

**SCHOOL OF PUBLIC HEALTH COLLEGE OF  
HEALTH SCIENCES UNIVERSITY OF GHANA,  
LEGON**

**ASSESSMENT OF STRATEGIC  
MANAGEMENT PRACTICE OF MALARIA  
CONTROL IN THE DANGME WEST  
DISTRICT, GHANA**

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**THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF  
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DEGREE**

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## DECLARATION

I certify that this thesis has not already been submitted for any degree and is not being submitted as part of candidature for any other degree.

I also certify that the thesis has been written by me and that any help that I have received in preparing this thesis; and all sources used, have been duly acknowledged in this thesis.



.....

Dr. Rexford O. K. Asante

## **DEDICATION**

This work is dedicated to the memory of my dear late husband, Dr. Kwadwo Ansah Ofei, my children, Selma, Yaw Titi, Kwadwo Ansah and Kwaku Quartey for their support and encouragement.

It is also dedicated to my mother, Madam Faustina Haizel Commeh and my sisters, Mrs. Magdalene Abude and Ms. Verona Dadson, whose tireless efforts gave me the courage to complete this work.



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## ABSTRACT

**Objective:** To assess the strategic management practice for malaria control in the Dangme West district.

**Methods:** Strategic management (SM) practice was assessed in all HCFs both in the public and private and some chemical shops within the Dangme West district using semi-structured questionnaires and question guides. In-depth interviews were carried out with healthcare providers in their clinical setting. The status of key malaria control indicators was assessed by interviewing 385 healthcare consumers and 100 pregnant women who were selected by multi-stage cluster sampling from 21 communities. The study utilized both qualitative and quantitative methods in describing the SM practice and assessing status of key malaria control indicators. In addition to the above data was also collected through desk top reviews of HCFs' records, district's health annual reports, published and unpublished literature, textbooks, etc.

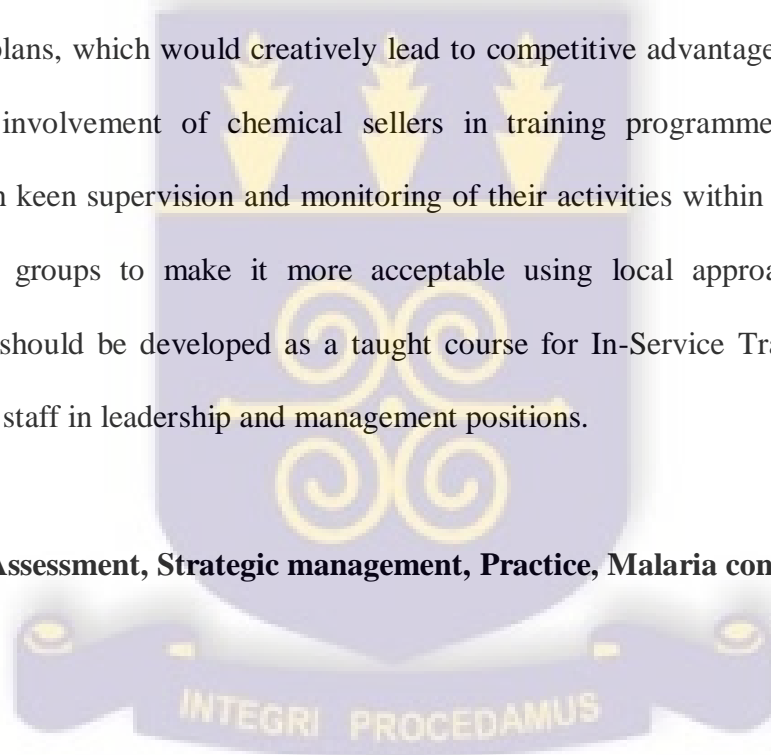
**Results:** Healthcare managers were using all the elements of SM in the management of malaria but these were not holistically coordinated. Present were short ranged informal planning based on the objectives of NMCP and day-to-day operation of the HCFs especially with Ghana Health Service facilities. Due to homogenous nature of Dangme West district, management of culture wasn't given much attention by healthcare managers though healthcare providers were acutely aware of its importance to quality service delivery. Competition was woefully absent in the healthcare environment. No formal structure has been created for the management of malaria control activities with the exception of the involvement of Community Based agents. The district was widely implementing all the strategies of the NMCP with favourable outcomes.

**Conclusions:** The practice of strategic management though present in the district, it was fragmented. Hence, while there was significant improvement in the status of key malaria control indicators, this could have been further enhanced if the practice of strategic management has been carried out in a more holistic way. Thus, the assumption; the degree to which malaria control is systematically managed using the process of SM will enhance the status of key malaria control programme indicators is true.

HCFs should be able to define their needs based on the realistic needs of the communities and develop plans, which would creatively lead to competitive advantage. There should be adequate involvement of chemical sellers in training programmes for healthcare providers with keen supervision and monitoring of their activities within the district. BCC should target groups to make it more acceptable using local approaches. Strategic Management should be developed as a taught course for In-Service Training within the service for all staff in leadership and management positions.

**Key words:** Assessment, Strategic management, Practice, Malaria control, Dangme

**West**



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## ABBREVIATIONS/ACRONYMS

ANC	Antenatal Care
BCC	Behaviour Change and Communication
CBAs	Community Based Agents
CDO	Community Drug Officers
DA	District Assembly
DDHS	District Director of Health Services
DHA	District Health Administration
DHD	District Health Directorate
DHMT	District Health Management Team
DSS	District Surveillance System
GHS	Ghana Health Service
GLSS4	Ghana Living Standard Round 4
GSS	Ghana Statistical Service
HCF	Healthcare Facility
HRU	Health Research Unit
IPTp-SP	Intermittent Preventive Treatment for Pregnancy
IST	In-Service Training
ITNs	Insecticide Treated Nets
MDAs	Ministries, Departments, and Agencies
M&E	Monitoring and Evaluation
NADMO	National Disaster Management Organization
NGOs	Non-Governmental Organizations
NHIS	National Health Insurance Scheme
NMCP	National Malaria Control Programme
PPAG	Planned Parenthood Association of Ghana
RBM	Roll Back Malaria
SM	Strategic Management
SP	Sulphadoxine Pyrimethamine
SWOT	Strengths, Weaknesses, Opportunities and Threats

## **CHAPTER ONE:**

### **INTRODUCTION**

#### **1.1 Background**

The healthcare system in Ghana is confronted with the formidable task of improving and guaranteeing the health and well-being of all people living in Ghana. Such a broad goal encompasses many specific objectives for individuals and populations, e.g. increased life expectancy, reduction in avoidable deaths and improvement in quality of life. Recognizing that resources are never adequate, a rethinking and restructuring of priorities is inevitable at all levels. Thus, the health care system has since independence gone through series of progressive reforms intended to develop and improve public health practice in Ghana. Prominent among these reforms, are the adoption of Primary Health Care (PHC) concept, creation of the Ghana Health Service by an act of parliament (Act 525), development of the Medium Term Health Strategy (MTHS) and a 5-year Programme of Work (PoW). In all these developmental approaches malaria control has been given some form of prominence.

Malaria as a public health challenge seems to be on the increase globally with over 1-2 million deaths each year. Over 90% of these are African children who due to poor access to health care facilities and local perceptions about the disease fail to seek prompt help. Indeed, malaria is accredited to be a major cause of poverty and low productivity especially in poor countries (Ijumba et al., 2004). It is estimated that the annual economic burden of malaria in Africa is about US\$ 1.7 billion or 1% of the Gross Domestic Product. In Ghana, malaria is hyper-endemic and accounts for more than 44% of reported out-patient visit and an estimated 22% of under-5 mortality. Reported cases however, represent only a small fraction of the

actual number of malaria episodes in the population because the majority of people with symptomatic infections are treated at home and not reported (Ghana Malaria Program, 2005). Malaria is a life threatening disease in individuals with low or impaired immunity, but malaria is both preventable and curable. Ghana therefore, has identified Malaria as one of its priority diseases targeted for control in the medium term. Resources are sent directly by the National Malaria Control Programme (NMCP), with support from the Global Fund, Development Partners, etc. to the district for the management of malaria and other diseases of public health concern to help strengthen decentralization (MTHS, 1995). For instance available data at the NMCP office showed that from 2004 to 2006 first quarter, a total of thirty thousand and one dollars, ninety seven cents (\$30,001.97c) was sent to the Dangme West district health directorate for malaria control activities. The issue is, what management processes have these healthcare managers put in place to cope with the increasing trend of morbidity and mortality associated with malaria? Strategic management (SM) according to Duncan (1996) is a major thrust that would guide the management of healthcare organizations to anticipate and cope with the variety of external forces operating beyond their control.

