KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

COLLEGE OF HEALTH SCIENCES

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DEPARTMENT OF COMMUNITY HEALTH

ASSESSMENT OF EXPANDED PROGRAMME ON IMMUNIZATION SERVICE UTILIZATION IN SEKYERE WEST DISTRICT OF ASHANTI REGION, GHANA

BY

ISAAC BADU

MAY, 2010

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A DISSERTATION SUBMITTED TO THE SCHOOL OF RESEARCH AND GRADUATE STUDIES, KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI – GHANA, IN PARTIAL FULFILMENT OF THE AWARD OF MASTER OF PUBLIC HEALTH (MPH) IN HEALTH SERVICES PLANNING AND MANAGEMENT DEGREE.

BY

ISAAC BADU

MAY, 2010

Declaration

I, Badu Isaac, hereby declare that the work presented here is the result of my own investigation, and that except for other people's works, which have duly been acknowledged at the reference section, this dissertation has never been presented to this university or elsewhere for any Master of Public Health (MPH) in Health Services Planning and Management degree. I am therefore responsible for the views expressed and the factual exactness of its contents.

…… …….

DR. EASMON OTUPIRI **BADU ISAAC**

(SUPERVISOR) **(CANDIDATE)**

…… …….

(DATE) (DATE)

……

(HEAD OF DEPARTMENT)

DR. ANTHONY ADUSEI

…….

(DATE)

Dedication

This document is dedicated to my dear mother, Madam Amma Ampontuah of blessed memory. It is further dedicated to my brothers and sister; Collins Osei, Eric Opoku – Asiedu, Joseph Adu, Kofi Adjei and Mary Ofori

Acknowledgement

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Definition of Terms

Cluster survey: A survey in which, after the population under study has been subdivided into clusters, some subjects from selected clusters are observed.

Confidence interval: An estimated interval within which the population parameter of interest is assumed to be found.

Coverage level: Percentage of fully immunized children with valid doses by one year of age.

Design effect: A measure of variability due to selection of survey subjects by any method other than simple random sampling.

Drop–out rate: Percentage difference in coverage between BCG and measles (card or card and history).

EPI service utilization: The extent to which immunization services provided by health workers is being patronised by mothers and their children.

Fully immunized child: A child who has received all the prescribed vaccine doses considered to protect the child from vaccine preventable diseases.

Immunization: A process where by a vaccine is injected or introduced into a child to confer immunity to the child against a specific disease.

Immunization centre: A place where mothers and their children attend immunization session.

Immunization cluster sampling technique: A household survey done in a number of clusters of a predetermined number of children to assess immunization services.

Immunization strategy: A well defined method employed by health workers to meet mothers and their children for immunization services to be executed.

Infant immunization coverage: The percentage of children under one year (24 months old) who have been vaccinated.

Partially immunized child: A child who has missed at least one dose of any of the prescribed antigens.

Random number: A number selected by chance.

Reasons for failure to immunize: Reasons why children and mothers do not come or attend or return for immunization session.

Vaccine: A preparation of weakened or attenuated bacteria or viruses that can be injected to confer immunity to a specific disease.

Abbreviations/Acronyms

5YPOW	Five-Year Programme Of Work
AARI	Average Annual Rate of Increase
ANC	Antenatal Care
BCG	Bacillus Calmette-Guérin
BWHO	Bulletin of World Health Organization
CI	Confidence Interval
DE	Design Effect
DHA	District Health Administration
DHMT	District Health Management Teams
DPT 3	Third dose of Diphtheria, Pertussis, Tetanus vaccine
EPI	Expanded Programme on Immunization
FGD	Focus Group Discussion
FP	Family Planning
GAVI	Global Alliance for Vaccines and Immunization
GHS	Ghana Health Service
GID	Global Immunization Data
HC	Health Centre
Hep B	Hepatitis B (vaccine)
HOS	Hospital (dose received in a hospital)
JHS	Junior High School
MCH	Maternal and Child Health Centre
MDG's	Millennium Development Goals

MOH	Ministry Of Health
MSLC	Middle School Leaving Certificate
NID's	National Immunization Days
Nmin	minimum number of children
NT	Neonatal Tetanus
OPV	Oral Polio Virus Vaccine
OUT	Outreach (dose received in an outreach centre)
Penta 3	Pentavalent Vaccine
PHC	Primary Health Care
PRIV	Private (dose received from a private practitioner)
RED	Reaching Every District approach
SHS	Senior High School
SIA's	Supplemented Immunization Activities
SPSS	Statistical Package for Social Sciences
TBA	Traditional Birth Attendant
TT	Tetanus Toxoid
Tech/Voc.	Technical/Vocational Education
UCI	Universal Childhood Immunization
UNICEF	United Nations Children's Fund
WHA	World Health Assembly
WHO	World Health Organization
WHS	World Health Statistics
YF	Yellow Fever

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Abstract

Background

This project work presents a comparative study of the implementation of global WHO standards for expanded programme on immunization, and EPI yearly records at the district level within the health sector. The purpose of this project was to develop an understanding of the linkages between mothers' attendance at immunization sessions and the gross effect on EPI service utilization, which is, immunization status of both children and the mothers, with special emphasis on measuring parameters like coverage and drop out rates in Sekyere West. The general objective of the study was to assess the expanded programme on immunization service utilization in the Sekyere West District Health Directorate. The study examined and compared the EPI coverage levels and drop out rates, the major reasons for immunization failure, the immunization coverage status of mothers for tetanus toxoid vaccine, and immunization strategy preferred by MCH/FP staff at the various health facilities.

Methods

The immunization status of one hundred and ninety three children (aged 12-24 months) and one hundred and ninety three mothers (aged 19-45 years) were determined by interviewing mothers who were selected by employing cluster probability sampling technique. A review of immunization history was done for confirmation from immunization cards of children and mothers' maternity cards (where available). A focus group discussion with the health service providers was conducted to find out the preferred immunization strategy with special emphasis on ranking/scoring all the approved strategies.

Findings

Overall, default rate for the entire recommended series of vaccines was 15.0 percent and a coverage level of 92.7 percent for children immunization. Further, partially immunized children were 14.5 percent and fully immunized stood at 85.5 percent. Only 14 percent of entire mothers interviewed had received all the five doses of tetanus toxoid vaccine prescribed by WHO as an intervention for both maternal and neonatal tetanus. The major reason for immunization failure for children was obstacles and prominent amongst the reasons being postponement of immunization session(s) until another time. MCH/FP staff at the facility level preferred outreach services most that is 43 percent to the rest of the immunization strategies approved and under full operation by Ghana Health Services nationwide.

Conclusions

The coverage level for infant immunization was fairly good since the finding was above what has been prescribed as worldwide indicator by WHO. However, the immunization status of mothers was unacceptable because 86 percent of mothers interviewed had not gotten full immunization status (permanent protection). Immunization clinic appointment default rate was still high. Postponement of immunization schedules was the most common reason for failure. MCH/FP confirmed outreach services as the best strategy for immunization blended with regular home visits.

The key recommendation given was that the MCH staff should embark on educational campaigns at ANC and postnatal sessions on the number of vaccines each child and/or mother is supposed to receive to complete the entire immunization programme.

KEY WORDS; Defaulter rate, Immunization strategy, Tetanus toxoid vaccine, Focus group discussion, Outreach Services.

CHAPTER ONE

1.0 INTRODUCTION

1.1 BACKGROUND

The Alma-Ata declaration of international conference on Primary Health Care (PHC) on September, 1978; mandated and expressed the need for urgent action by all government, all health and development workers, and the world community to protect and promote the health of all the people of the world. Further, declaration eight (point four) of the same document re-emphasized among other things the need to promote maternal and child healthcare, including family planning and immunization against the major infectious diseases. The process by which an individual is exposed to an agent, referred to as Immunogen, that is designed to fortify his or her immune system against the agent is referred to as Immunization. Artificial active immunization has been identified as the single most important factor that determine whether a child will have any of the vaccine preventable diseases-measles ,polio, neonatal tetanus, yellow fever, diphtheria, pertussis, among others.

Doctor Edward Jenner (1749-1823) has been recognized as the first doctor to have given sophisticated immunization. The early years of 19th century saw widespread but haphazard use of Jenner's vaccine against smallpox. After successful vaccination campaigns throughout the 19th and the 20th centuries, World Health Organization (WHO) certified the eradication of vaccine preventable disease through immunization.

The United Nations Millennium Development Goals (MDGs), goals four and five, lay specific emphasis on reducing child mortality through child survival interventions and improving maternal health in general which in turn recognizes immunization as key

component in reducing vaccine preventable diseases. Failure to reach the Millennium Development Goal four (MDG 4) for child survival will result in an estimated forty million children's lives lost by 2015 (Human Development Trends, 2004). As nearly a quarter of global under–five mortality is attributable to vaccine–preventable diseases, vaccination can contribute significantly to attaining MDG 4 (World Health Organization, 2004). Global health initiatives like Global Alliance for Vaccine and Immunization (GAVI), established in the year 2000, set the objective of reaching 80 percent DPT3 coverage in 80 percent of all districts in developing countries by the year 2005. GAVI, UNICEF, WHO, Rotary International etc are organizations that have been very instrumental in funding, supply of logistics, monitoring, and evaluation of Expanded Programme on Immunization (EPI) activities worldwide.

The success of routine immunization programmes has been measured by the coverage achieved with the third dose of diphtheria, tetanus, pertussis vaccine (DPT) among children aged 12-23 months, (World Health Statistics, 2005). Immunization currently averts more than 2.5 million deaths every year in all age groups from diphtheria, tetanus, pertussis (whooping cough), and measles (WHO, 2002)

Considering that more than 130 million children are born each year worldwide and need to be immunized, over 27 million children, who live mainly in disadvantaged rural communities, are not reached by routine immunization services and significant variations in coverage exist between and within regions and countries. Unless this gap is closed, 2 million children under five years of age will continue to die annually from preventable diseases for which vaccines are available or will be available in the near future (unicef, 2005).

Nearly one million adults die each year from liver cancer in part because they were not vaccinated against hepatitis B during childhood. (UNICEF, 2001).An unprotected number of children under one year of age who did not receive DTP3 were 26.3 million and 28.1 million in 2005, (WHO/UNICEF, 2007). The total number of children who died in 2002 from diseases preventable by vaccines currently recommended by WHO, plus diseases for which vaccines are expected soon were 2.5 million, (WHO 2007).

In Ghana, the Expanded Programme on Immunization (EPI) was introduced in 1978 as a strategy to improve child health. Since 1985 the programme has been operational in all the regions and districts (GHS annual report, 2002) Although EPI was introduced in Ghana in 1978, it actually became firmly established in 1986 when the Head of State declared a National Mass Immunization against measles. Since then, EPI activities have become the focus of Public Health activities at the regional, the district, the sub district and institutional levels of the health sector.

At the national level, EPI comes under the Disease Control Unit together with other programmes that fall directly under the Directorate of Public Health. At the regional level, EPI service is integrated into the public health system under the leadership of the Regional Director for Health Services. There are EPI coordinators or Disease Control officers who are responsible to the Senior Medical Officer (Public Health) of the region for the day-to-day management of immunization programmes in all regions. At the district level, the District Health Management Team (DHMT) led by the District Director of Health Services manages EPI activities. There are designated Disease Control Technical Officers who are responsible to the DHMT for EPI and Surveillance activities in the districts.

They team up to plan, implement and monitor immunization activities. They collate activity reports from the sub-districts for onward transmission on monthly basis.

World Health Organization (W.H.O) has described the commonest childhood killer diseases as poliomyelitis, tetanus, diphtheria, whooping cough, measles, yellow fever, and tuberculosis. WHO, 1994 reported that some 1.7 million deaths from measles, neonatal tetanus and pertussis and over 100,000 cases of poliomyelitis could have been prevented through immunization. In view of this international concerns have been raised to either control or eradicate these killer diseases from the world through an Expanded Programme on Immunization (E.P.I). In 1974, United Nations International Children's Emergency Fund (UNICEF) and (W.H.O) developed the E.P.I. to combat the six (6) childhood vaccine-preventable diseases, which was aimed at achieving universal childhood immunization (U.C.I) by 1990 with at least 80 percent of infants fully immunized by their first birthday (WHO, 1998). Success was measured by vaccine coverage levels in children aged 12 to 23 months. WHO recommended that children receive the complete schedule of vaccination before twelve months of age, otherwise such children are considered drop outs or defaulted.
The world Health Assembly (WHA) established a target to eradicate poliomyelitis world-wide by the year 2000, (WHA, 1998). However, achieving this target on the Africa Continent became one of the major setbacks in achieving global eradication by the target date. Many countries in Africa have severe constraints in maintaining coverage levels at 80 percent. These constraints include inadequate financing; insufficient equipment and supplies; cold chain and transport; inadequate access to facilities: inadequate trained personnel; inadequate information to the populace as well as poor receptivity (WHO, 1998).

The system in Ghana consists of the operational component (Immunization service, vaccine management, logistics, Surveillance of Vaccine Preventable Infections, and Advocacy and social mobilization) and the supportive components (Management, Capacity building and financing) of immunization services. In 1995, the figures reported for Ghana based on a nation-wide survey for the various antigens were; BCG- 85 percent DPT3-71 percent, OPV-71 percent, measles 68 percent (WHO,1998). These coverage levels were well below the WHO target of 80 percent coverage.

Table 1.1 Sekyere West District EPI figures from 2004 to 2007.

