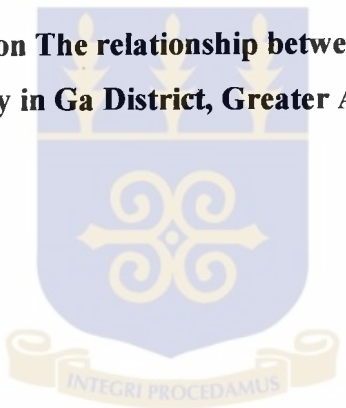
University of Ghana
School of Public Health

A retrospective Study on The relationship between antenatal care and supervised delivery in Ga District, Greater Accra, Ghana



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Declaration

I hereby declare that this submission is my own work and that, the best of my knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the award of any other degree or diploma of a university or other institute of higher learning, except where due acknowledgement is made in the text.

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1.0. Table of contents

2.0. Abstract

In a retrospective study in a small community in Ga District, Southern part of Ghana it was discovered, that majority of women (94.1%) received antenatal care and that eighty three per cent of them delivered under the supervision of recognised-trained medical personnel.

Supervised deliveries took place in Government health facilities as well as in the private sector. The majority of the women (86%) had more than four antenatal care visits.

Cost, cultural factors or age seem not to have had any significant influence on whether or not women deliver under supervision. Women with education more than seven years are more likely to deliver under supervision than women who are educated less than seven years.

The study confirmed a strong relation between antenatal care and delivery under supervision. About half of the women chose to deliver in the private sector. Individual midwifery care seems to encourage women to deliver in the private sector. Better collaboration between private and Government sector might strengthen the antenatal care and delivery service in Ga District.

3.0 Introduction

In developed countries almost all women receive antenatal care[1], give birth under the supervision of medically trained personnel and have prompt access to emergency treatment if complications arise. This has drastically reduced the number of maternal deaths in the developed countries. By contrast maternal mortality rate[2] in developing countries is high. The risk of dying from childbirth in Africa is 1/21, in Asia 1/54 and in South America 1/73. This compered to 1/9850 in Northern Europe. This high level of maternal mortality is often a result of inadequate obstetrical service. (1)

In response the Safe Motherhood initiative has been adopted in many parts of the world. Ghana has also initiated the Safe Motherhood Programme (3). Antenatal care, safe delivery [3]and postnatal care[4] are the major components of the Safe Motherhood Programme. This programme is intended to motivate women to actively participate in antenatal care service, to deliver under supervision[5] and to receive postnatal care.

In Ghana the maternal mortality rate is 214/1000 live births. In Greater Accra, it is estimated at 198/1000 live births. (6)

In Ghana, a national survey in 1994 showed that an average of 86% of all pregnant women receive antenatal care. Of this number only 60.2% deliver under supervision. Approximately fifteen percent of the supervised deliveries are under the care of Traditional Birth Attendants (TBA), and around thirty percent outside a clinic or hospital facility. (7). Only about 30% of the deliveries take place in a health /hospital facility.

In response to the low level of supervised delivery, free antenatal care is now available to all women who attend the government health institutions but not to the private sector (8). Free antenatal care includes free registration, prophylactic treatment for malaria, iron and folic acid tablets, routine laboratory tests, and Soya beans

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[1] Antenatal care: Is the health care (preventive and curative care) and education given during pregnancy.

[2] Maternal Mortality rate: Refers to the number of female deaths that occur during childbirth, per 100.000 live births. (2).

[3] Safe delivery: Management of normal labour and identification and management of complications and referrals as required. (4).

[4] Postnatal care: Begins at the end of delivery and ends 6 weeks after delivery. The Objective is to maintain the health of mother and child. (5).

supplement. Expenditures such as other medical treatment and laboratory tests, which are not included in the free tests, are not covered by the "free antenatal services". Women attending antenatal care pay an average of 2000 cedis per visit for services not included in the free antenatal care package.

4.0. Statement of the problem

In the Ga District, the level of antenatal coverage is estimated at 71%. Supervised delivery coverage was estimated at 28,2% and the average visit per woman for antenatal care was 2.3. (9) Around half of the deliveries were supervised by TBA's. Table 1 below shows the trend of Antenatal care and delivery coverage in Ga District from 1993-1997 (10). The data were obtained from Government Health institutions, TBA's and private health facilities that are collaborating with the District Health Management Team (DHMT). Likewise calculations on records were based on population figures from 1984 census. More precise data on antenatal care and delivery service is not available in Ga District.

It is questionable that only 28% of women deliver under supervision taken into consideration that 71% have received antenatal care. It should rather have been expected that women who receive antenatal care choose to deliver under supervison. There is a possibility that a woman may receive antenatal care in two or more institutions (ex. by TBA and health centre). If a woman has received antenatal care by two different institutions, she will appear more than once in the records. (11). This could yield a higher figure than the true number of women attending antenatal care.

Table 1: Coverage of ANC and Deliveries from 1993-1997

	1993	1994	1995	1996	1997
ANC	5249	4502	4648	6272	6556
%	64%	53%	53%	70.4%	71.4%
Del	2873	2198	1756	2249	2617
%	35%	25.8%	19.2%	25.2%	28.2%

Source: Annual reports 1993-1997, Ga District.

[5] Supervised deliveries: Deliveries, which takes place under the supervision of a

ANC attendance has increased between 1994 and 1997 from 53% to 71%. In contrast supervised delivery service attendance has dropped from 53% in 1993 to 28.2% in 1997. This suggests that, women who registered for antenatal clinic tend to live near the health centre. A majority of those attending antenatal clinic (71%) did not deliver under supervision.

Access to health care is a function of costs, as measured in money, time and distance. A previous study in Amasaman, Ga District looking at the true "catchment area"[6] showed that seventy five percent (75%) of patient seen at Amasaman health centre live close to the main trunk road within a short distance of 5 KM. The remaining twenty-five 25% are from villages within a distance of 8 Km near to a road with access to transportation. (12). See map annex 1.

Poor infrastructure in the District makes it impossible for the very rural population in Ga District to make use of the existing health facilities. There are parts of the District, which is not provided with health care facilities. Some of these areas are reached by out reach services, but apparently not frequently. (13).

The following table 2 describes the expenditures for antenatal care and delivery service in three different health facilities in Amasaman District. All facilities are within a distance of 8 Km.

Table 2: Cost per months in three different Health facilities in Ga sub- District in 1998.