### **1.1.1 Concept and Definition of Strategic Management (SM)**

“Strategic” is the most overused word in the vocabulary of business. Frequently, it is just another way of saying, “this is important”, but the aim of true strategy is to master environment by understanding and anticipating the actions of other economic agents, especially competitors (Greenwald and Kahn, 2005). A strategy to a programme is amongst other things a plan of how the programme can achieve its goals and objectives (Davies 2000; Mintzberg, 1996). It is a ‘commitment of present resources to future expectations’ (Drucker,

1999). The aim of SM is to decide on programme goals, the means of achieving those goals, and ensuring that the programme is sustainably positioned in order to pursue these goals. Furthermore, the strategies developed provide a base for managerial decision making (Robbins et al., 2000; Browne 1994; Porter, 1980).

SM according to Macmillan and Tampoe (2000) is the most exciting of the management disciplines which requires both clear thought and judgment in envisioning and realizing the future. SM uses the systems approach in the management of programmes with the assertion that the whole is greater than the sum of its parts. Hence, SM gives a holistic approach to management and attempts to achieve a fit between the organization's external environment (political, regulatory, economic, technological, social and competitive forces) with its internal situation (vision, values, culture, finance, organization, human resources, marketing, information systems, etc). Through SM, programmes gain a framework providing structures necessary to the management process. SM allows programmes and their managers to identify opportunities and threats within the environment, formulate plans to exploit some of those opportunities, and marshal the resources to implement those plans.

SM process may be applied at different levels in the organization; the corporate level, the divisional level and the operational level. These levels in the GHS are the Headquarters, the regions and the districts respectively. The resulting strategies differ in scope as well as in purpose from one level to the other.

SM is a unique perspective that requires managers to cease thinking solely in terms of internal operations and adopt what may be a fundamentally new attitude; an external orientation. It is basically optimistic in that it integrates "what is" with "what can be". SM is both a skill and an art; it has body of knowledge that can be learnt and techniques that can be

used with greater or lesser competence while dealing with a future that is unknowable and with the hearts and minds of people that transcend reason (Macmillan and Tampoe, 2000). Understanding the nature of the healthcare environment, the relationship of the programme to that environment, and the often conflicting interests of internal functional units requires a broad conceptual paradigm to comprehend so many and important interrelationships. The “system’s thinking” is a useful framework for organizing and understanding the variables of strategic management. SM according to Duncan et al. (1996) is an externally-oriented philosophy of managing an organization that links strategic planning to operational decision-making. Strategic managers constantly relate the programme to its external environment, not just to assure compatibility and survival, but also to understand the environmental trends sufficiently well to “create the future.”

The practice of SM therefore, is the key for efficient and effective malaria control programme because it would bring a proactive and creative dimension to the totality of management. SM would be able to identify clients’ needs and attempt to satisfy these needs competently. With adequate survey of the environment, a fit is always being managed with considerable involvement of stakeholders and efficient management of resources.

### **1.1.2 The Global Fund**

Approximately a decade ago, the United Nations declared HIV/AIDS, tuberculosis (TB) and malaria global emergency. These three diseases were publicly recognized as a threat to the social and economic stability of the world. In view of this challenge, the World Economic Forum launched the Global Health Initiative (GHI) to increase the quality and quantity of private sector responses in the fight against HIV/AIDS, TB and malaria. Now, the GHI or the Global fund is the largest public-private expert network on HIV/AIDS, TB and malaria in

the world. It works to catalyze public-private partnerships in health around the world through innovative policy frameworks. The Global Fund is the largest contributor to the three diseases and engages businesses for synergistic and sustainable contributions to health.

### **1.1.3 The Ghana National Malaria Control Programme Strategies**

Ghana's malaria control strategy, which has been adopted by the RBM Partnership, involves multisectoral and intersectoral partnerships working together on an agreed plan with the goal of reducing death and illness caused by malaria by 50% by 2010. Progress has recently been made in improving access to prompt and effective treatment, supply of ITNs and using IPT with SP. Based on evidence from drug efficacy studies, Ghana has recently changed from Chloroquine to Artesunate Amodiaquine for treatment of uncomplicated malaria. IPT for pregnant women has now been extended to all districts, including training for health staff with funds from the Global Fund. On Africa Malaria Day, that was 25<sup>th</sup> April 2005, Ghana launched a wide-scale ITN voucher programme and used high-impact media and advocacy pieces to raise awareness about malaria at community level. Available data at the NMCP suggested that the Global Fund has committed a total of US\$8,552,684.05 and US\$29,987,776 in two grants namely round two (2) and round four (4) respectively. The NMCP has disbursed monies based on individual proposals from either districts or NGOs for malaria control activities and the Global Fund has been a key financier to NMCP.

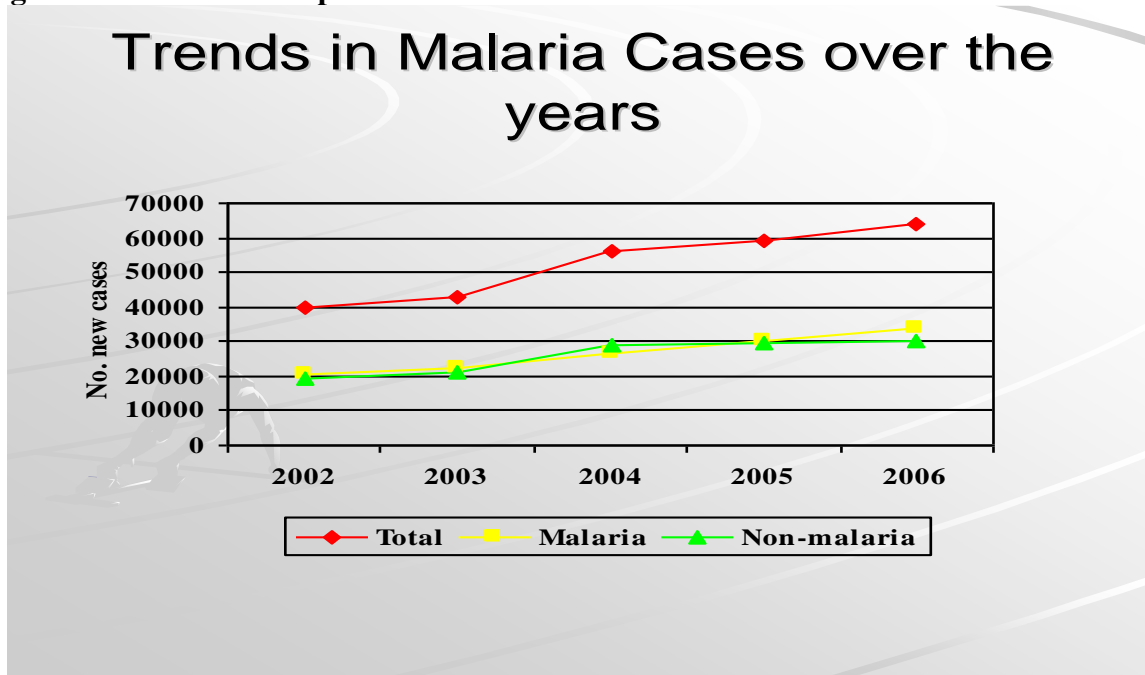
Ghana adopted the Roll Back Malaria (RBM) initiative in 1999. The NMCP developed a strategic framework to guide its implementation at all levels (national, regional, district and community levels). Significant to the RBM initiative has been the under listed strategic components:

- Improved malaria case management; to ensure early detection and rapid treatment for malaria at all levels from household to referral health facility.
- Multiple prevention interventions; to reduce the occurrence of malaria in the country.
- Research and Development; to ensure that efforts to RBM are supported and informed by well-researched information.
- Create and sustain partnership; establish social movement that is supported by well coordinated national action supported by all stakeholders to RBM.

These strategic components have guided the entire management of malaria control being promulgated by the NMCP.