ANTIGEN	**2004 Target 6,548**		**2005 Target 6,771**		**2006 Target 7001**		**2007 Target 7,239**	
	NO	**%age**	**NO**	**%age**	**NO**	**%age**	**NO**	**%age**
BCG	5,601	**85.5**	7,046	**104**	8,020	**114.5**	8,572	**114.4**
MEASLES	4,820	**73.6**	5,506	**82.4**	5,346	**76.3**	6,008	**83.4**
PENTA 3	4,837	**73.8**	5,343	**78.9**	5,040	**72**	5,482	**75.7**
OPV3	4,755	**72.6**	5,297	**78.2**	5,040	**72**	5,480	**75.7**
YF	4,797	**73.2**	5,505	**81.3**	5,082	**71.8**	5,991	**82.7**

Source: District Health Directorate Report, 2007.

Table 1.1 shows Pentavalent vaccine (Penta3) Percentage values as; 73.8 percent, 78.9 percent, 72.0 percent and 75.7 percent representing 2004, 2005, 2006 and 2007 respectfully. These percentages are indicative of coverage below what has been prescribed by WHO i.e. 80 percent coverage with pentavalent vaccine as the proxy indicator.

Further, the drop–out rates were computed to be 13.9 percent, 21.9 percent, 33.3 percent, and 29.9 percent for the years 2004, 2005, 2006, 2007 respectively.

Table 1.2 Sub-districts and District EPI Performance on Maternal Tetanus Vaccine (at least TT2 dose received) for 2004 – 2007.

Sub districts	2004		2005		2006		2007	
	No	%age	No	%age	No	%age	No	%age
Mampong	1866	73.6	2578	101.8	1623	62.0	2790	103.0
Nsuta	907	70.1	907	70.1	470	35.1	1099	79.5
Kwamang	392	40.4	461	47.6	290	29.0	398	38.4
Kofiase	546	66.5	294	35.8	522	62.0	1041	118.8
Birim	202	39.2	276	53.5	274	52.0	274	49.8
Asubuaso	233	57.3	242	59.6	145	35.0	332	76.4
Oku	184	77.6	76	32.0	41	18.0	149	58.8
District	4330	66.1	4833	71.3	3324	47.5	6083	84.0

Source: District Health Directorate Report, 2007.

The figures reported for maternal immunization against tetanus in the district, from 2004 to2007, indicated coverage levels below the 80 percent in TT2 except for 2007, which recorded 84 percent. Maternal vaccination is administered to mothers who attend antenatal care (ANC) at the institutional level. ANC attendance is the indicator for measuring the status of maternal immunization because that is the time expectant mothers could be available. For an ANC average target of four visits before delivery at the district, records

showed the following averages; 3.3, 2.5 and 2.5 for 2005, 2006 and 2007 years respectfully which were below the ANC average target of four.

The schedules for tetanus toxoid for mothers are as follows;

- 1st vaccination-No protection to the mother,
- 2nd vaccination, one month after first vaccination-3 years protection to the mother,
- 3rd vaccination, six months after second vaccination-5 years protection to the mother,
- 4th vaccination, one year after third vaccination-10 years protection to the mother,
- 5th vaccination, one year after fourth vaccination-protects the mother for life.

Maternal tetanus prevention is achieved through the vaccination of the expectant mother with tetanus toxoid vaccine according to the schedules specified above. A recommendation by UNFPA/UNICEF/WHO identified three key strategies for achieving maternal and neonatal tetanus elimination as:

- Provision of at least two doses of tetanus toxoid to all pregnant mothers and three doses to all child – bearing aged mothers,
- Promotion of clean delivery services to all pregnant mothers,
- Effective surveillance for MNT.

The elimination of neonatal tetanus is defined as the achievement of less than one NT case per 1000 live births in every district of every country. It is operationally defined by an algorithm which assesses four major indicators;

- The reported incidence of NT,
- The reliability of NT surveillance,
- The proportion of mothers reached with at least two doses of TT2,
- The estimated clean delivery rate.

STATEMENT OF THE PROBLEM

The national EPI policy specifies that each child should receive one dose of BCG at birth; three doses of DPT (at sixth, tenth, and fourteenth weeks); four doses of OPV (at birth, sixth, tenth, and fourteenth weeks); one dose of Measles (at ninth month); one dose of Yellow Fever (at ninth month) and five doses of Tetanus Toxoid of every child-bearing woman (between 12- 44 years). One of the major objectives of EPI is to fully immunize 80 percent of the target population using DPT as proxy indicator (WHO, 1992) and immunize all child-bearing mothers against tetanus. According to the WHO there is a problem with the immunization programme whenever the drop-out rate or defaulter rate exceeds 10 percent. The defaulter rate is estimated by the following formula;

$$\frac{\text{The No of children Who received BCG} - \text{The No of children immunized for measles}}{\text{The No of children immunized against BCG}} \times 100$$

Conversely, the district EPI performance as per the indicators stipulated by the health partners showed a drop-out rate above 10 percent regarded to be the acceptable level. The drop-out rates or defaulter rates for the years 2004, 2005, 2006 and 2007 were 13.9 percent, 21.9 percent, 33.3 percent and 29.9 percent respectively. Further, the coverage levels achieved by the EPI team at the district for the years 2004, 2005, 2006 and 2007 were 73.8 percent, 78.9 percent, 72 percent and 75.7 percent respectively indicating figures that are below the acceptable level.

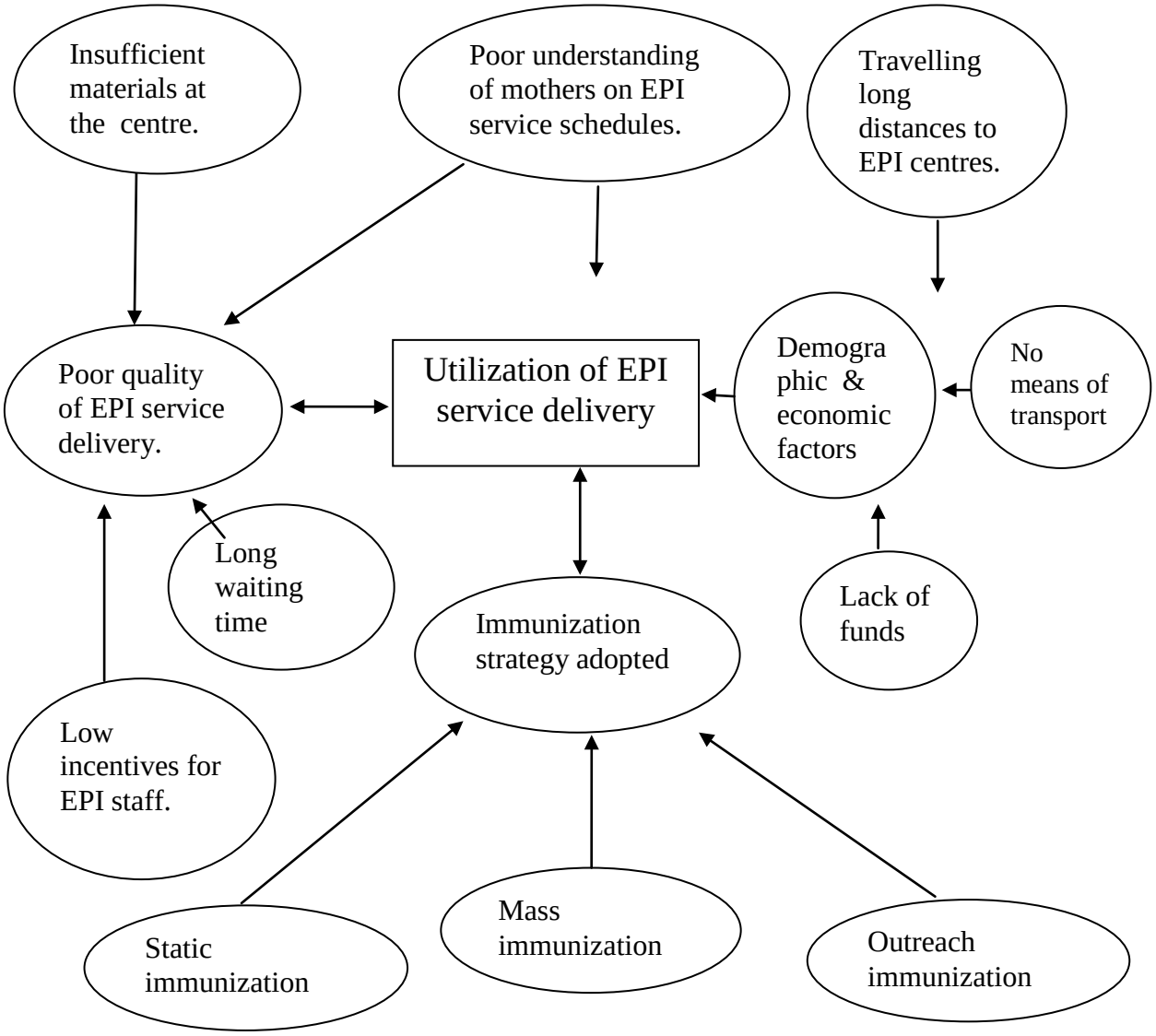
Again the maternal vaccination against tetanus also showed low figures below the 80 percent TT2 coverage level all mothers except for 2007 which recorded a figure above the 80 percent. Moreover, there has been under performance of the ANC attendance at the district where figures are below the average of four visits before delivery. Although, vaccine preventable diseases have been reduced by routine vaccination, surveillance activities at Sekyere West district revealed suspected yellow fever cases increasing from 4 in 2005 to 7 in 2007 and suspected measles increasing from 3 in 2005 to 6 in 2007 in the district (Sekyere West Annual Health Report, 2007). The district health directorate has therefore expressed interest in knowing the problems that are associated with such an under utilization of service on the part of the mothers and the entire health system and to identify key strategies to improve service utilization and consequently increase coverage levels.

RATIONALE OF THE RESEARCH

The commonest childhood diseases namely: measles, tuberculosis, diphtheria, poliomyelitis, tetanus, yellow fever, whooping cough which were mainly responsible for the child mortality in Ghana, And tetanus (lockjaw) which was identified as the major cause of maternal death in Ghana are now less or are not reported at all in our health facilities due to the introduction of immunization. Therefore efforts towards achieving healthier childhood and motherhood days are very critical to all stakeholders or health partners. An assessment of the activities of the programme therefore is vital in realizing the extent to which the immunization service, which is regarded as a child survival intervention, is being utilized by the target population in the respective districts.

The research seeks to assess the EPI service utilization by children and the nursing mothers, find out possible reasons that might account for under utilization of the EPI service by nursing mothers/carers. Again, the findings of the study will be used as a confirmatory evidence to either support previous reports given by the district health administration on EPI or identify differences and suggest corrective measures accordingly. The study will inform the DHMT, policy makers, funding agencies and other stakeholders on the management tools to employ to increase EPI service utilization and to reduce defaulter rates, increase coverage levels for both child and mother immunization and finally reduce the incidence of vaccine preventable diseases in our societies. The research will set the platform for which further studies can be conducted for the purposes of improving EPI service utilization. Finally, monitoring and evaluation can be done by making reference to the outcome of this study by comparing the findings to a given standard and making inference to the entire population.

Figure 1.1Conceptual framework on EPI service utilization.



EXPLANATION OF THE CONCEPTUAL FRAMEWORK.

EPI service utilization is influenced by a number of factors. Among these interconnected factors is the poor quality of EPI service delivery factor, which in turn is affected by long

waiting time experienced by mother and her child as a result of following long queues, poorly motivated and staff overloaded with a lot of activities at the same time due to low staff numbers and insufficient materials to be worked with at the immunization centre like means of transport causing undue delay by staff to work, inadequate vaccines and stationery.

Another ambit that affects the EPI service utilization is the socio-eco-demographic factors including mothers having problem with the means of transport to immunization centre due to poor road network linking such hinterlands to the designated centres (for distance is a function of accessibility and therefore utilization), lack of funds on the part of mothers to meet some financial obligations like feeding for that long period of stay at the centre, transport fare and most importantly mothers inability to pay the token fees collected by staff at the centre. Immunization strategy chosen by the staff undoubtly affects the attendance of the mothers and subsequently the children because the strategy determines the distance between the client and the service to be delivered. For instance home visits gets services closer to the client than static strategy whereby the staff are at one point where the client will have to travel to utilize the service being provided at the facility.

Mothers understanding of the EPI schedule play an indispensable role in EPI service utilization because the mothers are aware of the dates, time and place for the various categories of the vaccines. This factor worsens when the DHA's educational campaign on EPI does not reach a greater section of the mothers in the hinterland or hard-to-reach areas.

Therefore the utilization of the EPI service by mothers and children is highly dependent on these inevitable enumerated factors.

RESEARCH QUESTIONS

1. What are the coverage levels and drop-out rates for recommended antigens?
2. What are the major reasons for immunization failure as perceived by mothers?
3. What is the immunization coverage status of mothers for tetanus toxoid vaccine?
4. Which immunization strategy is preferred by MCH/FP staff?
5. What recommendation can be stated to help improve EPI service delivery?

GENERAL OBJECTIVE

To assess the expanded programme on immunization service utilization of Sekyere West District.

SPECIFIC OBJECTIVES OF THE RESEARCH

1. To describe the coverage levels and drop-out rate for the antigens in EPI Services delivery.
2. To identify the major reasons for immunization failure as perceived by nursing mothers.
3. To examine mothers immunization coverage status for tetanus toxoid vaccines.
4. To rank the preferred immunization strategy (immunization centre) from Maternal and Child Health/Family Planning staff point of view.
5. To make recommendations for all stake holders and funding agencies as to how to improve EPI Service utilization by nursing mothers, MCH/FP staff, and other concerned people.