Health facility	Deliveries per month(average) Period July/-July98	Antenatal care service fee	Delivery fee, (uncomplicated delivery)
Government clinic, Amasaman	15.7	Cedis 2.000/ visit	Cedis 15,500-20.000
Private maternity home, Pokuase	8.2	Cedis 3.000/visit	Cedis 20.000-35.000
Private TBA, Tantra Hill	50	Cedis 32.000-37.000/all service before delivery	Cedis 25.000

Source: Data collection by Winnie Kurtzhals in Ga District. July 1998.

nurse/midwife, physician/obstetrician or a trained TBA.

[6] Catchment area: The area from which patients come to the health service.

Bearing in mind that cost influences the utilisation of health facilities, it would be expected that Government health centres should have the majority of deliveries, since they are cheaper compared to the private sector.

The District health records do not report on any cases of maternal deaths with respect to pregnancy and delivery. According to health care providers, it is not seen in the facilities because in all cases they are able to refer to the nearest health facility. It could also be possible that women, who do not fall into the catchment area, are not reported. Likewise maternal deaths as complications to delivery are often referred to regional hospitals, which are in a different district. If many women did not deliver under supervision of medical expertise it should have been expected to see a high maternal mortality rate as well as child mortality rate in the District.

The service provided in the different health institutions differs in some ways. The main differences between Government health centre (Amasaman) and Maternity home (Pokuase) is the time spent by patient, and the type of care that is provided. Both types of institutions have midwives as service providers, which makes the medical expertise comparable. Women tend to spend longer time in Government facilities. The type of care provided in the Government health centres is institutionalised care.[7] Typically women consult with three different midwives during a single visit. The next time a woman come for antenatal care she might not meet the same midwife. The care at the maternity home or by the TBA is individualised. Health education is integrated in the routine visits and is provided by the same midwife every time.

TBA's provide individual care as well, but because of limitations in competencies the TBA will often refer women to a health facility for antenatal care. Annex 5 describes the different competencies and tasks, which are performed by the various health providers with regards to antenatal care and delivery service. (14/15)

The district lacks basic data on the percentage of women who receive antenatal care, and the percentage that deliver under supervision. Furthermore, it is believed that the high numbers of the women who receive antenatal care do not deliver in the health facilities. The factors contributing to this are unknown.

DHMT is the administrative body, located in Amasaman. The health system is made up of the Government sector and the Private sector[8]. See map over health facilities in the Ga District. (Annex 2)

DHMT collaborates only partly with the Private sector and not all information from the private health sector on health performance is available. F. Ex. information on number of private health facilities and patient records from the private sector is not included in DHMT records. The private sector includes institutions, such as private practitioners, maternity homes, TBA's, traditional healers and herbalists.

Maternity homes provide essential obstetric care. Patients are referred for laboratory tests to private laboratories. The maternity homes are usually staffed with medically trained midwives.

TBA's can be divided into two groups. TBA's, whom MOH has trained, and TBA's without training by the MOH. TBAs who are not trained by the MOH are categorised as not capable to supervise deliveries.[9] Patients with complicated deliveries such as, bleeding, obstructed labour, uterus perforation etc. are referred to nearest hospital, either Nsawam, Korle-bu or Ridge hospitals, a distance of 15-25 Km. None of the health facilities in Ga District can provide comprehensive obstetric care services. [10]

5.0. Aims and Objectives of the study:

5.1. General Objectives

There are three broad objectives to this study.

1. Determine the true usage of antenatal care and supervised delivery in a community within the catchment area of a health centre in Ga District.

2. Investigate which factors might prevent women in the community for not to deliver under supervision.

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[7] Institutionalised care: Fragmented care, where the patient sees different personnel according to the task attached to the particular personnel.

[8] Private Sector: Those institutions that provide health service not directly under Ministry of Health. Ex: Private practitioners, Private midwives, Maternity homes, Traditional Healers etc.

[9] Supervised deliveries: MOH includes trained TBA's and medical trained staff as capable to supervise deliveries.

[10] Basic essential obstetric care services and comprehensive essential obstetric care services is described in Annex 3.

3. Propose recommendations to improve antenatal care and supervised delivery coverage in Ga District.

5.2. Specific objectives are:

1. Determine how many women in the Pokuase community who live near health facilities that deliver under supervision
2. Investigate if women receive antenatal care from more than one health provider during pregnancy.
3. Describe possible reasons for women not using a MOH facility for delivery care.
4. Recommend areas, which could improve antenatal care service as well as motivate women to deliver in heath facilities.

6.0. Statement of hypothesis

1. Investigate if there is no association between antenatal care and supervised delivery.
2. Investigate that there is no association between education and type of delivery.
3. Determine if there is no relationship between age and supervised delivery, which might be confounded by education.

7.0. Review of the literature

The level of maternity care is a reflection of the availability and utilisation of maternal and child health (MCH) services. Appropriate and competent care during pregnancy, child birth and puerperiums contribute to the health of mothers and their children. The majority of maternal deaths occur around the time of delivery. (16). Hence it is important for women to deliver under medically safe conditions.

Lessons learned from experience in Sweden, show that two major factors contributed to the decrease in maternal deaths in Sweden: 1) The importance of having a trained midwife present during all the three stages of delivery and 2) The use of antiseptic technology during labour. (17). Other factors which were thought to contribute to improved obstetric outcome include general improvement in the environment, nutritional status, women's role and general socio-economic improvement (17).

Antenatal care programmes throughout the world are based on risk identification and prevention of eventual diseases that can occur during pregnancy. The effectiveness of such programmes varies depending on the following factors:

- Whether the whole population is included in primary screening
- Whether the screened for include the important causes of mortality and morbidity.
- When increased risk is detected, appropriate referral or other action is taken promptly.
- Whether adequate services exist at the referral level
- Whether women at risk are able to reach the referral level facility and are motivated to do so. (18).

A national study in Ghana on infant, child and maternal mortality (1994) showed that 88.6% of women had consultation for antenatal care. Out of this number 92.5% received antenatal from nurse/midwife or doctor. Among the women who received antenatal care, 54.8% had never attended school. School attendance was found to have little or no influence on visits to antenatal care. (19). About four out of every five women (79.2%) who had received antenatal care, had made their first visit in the second trimester. (20). The same study showed, that over 90% of women who did not seek antenatal care, were from rural areas where distance and cost are the main reasons. (21).