#### 1.1.4 Situation of Malaria in the Dangme West District

Figure 1.1: Trends in Reported Out-Patient Malaria Cases 2002 - 2006

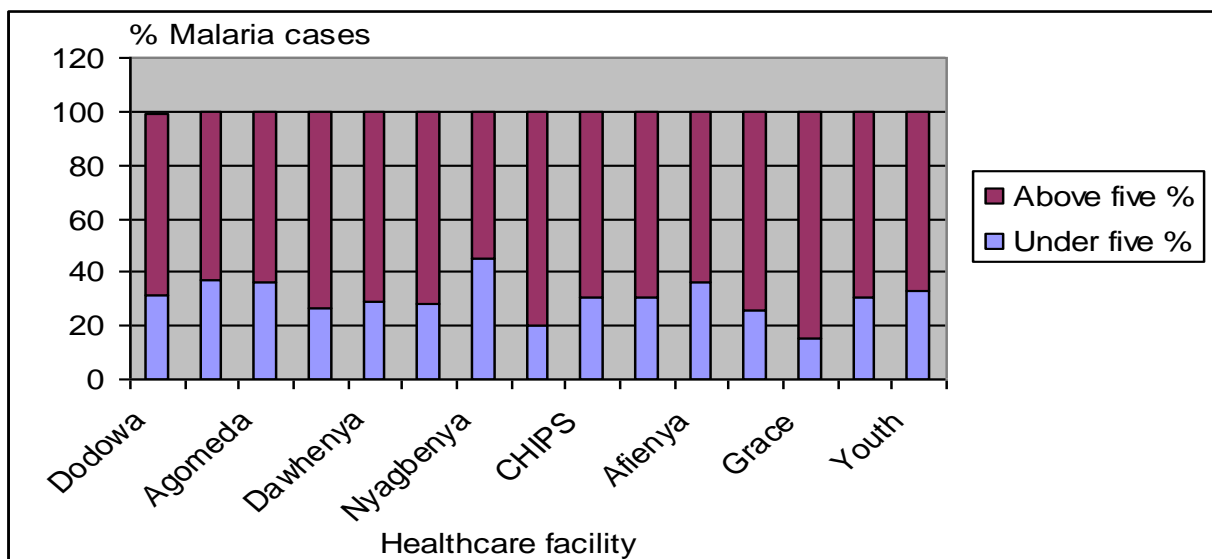


Source: Dangme West Annual Report, 2006

Malaria is hyper-endemic in Dangme West district, and like any other rural district in Ghana, reported malaria cases at the OPD have consistently risen over a period of five years (2002-2006) with a percentage rate of reported cases of febrile cases presumed as malaria at 51%

and annual reported cases of about 23515 (Annual report, 2006). Transmission was all year round but seasonal with peak transmission usually during the rainy season. Gyapong et al., (2005) asserted that local perceptions of malaria such as the different types of malaria and their mode of management may have accounted for the persistent increase. Community members perceived that there were two types of “Asra” (term for malaria); the “Eyoo” female type was mild while “Eku” which was the male type was more serious and can kill. Uncomplicated malaria was mostly managed at home. Inhabitants only visited healthcare facilities when faced with “Eku”.

**Figure 1.2: Percentage of Outpatient Malaria Cases in Under-Five Years and Above Five (2005)**



Source: Dangme West Annual Report, 2005

Malaria accounted for the highest reported cases in the out-patient attendance and for the past five years, it had been among the five top communicable diseases in the district. According to district annual reports, the reported malaria cases within that period have been between 69.7 to 86.0 %. Malaria in pregnancy have been equally an issue in the district with 575 (1.9%) reported cases only in 2005.

Another concern of the district was the high reported cases of malaria in the under-fives. Although the under-fives was just 12.82% (16,095) of the projected population of 2006, the out-patient reported cases of malaria for the under-fives ranged between 15.4% (229) in Grace clinic to 45.1% (316) in Nyigbenya clinic as compared to the percentage reported cases of the above-fives. Thus, clearly malaria affected the under-fives more than any other age group in the district.

#### **1.1.5 Malaria Control in the Dangme West District**

Management of malaria within the district has been the integrated approach (where all diseases of public health interest are being managed by the same healthcare providers) to public health diseases and for the past three years, the malaria control programme has been funded mostly by the Global fund. Proposals were written quarterly to the Global Fund to solicit for funds for activities delineated for malaria control. Objectives outlined for the control programme included the following:

- Provision of Intermittent Preventive Treatment (IPTp) to pregnant women;
- Promotion of home-base management of malaria;
- Promotion of the use of Insecticide Treated Nets; and
- Monitoring and Evaluation of the programme.

Activities carried out were the following:

- BCC on IPT, ITNs and Home-Based care had been on-going in all out-patients departments, church groups, mosques, schools and market places in the sub-district;

- All Community Health Nurses in the district as well as new midwives have been taken through orientation on Intermittent Preventive Treatment (IPTp), ITNs and Home Based Care;
- ITNs from the DHMT had been heavily subsidized and given to all health facilities and outreach points for pregnant women and mothers with children under five;
- Community Based Agents (CBAs) in the communities had been trained in home-based care, to treat and re-treat nets, to follow-up pregnant women referred to healthcare facilities at home and to report any adverse effects to the clinic quickly;
- Staff, NGOs, and Community Drug Distributors in all the sub-districts had been trained to monitor side effects of SP;
- Community Drug distributors had been trained to identify and distribute rectal Artesunate for the initial management of nil-per-os malaria at community level; and
- Unique system had also been developed for the monitoring of CBAs in the district.

The Health Research Unit (HRU) in Dodowa has also played a major role in malaria control within the district. Many clinical trials and surveys have been carried out by the unit and these have greatly enhanced and sustained malaria control in the district. Significant among these trials have been the deployment of rectal Artesunate to the CBAs to prevent severe malaria in the under fives.

The District Assembly has also contributed towards the malaria control process; one percent of its budget has been annually allocated to the activities of malaria control. Records

available at the DHD indicated that within the period of 2003 and 2004, the district assembly gave one thousand dollars (\$1000.00) and one thousand five hundred and seventy five dollars, thirty two cents (\$1,575.32c) respectively for the implementation of malaria control activities. Although they were not part of the decision-making body, the District Health Directorate would submit to the assembly their budget for a particular period to access the package. Other partners involved in the Malaria Control Programme were the NGOs namely World Vision, PPAG and African Youth Alliance.

## **1.2 Statement of the Problem**

As GHS continues with its decentralization process, resources are being disbursed directly to the district for the delivery of healthcare services. For example, financial data at the Dangme West DHD showed that between 2005 and 2006 first quarter the NMCP/Global Fund sent twenty thousand, six hundred and thirty dollars, seventy six cents (\$20,530.76c) to the DHD for malaria control activities. It is however, uncertain what structures the districts have developed to manage the health system in coping with the increasing malaria morbidity and mortality.

Malaria is a public health problem which no doubt accounts for a substantial disease burden in the Dangme West and for many years various control measures have been undertaken with limited success. The percentage of reported cases of febrile illness presumed as malaria at the OPD has consistently risen over a period of five years (2002-2006) with annual OPD reported cases of 17675 to 30070. Current percentage rate of reported cases of febrile illness presumed malaria at the OPD was 51 percent (DHD Annual report, 2006), which was just the tip of ice burg because most people managed uncomplicated malaria at home. What management processes have the healthcare managers practiced all this while and how have

they managed increased morbidity and mortality in malaria control? What are the outcomes of the efforts exerted by healthcare managers in malaria control?

**The assumption for the study is that the degree to which malaria is managed using the process of strategic management will improve the status of malaria control indicators within the district.**

This study describes the extent to which strategic management process is being used to manage malaria control in the Dangme West district. There are numerous decisions and actions that managers and administrators take in the course of operating a development programme. While all of them have an impact on the direction of the programme and its outcome, certain interventions by the government and the programme leadership is critical in that they provide the basic framework for operational decisions and set the pace for programme performance. This means that for effective and efficient malaria control, we should go beyond the leadership, resources and political commitment bit and use holistic approach or the SM approach in the management of malaria within the district as suggested by Paul (1983).

Pertinent questions that need to be asked in this study are what management processes have the district developed for malaria control and how has management thought their way out to cope with increasing morbidity and mortality of malaria? The reason for using the SM model was that this area has not been studied in depth although it is a promising area.

### **1.3 Justification for the Study**

The study aims to evaluate the extent to which the practice of SM is fully integrated into the management principles of GHS at district levels and make recommendations for the way forward to improve strategic management practice. This will give a holistic approach to

management such that malaria control programmes can wholly be linked to their environment with realistic objectives that can always be verified. It will also ensure appreciable handling of the three major spheres of administrative responsibility of health care managers namely, day-to-day operations, management of the culture of the health care facility and management of strategy. All three must coexist and synergize each other for optimal performance or output.

The district is the operational level of the Ghana Health Service. It is the operational level where all decisions concerning the delivery of healthcare are implemented. The study will provide knowledge about issues and needs of district health system management and directions for strategic management in malaria control. It will let the membership of DHMT appreciate the importance of their environments especially, the concept of competition. Develop a common sense of purpose and shared values with the community thus, improving effectiveness and efficiency of malaria control programme within the district since malaria is a developmental issue. It will encourage management training for all healthcare providers regardless of the size and site of the healthcare facility.