PROFILE OF THE STUDY AREA

Location and Size

Sekyere West District, which is one of the Twenty-one (21) Administrative Districts in the Ashanti Region of Ghana, is located on the northern part of the region, and shares boundary with Atebubu District, Sekyere East, Afigya-Sekyere, and Ejura-Sekyeredumasi to the north, east, south, and west respectively. The District is located within longitudes 0.05 degrees and 1.30 degrees west and latitudes 6.55 degrees and 7.30 degrees north, covering a total land area of 2346km^2. It has about 220 settlements with about 70 percent being rural. The rural areas are mostly found in the Afram Plains portion of the District where Communities with less than fifty (50) people are scattered here and there.

Population Size and Growth Rate

The District population is currently 155,755 (2006 projection), as against 143,206 of the 2000 Population and Housing Census figure. The District experienced a marginal increase in population growth. The current projected growth rate is 1.4% as against 1.3% of the 2000 population and housing census. A critical look at the trend thus reveals a rise, having stabled in 1984. The District Population Growth Rate since 1960 is shown in the Table below.

Table 1.3 Population Sizes and Growth Rates Sekyere West District.

Year	*Population*	*Year*	*Growth Rates*
1960	55,108	1960-1970	3.3%
1970	76,551	1970-1984	3.0%
1984	117,081	1984-2000	1.3%
2000	143,206	2000	1.3%
2006	155,755	2000-2006	1.4%

Source: Sekyere West District Statistical Service, 2006.

Household Sizes/Characteristics

The current average Household size of 6.4 is higher than the National figure of 5.24 and the 1995 survey figure of 5.5 of the District showing an increase due to the growth of the population. The implication is that each Household has a large number of Dependants to feed, cloth and house. Given the low average Household Income, most families have a low Living Standard as evidenced by both Income and Expenditure pattern where the bulk of family income goes into food.

Ethnic Diversity

One important characteristic about the District is its ethnic diversity. Almost every ethnic group in the Country can be found in the District. Of more significance is the interrelationship among the various ethnic and clan groupings. Each one is proud to be identified as “Mamponni”, “Nsutani”, “Kwamangni” and “Beposoni”, except in times of a peculiar situation that calls for a real identification. The district is dominated by the Akans who constitute 92.6 percent followed by tribes from the North of 6.8 percent Ewes 0.4 percent and others 0.2% percent as shown in the table below.

Table 1.4 Ethnic Composition of Sekyere West District.

Ethnicity	Percentages
Akans	92.6%
Northerners	6.8%
Ewes	0.4%
Others	0.2%

Source: Sekyere West District Socio-Economic Survey, 2000.

Structure of the Local Economy

The main economic activities undertaken in the District are Agriculture, Industrial and Commercial Services. Farming is the predominant economic activity and employs about 75 percent of the economically active labour force. The District with its vast arable land coupled with limited alternative employment opportunities, forces many to the agricultural sector to produce at subsistence level. Next after Agriculture is the Service Sector (Salaried Workers) with 17.2 percent followed by Commerce that is selling with 12.4 percent and Small Scale Industrial activities taking 9.6 percent as shown in the table below.

Table 1.5 Occupational Distribution of Sekyere West District.

Sector	Population	Percentage (%)
Agriculture	95,147	75%
Sales Workers /Commerce	12,765	10%
Production/Transport	19,000	15%
Total	**126,912**	**100%**

Source: Sekyere West District Statistical Service, 2006.

Household Income

The average annual household income for the District was estimated at ¢730,178.20 which gives an average monthly income of 121,696.36 for a household size of six persons. The major sources of income are Agriculture and commerce/Services, which implies that Agriculture is a potential in the District's development. The contribution of Income by the various sectors of the District Economy is indicated in the table below

Table 1.6 Household Income and Sources of Sekyere West District.

Sector	Income per annum (¢)	Sources of Income	% of Total Income	% of household per Source	Average Monthly Earning
1. Agriculture	979,016.00		33.5		81,584.70
2 .Service/Commerce	848,203.00		29.0		70,683.60
3.Industry	363,315.50		12.5		30,276.30
District (Average)	730,178.20		25		60,848.20

Source: Sekyere West District Socio-Economic Survey 2000 Report.

Health

The Sekyere West district has a number of health facilities including one Hospital, seven Health Centres, three Maternity Homes, five MCH/FP Points, six Private Clinics and one Midwifery Training Institution. All but two of the health facilities are located in the southern portion of the District. This therefore, means that people in the Afram plains do not have access to most of the health facilities.

Physical accessibility to Health

According to the physical accessibility to health map all the major health facilities are located at Mampong, Nsuta, Kwamang, Kofiase, Dome, Birem and Oku in the Sekyere West District. According to the physical accessibility to health map prepared, people who are able to access health facilities in 30 minutes are assumed to have access to health facilities. These are people who stay 30km from health facility on the Mampong – Kumasi main road and 9km from the facility for those who stay on the minor road. A study of the map indicates that areas at Aframso nos. 2 and 3 are not accessible to health facilities. There are other parts like Adidwan nos. 1, 2 and 3 areas, which are also not accessible to health facilities. It is envisaged that with the completion of the Aframso no. 3 health facility, health services will improve in the area. Below are the distribution of the health facilities of Sekyere West District.

Table 1.7 Distributions of Health Facilities of Sekyere West District.

Sub-District	Hospital	Health Centre	Clinics	
			GHS (Maternal and Child Health)	Private/Mission
Mampong	1	1	1	5
Nsuta	-	2	0	1
Kwamang	-	4	1	0
Birem	-	1	0	0
Oku	-	-	0	1
Asubuaso	-	1	0	1
Kofiase	-	4	0	0
Total	1	13	2	8

Source: Sekyere West District Health Directorate, 2006.

CHAPTER TWO

2.0 LITERATURE REVIEW

Literature was reviewed using the key words such as: “EPI drop-out rate”, “EPI coverage levels”, “Reasons for immunization failure”, “Maternal and neonatal tetanus immunization” and “EPI service delivery strategies” to critically examine journals, articles, and many other valuable scientific papers and reports that were adjudged relevant to the various ambits of the specific objectives.

2.1 Coverage levels and drop out rate for the antigens in EPI service delivery

WHO estimates that 2 million child deaths were prevented through vaccination in 2003 and immunization continues to be amongst the most successful and cost–effective public health interventions. The number of developing countries estimated to have met the target of the UNICEF medium-term strategic plan of 80 percent coverage for DPT3 in every district increased from 42 in 2002 compared to 45 in 2003. Nonetheless 89 developing countries have developed strategies for reaching hard-to-reach group with immunization. Since 1985 expanded programme on immunization (EPI) coverage has realized a worldwide increase, reported by (WHO, 1991). By 1990 Africa and member states were reported to have achieved 80% vaccination. The increase was attributed to mass immunization exercises where districts were given financial support to implement the programme aggregated among member states; routine coverage with DPT3 has remained at 70 percent to 78 percent from 1990 to 2004, (Global Immunization Data, 1980-2004). In 2003, the coverage rates for three doses of combined diphtheria/pertussis/tetanus vaccine (DPT3) increased to 76 percent in developing countries and 78 percent worldwide (unicef, 2005).

The average annual rate of increase (AARI) since 1990 exceeds the AARI required to reach 90 percent coverage in 2010.

In 1989, a situational analysis of EPI coverage in Ghana showed that in spite of the success of the EPI the third dose vaccination was still low. There were only 50.7 percent coverage for DPT3 and 51.5 percent for OPV3 with drop out rate of approximately 40 percent, (UNICEF, 1990). In 1995, the figures reported for Ghana based on a nationwide survey were; BCG -85 percent, DPT3 -71 percent, OPV3 -71 percent, Measles 68 perent (WHO, 1998). Ghana Health Service (GHS) reported in 2002 that in spite of several attempts over the years to improve EPI, the national immunization coverage has been low (GHS, 2002).

2.2 The major reasons for immunization failure

In Nigeria, Odebiyi and Ekong (1982) found that, beliefs about the causes and supposed alternative source of preventing diseases, and the literacy level of mothers influence their acceptance or non acceptance of vaccination. The authors concluded that as long as people defined within the super natural context, they would be reluctant to use scientific measures to prevent and/or manage it.

The extent to which modern methods are adopted may still depend on the people's conviction of the causes of ill-health and on their level of conviction about the efficacy of such modern health measures. (Feyisetan and Adeokun, 1992). The annual report from UNICEF 2003 showed that more than 30 million children are not immunized because vaccines are unavailable, health-care facilities are poor or nonexistent, or families are uninformed or misinformed, (UNICEF, 2003). Since 1992 a decline in vaccination coverage

has been observed, and possible reasons for the decline have been given as inadequate resources and managerial capacities at different levels, low accessibility to health services, and the eruption of social and political conflicts (WHO, 1994).

In Italy, the study conducted on EPI coverage using cluster survey of regions comparing mandatory and optional immunizations showed a study increase in coverage for mandatory vaccines, which were free and cost borne by the national health office and decreased drastically for optional vaccines which parents were made to pay a fee for cost of vaccination. (Salmaso 1998). In this regard, payment of token fees has been a major hindrance to EPI service utilization in Italy. The emerging challenge is how to change the behaviour of the health workers since the incinerators are not being used by some health workers for various reasons, (WHO, 2002). It is therefore clear that health workers' attitudes can significantly influence mothers' attendance. Improving of staff attitudes and greater community mobilization will be the key approaches to increasing the immunization coverage, (J. Omolo, 2007).

Bosu et al(1997) found that the major factors hindering attendance of EPI services were; poor knowledge about immunization, lack of suitable venues and furniture at outreach clinics financial difficulty, long waiting times transport difficulties, poorly motivated service providers and intersectoral collaboration. Lack of vaccination, largely due to lack of confidence in immunization and lack of clean deliveries seem to be the major factors contributing to neonatal tetanus deaths, (WHO, 2006).

GHS 2005, report indicated those barriers such as inadequate understanding of immunization and insufficient demand for immunization services by families and communities; limited access to immunization services for communities in hard-to-reach areas; and inadequate numbers of health staff to provide services to very large and scattered communities have hampered the delivery of services to many target populations.

In response to existing and anticipated challenges to immunization and the call for comprehensive policy guidance on vaccine preventable diseases and others linked interventions, WHO and UNICEF have drafted a 10-year plan (2006-2015), the global immunization vision and strategies to curtail this anomaly.

2.3 Mothers' immunization status for tetanus toxoid vaccines

Tetanus is caused by a neurotoxin produced by *Clostridium tetani* a gram-positive, obligate anaerobic rod-shaped bacterium that forms spores; spores found as soil constituents of soil and in the gastrointestinal tracts of animals (including human beings) and can contaminate surfaces and substances.(M.H. Roper et al, 2007). Five doses of tetanus toxoid vaccine protect both the mother and the baby.

The immunization of pregnant women also protects the newborn for several months against tetanus or lockjaw (Media Global, 2008). World Health Assembly (WHA) adopted the goal of neonatal tetanus (NT) elimination by the year 1995. Subsequently, the elimination target was defined as a reduction in the incidence of NT to less than 1 case per 1,000 live births in every district of every country. (WHO, 1993). Maternal tetanus is responsible for at least 5 per cent of maternal deaths, approximately 30,000 deaths annually. (Fauveau, 1993).

Tetanus infection is directly linked with unsanitary surrounding. Maternal and neonatal tetanus is a public health problem in 57 countries. It occurs where poverty, poor health care, low levels of immunization and unsanitary deliveries conditions all converge. (WHO, 1999). Maternal and neonatal tetanus are important causes of maternal and neonatal mortality, claiming about 180,000 lives worldwide every year, almost exclusively in developing countries. Although easily prevented by maternal immunization with tetanus toxoid vaccine, and aseptic obstetrics and post natal umbilical-cord care practices, maternal and neonatal tetanus persist as public health problem in 48 countries, mainly in Asia and Africa (Lancet, 2007). A research conducted by the Nigerian government in collaboration with WHO and UNICEF estimated that, in Kano State, Nigeria, "only 30.3 percent of mothers and 14.8 percent of women of child-bearing age had received 2 (that is, protective) doses of tetanus toxoid (WHO, 2006). A partnership among many public and private agencies led by UNICEF, in eliminating maternal and neonatal tetanus, is operating in 52 countries where tetanus kills some 180,000 newborns and 30,000 mothers annually, (UNICEF, 2003).

Routine immunization with tetanus toxoid has been stagnant over the past decade, with only 50-54 percent of pregnant women worldwide receiving adequate immunization, a situation largely unchanged since the late 1980s (Global Immunization Data, 2004). However, data on women immunization is incomplete due to non recording and/or registering of some women. Data for vaccine coverage underestimate the true proportion of protected women because of unregistered doses of tetanus toxoid and the increasing number of women who received a primary series of tetanus toxoid-containing vaccine in infancy, (Bulletin of World Health Organization, 2002). The Weekly Epidemiological Record of WHO reported the infected areas in Ghana as at 16th September, 1993 as; Accra, Ashanti, Central, Upper East, Volta

regions, (WHO, 1993). WHO estimated NT cases of 2,576, NT deaths of 1,932, and mortality rate of 2.69 per 1,000 live births of neonatal deaths for Ghana, (WHO, 1990).

2.4 EPI Service Delivery Strategies;

A number of service delivery strategies have been employed depending on the physical access, social, and economic access to immunization services. About 40 percent of the population lives more than 14 kilometres from a health facility in Ghana. In the rural areas, a greater proportion of the population lives more than 14 kilometres from a health facility, (WHO, 2005).