The same study showed that in urban areas medical personnel assisted 83.1% of the deliveries. Of this number 8.6% were assisted by doctors, 68.8% by nurses/midwifes and 5.7% by trained TBA's (22).

In the rural areas only 52.2% of the deliveries were supervised. The deliveries were assisted by doctors (2.3%), by nurse/midwifes (30.9%), and trained TBA's (19%).

In the Ga District report on antenatal care attendance of 71% in 1997 and supervised deliveries 28.2% same year it is notable, that Ga District does not have a higher coverage of supervised deliveries. In the mentioned study even the rural areas 52.2% of the deliveries are done under supervision of medical personnel including trained TBA's.

The low coverage could be due to either inadequate data collection, (true coverage not known) or if there are other contributing factors to why women don't use the health facilities for deliveries.

Factors could include the role of the women, whose workload, childcare responsibilities and financial situation may all constrain their ability to make use of a health care facility. In addition, cultural factors and the family structure could influence women's accessibility to delivery services. (23).

Since 70% of the women Ga District attend antenatal care, the acceptance rate of the orthodox healthcare system is reasonable high. The low acceptance rate (30%) for delivery service could have a direct relation to the very important chapter of a woman's life, when she delivers a child. The woman might seek delivery care outside the public health centre due to the "relation or trust[11]" to the person who assists her. Pregnancy and childbirth may be times of physical danger for the women and her child, but are also times of psychological and social growth and role change. Demands for good quality of care/ trust could be of importance. The institutionalisation of childbearing women in the public health service facilities has resulted in fragmented care, whereas the care given by the traditional birth attendants, the private midwifes and practitioner is more individualised. (24). During the 1970s in Britain there was increasing evidence of consumer dissatisfaction with maternity service. Dissatisfaction related to lack of individualised and continuity of care and lack of responsibility felt by women for their own care. (25).

A study in Nsawam, Ghana in 1994 showed that the reasons the women had, for not using the health facilities during labour were: 1) equipment not available 2) poor attitude and behaviour from hospital staff toward client, rudeness and impatience 3) need to know health worker before assured good care (trust), 4) roads inaccessible, especially in the rainy season and 5) the cost involved. (26)

Table 2 shows that cost does not always seem to have much influence on when using a facility. The data obtained in Amasaman sub district on utilisation of three different types of health facilities, showed that a high number of women choose to deliver in the private sector even if the cost involved is higher.

[11] Trust: could be medical expertise as well as trust in personnel.

Reasons for not using a particular facility might not only depend on community characteristics but also on the characteristics of the health facilities available in a particular community and the sevice provided.

8.0. Methodology

8.1. Background of the District

Ga District is the second largest of the five districts that make up the Greater Accra Region in the South of Ghana. It has a land area of 859 sq. Km. and a current estimated population density of 338 persons per square Km. There are over 300 small settlements scattered all over the district. Total population in 1997 is estimated to 232.399, based on projections from 1984 population census.

The district shares boundaries with the Awutu-Efutu Senya district west of the Central Region, the Akwapim South District of the Eastern Region, the Tema Municipality and the Accra Metropolis. See map 1 annex 1.

The District administrative capital, Amasaman, is located centrally, 25 km from Accra. The district used to be only rural but the growing population of Accra has changed the Ga district to be both urban and rural. About 20-30 % of the district is urban. The rural economical activities are farming and fishing.

The inhabitants of the District are mainly of the Ga tribe. However many other ethnic groups have settled in the urban as well as the rural communities. Languages spoken in the District are mainly, Ga, Twi, and Ewe. Close to the urban area of Accra, where many of the northern tribes have settled, a variety of northern languages are spoken.

8.2. Study Area

Pokuase is a village near the main trunk road from Accra to Nsawam going through Amasaman. Pokuase is within a distance of 2 km from the district capital, Amasaman where the health centre for Amasaman sub district is based.

Total population in Pokuase is estimated to 5000 inhabitants (1998). Number of yearly-expected deliveries in Pokuase is estimated to 200.

Characteristics for the population:

Pokuase is a farming community. Many of the women are engaged in trading as their main income activity. The different tribes in Pokuase are Ewe, Ga, Akan.

Accessibility to antenatal care and delivery care:

Women in Pokuase can receive antenatal care from different facilities and health providers. 1) At Amasaman health centre a distance of 2 km from Pokuase, 2) in private maternity home in Pokuase, which have one medical trained midwife employed, and 3) by one trained TBA, who lives in the community.

Deliveries can take place 1) at health centre, 2) by trained/not trained TBA's, 3) at maternity home and 4) by private nurse/midwives.

8.3. Study population

To identify the true coverage of antenatal care and delivery service in a community with access to health care facilities, all women in Pokuase who has delivered within the period of 1. July 97- July 98 were investigated. Other objects of interest were the health care providers in the community.

Predictable bias for the study:

It is likely that women who had delivered within the previous year, who had either died or lost their child, might not have been included in the study population. Likewise women who had travelled to their hometowns before or after deliveries might also not have been included.

Women who have died or lost their child during deliveries could fall into the group of women who deliver under unsafe conditions, and will therefor not be found. Data available on maternal deaths or infant mortality for this particular community is not available.

8.4. Study Design

The study was a descriptive retrospective quantitative study. The study took place in a village, Pokuase, Amasaman Sub district, Ga District.

9.0. Data collection

Individual Questionnaire to all women who had delivered in Pokuase the past year. The questions covered four major topics namely:

- The demographic data
- Social economic background
- Characteristics on antenatal care
- Characteristics on delivery care

See annex 4 for more details on the questionnaire.

Two field workers were trained in the use of the questionnaire and interviewing techniques as well as the different concepts like "antenatal care" and "delivery service" according to service providers. The questionnaire was pre-tested in a similar community of the study area in the same sub district. When the pre testing took place the fieldworkers were supervised during interviewing by the resident of the school of public health.

Data collection in Pokuase took place over a three-week period where all households in the community were visited.