#### **1.4 Conceptual Framework**

SM is most easily understood, studied and applied by using a conceptual model of the process. The use of a descriptive model, based on systems thinking, provides an overview of the rationale, logic, context, and the inherent interrelationships in the process of strategic management (Duncan et al., 1996). The assessment of the practice of SM in the district can be best studied with a logical framework. The conceptual framework will provide an outline for the study and a framework of significant variables and their relationships.

This model therefore, illustrates and organizes the major components for district health systems. It represents a clear and practical understanding of the organizational setting (the external environment) for health care as well as the healthcare facility itself. The SM process is made up of 4 stages namely:

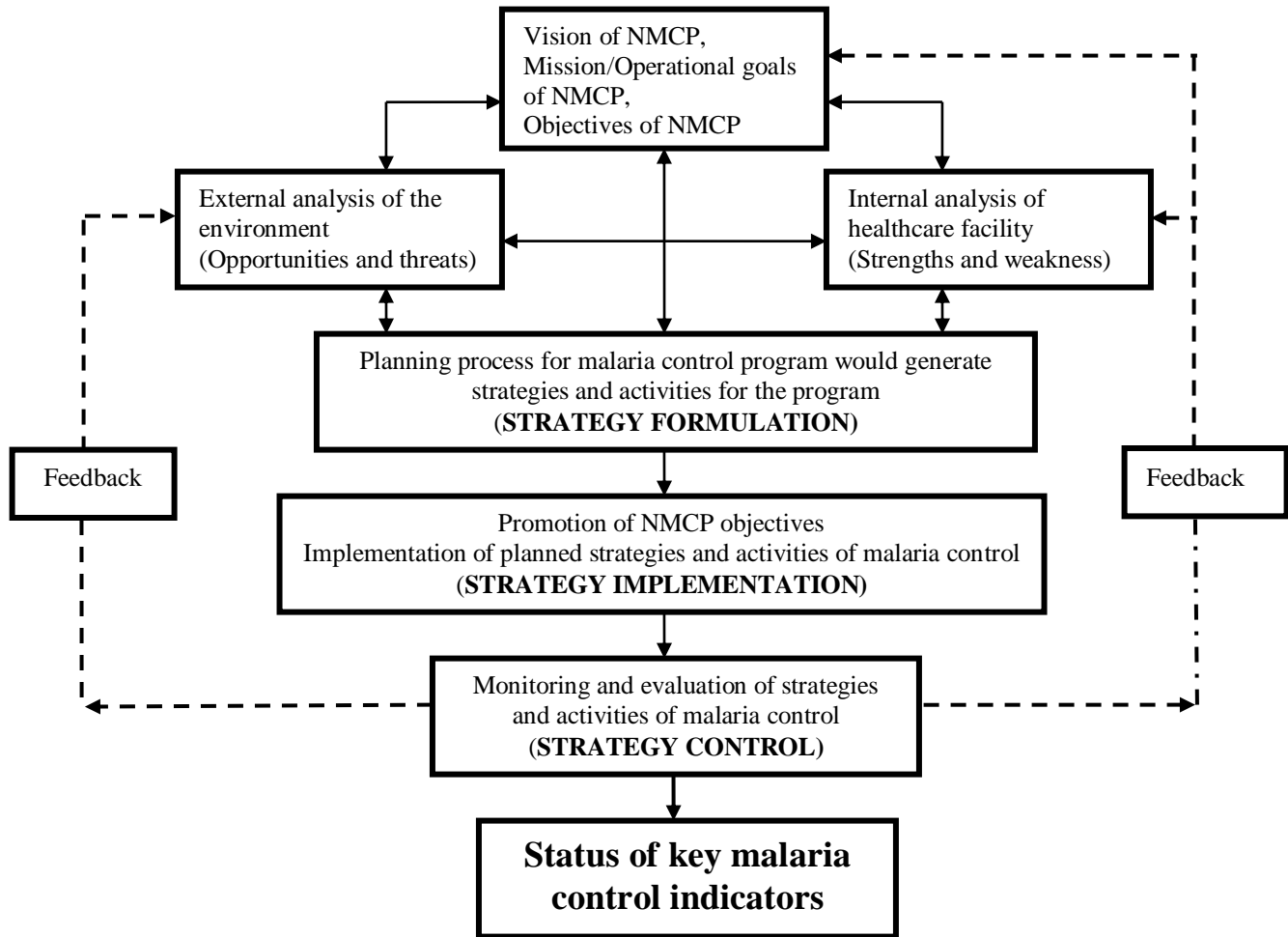
- (1) the situation analysis;
- (2) the formulation or planning stage;
- (3) the implementation stage; and
- (4) the monitoring and evaluation stage.

The situation analysis stage in this study of the extent of SM practice in malaria control in the Dangme West district comprises of the vision of NMCP, vision of malaria control in the Dangme West district, the mission or operational objectives of NMCP, the goals of the NMCP and the internal and external environmental analyses of healthcare facilities. The situation analysis provides the information for the formulation stage or the planning process of the programme. The strategic analysis process, depicted in figure 1.3, focuses on the integration of opportunities with distinctive competences. The internal analysis is used to identify assets (resources) and competences (capabilities) currently possessed by the healthcare facility. These would influence the strategic options developed in the next stage of the planning process, as would the external market environment of clients and competitors.

The formulation or planning stage involves analysis of data generated from the situation analysis into strategies or action plans for implementation. Strategies may be developed around existing assets or distinctive competences through matching them with environmental opportunities (Pearce II & Robinson, 1994). Alternatively, they may identify new

competences that would be acquired, developed and supported. Growth strategies such as product expansion, market expansion, and diversification often require that competences should be extended and enhanced to meet environmental opportunities (Aaker, 2001).

**Figure 1.3: The Conceptual Framework**



Within the bounds of this framework, the independent variables such as the vision of NMCP, goals of NMCP, external and internal environmental analysis, a number of candidate strategies will be generated. From these candidate strategies, the selected strategies will determine the products and services to be provided, in effect, the healthcare facility's position and scope. The products and services to be produced, in turn would determine the

resources, which include knowledge, skills, attitudes and logistics required to produce them (Teece, Pisano & Shuen, 1997).

The implementation stage involves putting all the strategies or plans developed into action within the stipulated time. Effective implementation requires careful selection, development of system or structures and management of both the programme assets and competences required to support the strategies. It also requires effective promotional strategies, human resource development and good motivational process.

The final stage is the monitoring and evaluation of the programme. Information from the monitoring and evaluation then feeds back into the situation analysis. Effective utilization of the SM process, all things being equal will improve the status of malaria control indicators in the district. The aim of SM is to ensure that organizations are competitive and able to satisfy both clients' and stakeholders' expectations.

## **1.5 Research Objectives**

### **1.5.1 General Objectives**

To assess the extent of strategic management practice for malaria control and the current status of key Malaria Control Programme indicators in the Dangme West district.

### **1.5.2 Specific Objectives**

1. To describe the extent and approach to the conduct of the situation analysis phase of strategic planning in the district.
2. To describe the extent and approach to the conduct of the planning process of malaria control in the district in relation to its environment;
3. To describe strategies used in the implementation of NMCP strategies in the district;

4. To describe systems designed for monitoring and evaluation of malaria control activities within the district; and
5. To describe the status of malaria control programme indicators in the district.

## 1.6 Definition of Key Terminologies

**Healthcare managers:** officers' in-charge of healthcare facilities or chemical shops in the district.

**Healthcare providers:** healthcare professionals/chemical sellers providing healthcare services in the district. This shows that all healthcare managers are also healthcare providers.

**Healthcare consumers:** residents in the district who are patronizing the services of healthcare providers.

**Strategic management:** formulation of the programme's strategies and plans using vision, mission, and the strategic objectives of NMCP with assessment of the external and internal environments (SWOT analysis); plans and strategies are then implemented, after which monitoring and evaluation is carried out.

**External environment:** physical surroundings and conditions outside the healthcare facilities which affect peoples' lives in the district.

**Healthcare facilities:** public health institutions, private health institutions, private-not-profit health institutions or chemical shops providing healthcare services to people within the district.

**Structure:** formal/informal system of task and reporting relationship that controls, coordinates, and motivate employees so that they cooperate and work together to achieve organizational goals.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 The Theory of Strategic Management

SM can be defined as a continuous, iterative process aimed at keeping an organization as a whole appropriately matched to its environment (Certo & Peter, 1988, p.5). It is a process of making explicit the goals of the enterprise, the environment in which it operates, the strategies, and finally the feedback loops that tell the firm whether each of these steps has been identified correctly (Gardner & Rachlin, 1986, p. 2). Furthermore, it is a stream of decisions and actions that leads to the development of an effective strategy or strategies to help achieve corporate objectives (Jauch & Gluek, 1988, p. 5).