The main EPI service delivery strategies are; the static services/routine immunization services at health facilities (public and private), outreach services to communities without access to health facilities, mass campaigns (mop ups) in high-risk populations, reaching every district (RED) approach targeting hard-to-reach districts to attain the 80 percent coverage or even more, generalized periodic national immunization days (NIDs), supplemented immunization activities (SIAs) organized for missed opportunities and drop-outs, and home visits, (WHO, 2005). Any of the specified strategies could be used or sometimes two or more may be integrated depending on the factors that define the various strategies above.

A massive mass immunization campaign was carried across five countries in west and central Africa owing to a new polio outbreak spreading from Nigeria to neighbouring countries; Benin, Burkina Faso, Ghana, Niger, and Togo. Hundreds of thousands of volunteers and health workers aimed to reach every child in those countries with polio vaccine in just three days, (WHO, 2003).

A research conducted by Department of Child Health, College of Medical Sciences, University of Benin, Nigeria revealed that the vaccination default rate among children attending a static immunization clinic in Benin City, Nigeria was 26.7 percent. The commonest reason for defaulting immunization clinic appointment was the child's ill-health (37.5 percent of all cases), (Journal of medical and biomedical research, 2005).

This explains the fact that reaching mothers at their homes could be more convenient than just being at a static point where socio-economic factors can easily influence their decsion of attending an immunization session. The review indicates several contributory factors that influence under utilization of immunization by nursing mothers/carers of infants.

CHAPTER THREE

3.0 METHODOLOGY

3.1 STUDY METHODS AND DESIGN

The study is a cross sectional descriptive survey which adopted cluster sampling technique. This allowed a portion of the target population to be sampled which provided statistically valid data that was extrapolated to the entire population. Both qualitative and quantitative methods of data collection were used.

3.2 DATA COLLEC TION TECHNIQUES AND TOOLS

Two main techniques used in collecting the data were;

1. World Health Organization Standardized Questionnaire, obtained from the immunization coverage cluster survey – reference manual/document (WHO/IVB/04.23) designed by the Immunization, Vaccines and Biologicals Department of World Health Organization, (WHO, 2005); was used to interview the mothers whose names were on the immunization register.
2. Focus group discussions (FGD) were conducted for all the seven sub–districts with maternal and child health, family planning staff at the facility level.

The data collection tools were;

1. World Health Organization Standardized EPI Question Guide was employed to obtain the key variables of the study that revealed the background information like the age, sex, parity, educational level of mothers, occupational status of mothers, and religious affiliation. The guide was used to obtain information on

variables such as immunization status of both mothers and the children, determining the major reasons for failure to immunize children, mothers level of understanding of the immunization schedules/sessions, and socio–economic and cultural factors that could influence the willingness of mothers to attend an immunization sessions among other things.

2. FGD guide was used to conduct discussions involving the MCH/FP staff at the facility level to reveal their choices for a given immunization strategy through ranking of the common strategies known to them.

3.3 STUDY POPULATION AND SAMPLING FRAME

The study population included all mothers whose children are under 24 months within the catchments area of Sekyere West District Health Directorate. The sampling frame comprised nursing mothers with children 6weeks-24months who have been registered for the immunization. The target population was all children aged between 12-24 months old.

3.4 STUDY VARIABLES

Table: 3.1 Key Study Variables

STUDY VARIABLES	**OPERATIONAL DEFINITIONS**	**MEASUREMENT SCALES**	**DATA COLLECTION TOOL AND TECHNIQUE**
Dependent variables: **1**. Drop out rate	Drop out rate above 10 percent recommended by WHO as a result of children unable to receive the prescribed doses.	Nominal 1.Low 2.Moderate 3.High	Questionnaire Interview
2.Coverage rate	Coverage level below 80 percent recommended by WHO using pentavalent vaccine as proxy indicator.	Nominal 1.Low 2.Moderate 3.High	Questionnaire Interview
Independent variables: **1**.Socio-economic and cultural factors.	Demographic factors, material resources, norms and values which influence mothers to utilize EPI services.	Nominal 1.No funds 2.Long distance 3.No transport	Questionnaire Interview
2.Immunization strategy	Site/centre for EPI service delivery e.g. static, mass, home visits, outreach etc.	Ordinal 1.High 2.Moderate 3.High	FGD Question guide Discussion

3.Level of education	Highest school attended to date.	Nominal 1.Primary 2.JHS/MSLC 3.SHS/VOC/TECH 4.Tertiary	Questionnaire Interview
4. Poor quality of EPI service delivery by MCH/FP staff.	Issues related to a decline in service quality as matched with well defined expected standards.	Nominal 1.Insufficient logistics 2.Inadequate staff 3.Less incentives 4.Unqualified staff	Questionnaire Interview
5.Insufficient education/ Understanding of EPI schedules by mothers.	The level of mothers' education/awareness of EPI schedules for immunization.	Nominal 1.Mother unaware 2.Mother forgot 3.Mother did not attend previous session.	Questionnaire Interview

Source: Sekyere West District field survey, 2008.

3.5 SAMPLE SIZE AND SAMPLING STRATEGY

SAMPLE SIZE ESTIMATION:

A statistical calculator used to compute the raw figures. The sample size was estimated using the following assumptions;

- Anticipated level of immunization coverage was 50 percent

- The level of statistical confidence of the estimate (confidence interval) of 95 percent.
- Desired precision of the estimate was ±5 percent.
- Magnitude of differences of coverage among and within the clusters of 2

With reference to these assumptions, the sample size was calculated using the formula:

$$N.min = DE \times \frac{Z^2_{1-\alpha/2} \times P \times (1-P)}{d^2}$$

Where: N.min= minimum number of children sampled,

DE= design effect, the ratio between the variance from the cluster design to the variance that would be obtained from a simple random sampling.

Z= the desired confidence level (α).

P= expected coverage

d= the desired width of the confidence internal.

Assuming a design effect of 2, confidence level of 95 percent (for α= 0.05, Z= 1.96), expected coverage (P) of 50 percent (0.5) and a desired width of the confidence interval of ±10 percent (d= 0.1), the minimum number of children (Nmin) used as the sample size was calculated as follows;

$$Nmin = 2 \times \frac{(1.96)^2 \times 0.5 \times 0.5}{(0.1)^2}$$

$$= 2 \times \frac{3.8416 \times 0.5 \times 0.5}{0.01}$$

$$= 2 \times \frac{0.9604}{0.01}$$

$$= 2 \times 96.04$$

$$= 192.08$$

$$\approx 193 \text{ respondents}$$

10 percent non-response was calculated to be;

0.1× 193 = 20 children.

Therefore the minimum number of children to be selected was 193+20 =213 mother and child pairs. A sample of thirty clusters was chosen and therefore a minimum of 213/30 = 7.1 and rounded up to eight (8) mother and child pair per cluster.

3.6 SAMPLING STRATEGY

The study used cluster probability sampling technique to draw the respondents to represent the sample size. This was started by collecting information on the population for the major communities from the statistics department of the District Assembly. A sampling frame consisting of the list of all the towns, villages and communities in the district with 2005 projected figures using 2000 population and housing census data. A cluster identification form was used to list all the cities, towns, communities etc and listed the individual population of each community. In the cumulative column of the cluster identification form were written the cumulative populations as each community is added. A sampling interval, a number that was used to systematically select clusters from the sampling frame, was calculated by dividing the total population to be surveyed by the number of clusters, rounding off to the nearest whole number. A random number which was less than and had the same number of digits as the sampling interval was then selected.

The community in which cluster one was located was identified by locating the community listed in which the cumulative population equated or exceeded the random number. One was written beside the community in the column entitled cluster numbers. Cluster two (2) was identified by adding the sampling interval to the random number. This exercise continued systematically until all the thirty clusters had been gotten. Selections of starting households

in each cluster were done by selecting a central location like the market, durbar grounds etc in each town or village visited. This was done first by getting the household lists that existed for each village/town/city etc from the statistics department of the district assembly of Sekyere West. Directions were selected randomly by spinning bottle from the central location in each village or town visited. Houses lying along the directional lines where the bottle was spanned to the edge of the village or town were counted and identified. A random number between 1 and the total number of houses counted was selected. This became the first household to be selected.

TRAINING:

Two research assistants were recruited and trained in order to standardize data collection procedures. The following areas were covered under training;

- Interview skills,
- Community entry skills,
- Definition of Nursing Mother,
- Translation of the questions into Twi,
- Criteria for the selection of Nursing Mothers and Children,
- Field work and pre-testing,
- Selection of starting households and subsequent ones for interviews.

One data entry clerk was recruited to immediately enter all completed forms right after these questionnaire have successfully been administered.

Local Guides were requested to assist the teams/interviewers in the following ways;

- Helped field teams/interviewers to familiarize themselves with the clusters they were to survey.
- Introduced them to the cluster administrative and social authorities.
- Advising on when it was best to visit households.
- However, the local guides were not allowed to interview or choose households.

PRE-TESTING

The survey instrument (questionnaire) was pre-tested at Abasua village via Nsuta, to identify potential problem areas. The questions found to be unclear or unnecessary were either modified or deleted and new befitting questions added.

DATA HANDLING AND ANALYSIS

DATA HANDLING**;**

In order to ensure the safety of the data collection tools (questionnaire), the research assistants were provided plastic bags to keep the raw papers from getting wet any time it rained. The tools were sifted after every interaction with respondents by discarding questionnaire that were not correctly filled and incomplete questions were treated as "missing values". The tools were sorted out to get the 213 respondents which was adjusted upwards in anticipation of non-response from respondents. Codes were assigned to the categories of variables that have nominal, ordinal, dichotomous scales. Thereafter, scores were collated and codes entered into a standard coding sheet.

A tape recorder was secured and properly tested before being used to obtaining the details of the session conducted from FGD. A debrief (a meeting) was held at the end of every session to examine the focus group activities and results. The recorded session on tape was transcribed to notes, processed, edited and coded to ease analysis.

DATA ANALYSIS;

Data entry was done after variables have been coded on a coding sheet. Data analysis was done entirely by the use of the statistical analysis software SPSS version 11.0. Cross tabulations of quantitative data were done in relation to the study objectives to find out associations or relationships amongst them. Summary of the various results were then tabulated and others put on approved statistical figures like bar graph and pie chart.

ETHICAL CLEARANCE

Ethical clearance for this research was obtained first from the authorities of Kwame Nkrumah University of Science and Technology, specifically the Medical School and also from the Regional and District Health Administrations. Circulars were sent to the District Assembly, and all Assembly members within the study area. Verbal consents were obtained from the chiefs of the communities as well as individuals involved in the research.

LIMITATIONS OF THE STUDY

- Some of the selected clusters were not similar to one another, therefore there could be a reflection of the variability across the total population, that is, inter – cluster heterogeneity, it might be that the variance for the cluster survey may be higher than required.

- There could be biases emanating from absented respondents who were replaced by respondents selected from the same vicinity to substitute them. Again, because of the difficulty in travelling long distances to reach respondents who were not present for interview at the first visit, closer respondents were chosen to avoid a second absenteeism on the part of the respondent which could have effect on the results.

ASSUMPTIONS

- It was assumed that all the respondents would understand and answer the questions correctly on the questionnaire.
- The sample size chosen makes the study obey the central limit theorem because the sample size was large to merit it.
- Further, the study relied on the assumption that all clusters were similar to one another, that is, inter – cluster homogeneity existed.

CHAPTER FOUR

4.0 STUDY FINDINGS/RESULTS

4.1 INTRODUCTION

In all, two hundred and thirteen respondents/mothers were visited at their homes. Out of this, one hundred and ninety-three respondents, as defined by the required sample size, were entered for data analysis. In general, respondents' participation in terms of giving responses to the questions and their readiness to make available vital documents like immunization cards and maternity cards (where available) to the interviewers were highly acceptable and encouraging.

Essentially, fully immunized children stood at 85.5 percent, an improvement over the district's average of 75.1 percent from (2004-2007) EPI yearly reports for Sekyere West, fully immunized mothers for TT5 vaccine stood at 14 percent.

4.2 BACKGROUND INFORMATION.

SOCIO-DEMOGRAPHIC AND ECONOMIC CHARACTERISTICS OF RESPONDENTS.

Socio-demographic and economic characteristics of respondents for Skyere West District according to the findings of the study have been shown in the table below.

Table 4.1 Socio – demographic and economic characteristics of respondents

CHARACTERISTICS	FREQUENCY	PERCENTAGE
AGE OF RESPONDENTS		
≤19	14	7.3
20 – 29	103	53.4
30 – 39	59	30.6
≥40	17	8.8
SEX OF RESPONFDENTS		
FEMALE	192	99.5
MALE	1	0.5
MARITAL STATUS OF RESPONDENTS		
MARRIED	148	76.7
SINGLE	14	7.3
DIVORCED	11	5.7
SEPARATED	14	7.3
WIDOWED	6	3.1
PARITY		
1 – 2	184	95.3
3 – 4	9	4.7
OCCUPATION OF RESONDENTS		
UNEMPLOYED	65	33.7
FARMER/ARTISAN	33	17.1
TRADER/SELF – EMPLOYED	90	46.6
STUDENT	1	0.5
SALARY EARNER	4	2.1
RELIGIOUS AFFILIATION		
CHRISTIAN	163	84.5
MUSLIM	16	8.3
TRADITIONALIST	14	7.3
TOTAL	**193**	**100.0**

Source: Sekyere West District field survey, 2008.