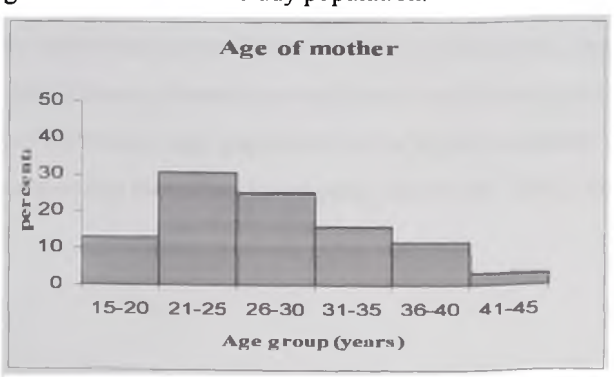
10.0. Results

The true coverage of antenatal care and delivery service was analysed by descriptive statistic methods such as Chi-square and P-value. Outcomes of variables have been summarised in tables and graphs. The qualitative data and observations on the antenatal care and delivery services available in the background information were analysed and discussed for their influence on the use of the existing facilities or not.

11.0. Analysis of results

The study population was made up of all households in Pokuase. A total of 186 women were registered. The age distribution of these women who delivered last year is shown in figure 1.

Figure 1: Age distribution of the study population.

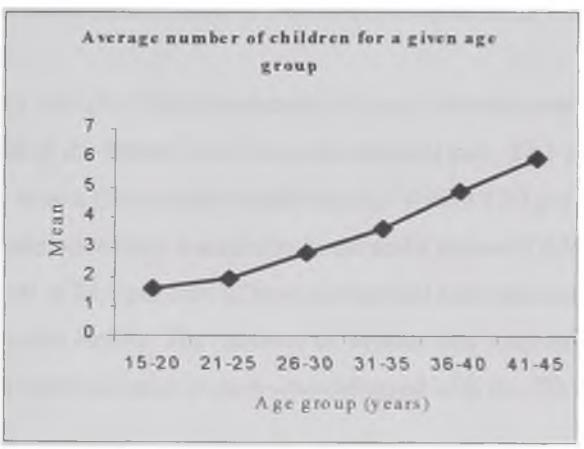


The highest age group of 30.5 per cent was in the age group 21 to 25 years, followed by the 26 to 30 year's age group (25.1%). The mean age of these women in the study population was 25 years.

Almost all women in the study population were married with the exception of two women who stated otherwise.

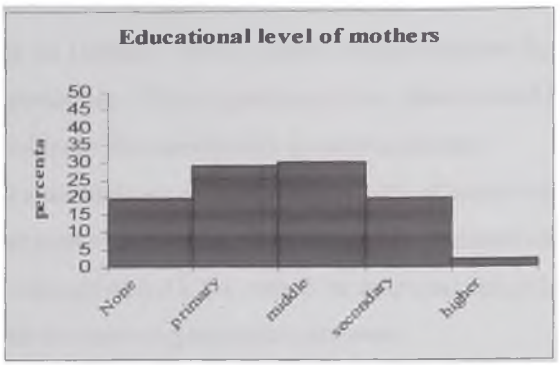
Average number of children per woman was 3 with seventy per cent of them having three children or less. Compared to the national average number of children per woman of 5.5, the 3 recorded were low. About sixteen per cent (15.6%) of the women had four children. Only 14.4% of the women had five or more children. The low average number of children per women might be due to the low mean age, which was close to 26 years. The following figure shows the number of children per women according to age group.

Figure 2: Number of children per women in different age groups.



Whilst 80 per cent of the women had some form of education, about 20 per cent have had none at all. Of those educated more of them went beyond primary school but only two percent of the whole study population had a higher education. About fifty per cent of the women had more than seven years education. This is illustrated in figure 3.

Figure 3: Educational level of mothers:



Trading was the main occupation of the mothers in Pokuase (41.7%). Farming which used to be the main occupation of the women was just 1.1 per cent. About thirty two per cent (31.7%) of the women were housewives whilst the remaining 25 per cent were engaged in other activities such as dressmaking, hair dressing and other skills. Many of the mothers rather traded or had other occupations as their main income activity.

Ninety-four per cent (94.1%) of women in Pokuase received antenatal care during pregnancy. Out of the women who received antenatal care, 82.1 per cent received antenatal care from a Government health facility. Whilst 17.3 per cent and 6 per cent received antenatal care from a maternity home and a trained TBA respectively in Pokuase. A total of 23.3 per cent of women received antenatal care outside a Government health facility. The numbers of women who received antenatal care from the TBA (6%) were the same women who delivered with the TBA. All lived in the same area.

The true antenatal care coverage for Pokuase of 94.1 per cent was higher when compared to coverage for Amasaman sub district, which is 71 per cent.

About 11 per cent of the women received antenatal care in more than one facility during pregnancy. Since both health- centres and maternity homes provided the women with medicine and tetanus vaccine there was a possibility that the women received more treatment than necessary. Women who did not receive any antenatal care (5.9%) stated the following as some of their reasons for not attending:

1) High cost of service, 2) Attitude of health provider and 3) Lack of time.

About fourteen per cent of women made less than three antenatal care visits. Majority (86.5%) made more than four visits. This was far higher than the average visits per woman in the Ga District. That the women stated a higher figure than the true figure given was a possibility. If the figures were true, then it could be due to the fact that a woman visited more than one facility for antenatal care.

First visit for antenatal care took place for 45.4% of cases within the first trimester. Eighty-six per cent of the women made their first antenatal care visit within their second trimester and only 13.7% visited the antenatal care clinic in the third trimester. Reasons stated for receiving antenatal care were:

- To get to know if foetus was healthy/alive
- To receive medicine

Thirty nine per cent (38.7) of the deliveries took place in a health facility/hospital. Some of these were referred because of complications. About thirty two percent (31.2%) delivered at maternity homes, 10.2% at home with assistance from nurse/midwife, 5.9% delivered by trained TBA and 11.3% delivered by untrained TBA's. Only (2.7%) delivered at home without assistance. Almost all in the last category delivered unintentionally by themselves due to sudden delivery (multy-parities). All of those who delivered by the trained TBA lived close to the TBA. Table 3 shows the distribution of deliveries within the different categories.