What is more, SM is the way in which strategists determine objectives and make strategic decisions with regard to: (a) Determine the organization's mission; (b) Establishing long and short-range objectives to achieve the organization's mission; (c) Determining the strategy that is to be used in achieving the organization's objectives; (d) Formulating policies to guide the organization in establishing, choosing a strategy, and implementing the chosen strategy (Byars, 1984, p.7).

According to Asch (1992), SM is the process of making and implementing strategic decisions; it is about the process of strategic change. Hence, strategy can be seen as a key link between what the organization wants to achieve- its objectives- and the policies adopted to guide its activities. Organizations are in competition- competition for factor inputs, competition for customers, and ultimately, competition for revenues that cover the cost of

their chosen manner of surviving. Because of competition organizations have to make choices if they are to survive. The process of SM may range from a formal process to an intuitive one and uses the systems theory model. Gluck, Kaufman, and Walleck (1982) acknowledged that the development of strategy may be the result of strategic thinking, formal strategic planning or opportunistic decision making. SM is therefore, the exciting future of effective health care management.

Henry Mintzberg (1978) also asserted that strategy may be viewed as a pattern that emerges in a stream of decisions concerning the positioning of the organization within its environment. In other words, when a sequence of decisions relating the organization to its environment exhibits a logical consistency over time, a strategy is formed. Strategy does not exist in a vacuum; it has both an influence on, and is influenced by the culture of the organization, its structure and the people it employs. How you want people to act is driven by strategy: how they actually act depends on reward systems, control mechanisms, and the climate of the organization. Liz Johnson (1992) in her study of executives concluded that there were three main functions that they performed; management of day-to-day operations, management of culture and development of strategy for future orientation. All the three should be carried out concurrently for synergetic results. If anyone function is ignored, performance would be ineffective and inefficient.

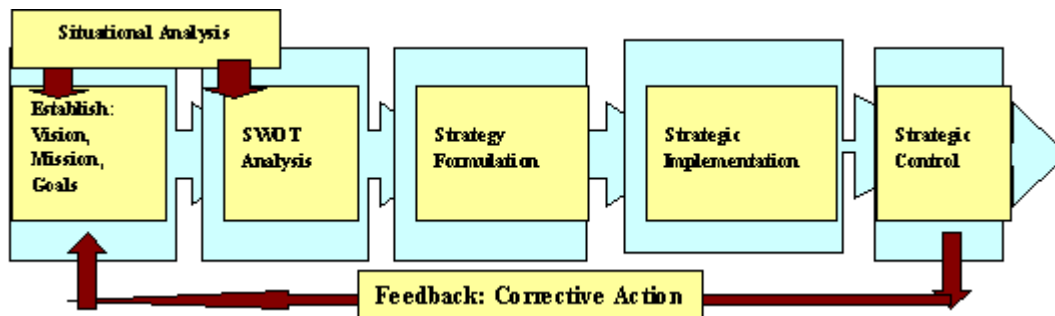
One important element of SM process is the development of a vision for the organization by top management. SM is in large part, a decision-making activity. The strategy of an organization hence, is the result of a series of managerial decisions often supported by a great deal of quantitative data. Strategic decisions are fundamentally judgemental and generally

the more important the decision, the less quantifiable it is and the more it is reliant on opinions of others (Duncan et al., 1995).

### 2.1.1 The Strategic Management process

SM has been described as a management process that has the objective of making the organization compatible with and successful in its external environment. In managing to achieve that compatibility, many constantly changing external and internal factors must be considered. SM is based on the systems theory; with the assertion that the whole is greater than the sum of its parts. From these very aspects, SM can be described as the formulation, implementation, and evaluation of actions that will enable an organization to achieve its objectives. The SM process can best be studied and applied by using a SM model. The model presents a clear and practical approach to formulating and evaluating strategy in actual situations.

**Figure 2.1: The Strategic Management Process**



Source: Hussin J. Hejase, Dima A. Baltagi, and Kassem Kassak (2000)

### 2.1.2 Malaria Control and Issues in Strategic Planning

Despite the magnitude of the burden of malaria and the wake of renewed interest in malaria prevention and control resulting from the Roll Back malaria initiative and the political commitment made by the African Presidents at the Abuja Summit, there are still no significant initiatives for strengthening capacity for malaria control through training within

Africa. Thus, Ijumba and Kitua, (2004) acknowledged that Africa needs to develop and institutionalize malaria training to sustain malaria control capabilities.

The RBM baseline survey (2001) revealed that quality of malaria case management was not good and only a tenth (11.7%) of uncomplicated malaria cases received prompt and accurate treatment whilst only about a quarter (24.8%) of severe malaria cases were managed appropriately. These insufficiencies were attributed to the fact that less than half (41.5%) of health workers had in-service training in malaria and few health facilities had malaria treatment guidelines. In implementing RBM strategies and to ensure that these insufficiencies were abridged, existing inter-sectoral committees at the district and regional levels were used to ensure performance.

To achieve clearly defined malaria control targets, the NMCP developed framework of strategies to guide implementation and action of key stakeholders. The strategic components pursued were - Improved malaria case management; Multiple prevention; Focused research; and Improved partnerships.

The objective of improving case management was to ensure that symptoms and signs of malaria were recognized early and appropriate management provided promptly at individual, family, community and facility levels. The objective of multiple prevention was to ensure that multiple preventive strategies were adopted to reduce the occurrence of malaria in the country. The objective of research and development was to ensure that the efforts to roll back malaria were supported and informed by well-researched information to guide policy decisions, and monitor progress and outcomes of main interventions. While the objective for developing partnership among major stakeholders was to establish a social movement that

would be supported by all stakeholders to roll back malaria. Implementation of malaria control interventions and activities were at all levels of management i.e. national, regional, district and community levels (MOH, 2000).

## **2.2 Situation Analysis and Strategy Formulation**

To survive and prosper, all developmental programmes must constantly develop strategies to meet the challenges of dynamic environments. In some programmes strategy is planned, in others this may occur in the mind of one person responsible for direct implementation of strategic decisions. Regardless of the manner of developing strategy, the long time survival of the programme depends on sound strategic decisions, which are effectively implemented. Planning according to Ackoff (1970) is the design of a desired future and of effective ways of bringing it out. Thus, for the NMCP to realize its dream of halving the incidence of the disease by 2010, healthcare managers need to critically assess their capabilities and resources to come up with strategies for the management of malaria. Malaria is, and has been, the most important parasitic disease of man in Africa in terms of mortality, morbidity and effects upon life generally. The malaria parasites are of great antiquity; evolving along with man with accelerated rate of major epidemiological changes over the past fifty years (Bradley, 1992). Bradley acknowledged that the complex biology of the vector, present health care, history of the use of medicines and insecticides, migration and environmental changes, did not fit simply into the idea of a single unidirectional process. Therefore, the need for collaborative efforts and effective planning in the management of malaria is very crucial especially, community participation.

The Roll Back Malaria Initiative launched in 1998, was a global effort, led by World Health Organization (WHO) and supported by the global fund. RBM representation is drawn from malaria affected countries, United Nations Organizations, Bilateral Development Agencies, Development Banks, Non-Governmental Organizations and the Private Sector committed to a common purpose, ways of working and outcome. WHO provides strategic direction, co-ordination and technical support to individual countries within the context of sustainable health sector development through its NMCP (WHO, 1998).

The approach of RBM has been built on all current malaria efforts and the existing Global Malaria Control strategy to achieve targeted levels of coverage in the affected populations based on regional, epidemiological and health systems' needs. RBM focuses on community and district level action (WHO, 1998). After the introduction of RBM, many countries especially in Africa developed strategic plans towards the control of malaria. The Regional Support to Roll Back Malaria and Integrated Management of Childhood Illness in Africa (2005), in its output-to-purpose review stated that all countries reported having a basic intervention packages as part of their national plans and almost all (97%) had malaria prevention and control as part of such plans.

Tanzania was among the first 20 African countries selected to plan and implement a programme for accelerated malaria control; a four-year plan of action for malaria control was thus, developed in 1997 (MMTSP, 2002 – 2007). Ghana was also among the first countries to introduce RBM and was signatory to Abuja Declaration of African Heads of States and Governments in 2000. Ghana set regional targets for achievements by 2005, implementing the core RBM strategies and priority interventions (GHS, 2001). A baseline survey

conducted in six selected districts based on eco-epidemiological situations in 2001 formed the basis of effective planning and monitoring to malaria control programmes.