Majority of the respondents/mothers fell within the age interval 20-29, 53.4 percent with the least at $\leq$ 19 years that is 7.3 percent .Female respondents constituted 99.5 percent; one male gave responses on behalf of a deceased wife, in presence of the child and her woman caretaker. Marital status of respondents revealed 76.7 percent of married women with 31 percent respondents who were widowed. Most respondents 95.3 percent reported they had between one to two children who were under 24 months of age. The level of education of respondents showed a distribution favouring JHS/MSCC category that is, 54.9 percent with 1.6 percent tertiary education being least. The occupational distribution of respondent revealed 46.1 percent being traders/self-employed workers, 33.7 percent were unemployed and 2.1 percent being salary earners. Religious affiliation of respondents yielded 84.5 percent belonging to Christian's category, 8.2 percent being Muslims and 7.3 percent being Traditionalists.

4.2 COVERAGE LEVEL AND DROPOUT FOR ANTIGENS / VACCINES.

Fully immunized children represented 85.5 percent and partially immunized children stood at 14.5 percent. None of the children was reported to have not received any of the vaccines. Of the 193 children, 74.6percent had scar on their shoulders indicating the administration of BCG vaccine probably at birth. The problem of dropout was with the subsequent antigens specifically measles and YF which are given at the same and are the last vaccines to end the entire immunization programme. The immunization status of the children, is presented in Table 4.2

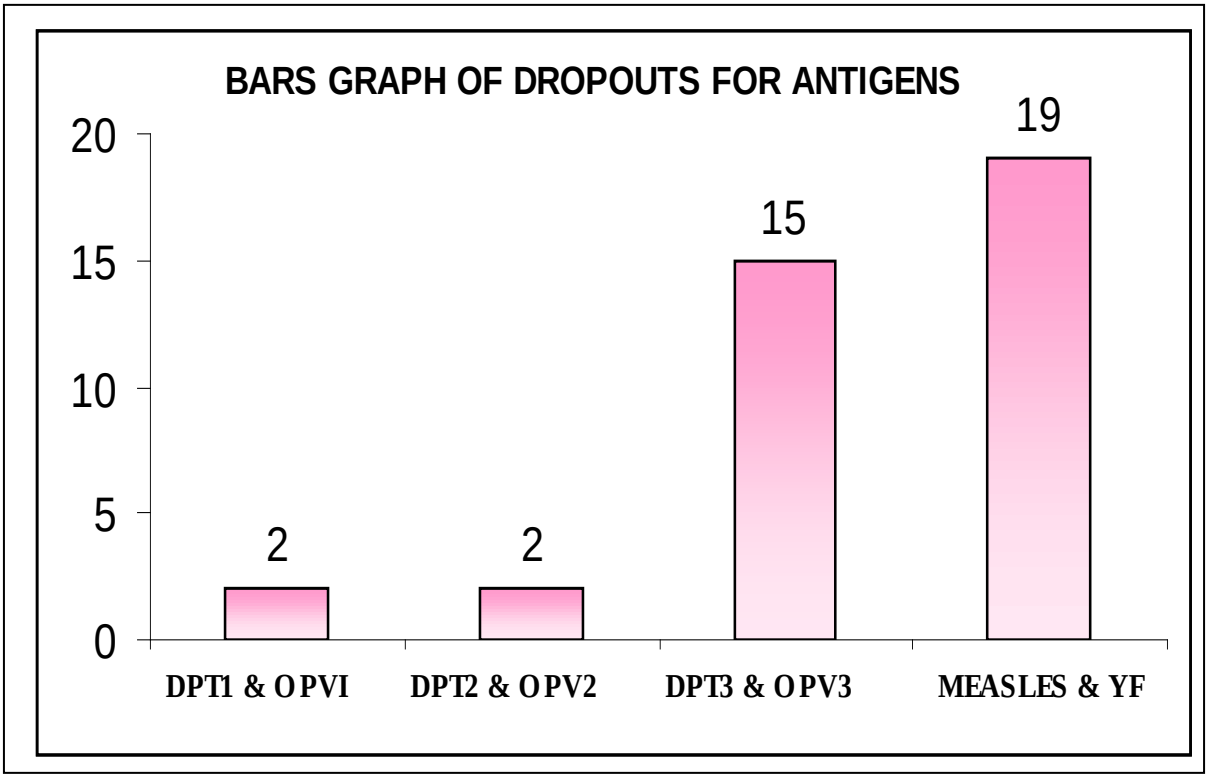
Table 4.2 Immunization status of children

STATUS OF CHILDREN	FREQUENCY	PRECENTAGE
Partially immunized	28	14.5
Fully Immunized	165	85.5
TOTAL	193	100.0

Source: Sekyere West District field survey, 2008.

There was an increase, according to the findings from the field survey in the number of children who defaulted on the vaccines from DPT1 and OPV1 to Measles and YF. Nineteen (19) children defaulted for Measles and YF representing the highest drop – out rate.

Figure 4.1 Bar graph of dropouts for antigens



Source: Sekyere West District field survey, 2008.

As shown in Table 4.2.3, DPTI and OPVI recorded on the average 1 percent, DPT2 and OPV2being 1 percent, DPT3 and OPV3 being 7.5 percent with measles and the YF registering 9.5 percent. It is clear from the results that defaulters increased in number as the immunization sessions increased and it peaked at the ninth month where some mothers might have forgotten about the date for the last session.

Table 4.3 Coverage levels of antigens

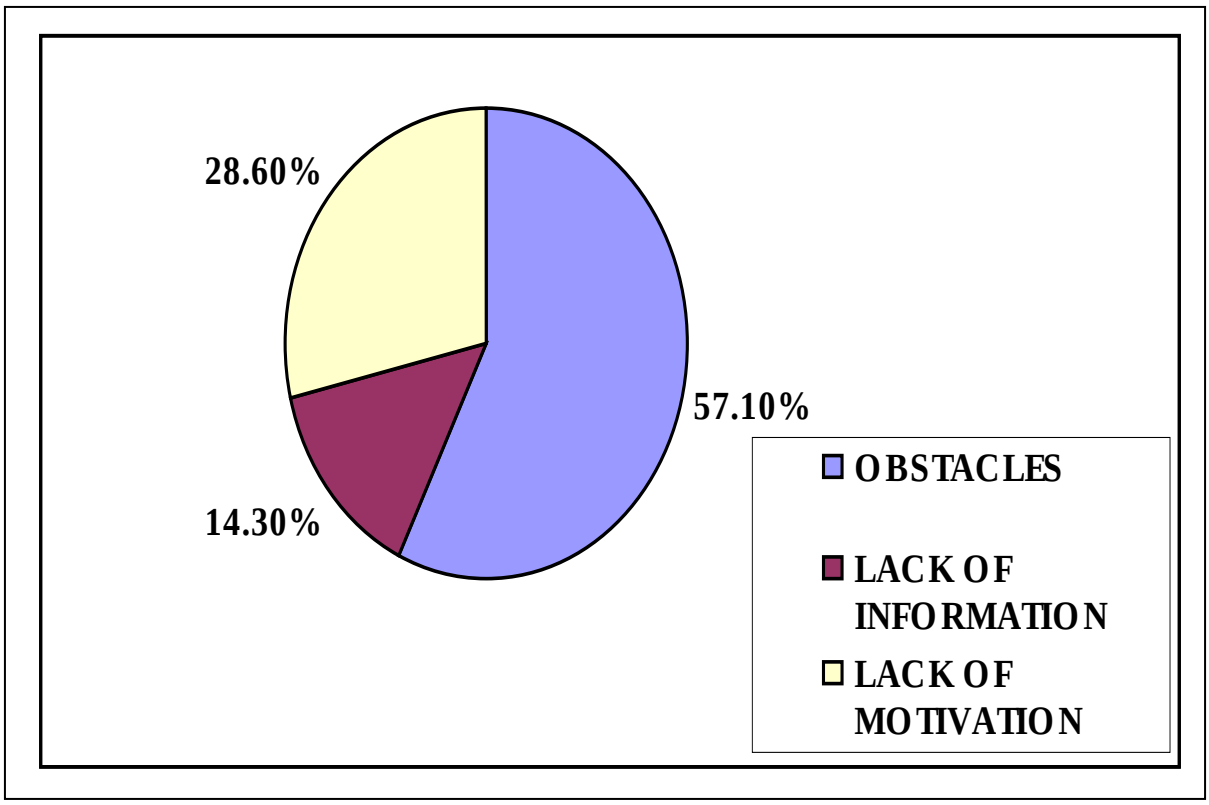
Antigens	**No. of children immunized**	**%age of children immunized**	**No. of children not immunized**	**%age of children not immunized**
DPTI	192	99.5	1	0.5
OPVI	191	98.9	2	1.1
DPT2	1 91	98.9	2	1.1
OPV2	192	99.5	1	0.5
DPT3	179	92.7	14	7.3
OPV3	178	92.2	15	7.8
Measles	175	90.7	18	9.3
YF	174	90.2	19	9.8

Source: Sekyere West District field survey, 2008.

4.3 MAJOR REASONS FOR FAILURE TO VACCINATE CHILDREN.

The major reasons for dropping out for the immunization schedule was obstacle 57.1 percent followed by lack of motivation 28.6 percent and lastly lack of information 14.3 percent as shown in figure 4.3 Under each umbrella of a major reason to drop out, specific reason(s) were given.

Figure 4.3 Pie chart of the major reasons for failure to vaccinate children.



Source: Sekyere West District field survey, 2008.

4.3 REASONS FOR FAILURE TO IMMUNIZE

Amongst the defaulted mothers, 28.6 percent responded that the reason for their dropout was that, the immunization session was postponed until another time. Other reasons for dropout are tabulated on table below.

Table 4.4 Reasons for failure to vaccinate children.

Major Reasons	Specific Reasons	Frequency	Percentage
Lack of information	Unaware of need for immunization.	1	3.6
	Place/time of immunization unknown.	1	3.6
	Fear of side effects.	1	3.6
	Wrong ideas about Contraindications.	1	3.6
Lack of motivation	Postponed until another time.	8	28.6
Obstacle	Place of immunization too far.	1	3.6
	Time of immunization Inconvenient.	2	7.1
	Vaccinator absent.	1	3.6
	Mother too busy.	4	14.3
	Family problems including illness of mother.	4	14.3
	Child ill-not brought.	2	7.1
	Child ill – brought but not given Immunization.	1	3.6
	Long waiting time.	1	3.6
TOTAL		28	100.0

Source: Sekyere West District field survey, 2008.

4.5 LEVEL OF EDUCATION OF MOTHER AND THE REASON FOR IMMUNIZATION FAILURE

None of the mothers with tertiary education had her child defaulted in any of the antigens which means mothers with fair understanding of the EPI schedules supported by a higher educational level above the basic had a great asset. However, mothers with JHS/MSLC education registered the highest number of dropouts, followed by primary education 21.4 percent and no formal education recorded 17.9 percent.

Immunization session postponed until another time was the main reason for immunization drop–out. Mother being too busy and family problem involving illness of mothers were other reasons for default which cut across the levels of education of mothers.

Table 4.5 Reasons for failure to vaccinate and mothers' educational levels.

REASONS FOR IMMUNIZATION FAILURE	NO FORMAL EDUCATION	PRIMARY EDUCATION	JHS/MSCL	SHS/TECH /VOC	TERTIARY	**TOTAL**
Unaware of need for immunization	-	-	1	-		1
Place/time of immunization unknown	-	-	1	-	-	1
Fear of side effects	-	1	-	-	-	1
Wrong ideas about contraindication	1	-	-	-	-	1
Postponed until another time	-	2	5	1	-	8
Place of immunization too far	1	-	-	-	-	1
Time of immunization inconvenient	-	-	2	-	-	2
Vaccinator absent	-	-	1	-	-	1

Mother too busy	2	1	1	-	-	4
Family problem involving illness of mother	1	1	1	1	-	4
Child ill-not brought	-	1	-	-	-	1
Child ill-brought but not given immunization	-	-	-	2	-	2
Long waiting time	-	-	1	-	-	1
Total	5	6	13	4	0	28

Source: Sekyere West District field survey, 2008.

4.6 OCCUPATION OF MOTHERS AND THE REASONS FOR IMMUNIZATION FAILURE

The financial position of mothers is highly influenced by the occupational status of such mothers and therefore affects their willingness to send their children for immunization. This has been justified by the outcome of this finding where salary earners did not record any default for any of the antigens. Farmer/artisan, unemployed and trader/self-employed, from Table 4.6 recorded 39.3 percent, 32.1 percent and 25.0 percent defaults respectfully. Place of immunization too far and vaccinator absent were not reasons for dropouts as far as mothers' occupational status were concerned. Mother too busy, postponed until another time and family problems involving illness of mother were outstanding reasons for defaults with regards to the mothers' occupation.

Table 4.6 Reason for failure to vaccinate children and occupation of respondents.

REASONS FOR IMMUNIZATION FAILURE	UNEMPLOYED	FARMER / ARTISAN	TRADER/ SELF-EMPLOYED	STUDENT	SALARY EARNER	TOTAL
Unaware of need for immunization	_	_	1	_	_	1
Place/Time of immunization unknown	1	_	_	_	_	1
Fear of side effects	-	-	1	-	-	1
Wrong ideas about contraindications	_	3	1	_	_	4
Postponed until another time	4	1	1	_	_	6
Place of immunization too far	_	_	_	_	_	-
Time of immunization inconvenient	1	_	_	_	_	1
Vaccinator absent	-	-	-	-	-	-
Mother too busy	-	3	1	-	-	4
Family problem involving illness-of mother	2	-	-	1	_	3
Child ill-not brought	_	2	2	_	_	4

Child ill-brought but not given immunization	_	_	1	_	_	1
Long waiting time	1	1	-	-	_	2
TOTAL	9	10	8	1	-	28

Source: Sekyere West District field survey, 2008.