Table 3: Place of delivery

Place of delivery	Number	Percent
Home by own	5	2.7
Home by untrained TBA	21	11.3
Home by trained TBA	11	5.9
Home by nurse/midwife	19	10.2
Maternity home	58	31.2
Health centre/hospital	72	38.7
Total	**186**	**100**

Majority (86%) of women in Pokuase delivered under supervision of qualified trained personnel whilst the rest were not supervised. The number of supervised deliveries was higher when compared to the expected figure for the sub district, which is around 28%. It seems that many of the women (47.3%) chose to deliver under medical supervised personnel (including trained TBA) outside the Government facilities. Some of these facilities were a maternity home, a trained TBA or a nurse/midwife in the community. Those deliveries, which took place in the private sector of health care providers, might not be recorded at the DHMT office. Reasons stated for choosing these facilities were:

1. Trust in personnel
2. Nearness
3. Safety of place.

Women who choose to deliver in a health facility state the same reasons as those who delivered under supervision but outside a health centre/hospital.
The following table 4 shows the number of women who received antenatal care and number who delivered under supervision.

Table 4: Two by two table of deliveries and antenatal care:

Supervised delivery	Antenatal care				
	Yes	percentage yes	NO	percnetage no	Total
Yes	155	88.5	5	45.5	160
No	20	11.5	6	54.5	26
Total	175	100	11	100	186

Most of the women who had antenatal care during pregnancy delivered under supervision (88.5%) (table 4). Those who were not supervised constituted about eleven per cent of this group. A Chi square test of association between antenatal care during pregnancy and type of delivery was highly significant (P= 0.00006). Thus there was overwhelming evidence that women who had supervised delivery were influenced by their attendance at antenatal clinic. The first hypothesis stating that there is no association between antenatal care and supervised delivery therefor has to be rejected.

Educational level can be divided into three groups.

1: women with no education

2: women with less of seven years of education

3: women with more than seven years of education.

The distribution of type of delivery in regard to educational level is shown in table 5.

Table 5: Educational level and type of delivery

Educational level	Non supervised delivery	Supervised delivery	Total	Relation between education and supervised delivery
No education	8	28	36	77%
Less than seven years	15	95	110	86%
More than seven years	3	37	40	92%
Total	26	160	186	

In all three groups majority of women deliver under supervision. The trend seems to be that the more education a woman has the higher percentage of women deliver under supervision. Chi square test showed no significant influence on type of delivery and educational level among the three groups (P=. 0.17).

If the women are divided into two groups, women with less than seven years and women with more than seven years of education. The test of association showed this to be significant at 5 per cent (P=0.02). Which means that if a woman had more than seven years of education it was more likely that she would deliver under supervision.

The stated hypothesis that **there is no association between education and type of delivery** can therefore be rejected. There is an association between education and type of delivery **if** the women are has more than seven years of education.

Choice of delivery was not apparently influenced by a mother's age (P=0.3) and education does not seem to be a confounding variable. The third hypothesis is therefore rejected.

Summary of findings:

Pokuase, a community with easy access to health care was found to have:

- 94.1% of women received antenatal care, of these 82.1% received antenatal care in a Government health facility, 23.3% received antenatal care in private health facility and 11.3 per cent receive antenatal care in both Government facility and private institutions.
- 86% of women delivered under the supervision of medical trained personnel.
- There was a strong relation between antenatal care and delivery under supervision.
- Majority (86.5%) visited antenatal care more than four times.
- There was a strong correlation between education and type of delivery if mother was educated more than seven years.
- Age appeared to have no influence of choice of delivery.
- Around fifty per cent of the women had more than seven years of education.

12.0. Discussion, and recommendations

The study in Ga District contained only parts of the components of the Safe Mother - hood initiative, namely antenatal care and delivery service. Other components such as postnatal care, family planning and safe abortion were not included in this study Likewise the study was concentrated in only one of the sub districts of the Ga District. The community chosen (Pokuase) used to be a rural community but seems to be in the transition stage from a rural community to a more urbanised community (The majority of women were engaged in trading, and farming was no longer the main activity).

The study population came up to 186 women participating, which was close to the expected number of delivery (200) for 1998. The study population was young (mean age 26) and therefore the average number of children per women was low (3 children per women). Figure 2 showed clearly an increase in the number of children per women, in the higher age groups. If the average number of children per woman in Pokuase should remain low, it is then important to emphasis on family planning and further health education of the women in the community.

The true coverage of antenatal care (94.1%) was far higher than expected. The Government health centres seem to cover majority of the antenatal care attendance (82.1%). The figure reported at the DHMT office in 1997 (71%) was ten per cent lower than the true antenatal coverage. This could be due to the fact that some of the women were attending neighbouring district health facilities, since Pokuase is close to the main road that leads to Accra and Nsawam.

The high antenatal care coverage could be explained as a high acceptance rate and accessibility of the orthodox health system among women in the catchment area.

In contrast to information available, this study rather showed high coverage of supervised deliveries (86%) in the community and a strong relation between antenatal care and supervised delivery care.

Even though the majority of women delivered under supervision in the community it seems to be relevant that education for more than seven years influenced the choice of delivery. That age did not appear to have any influence and was not confounded by education in regard to supervised delivery was probably because there were small numbers of mothers in the study, who had more than seven years of education.

Reasons mentioned for delivering under supervision were, trust in personnel, greater safety, and shorter distance. A high number of these women chose to deliver in the private sector (37.1%), even though the cost involved was higher as compared to Government facilities (see table 2). However it would be of interest, to identify, the specific factors in the area of education more than seven years, that determined the choices they made with respect to supervised delivery. The importance of this is that there may be elements that may enable the health care system to increase the number of less educated women who access supervised delivery without their necessarily having to have seven years of education.

This study did not investigate in detail what in the private sector attracts women, but the type of service that seem to have an influence on the women's choice.

The major difference between antenatal care and delivery care in a government health facility and example a maternity home is the "type " of care as mentioned earlier. Care given by a midwife in a maternity home, by a TBA and by a community midwife/nurse is individualised compared to a fragmented care often provided in a

Government health facility. The study in Britain in the seventies, showed great satisfaction among personnel and patients when individualised care was introduced in Government health facilities (26). Research on what women define as "trust in personnel" during delivery is of high importance to investigate, to improve on antenatal care service and delivery service in the Country.

Women who did not deliver under supervision mentioned reasons such as lack of trust in personnel, cost too high and no time. Lack of trust could have been because of misconceptions on the part of the mothers, or a perceived lack of empathy or poor quality of care by the health service provider. The possibility that these women would attend antenatal care and safe delivery if they were to get a positive contact or experience in the orthodox health sector should be of relevance. Health educational programmes could reach these women in the community.

Majority of women received antenatal care in a Government health facility. Some (23.3%) received antenatal care from the private sector and a group of women (11.3%) received antenatal care in more than one facility at the time. Annex 5 table two showed the differences in the care provided according to health provider.