### **2.2.1 The Development of the Programme's Vision.**

Vision identifies the future and is the philosophy of a programme; the quality of which is tied in directly with the quality of leadership (Hussey, 1994). The vision is an expression of hope and is simply regarded as statement of basic principles that governs the direction in which a programme seeks to develop. The vision of RBM was to half global malaria mortality by 2010, and a further half by 2015 (WHO, 1998). Vision of NMCP for partner countries was generally from this strategic dream. For instance, the vision of Tanzania was to reduce malaria to a level where it wouldn't be a major public health problem and obstacle to socio-economic development, whereas the vision of NMCP in Ghana was to have a malaria free environment. Thus, all is being done to achieve this dream; there has been massive distribution of ITNs to children under fives and pregnant women together with IPTp-SP. The goal of NMCP in Ghana was to facilitate human development by reducing the malaria disease burden by 50% by 2010.

### **2.2.2 Choice of Objectives and Services**

Critical to management is the choice of objectives and the programme's services. Objectives describe fairly what the programme hopes to accomplish thus, provides guidance and unified direction, facilitates planning, inspires motivation and commitment, and promotes evaluation and control. Objectives spread along different time dimensions translating the mission

statement more tangibly. Effective objective setting promotes good planning, and good planning facilitates future objective setting (Griffin, 1999).

Multiple objectives and multiple services according to Paul (1983) are usually pursued in a homogenous environment whereas single-service strategy is pursued in diverse environment where uncertainty in relation to market or public response is high. Multiple objectives are desirable because such diversification tends to yield better results when attempted sequentially. The general objective of RBM was to significantly reduce the global burden of malaria through interventions adapted to local needs through reinforcement of the health sector (WHO, 1998). To reduce the burden of malaria, Partners of RBM (global organizations, national authorities and local communities) were to develop strategies to meet this challenge. Objectives developed by Partners of RBM have been mostly dominant multiple objectives (GHS, 2001; MOH, United Republic of Tanzania, 2002).

Ghana's NMCP strategic plan for 2001 to 2010 for instance, adopted multiple objectives to meet the challenge of malaria control. These strategic objectives have been the basis for malaria control in Ghana since 2001 (MOH, 2000). Quarterly strategic plans have therefore, been developed by districts health systems using these strategic tenets over the last two years to sought resources from the NMCP and the Global fund.

### **2.2.3 Management Tools Used in the Situation Analysis**

External environmental analysis is a process for understanding the external environment of organizations and acts as a window through which, healthcare managers can view external environment for information and/or issues. These issues are trends, developments, dilemmas

and possible events that affect the programme as a whole and its position within the environment (Duncan, et al., 1996). These issues are fundamental in planning and the analysis normally utilizes several different tools and techniques. These techniques are informal and generally unsophisticated or judgemental (Klein and Linneman, 1984). Some of these tools are simple trend identification (review of previous objectives, etc), SWOT analysis, community assessment, etc.

✚ **SWOT Analysis:** The starting point in the process of SM is to determine precisely where the organization is today and where it wants to be in the future. The external environment is examined to determine key external forces that could either be opportunities or threats. The internal environment is also analysed to determine the internal strengths and weaknesses of the organization that will be used to take advantage of the opportunities while avoiding threats.

✚ **Information Technology:** For effective co-ordination of malaria and its control in the district health system, an integrated Health Information System is needed to ensure regular and accurate reporting on age and sex-specific malaria morbidity and mortality (MOH, 2000). According to Sprague and McNurlin (1993) information technology can be used strategically as a catalyst to fundamentally revamp ways of doing business. Information technology is used to analyze competition and develop competitive advantage.

✚ **Epidemiological Analysis:** is the surveillance and case investigation to identify causes, mode of transmission, and appropriate control and preventive measures. The analysis examines the incidence of the disease or health event and its distribution by time, place and person. The analysis also calculates rates and identifies parts of the population that

are at higher risk than others. It is concerned with the search for causes and effects, or the why and how.

- ✚ **Community assessment:** is the appraisal of the demographic characteristics, socio-economic, physical and/or environmental conditions of the community that impinge on the health of its inhabitants.
- ✚ **Stakeholder Analysis:** The communities, groups or individuals are referred to as stakeholders because they have an interest or 'stake' in the success of the developmental program. Stakeholders are almost always influential thus, if identified and evaluated, 'forces' affecting the programme may be specified. This analysis is particularly important to malaria control because it is believed that the involvement of all partners involved in health will greatly enhance the vision of the programme (GHS, 2001).

#### 2.2.4 Types of Planning

Obviously, some programmes grow and prosper with relatively rudimentary planning systems, but are these programmes successful because of pure luck or have their managers managed to develop strategies without going through a formal process? A programme may have a strategy even though it lacks a formal planning system as long as its decisions are consistent over time. Thus, Duncan, et al., (1996) asserted that SM may take place in several different modes and this may range from a formal process to an intuitive one.

Henry Mintzberg referred to these strategic management modes as the informal mode, the planning mode and the adaptive mode. Whereas informal planning is an implicit strategy worked out by a dominant or powerful leader without the support of a formal process, the formal planning mode is a highly ordered process resulting in logical strategies developed by

a purposeful developmental programme. The adaptive manager reacts to changes rather than anticipates and plans for change thus, has both formal and intuitive elements of planning.

Formal planning becomes increasingly important to programmes when their markets stop growing, when there is an increase in the level of competition and when the rate of change in such environmental factors such as legal, regulatory, economic, demographic, and social, etc., are fast. Again, a formal systematic plan is needed for large organizations so as to ensure effective internal coordination and communication (Duncan, et al., 1996). Hussin et al. (2000) in their study of Middle East hospitals concluded that long-range planning and strategic thinking was common to most healthcare managers but not strategic management which was still vague to many managers. The general practice was more towards short-range horizons and not many used contingency plans, a fact that jeopardized future planning.

### **2.3 The Implementation Process or Strategy Implementation**

The first barrier towards implementing new strategies is resistance to change. Internal involvement of staff in the exposition of the planning processes and inter-institutional communication patterns between top and bottom layers of the HCFs according to Hussin et al., (2000) are strategies used to reduce resistance. Implementation is critical, in that if planning is creative and brilliant but strategies are poorly implemented, little is likely to change. Support outlined by WHO (1998) for RBM implementation in countries were prioritization and phasing of support, and support to interventions in districts with stable, high transmissions in Africa. Technical and financial support to districts for situation analysis was to ensure that interventions would be adapted to local needs which would be

sustained after RBM support. The interventions could include community-based interventions, strengthening of public and private health sector and the establishment of local partnerships.

Interventions required adequate resources but Duncan et al. (1996) acknowledged that although financial resources were important reality checks to strategic decision making, the vision of management should not be limited by the financial resources available. Duncan reiterated that there were dedicated personnel whose attraction to the field goes beyond monetary rewards and is mostly focused on some of the “strategic uniqueness” of healthcare. These strategic unique characteristics of the healthcare are inspiration-related currencies, task-related currencies, position-related currencies, relationship-related currencies, and personal-related currencies. Cohen & Bradford, (1990) also remarked that individuals are normally grateful, have a sense of ownership, freedom from bureaucratic hassles, and affirmation of the basic service-oriented values that attracted them to the profession.

This “strategic reorientation” away from salary- and benefit-driven recruitment and motivation philosophy could do much to attract and retain the kinds of healthcare professionals who are capable of providing the high quality services desired in healthcare institutions. Thus, the difference between employees who perform well and those who do not is not how much they are paid but how they are treated. Katz (1988) also asserted that with respect to professional employees, meaningful products from their labor, freedom to use personal judgment, time to do quality work, and challenge are the primary motivators of high performance.

### **2.3.1 Training**

Training and motivation are very essential elements to implementation of programmes. Regular in-service training (IST) therefore, has been a strategy of GHS for sustaining competencies, interests, morale and quality of the workforce. In-service training is designed to build on the basic level training of staff to enable them meet the ever changing health demands. The objective of in-service training in GHS is to ensure that all staff have at least one IST that is relevant to their functions every three years. Acharya (2000) remarked that the success of any health intervention cannot merely be justified by its efficacy but on factors such as the knowledge and skills of service providers and users, their motivation, attitudes, practices and a range of other socio-economic factors.

### **2.3.2 Programme Excellence and Culture**

In a competitive enterprise, a programme has to be good in terms of efficiency and effectiveness to survive. Likewise in the public sector, a programme should at least perform satisfactorily at what taxpayers created it to do to survive. Excellence to a great extent begins with the culture of the programme. Culture permeates the environment of programme activities and is important in determining the internal capabilities of a programme. Kotter and Heskett (1992) found that the strength of an organization's culture and its "fit" with the demands of the external environment only partially explained the culture-performance relationship. Adaptive cultures are associated with superior performance over the long run and allow for reasonable risk taking. It is built on trust and a willingness to allow people to fail, and exhibit leadership at all levels. Bovee et. al., (1993) stated that when innovations occur, two things seem to be present – an organizational culture that encourages everyone to

think and share ideas, plus a champion of change, a person who is determined to overcome all odds and all bureaucratic barriers to shepherd the new idea into reality.