4.7 LOCATION EFFECT ON IMMUNIZATION

There were no dropouts, according to this finding, in these clusters; Abuontem + Adidwan, Aframso + Amoamang, Asubuaso + Atonsu, Beposo, Kwarmang and Nyinapong + Oku + Yonso. Majority of the defaulters 32.1 percent were located in the Mampong + Mprim cluster. Birim +Bonkrong cluster followed with 17.9 percent dropouts. The rest of the figures for defaults due to location effect has been shown in Table below.

Table 4.7 Location effect on drop–out.

	No. of children defaulted	Percentage
Abuontem + Aditwaan	-	-
Aframso + Amoamang	-	-
Apaah + Asaam	1	3.6
Asubuaso + Atonsu	-	-
Atonsuagya + Benim	4	14.3
Beposo	-	-
Birem + Bonkrong	5	17.9
Daaho	3	10.7
Kofiase	3	10.7
Kwamang	-	-
Kyebi	2	7.1

Mampong + Mprim	9	32.1
Nsuta	1	3.6
Nyinapong + Oku +_Yowso	-	-
TOTAL	28	100.0

Source: Sekyere West District field survey, 2008.

4.8 AGE DISTRIBUTION OF MOTHERS COMPARED TO DROP–OUTS

The age distribution among mothers who defaulted centred on the age group 20-29 years which represented 50 percent. Other age groupings; 30-39, ≤19, and ≥40 who defaulted in one or more of the antigens for their babies (12 months or more) were 25 percent, 14.3 percent, and 10.7 percent respectively.

Table 4.8 Age distribution of mothers and drop-outs.

Age groups of mothers (in years)	**Number of mothers who defaulted**	**Percentage**
≤19	4	14.3
20-29	14	50
30-39	7	25
≥40	3	10.7
TOTAL	28	100.0

Source: Sekyere West District field survey, 2008.

4.8 MOTHERS IMMUNIZATION STATUS FOR TETANUS TOXOID.

All respondents were interviewed on the number of life time pregnancies they have experienced. About 69 percent reported they have life time pregnancies between 1-3, 26 percent have had 4-6 life time pregnancies and 5 percent representing seven as more number of life time pregnancies as shown in Table below.

Table 4.9 Total Number of life time pregnancies by mothers.

No. of pregnancies	Frequency	Percentage
1-3	134	69.4
4-6	50	25.9
≥7	9	14.0
TOTAL	193	100.0

Source: Sekyere West District field survey, 2008.

It is evident from the study that 14.0 percent of all the women interviewed had received all the five doses of tetanus toxoid vaccines prescribed for them by the health partners. For about 80 percent of the responses provided by mothers were verbal information and were not documented information from maternity cards. Figures on TT5 TT4, TT3, TT2, TT1 and TT0 are shown in Table below.

Table 4.10 Distribution of tetanus toxoid vaccines received.

Tetanus Vaccine	Frequency	Percentage
TT0	6	3.1
TT1	32	16.6
TT2	62	32.1
TT3	37	19.2
TT4	29	15.0
TT5	27	14.0
TOTAL	193	100.0

Source: Sekyere West District field survey, 2008.

4.9 MATERNITY CARDS AVAILABILITY

Availability of maternity card, which indicates the number of tetanus toxoid vaccines received by mothers and the number of antenatal care (ANC) they have attended, showed 22.3 percent yes and 77.7 percent No in the table below. It therefore became clear that nursing mothers were not allowed to take the maternity cards home as they did for the children's immunization cards.

Table 4.11 Maternity cards availability in last pregnancy.

Card availability	Frequency	Percentage
Yes	43	22.3
No	150	77.7
TOTAL	193	100.0

Source: Sekyere West District field survey, 2008.

4.10 SOURCE OF REPORT FOR MATERNAL IMMUNIZATION

Table 4.12 shows a distribution of mothers/respondents immunized for tetanus and the sources from which reports were obtained whether the report was obtained from the maternity card, mother reported immunization administered but could not provide maternity card or mother reported immunization not given at all. Six of the mothers reported they have never received any tetanus vaccine throughout their lifetime. These mothers however acknowledged the fact that they can have the *Clostridium tetani* infection, which is a predisposing factor to tetanus infection, because they have not received any of the vaccines. For TT2 vaccine which is the standard for measuring TT coverage levels, the study findings showed that while 13.9 percent of mothers actually provided maternity cards as evidence of the TT2 vaccination, 67.4 percent however confirmed the receipt of the tetanus vaccination by word of mouth and by maternity card. Almost 19 percent of the mothers had not received the TT2 vaccine though may have received the TT1 vaccine. The TT5 vaccine which gives permanent immunity to the mothers revealed only one of the mothers received the fifth dose by maternity card confirmation. Further more, 11.2 percent of the respondents had received the TT5 by word of mouth and 88.3 percent had not received the TT5 vaccine.

Table 4.12 Source of report and TT vaccine given.

SOURCES OR REPORT	TT0	TT1	%age	TT2	%age	TT3	%age	TT4	%age	TT5	%age
Date from maternity card	-	36	19.3	26	13.9	11	5.9	2	1.1	1	0,5

Mother reports immunization given	-	147	78.6	126	67.4	79	42.2	4	25.7	21	11.2
Mother reports immunization not given	6	4	2.1	35	18.7	97	51.9	139	73.2	165	88.3
TOTAL	6	187	100	187	100	187	100	187	100	187	100

Source: Sekyere West District field survey, 2008.

4.11 ANC ATTENDANCE AND TT DOSES RECEIVED

Table 4.13 shows the number of ANC visits made by respondents during their last pregnancies. Fifty, that is 25.9 percent made up to three ANC visits at the facility level, 37.8 percent of the respondents made up between 4 –6 times ANC visits before delivery, 34.2 percent attended either 7 or more times and 2.1 percent didn't attend any ANC at all during their last pregnancies before delivery.

In all, 32.1 percent of the mothers, the majority, had received TT2 doses of the tetanus toxoid vaccine. Only 14.0 percent of the mothers had received all the 5-doses prescribed by WHO and other health partners worldwide.

Table 4.13 ANC attendance for last pregnancies and the total number of TT doses received to date.

Total no. of TT doses received up-to-date	**ANC attendance- no. of visits in last pregnancy by mothers.**					
	1-3 times	4-6 times	7 or more times	Didn't attend any ANC	Total	percentage
TT0	2	-	1	3	6	3.1
TT1	14	6	12	-	32	16.6
TT2	16	29	17	-	62	32.1
TT3	11	10	16	-	37	19.2
TT4	4	12	13	-	29	15.0
TT5	3	16	7	1	27	14.0
Total	50	73	66	4	193	100

Source: Sekyere West District field survey, 2008.

4.5 FOCUS GROUP DISCUSSION FINDINGS

The main purpose for conducting the focus group discussions with personnel of maternal and child health/family planning (MCH/FP) units of the seven sub districts was to determine and compare the immunization strategies and to find out any health service factors contributing to drop–out from the immunization schedules. At Asubuaso sub – district, Sister Mary Aminata said "*Sometimes the altitudes of some nurses can discourage the mothers from attending the next immunization schedule"*.

The results from the FGD revealed that the MCH/FP units were being ran by community health nurses stationed at Mampong, Nsuta, Kofiase, Asubuaso, Oku, Birem and Kwamang

sub districts. The staff strength ranged between 2-7 depending on how remote the sub district is located and other geographical factors. Mrs. Mercy Okran remarked "*The biggest challenge currently facing the Oku sub – district was understaffing because the area is too remote for freshly trained nurse and they quickly apply for transfer shortly after their posting from the DHA"* The operational strategies used for EPI service delivery were static at the facility level and outreach services to communities without access to health facilities. At the Mampong sub-district Patricia Berko, the senior nurse said, *"Though Mampong Municipality has the biggest population, the defaulters were more than all the other sub-districts as revealed by the 2006 annual report. This was so because of static immunization strategy that was adopted.* House to house was only employed during the national immunization days (NIDS). However, Oku and Birem, which are close to the Afram plains occasionally adopted supplementary immunization activities (SIAs).Mass immunization was not practiced. All the respondents knew their target population, the childhood vaccine preventable diseases and the number of times a mother needs to visit the clinic to have all the antigens as well as intervals between the vaccines. In general, staff knowledge on the cold chain system was fair. Most of the community health nurses could tell what constituted the cold chain and the temperature requirements for the various vaccines especially when they embark on out reach services. *"Improper cold chain handling could lead to wastage and may deny the potential children the opportunity of immunization"* said Mr. Fuseini, Birem sub-district.

They explained their job schedules as giving health talks/education to mothers, weighing the children, administering the vaccines, recording in both the immunization register and in the 'Road to Health Card' as well as counselling on individual basis. Madam Gloria made a remark that *"Whilst some mothers forget about the next schedule for immunization, others intentionally absent themselves for other activities like going to farm, attending funeral and*

many others. Staff also administer paracetamol syrup to children receiving DPT vaccine to prevent fever that is usually associated with the DPT vaccine. The study established health service factors that could contribute to drop - out as lack of transport, vaccinator absenteeism, staff impatience and sometimes long waiting time. Staff ranked the immunization strategies with regards to the strategies ability to increase coverage and reduce dropout in descending order as follows ;outreach services 43 percent, Home visits 28 percent supplemental immunization activities (SIA) 15 percent, NID 10 percent, static 4 percent and mass immunization recorded 0 percentage points. Sister Dufie, Kofiase sub-district said *"The annual targets set by the DHA could be achieved only when all the staff put in their maximum effort and embrace the outreach method of carrying the immunization activities.* The staff were of the opinion that the immunization coverage had not reached the 80% for the district, and attributed this to inadequate staffing at deprived communities and staffs inability to do regular home visits. The reasons given for mothers' inability to complete the immunization schedules for their children included the following;

- ⇨ Missing Road to Health Card/Folder.
- ⇨ Bad previous experiences with immunization e.g. abscess formation at needle point etc.
- ⇨ Time of immunization inconvenient for mother
- ⇨ Travelling
- ⇨ Laziness

Salina, Kofiase sub-district, expressed that *"Most mothers who normally default in the immunization session s are due to lost or misplaced Road to Health Folder and are also afraid of being embarrassed in front of their own friends.*

The nurses in all the sub-districts were of the opinion that the immunization coverage in the district has been at a standstill for a couple of years, a finding which agreed with the contents of the DHMT annual reports for 2004-2007.

CHARPTER FIVE

5.0 DISCUSSION OF STUDY FINDINGS

5.1 CHARACTERISTICS OF RESPONDENTS.

The study established that dropouts for immunization schedules cut across all the fertility age groups, however, there seemed to be more defaulters with the age group 20-29 for both child and maternal immunization. This was however contrary to the finding of a study by Brown et al (1999) in the Kumasi metropolis, where mothers aged 16-20years and 50 and above years had 100 percent coverage for all antigens.

Marital status of respondent, according to the study, showed that married respondents defaulted more than the other categories. Educational level of respondents seems to play an important role in the immunization status of the mother herself and her child. The study revealed that respondents with no formal education, primary and JHS/MSLC recorded 80 percent of dropout compared to their counterparts with SHS/Technical and Vocational and Tertiary education, that is 11 percent. Occupation of the respondents could also be a contributory factor to the dropout of mothers because, the study showed unemployed, farmers/artisan and trader/self employed recording 96% dropout and salary earner representing only 4 percent drop–out.

5.2 COVERAGE LEVEL AND DROPOUT FOR THE ANTIGENS

Interestingly, the study revealed a coverage level of 85 percent with pentavalent vaccine as the proxy indicator, as compared to a district average of 75.1 percent from 2004-2007 District Health Administrative Records. This figure is higher than what WHO, Ghana reported as 71 percent (DPT3) for 1998 in Ghana. The EPI coverage (Penta 3) for the entire

country, according to Ghana Health Service (GHS) Annual Report for 2007, showed 85 percent, 84 percent and 88 percent representing 2005, 2006 and 2007 years respectively. The regional coverage figures range from 68 percent in the Greater Accra Region to about 100 percent in the Northern Region. The most populous regions in the country, Ashanti and Greater Accra, were among the least performing regions, (GHS, 2007). According to Ashanti Regional Office records, for GHS, the coverage for the years 2004, 2005 and 2006 were 66.0 percent, 74.2 percent and 71.0 percent which indicated coverage figures that were below the expected of 80 percent. Again, the GHS report, Ashanti Regional Districts' report showed 72 percent for Sekyere West District for the year 2006. Therefore the increase in the coverage level for this study may be due to the fact that the respondents who had defaulted were not sampled and interviewed because the interviewers may have not met them at their homes and subsequently may have replaced them according to the sampling strategy.

The drop–out rate according to the study is 14.5 percent as against 24.75 percent of the district average drop – out rate for 2004-2007. The dropout rate is higher than what Sommerfelt et al (1997) found in a study, which indicated that the EP1 defaulter rate in Ghana is 11.3 percent. This is a confirmation of the report given by GHS Ashanti Regional Office of a drop–out rate of 20.1 for Sekyere West District EPI performance for the year 2006. This supports the fact that all is not well with the EPI coverage and the drop–out rate in Sekyere West district. According to WHO, there is a problem whenever the drop–out rate from the immunization program exceeds 10 percent.

However, the drop–out rate between Penta 1 and Penta 3, a measure of the quality and utilization of immunization services, in aggregate terms, remained below the 10 percent threshold for the entire country for 2007 year, (GHS, 2007).