Free antenatal care was only provided to women attending Government health facilities. It should be recommended that the free antenatal care should include the private sector as well since many women prefer the private sector.

There does not seem to be any collaboration between government and private sector in the district in regard to antenatal care likewise the service provided does not seem to be standardised. It should be expected that women in the same community receive the same type of care and that the different service providers are likely to collaborate to improve on the Safe Motherhood programme in the community or the district.

It should be mentioned that the whole area of cost effectiveness of maternity care in regard to service provider and performance should be of interest for the District. Looking at the number of deliveries on midwife in a maternity home can assist per months compared to number of deliveries in a government health facility should be of high importance for the District to investigate. The private sector seems to do about halve of the work in the area of maternity care. There is no financial support from the MOH to the private sector. There is a need to plan and co-ordinate the maternity care in the district.

DHMT records from 1994 to 1997 showed in the years an increase in antenatal care attendance and a decrease in women who deliver under supervision see table 1. Taking the study's findings into consideration, data collection and records from government health facilities and private sector seem to be inadequate.

12.1. Summary of recommendations

- Improve on record collection in the District.
- Educate women in family planing and health education to maintain low fertility rate in the community.
- Further investigation and research into relevant factors for using the private sector for safe delivery.
- Further investigation or research into the type of care/ quality of care women in Ga District expects with regard to better maternity care.
- Improve on collaboration and co-ordination of maternity health programmes in Ga District between private and government sector.
- Include the private sector in the free antenatal care for all women.
- Improve on standardised antenatal care in the District.
- Investigate and compare the cost effectiveness of the different types of maternity care provided in the private sector as well as in the government sector.
- Emphasis on female education more than seven years.

13.0.List of references

1. Maine, Deborah. (1991). Safe Motherhood Programs: Options and issues *Centre for Population and Family Health School of Public Health. Faculty of Medicine Columbia University, New York.* Page9.
2. World Bank Publication. (1994). Better Health in Africa, experience and lessons learned. *The World Bank. The international Bank for reconstruction and Development.* Page 215.
3. Ministry of Health, Ghana. (April 1996*). National Reproductive Health Service Policy and Standards.* Page 2.
4. Ministry of Health, Ghana. (April 1996*). National Reproductive Health Service Policy and Standards.* Page 5.
5. Ministry of Health, Ghana. (April 1996). *National Reproductive Health Service Policy and Standards.* Page 5.
6. Twum-Baah, K.A. (1994). Infant, Child and Maternal Mortality Study in Ghana. *Ghana Statistical Service.* Page 38.
7. Twum-Baah, K.A. (1994). Infant, Child and Maternal Mortality Study in Ghana. *Ghana Statistical Service.* Page 40-47.
8. Kurtzhals,Winnie (1998). Student LogBook. Ga District. *School of Public Health Legon, Ghana.*
9. Ga District. (1997). Annual Report. *D.H.M.T. Amasaman, Ghana.*
10. Ga District. (1993-1997). Clinic Records. *D.H.M.T. Amasaman, Ghana.*
11. Information obtained in June 1998 from record collection system in Amasaman Health facility, TBA record book and Maternity home, *Pokuase. Ga District, Ghana.*
12. King, Liberty (1998). Towards an efficient and effective utilisation of human and material resource. A case study of the Amasaman Health centre. *School of Public Health, Ghana.*
13. Information obtained by Ga District (June 1998).*D.H.M.T. Amasaman , Ghana.*
14. Ministry of Health. Republic of Ghana. (April 1996). *National Reproductive Health Service Policy and Standards.* Page 31,32,33.
15. Kurtzhals, Winnie. (1998). Student LogBook. Ga District. *School of Public Health Legon, Ghana.*

16. Twum-Baah, K.A. (1994). Infant, Child and Maternal Mortality Study in Ghana. *Ghana Statistical Service* Page 40.

17. Liljestrand, Jerker and George Povey. (1992). Maternal Health Care and International Perspective. *WHO Collaborating centre for research in human reproduction. Dept. of Obstetrics & Gynaecology, Uppsala University.* Page 138-145.

18. Roooney, Cleone (1994). Antenatal care and maternal health. How effective is it? *Maternal Health and Safe Motherhood Programme, WHO.* Page 13.

19. .Twum-Baah, K.A. (1994). Infant, Child and Maternal Mortality Study in Ghana. *Ghana Statistical Service.* Page 40-50.

20. Twum-Baah, K.A. (1994). Infant, Child and Maternal Mortality Study in Ghana. *Ghana Statistical Service* Page 40-50.

21. Twum-Baah, K.A. (1994). Infant, Child and Maternal Mortality Study in Ghana. *Ghana Statistical Service.* Page 40-50.

22. .Twum-Baah, K.A. (1994). Infant, Child and Maternal Mortality Study in Ghana. *Ghana Statistical Service.* Page 46.

23. In her lifetime. (1996). Female morbidity and mortality in sub Saharan Africa. *Institute of Medicine, National Academic press, Washington D.C.* Page 38.

24. Robinson, Sarah and Ann M. Thomson. (1991). Midwives, Research and Childbirth. *Chapman & Hall, London UK.* Page 48-49.