### **2.3.3 Quality Delivery of Healthcare Service**

Access to quality basic healthcare through empowerment of communities to improve their health was a key strategic objective in priority health intervention of the health sector (PoW, 2001 – 2006). Quality service include all services pertaining to customer care such as healthcare providers' behaviour when dealing with clients, waiting time at service delivery, availability of drugs, technical competence/skill of a healthcare provider and other basic services (Hanson, 2004). Adongo (2005) remarked that families preferred hospitals for cases of malaria, based on their knowledge about modern medicine, good quality care, and advanced technology. However, people's ability to utilize hospitals is being constrained by cost and convenience, as most healthcare facilities were not within reach.

Users' perceptions of quality of care according to Hanson et al., (2004) and Goodman et al., (2003) are highly subjective; patients expect courtesy and attention from healthcare providers as well as proper clinical examination and medical advice. Studies in Tanzania (de Savigny et al., 2004) and elsewhere (Goodman, 2003) observed a relationship between user-perception of quality of care and healthcare seeking behaviour for malaria and other illnesses, which had negative implications on users' compliance with the recommended treatment procedures.

Staff motivation is also an important factor in determining the quality of care, and evidence has shown that a well-functioning health system depends on a motivated work force (Wyss,

2004). In resource limited HCFs, solving problems related to staff de-motivation and poor quality healthcare depends on cost and priority setting. Effective measures designed to improve staff motivation through systematic, long-term and well-planned IST and supportive supervision contributes to the successful functioning of an intervention programme. Measures linked with proper performance monitoring of service providers and periodic user satisfaction assessment, would likely affect the quality of healthcare in a positive way (Wyss, 2004). Desired quality of healthcare cannot be fully realized when there is shortage of healthcare providers and supporting infrastructural facilities.

#### **2.3.4 Community Participation**

The need to involve communities at all levels of the programme (Bopp, 1994; Ofosu-Amaah, 1983) is necessary for determining the needs and shaping malaria control activities. The key to sustaining a community-based implementation plan according to Winch and Premji, (1996) is to build up a partnership among the community, district authorities, and central government. Adongo et al., (2005) acknowledged that understanding local knowledge about malaria would help in designing sustainable community-based malaria control programme that would lead to behaviour change and adoption of new ideas and technologies. It would also emphasize the concept of investing responsibility in local people (Coombs, 1980) which would ultimately ensure that programme activities dovetail community needs.

The global RBM provided both technical and financial support to endemic districts to undertake situational analysis of treatment and prevention practices at household and community level. The global RBM acknowledged that obtaining national commitment for

district-based plan would be crucial to avoid further compartmentalisation of malaria work. The Tanzania Malaria Medium Term Strategic Plan (2002-2007) acknowledged household sensitization whereby community health management teams (CHMTs) would proactively sensitize communities on early recognition and treatment of febrile illness in children, creating awareness on dangerous signs of malaria in children and actions to be taken by caretakers. In the Dangme West district, community participation was well entrenched in the malaria control programme, community based agents have been trained to administer Artesunate suppositories and tablets Artemether-Lumefantrine (Gyapong, 2005) to children under five as a first aid to malaria. In the Tano district, all pregnant women on SP were listed in the community registers for CBAs to follow up. For effective monitoring of information, education and communication (IE&C) activities, CBAs were provided with log books and bicycles to enhance home-based care. It has been realized that, with the strengthening of collaboration of the district assemblies, a lot could be achieved by way of health through malaria control (Offei-Akoto, 2005).

### **2.3.5 Maintaining Competitive Edge**

Successful business strategies are those that use the capabilities of the firm to address clients' needs in a way that leads to sustainable competitive advantage. Competitive advantage is highly desirable, hard to define or measure and may be imaginary (Macmillan and Tampoe, 2000). Greenwald & Kahn (2005) described competitive advantage as something a firm can do that rivals cannot match which either generates higher demand or leads to lower costs. They asserted that "demand" competitive advantages/customer captivity give firms unequal access to customers whereas "supply" or "cost" advantages always come down to superior technology that competitors cannot duplicate. Competitive advantage comes from matching

internal capabilities to external opportunities and can be achieved through several ways: Cost-based advantages: where clients are always aware of the price and would choose the lowest price; Advantages from differentiated products/services; first mover advantage; time based advantage, technology based advantage; and knowledge based advantage (Kay, 1993;4). Over the last several years, there has been increasing awareness of knowledge as a wealth creator in its own right. Professional services are knowledge intensive enterprise who sell knowledge directly, their success depend on how well they develop the knowledge of their staff and transmit it as benefits to clients (Scott, 1998; Maister, 1993; Katz, 1988). Successful SM depends on understanding the approaches' dimensions of the context and the issues to be resolved.

### **2.3.6 Leadership**

With so many forces at work against making choices and trade-offs in programmes, a clear intellectual framework to guide strategy is a necessary counterweight (Porter, 1996). Strategic planning is considered a major part of leadership functions of a programme. Leadership is a process that uses non-coercive influence to shape teams' goals, motivate people's behaviour towards the achievement of those goals and help define the organizational culture (Heifetz and Laurie, 1997). Leadership involves setting direction or creating a vision, enfranchising people in decision making, building coalitions that get things done, inspiring and motivating others (Kotter, 1990). Whereas management is concerned with order and efficiency, leadership is concerned with inspiration, change, movement and doing things in different and ideally better ways (Griffins, 1999). Leadership is stewardship not ownership (DuPree, 1990) and is critical at all levels skillfully developing and communicating mission,

vision and values of the programme. Hence effective leadership is very essential for the improvement in the status of malaria control indicators.

### **2.3.7 Structures Developed for Implementation of Malaria Control**

Organizational structure is like the bones of the body - it holds the organization together.

The key in structure is to divide tasks into manageable pieces and decentralize to achieve focus and empowerment. At the same time structure needs to be able to centralize in order to integrate and co-ordinate to make the body move as one. The appropriateness of a structure can be judged only in relation to a programme's strategy and environment. Adaptation of structural forms (functional, matrix, network, etc.) goes through the process of differentiating and integrating tasks and functions, the choice of patterns of authority sharing (e.g. the degree of decentralization) and level of autonomy. Through this media, structure influences performance. The creation of structures, by and large, follows the evolution of programme strategies, which in turn influence changes in the external environment and government objectives.

Without implementation, plans remain theoretical. Implementation ensures that programme activities are executed as planned with services delivered as intended. Personnel are deployed in the right number, at the right time and in the right place to perform activities. Essentially, there is alignment, mobilization and allocation of the physical and financial resources needed to perform the activities. Standards, protocols and guidelines are developed and used to achieve the expected outcome.

The management of malaria control activities needs the creation of some informal structures to ensure that the community benefit immensely from national effort. The creation of

community based agents (CBAs) in Dangme West for the administration of Artemether-Lumefantrine in the communities for instance, enhanced compliance to drug therapy (HRU, 2005). Nsabagasani et al., (2007) argued that community appreciation of home-base management of fever is based on the availability of drugs at the community level through the services of drug distributors (DDs). They reckoned that if well trained, facilitated and integrated into the local healthcare system, DDs could contribute substantially to prompt and appropriate management of acute febrile illness but the approach should be iterative enough to be able to improve itself.

## **2.4 Programme Monitoring and Evaluation or Strategic Control**

As malaria morbidity and mortality continues to increase in most countries in Africa, international agencies and malaria control programme managers have identified the strengthening of programme evaluation as an important strategy for improving the efficiency and effectiveness of malaria control programmes (Bryce et al., 1994). Evaluation helps managers to account for the investment made, refine strategies and identify and correct flaws in programme implementation.

Monitoring according to Kim (2006) is a continuous ongoing and step-by-step recording of the progress made by malaria control programme. Monitoring provides information and matches it with set norms or standards ensuring accountability and implementation of programmes in the correct and agreed-upon manner. It provides decision-makers with the required tools for refined planning and modified strategies by updating on progress, as well

as any problems or constraints. Monitoring and evaluation are concern with; work progress (inputs), staff performance (process) and service achievement (output).

Indicators normally developed for M&E, were directly related to programme objectives and selected on the basis of validity and reliability; ability to detect change within a reasonable time period and as a result of successful programme implementation; ability to be interpreted; and useful in guiding programme change. Only those indicators that could be measured with available programme resources should be selected.