5.3 MAJOR REASONS FOR IMMUNIZATION FAILURE.

The number of defaulting children increased gradually from OPV1 and DPT1 through to OPV3, with a sharp increase in defaults for measles and YF. The respondents gave several reasons as to why they could not comply with the immunization schedule. Most of the reasons 57.1 percent pointed to obstacles and the prominent amongst the reasons being postponement until another time. Other reasons given were, mother being too busy, family problem including illness of mother, child-ill not brought and time of immunization inconvenient. The findings confirm a report released by GHS, 2005 which indicated barriers such as inadequate understanding of immunization and insufficient demand for immunization services by families and communities.

The level of education of respondents against reasons for immunization failure according to the study showed that, tertiary education was an asset to motivate mothers to send their children for immunization. The outcome supports the finding of Odebiyi and Ekong (1982), who found that literacy level of mothers influence their acceptance or non acceptance of vaccination. On the other hand, the number of defaulters increased as the education level of respondents decreased, with drop–out for JHS/MSLC being highest. These findings are validated by findings of such works as UNICEF (1988) and Rouse and De Graft (1992) .Rouse and De Graft found level of education of mothers, fear of side effects, money etc. to be reasons influencing immunization uptake.

The findings showed a relationship between mothers' occupation and the reason for dropouts/defaults. Farmers, artisan defaulted most, unemployed follow whilst none of the salary earners did not default in any of the antigens. This finding is in line with the finding of

Salmaso (1998) which showed an increase in coverage for free and mandatory vaccines whilst decreasing for optional vaccines where mothers were made to pay fees for such service in Italy.

Location effect on mothers' attendance at immunization session revealed that those who have easy access to a number of health facilities including the district hospital in the cities and big towns defaulted more than those who are in small villages. For the entire defaulting mothers, Mampong city recorded the highest, which is 32.1 percent. This finding is contrary to the report by GHS, 2005 that drop–out were high among families and communities with limited access to immunization services (hard-to-rich communities) and have inadequate staff members to provide services.

Religious affiliation of mothers showed that about 82.1 percent of all dropout mothers were Christians, 10.7 percent, Muslims and 7.2 percent being traditionalist. Religious activities according to the nursing mothers may have contributed to the defaults because while some religions have misconceptions about immunization, others regard it as against their doctrines and practices. Further more, any time the immunization schedule coincided with a religious activities, the mothers forfeited the time for the religious activity instead of attending the immunization session. The finding validates what Feyisetan and Adeokum (1992), found that the extent to which modern method are adopted by mothers may still depend on the people convictions of the causes of the ill-health and the level of convictions about the efficacy of such modern health measures. Odebiyi and Elang (1992) found out that beliefs about the causes and supposed alternative source of preventing disease influence their acceptance or non acceptance of vaccination.

5.5 MOTHERS IMMUNIZATION STATUS FOR TETANUS TOXOID VACCINES

Vaccination of mothers against tetanus in Sekyere West district has been very difficult to truck because of unrecorded vaccination shots and unavailability of maternity cards for verification. The findings from this research revealed majority 32.1 percent of respondents having received 2 doses of the tetanus toxoid vaccine which ultimately gives protection to mothers for only 3 years. This is in line with a collaborative report by WHO and UNICEF and the Nigerian government (2006) which estimated that in Kano state, only 30.3 percent of mothers had received two doses (i.e. Protective) doses of the tetanus toxoid vaccines. Moreover, only 14 percent of respondents had received all the 5 doses of vaccines indicating that the remaining 86 percent, if not fully immunized, will not get the lifelong protection the vaccine gives to mothers. Majority of the mothers, 77.7 percent could not provide their maternity cards at the time of visit. Respondents said cards were kept at the health facility archives while a few 22.3 percent were able to give their cards for recording and confirmation of tetanus toxoid immunization. The finding confirms a report by a World Health Organization Bulletin, (2002) which stated that, data on women's immunization is incomplete due to non recording and/or none registering of some women.

The source of report-either it is taken from a maternity card or recorded according to the mothers opinion/perception showed that report given by mothers without card outweighed the mothers with maternity cards. Reports from mother other than the maternity card were full of guesses and assumptions. Some mothers could not even tell but rather asked friends for reports. Even where maternity cards were provided some mothers doubted the numbers of the vaccines received. According to the finding of (BWHO) 2002, data for vaccine coverage

underestimates the true proportion of protected women because of unregistered doses of tetanus toxoid vaccines which directly points out such anomaly in the finding of this study.

Antenatal Care (ANC) attendance is directly linked with tetanus immunization at the facility level.

CHAPTER SIX

6.0 CONCLUSIONS AND RECOMMENDATION

6.1 CONCLUSIONS

The main purpose of the study was to access the EP1 service utilization in the Sekyere West District in order that, DHMT, Funding Agencies, Policy makers and other health partners can make informed decisions in their effort to improve immunization service utilization by the children and mothers alike.

Based on the findings of the study, the following conclusions are reached;

1. The drop-out rate, according to the study, was 15 percent, 85 percent fully immunized children and 14.5 percent partially immunized children. The drop-out rate is highly unacceptable because it is above the acceptable rate of 10 percent; however the coverage of 85 percent is good since it has exceeded the appreciable level of 80 percent as prescribed by all health partners.
2. The major reason for immunization failure is obstacle. Non compliance to immunization schedule was attributed to obstacle such as,
   I. Mother being busy
   II. Family problems
   III. Postponement of immunization session to another time
   IV.Time of immunization is inconvenient
3. Mothers who dropped out of the immunization programmes were mostly those between 20-29 years and were either unemployed or farmer/artisan by occupation.

4. Mothers' immunization status for tetanus toxoid vaccine was 14.0 percent for the 5th and last vaccine (TT5). Report from mothers in connection with their immunization status mostly did not tally with what was reported in their maternity cards. Further, mothers 77.5 percent did not had their maternity cards with them owning to the reason that these cards were kept at the health facilities.
5. Most of the mothers 32.1 percent reported to have received two doses of the tetanus toxoid vaccines up-to-date.
6. MCH/FP staff preferred outreach most to other immunization strategies available. Mass immunization is the least preferred by the nurses.
7. Health education offered by the nurses is very important to the mothers although nurses reported of low level of staff for MCH/FP activities at sub district like Oku, Birim and Asubuaso

8. The knowledge of the Community Health Nurses on cold chain and temperature requirement for the vaccines at out reach service was fair.

6.2 RECOMMENDATION

In line with the conclusions drawn, the following recommendations are being made to provide information to enable the DHMT, Funding Agencies, MoH and GHS to design and implement appropriate and relevant immunization programmes that will serve to improve EPI service utilization in Sekyere West District health administration.

1. MCH/FP staff should embark on routine education campaigns at both antenatal and postnatal sessions and child welfare clinics stressing the total number of times mothers need to visit the clinic to complete the immunization and targeting the age group 20-29 years who defaulted most in the drop out category.
2. Intensified outreach and regular home visits should be employed by community health nurses specifically for mothers who default as a result of obstacles.
3. Mothers immunization for tetanus toxoid vaccine should be given equal attention by all health workers particularly MCH staff just like the immunization for their children in terms of keeping the records on all maternal immunizations up-to-date, educating mothers on the number of times to attend the sessions to complete the entire immunization schedule during antenatal care attendance, and releasing the maternity cards to mothers. MCH staff at regular time interval should make follow ups to check on mothers' immunization status.
4. As a matter of urgency, the DDHS at the Sekyere West DHA should solicit for funds to allow MCH staff to organise mop-up for mothers who have not gotten the full compliment of vaccines considered ideal for mothers to get permanent protection against maternal tetanus infection.

5. The MCH/FP staff numbers should be increased through the sponsoring of young SHS graduates and bonding of such students by DHA in order to have adequate number of MCH/FP staff at the hard-to-reach sub-districts like Oku, Birim, and Asubuaso.
6. The DHMT must as a matter of urgency, set a standard of getting all pregnant mothers a minimum of two doses of the tetanus toxoid vaccine before delivery of babies.
7. Adequate motor bikes and four wheel drive vehicle should be made available by the GHS and MoH through the DHA to enhance the movements of MCH staff who embark on outreach services and home visits exercise especially with the sub-districts along the Afram plains area where roads are sometimes inaccessible or not motorable.
8. DDHS should ensure that incentive packages, thus allowances and accommodation are provided to motivate staffs who accept duties in hard-to-reach areas are disbursed in time.

It is hoped that these recommendations will be critically considered by the DHMT, MoH, GHS, and other health partners; to improve immunization service utilization in the Sekyere West District Health Administration.

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APPENDICES

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

DEPARTMENT OF COMMUNITY HEALTH

QUESTIONNAIRE (DATA COLLECTION TOOL)

This questionnaire has been designed to seek opinions of carers, opinion leaders and health workers with regards to assessing the utilization of **Expanded Programme** on **Immunization (EPI)** in Sekyere West District. It is worth noting that any information provided by respondents shall strictly be treated confidential and shall be used only for academic purposes

RESPONDENTS'BACKGROUND INFORMATION.

1) How old are you.	1.≤ 19 2. 20-29 3. 30- 39 4. ≥ 40	1 [ ]	2 [ ]	3 [ ]	4 [ ]	5 [ ]	6 [ ]	7 [ ]	8 [	Tot al
2) Sex of caretaker	1. Female 2. Male	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	
3) Marital Status of caretaker	1. Married 2. Single 3. Divorced 4. Separated 5. Widowed	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	
4) Parity	1. 1 – 2 2. 3 – 4 3. 5 – 6 4. ≥ 7	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	
5) Level of Education of caretaker	1. No Formal Education 2.Primary 3.JHS /MSLC 4.SHS / TECH / VOC 5.Tertiary	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	
6) Occupation of caretaker	1.Unemployed 2.Farmer / Artisan 3.Trader / Self-employment 4.Student 5.Salary Earner	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	
7) Religious Affiliation of caretaker	1.Christian 2.Muslim 3.Traditionalist	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	

ANSWER SHEET

CLUSTER FORM, INFANT IMMUNIZATION

(1)Cluster Number ……. (2)Date……. (3)Area……. (4)Range of birth dates: From:……. Until: ……..	(5) Name:									TOTAL	
										Card	Card plus history
Child Number in Cluster		1	2	3	4	5	6	7	8		
(6)Birth date											
(7)Immunization card	Yes/No										
(8) BCG	Date/x /o										
	Scar: Yes/No A										
	Source										
(9) DPT1	Date/x/o										
	Source										
DPT2	Date/x/o										
	Source										
DPT3	Date/x/o										
	Source										
(10) OPV1	Date/x\o										
	Source										
OPV2	Date/x/o										
	Source										
OPV3	Date/x/o										
	Source										
	Date/x/o										
(11) Measles	Source										
(12) Yellow Fever	Date/×/o										
	Source										
(13) Immunization Status	Not										
	Partially										
	Fully										
(14) Fully Immunized before one year of age.	Yes / No										

(15) Tally of households visited.....

(16) Name of interviewer……
Signature……

CLUSTER FORM, REASONS FOR FAILURE TO VACCINATE CHILDREN

ANSWER SHEET

(1)Cluster Number …… (4)Range of birthdates: From:……..

(2)Area:…….
Until:…….....
(3)Date:……..
NOTE: ASK ONLY ONE QUESTION: Why was the child not fully immunized

Child number in Cluster			1	2	3	4	5	6	7	8	TOTAL
(5) Immunization Status		Not Immunized									
		Partially Immunized									
		Fully Immunized									
(6)	Lack of Information	A-Unaware of need for immunization.									
		b- Unaware of need to return for 2nd or 3rd dose.									
		c-Place and / or time of immunization Unknown									
		d-Fear of side reactions									
		e-Wrong ideas about contraindication									
		f- Other.									
	Lack of Motivation	g- Postponed Until another time									
		h- No faith in Immunization									
		j- Rumors									
		j- Other.									
	Obstacles	k- Place of Immunization too far.									
		l- Time of Immunization inconvenient									
		m- Vaccinator absent									
		o- Mother too busy									
		p- Family problem, including illness of mother.									
		q- Child ill- not brought.									
		r- Child ill- brought but not given immunization									
		s- Long waiting time									
		t-Other									

Cluster Form

Tetanus Toxoid Immunization of Women

ANSWER SHEET

(1)Cluster number:…… (2)Date:……. (3)Area:…… (4)Range of birth dates: From:…… Until:…….		(5)Mother Name									TOTAL	
											Card	Card Plus History
Women number in cluster			1	2	3	4	5	6	7	8		
(6)Birth date of child												
Mother	(7) Immunization card	Yes/ No										
	(8) TT1	Date/x/o										
		Source										
	TT2	Date/x/o										
		Source										
	TT3	Date/x/o										
		Source										
	TT4	Date/x/o										
		Source										
	TT5	Date/x/o										
		Source										
(9) Antenatal care(ANC)		Yes/No										
(10)Other visits to health facility during last pregnancy		Yes/No										
(11) Delivery of baby		Home										
		HC/HOS										
		Other										
(12)Child protected against neonatal tetanus		Yes/No										

(13)Tally of house holds Visited:……

(14)Name of interviewer:…….

Signature:…….