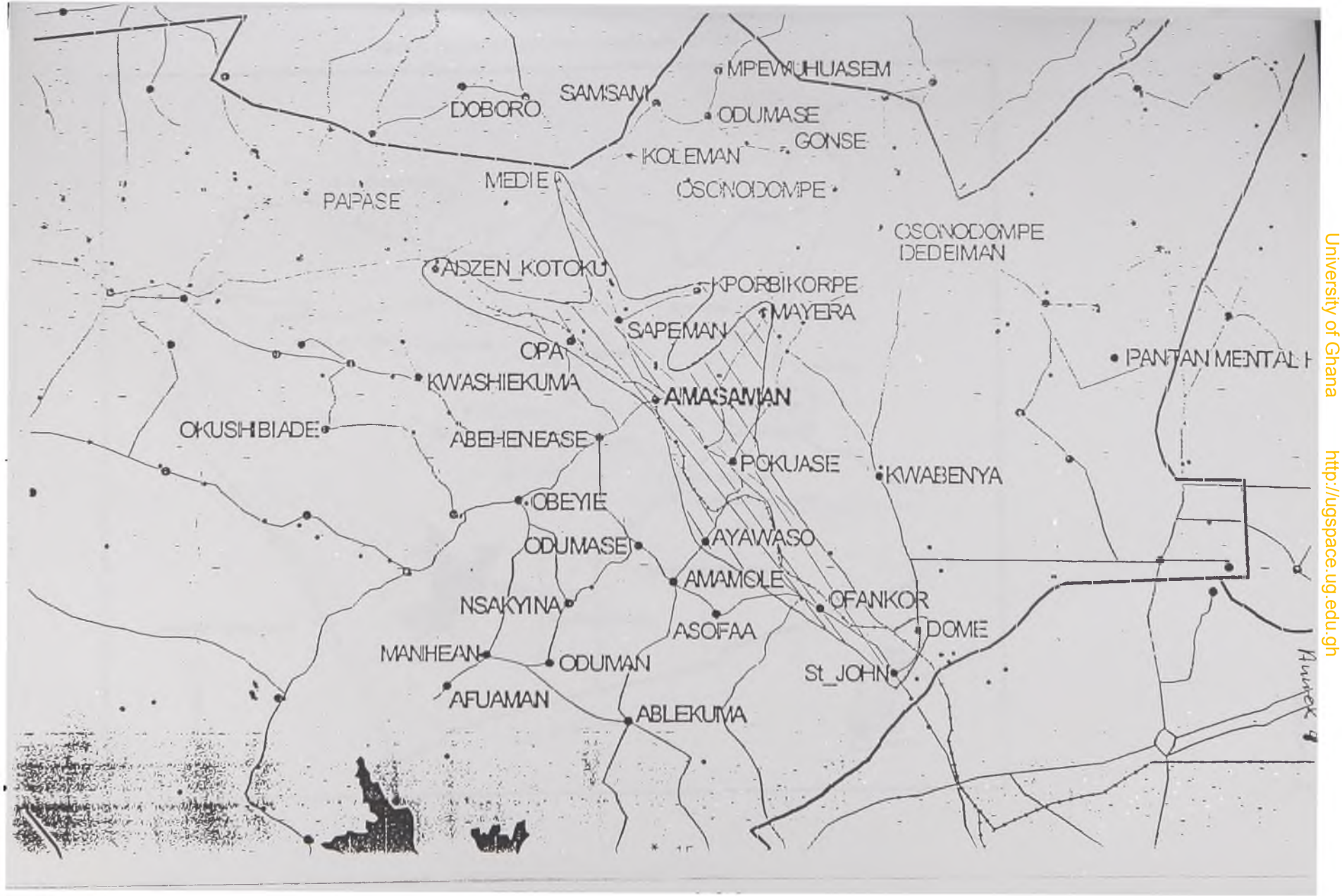
25. Wilson, J.B. and AHK Collison. (1998). Title: Maternity waiting home concept: The Nsawam, Ghana Experience. *Journal: International Journal of Gynaecology and Obstetricts* 59 suppl. 2 Page 165-172.

26. Robinson, Sarah and Ann M. Thomson. (1991). Midwives, research and Childbirth. *Chapman & Hall, London UK.* Page 48-49.

27. UNICEF, WHO, UNFPA, (1997). A guideline for monitoring the availability and use of obstetric services, *United National Children's Fund, New York USA.* Page 26.

14.0. List of annex

1. Annex1: Map over true catchment area, Amasaman Sub District
2. Annex 2: Map over location of health care facilities in Ga District
3. Annex 3: WHO recommendations on procedures used to identify basic and comprehensive essential obstetric care
4. Annex 4: Questionnaire, Ga District 1998
5. Annex 5: Ghana National RH Service Policy and Standards April 1996.
6. Annex 6: Map over Ghana