FOCUS GROUP DISCUSSION

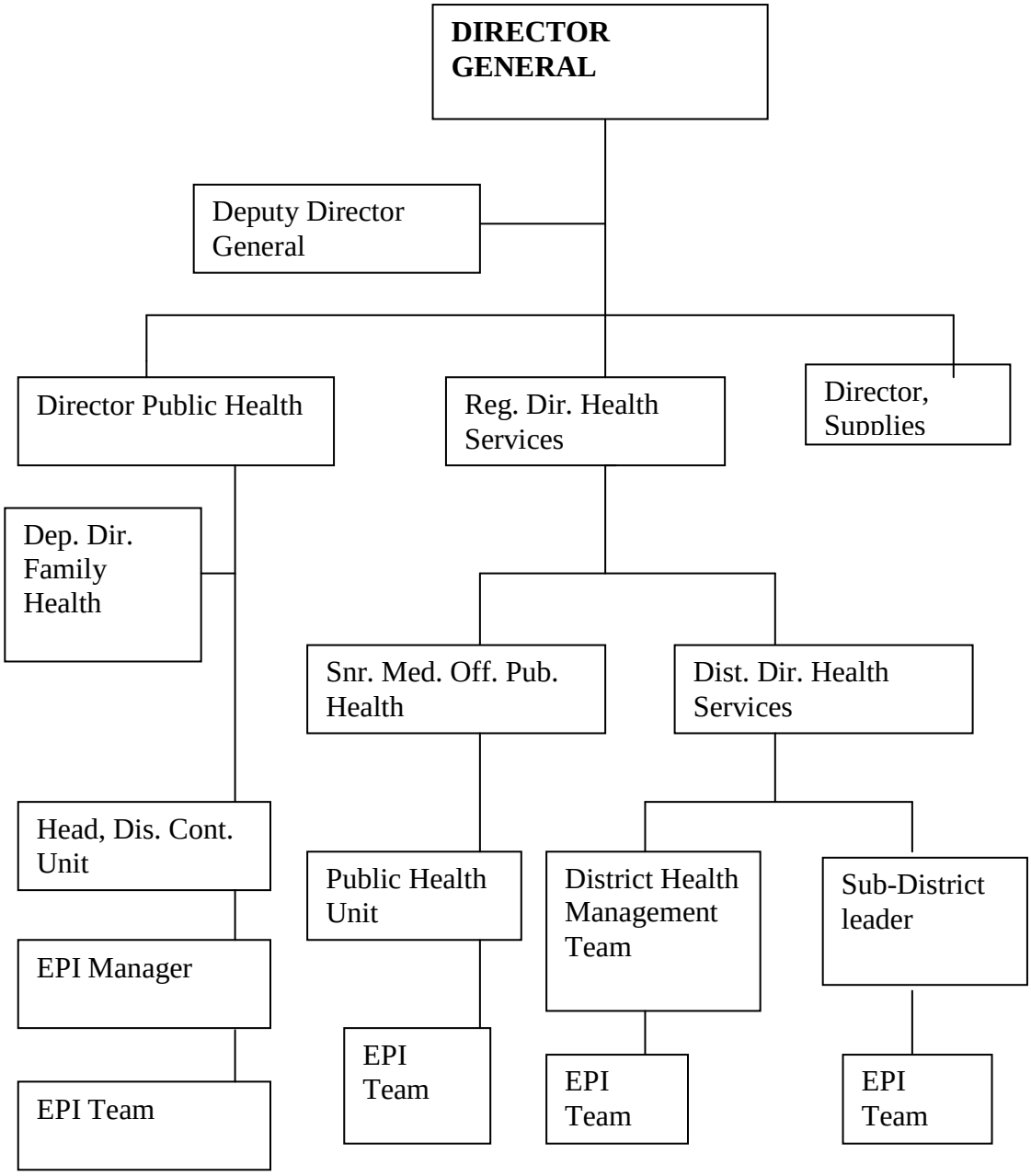
QUESTION GUIDE FOR MCH/ FP UNIT ON EPI UTILIZATION

1. The community has talked to me about EPI service delivery being offered by your Unit. Could you tell what EPI entails?
2. Are all children eligible to utilize this service and why?
3. What indicators are available for measuring EPI service utilization?
4. Amongst the seven sub-districts in this district health administration, which of these are more likely to record high levels of defaulter rates and why?
5. What do you do to get partially immunized and non-immunized infants to be fully immunized?
6. Could you enumerate some of the general challenges you encounter when you want to carry out the following activities;

- Maintaining cold chain,
- Means of transport to hard-to-reach communities/hinterlands,
- Identifying defaulted infants and addressing missed opportunity issues,
- Carrying out Daily Immunization Service at the facility level

7. Comparing static sites to multiple outreach sites, tell me the differences in these sites with emphasis on EPI service utilization.

National Organizational Structure of EPI in Ghana.



Organizational structure of the health sector in Ghana, with particular emphasis on EPI coordination and management in the country.

Source; Ghana Health Service EPI 5YPOW (2002-2006), October, 2002

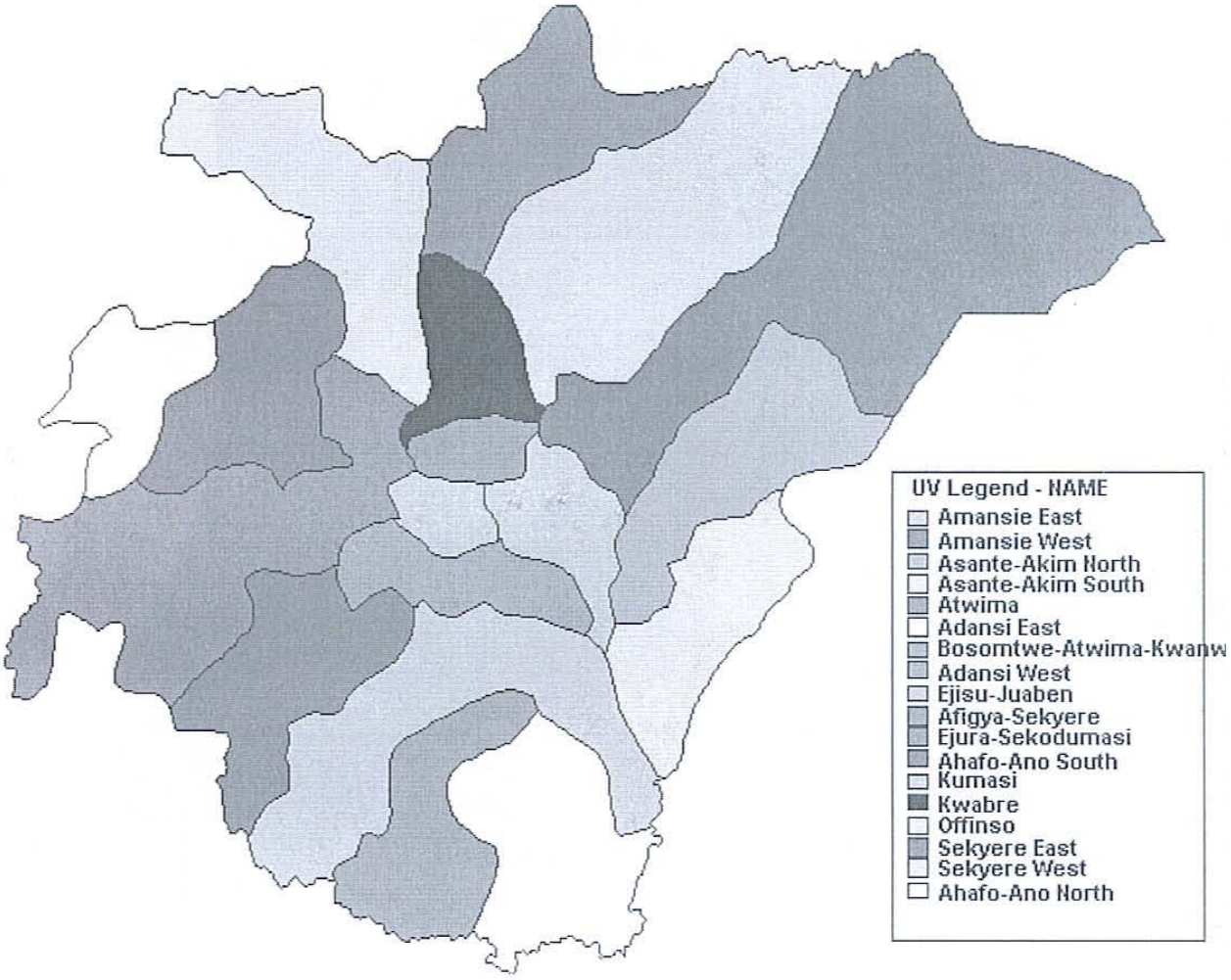
Table for Immunization Coverage Survey Sampling Frame And Cluster Selection

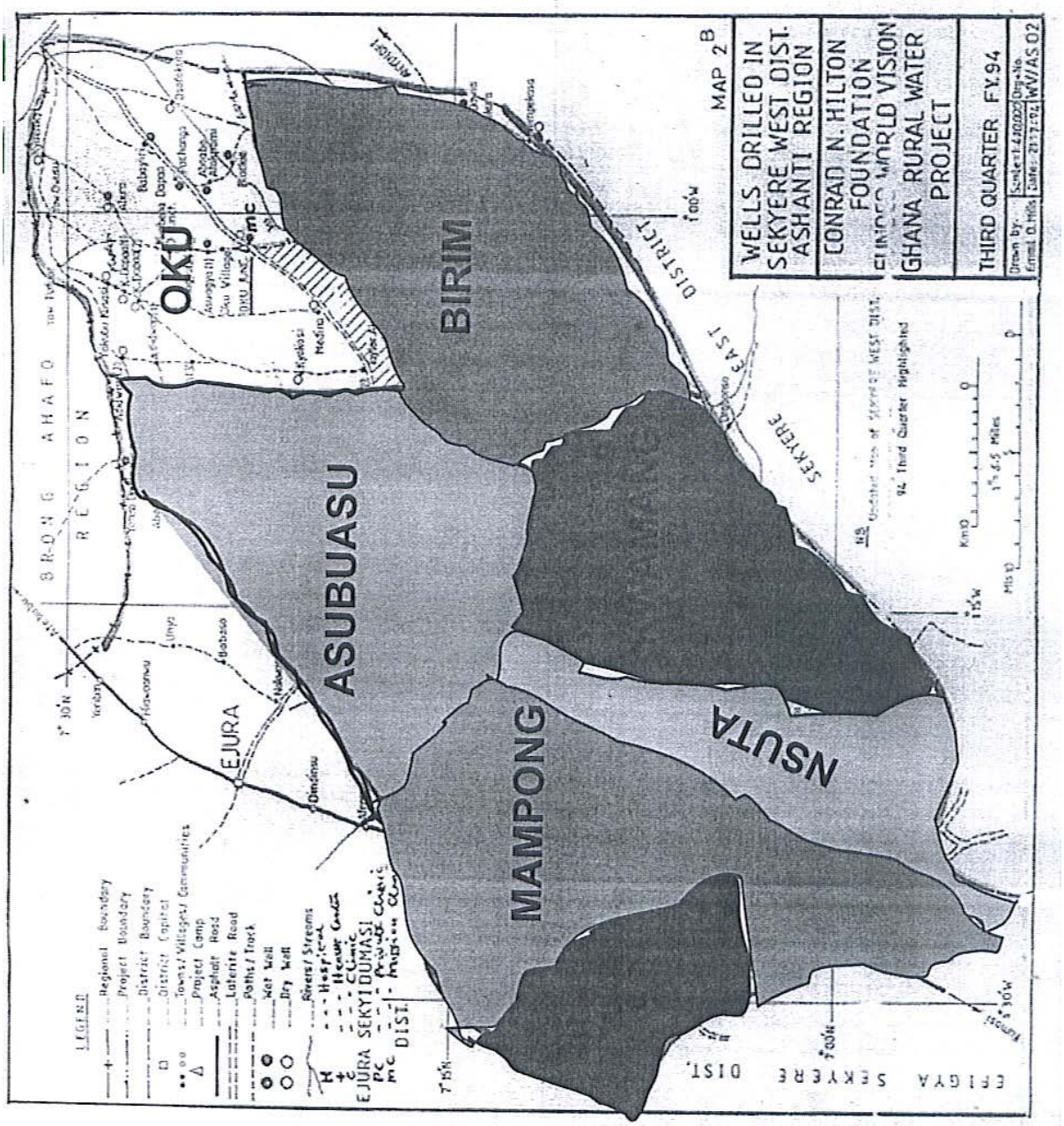
Column 1	Column 2	Column 3	Column 4	Column 5
	Community/ Area	Population	Cumulative Population	Cluster Numbers
1	Abuontem	1770	1770	
2	Adidwan	1976	3746	1
3	Aframso	1453	5199	
4	Amoamang	2176	7375	2
5	Apaah	2057	9432	
6	Asaam	3030	12462	3
7	Asubuaso	649	13111	
8	Atonsu	4151	17262	4,5
9	Atonsuagya	2189	19451	
10	Benim	2518	21969	6
11	Beposo	6408	28377	7,8
12	Birem	2795	31172	
13	Bonkrong	1251	32423	9
14	Bosofour	1381	33804	
15	Daaho	1835	35639	10
16	Jeduako	2871	38510	11
17	Kofiase	5623	44133	12
18	Kwamang	7305	51438	13,14
19	Kyebi(Ash.)	1599	53037	15
20	Kyeiase	1890	54927	
21	Kyekyebon	1097	56024	
22	Kyekyewere	1384	57408	16
23	Mprim	1456	58864	
24	Mampong	34903	93767	17,18,19,20,21,22, 23,24,25,26
25	Nintin	1893	95660	
26	Nkwanta	1827	97487	27

27	Nsuta	7104	104591	28,29
28	Nyinapong	1069	105660	
29	Oku	816	106476	
30	Yonso	2136	108612	30
	TOTAL	108612		
Sampling interval		108612/30=3621		
Random number		2288		

Source; Field Survey, 2008

MAP OF THE ASHANTI REGION OF GHANA





Map of Sekyere West District showing the sub-districts as defined by the District Health Directorate.