Annex 2

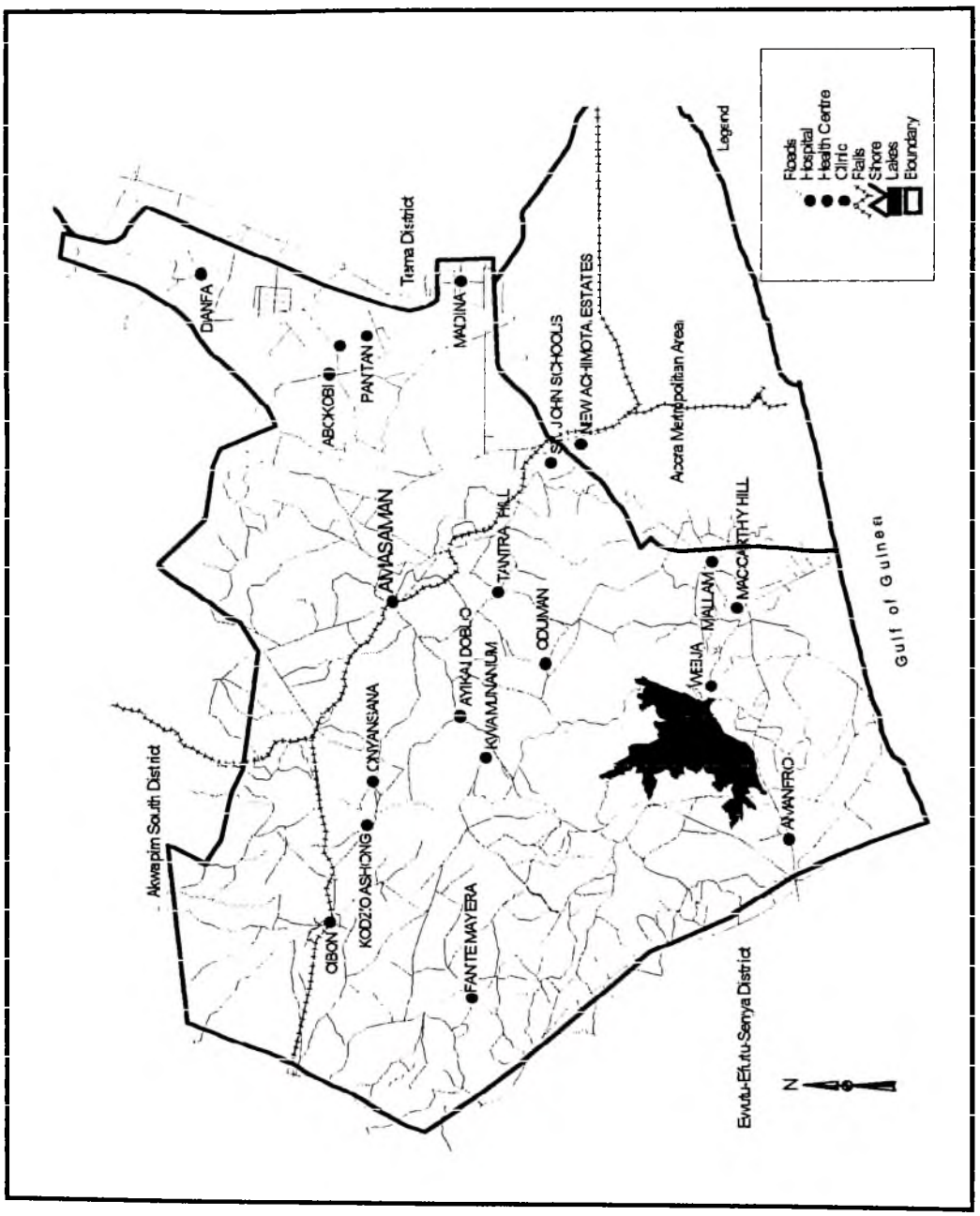


Figure 1. Ga District: Location of health care facilities

Annex 3

WHO recommendations on Procedures used to identify Basic and Comprehensive Essential Obstetric Care (EOC):

Basic EOC services:

1. Administer parenteral[i] antibiotics
2. Administer parenteral oxytocic drugs
3. Administer parenteral anticonvulsants for pre-eclamsia and eclamsia.
4. Perform manual removal of placenta
5. Perform removal of retained products (e.g. manual vacuum aspiration)
6. Perform assisted vaginal delivery

Comprehensive EOC services

7. (1-6) All of those included in Basic EOC
8. Perform surgery
9. Perform blood transfusion

Basic CCEOC facility is one that is performing all of functions 1-6

A comprehensive EOC facility is one that is performing all of functions 1-9

Source: (8).

[i] Parenteral administration of drugs means by injection or intravenous infusion (drip).

Annex 4

No:|__|__|__|

Questionnaire 1
Field researches Ga District
Winnie Kurtzhals
July 98

Personal data:
Name of mother: _____House number: _____

When was your last child borne? ___/___/___
Date month year

(The mother is relevant for the study if the child is born after 30 June 97)

Child number: 1 2 3 4 5 6 7+

1. Mother's age: (15-20) **1** (21-25) **2** (26-30) **3** (31-35) **4**
(36-40) **5** (41-45) **6** (46-50) **7** |__|

2. Educational level: No school **1** Primary school **2**
Secondary school **3** Higher education **4**
Middle school **5** |__|

3. Occupation: Trading **1** Farming **2** Fishing **3** Other **4**
Housewife **5** |__|

4. Marital status: Married **1** Single **2** Divorced **3**
Separated **4** Widowed **5** |__|

Data on delivery: (Please circles the answer)

5. Where did you deliver?

At home on my own	1
At home by TBA	2
Maternity home	3
At a health centre/hospital	4
At home by trained TBA	5
At home by nurse/midwife	6

6. Could you tell me all the reasons why you choose to deliver:_____

The cost is minimal	1
It is safer	2
To be around the family & friends	3
Husbands decision	4
Distance: So far to health centre	5
Distance: So near	6
Like the attitude of provider at HC	7
Don't like the attitude of provider	8
Cultural factors	9
Because of complications	10
Trust the personnel	11

Other reasons: _____

7. Did you attend an antenatal care service facility during pregnancy?

Yes	1	
No	2	⟶ go to question 14

8. List all the places you went for antenatal care during your pregnancy:

TBA	1
Health facility	2
Maternity home	3

9. If you visited more than two places, which of the places was your main contact/ choice? **(Use the same number as in question 8)** |__|

10. How many antenatal care visits did you make during your pregnancy?

1 2 3 4 5 6+

11. How many antenatal care visits did you do at:

TBA |__|
Health facility |__|
Maternity home |__|

(When you total the number of visits in question 11 it should give you the same number as in question 10)

12. Which month did you make your first visit for antenatal care?

1 2 3 4 5 6 7 8 9

13. Why did you go for antenatal care?

To get a registration card	1
To get to know if the foetus is healthy / alive	2
To receive the free medicine	3
To get Tetanus vaccine	4

Other reasons: _____

14. Tell me the reasons why you did not go for antenatal care?

Not aware of the existence	1
I don't have time	2
The cost is too high	3
Husbands decision	4
Distance: So far to health centre	5
Don't like the attitude of provider	6
Cultural factors	7
I don't trust the personnel	8
They want bribe	9

Other reasons: _____

Annex 5

Table 1: Ghana National RH Service Policy and Standards April 1996. Antenatal care service. (14).

Activity	levels		
	Community TBA's	Sub-district	District
Registration	+	+	+
History	+	+	+
Gen.exam.	+	+	+
Syst.exam.	0	+	+
Obst.exam.	+	+	+
Vag.exam.	0	+	+
Lab.investig.	0	+	+
Risk assess.	+	+	+
Ad.routine drugs	+	+	+
Immunisation	0	+	+
Health educ.	+	+	+
Management of complications	+	+	+
Referral	+	+	+

- Staff responsible at sub-district and district level: Midwives, physicians, Medical assistants.

Table 2: Antenatal care service actual performed at the different levels and health providers in Ga District. (15).

Activity	Levels		
	Community TBA	Maternity home[1]	Health centre[2]
Registration	+	+	+
History	+	+	+
Gen.exam.	0	+/0[3]	+/0[4]
Syst.exam.	0	+/0	+/0
Obst.exam.	0	+/0	+/0
Vag.exam.	0	+/0	+/0
Lab.investig.	0	+	+
Risk assess.	+	+	+
Ad.routine drugs	0	+	+
Immunisation	0	+	+
Health educ.	+	+	+
Management of complications	0	+/0	+/0
Referral	+	+	+

[1] Staff: Medically trained Midwives and their assistants.
[2] Staff: Medically trained midwifes.
Two of the district health centres (Weija and Danfa) have physicians. In the health facilities where physicians are employed all the recommended National competencies are taking place.
[3] +/0: In most cases these activities do not take place.
[4] +/0: In most cases these activities do not take place.

Annex 6

LOCATIONAL MAP OF THE GA DISTRICT