## **2.5 Status of Key Malaria Control Indicators**

Despite the efforts of government and other agencies to control the incidence of malaria, malaria continues to be a major cause of morbidity and mortality accounting for 43.7 percent of all OPD attendances in 2005, ranging between 54.4 percent in the Northern region to 37.0 percent in the Volta region (GHS Annual report, 2005). Key indicators developed for evaluation of management of malaria control activities were according to the strategic operational strategies adopted for implementation. Agyepong and Manderson (1994) asserted that people's ability to comply with interventions and to treat sickness is affected by their acceptance of the interventions, their understanding of the nature of the illness and the relationship between vector and infection, and other social, economic and cultural factors.

### **2.6.1 Knowledge of Malaria**

Studies done in the district (Agyepong and Manderson, 1994; Gyapong et al., 2005) and other places (Anh et al., 2005) found high levels of correct knowledge about transmission and symptoms of malaria. Majority of people in the district were aware that mosquitoes cause malaria, even though some still perceived malaria as a result of the sun and other

factors (De La Cruz et al., 2006; Gyapong et al., 2005; Agyepong and Manderson, 1994). Signs and symptoms recognized by caretakers as severe malaria were hot body, severe vomiting, loss of appetite, convulsion and anaemia. Treatment included wide range of interventions such as sponging, giving of drugs bought from a chemical shop, going to a traditional healer and going to the HCF (Gyapong et al., 2005). Studies have shown that about 4 percent of rural caretakers resorted to herbal traditional healer for simple fever (Waltin, 1986).

Knowledge about malaria in pregnancy generally was high among pregnant women however, risk factors associated with malaria in pregnancy was inadequately known to them. Dissemination of information about malaria prevention and management to women attending ANC was very poor with inadequate recognition that Sulphurdoxine Pyrimethamine (SP) prescribed was for malaria preventive purposes. There was also uncertainty about whether the IPTp strategy was substituting or complimenting the promotion of ITNs (Mubyazi et al., 2007). Mubyazi declared that intensified health education and sensitization programs at ANC and community level would be useful measures for increasing acceptability and coverage of IPTp-SP services among its users.

### **2.6.2 Insecticide Treated Nets (ITNs)**

ITNs have been adopted as a key malaria control strategy in all Sub-Saharan African countries because studies in Ghana (Binka et al., 2006; Binka et al., 1996) and Kenya (Nevill et al., 1996) have confirmed earlier findings in The Gambia (Alonso et al., 1991) that ITNs are a simple, low-cost, and appropriate technology that has enormous potential to prevent malaria and decrease childhood mortality and morbidity from the disease. Therefore a number of organizations, governments, and donors are seeking cost-effective and sustainable strategies for implementing ITN interventions.

Although studies have shown that ITNs are effective this has not yet been translated into an increase supply and use across the country. In two rural communities, whereas 98 percent of people slept in bed nets, in the other community only 4 percent used it and less than 3 percent of people in both communities used ITNs (GMICS 2006, 2007). According to Ghana multiple indicator cluster survey in 2006, almost a third (30 percent) of households had at least one mosquito net while almost one fifth (19 percent) had at least one ITN. The likelihood of possessing a mosquito net or an ITN was 15 percent higher in the rural areas than in urban areas. 33 percent of children under the age of 5 years slept under any mosquito net whereas, 22 percent slept in ITNs and the use of bed nets among children under 5 years declined steadily with age.

The main barrier to the use of ITNs was not just people's unwillingness, treated nets were costly, not always available and low value people placed on ITNs compared to their market price (Conteh and Ahorlu, 2006; Agha et al., 2007). Main reason for not using ITNs had been the size being sold for twenty thousand cedis; it was too small as women mostly sleep with children. The use of ITNs was based on availability, affordability and the match between products offered and cultural factors such as local sleeping arrangement influence household purchasing of ITNs (Stephens and Ahorlu, 2006).

### **2.6.3 Management of malaria**

Gyapong et al., (2005) contended that the use of herbal and other preparations rectally for treating various signs and symptoms of "Asraku" (malaria) was common in the district, and normally the enema consisted of combinations of pepper, ginger, soap, etc. She reiterated that the use of rectal Artesunate at the community level had the potential of reducing severe malaria. Adongo (2005) indicated that while most people had confidence in the formal

health sector for treating malaria, it was usually treated first at home with herbal teas and baths prepared from neem, pawpaw, guava and eucalyptus leaves. Malaria was also treated with Chloroquine (and other anti-malarias), Paracetamol and multivitamin at home.

Artesunate-Amodiaquine was the most common treatment for patients with probable malaria at public health centres (Gersti et al., 2007). The multiple cluster survey indicated that 61 percent of children with fever were treated with “appropriate” anti-malaria drug and 48 percent received anti-malaria drugs within 24 hours of onset of symptoms. Appropriate anti-malaria drugs included Chloroquine, Sulphadoxine-Pyrimethamine/Fancider, Amodiaquine, quinine, Artemisine combination drugs, etc. The most widely used drugs were Chloroquine and Amodiaquine. Drug vendors in the community stocked very large quantities of Chloroquine and SP. Many of them have been trained (73.3 percent) in malaria as compared to 41.5 percent of health staff. However, they did not always sell drugs in full dose and neither did all of them have malaria treatment guidelines. Besides less than a quarter (24.4 percent) of them were supervised by the HCF in their locality (RBM baseline study, 2001).

Williams (2006) acknowledged that malaria treatment continues to consist of a single less effective drug (mono-therapy) rather than the internationally recognized combination anti-malaria therapy (ACTs) which agencies cannot afford. Families living in drug resistance area to mono-therapy were willing to pay more for more effective ACTs. However, these amounts were far from the real cost of delivering the new medicines. Only with subsidy would ACTs realistically make any impact. Thus, Chloroquine and SP were the most commonly prescribed drugs (GMP, 2006).

#### **2.6.4 Intermittent Preventive Treatment for Pregnancy (IPTp-SP)**

Intermittent preventive treatment with Sulphadoxine-Pyrimethamine (IPTp-SP) is currently the recommended regimen for prevention of malaria in pregnancy in endemic areas. Starting from 16 weeks of pregnancy, three doses would be given sequentially within four weeks interval using the direct observation therapy. IPTp-SP is effective in preventing maternal and placental malaria as well as improving pregnancy outcomes (Schulman et al., 1999; Njagi, 2002; Falade, 2007). Alternative measures for those who couldn't take SP were to sleep under ITNs throughout pregnancy, undertake indoor residual spraying with Pyrethroid insecticide, avoid staying outside in the night and using mosquito repellent (IPT of malaria in pregnancy training manual, 2005). Treatment of malaria according to the IPTp training manual (2005) was taking either Artesunate-Amodiaquine or Quinine. The RBM baseline study (2001) noted that although majority of pregnant women (69.8 percent) attended ANC at public HCF, less than half (34.6 percent) took malaria chemoprophylaxis and only 11.6 percent take it appropriately.

The successful implementation of the IPTp-SP strategy, Mubyazi et al. (2005) acknowledged depends on proper planning and support to the training of health staff and sustained sensitization of pregnant women at HCF and community levels about the benefits of IPTp-SP to mothers and their unborn babies. There was no effect of folates according to GMP (2006) on the efficacy of SP and both drugs could be used together. Using of SP in first pregnancies in relatively high transmission areas is effective but there is little evidence that it's efficacious in second and subsequent pregnancies, for the negative effects of malaria decreases as the number of pregnancies increases (GMP 2006).

### **2.6.5 Behaviour Change and Communication (BCC)**

Treatment and prevention of malaria deaths occurs if the condition is promptly identified, treated and/or referred. Delay in seeking therapy, misuse of anti-malarial drugs and resistance of malaria parasites to existing drugs frustrate measures to effective management of malaria in Ghana (Buabeng et al., 2007; Nyamongo and Muturi, 2006; NMCP, 2005; Marsh et al., 2004; Binka et al., 1994; Ahmed, 1989). Choice of treatment for childhood fevers is influenced by a range of socio-cultural factors that need to be understood if children are to be successfully treated e.g. previous experience with the illness especially young mothers, or bad timing of the sickness such as when HCFs are closed, the lack of social support and appropriate advice from members of ones' social net-works (Kamat, 2006).

Kamat (2006) suggested that most mothers with sick children would try to seek immediate care from HCF, but help was not always available or effective and mothers were forced to look elsewhere e.g. traditional healers. Nyamongo (2006) noted that treatment at HCF is not always as effective as it should be; only 29 percent of children are examined for malaria. Agyepong and Manderson (1994) argued that if information is given on the most appropriate anti-malaria drugs, correct use of drugs at home could be significantly improved.

Home-based management of malaria would be well appreciated by the community if, more efforts is used to improve uptake of the strategy through systematic community sensitization and community dialogue. There would be the need for enhanced public health education on home-based management of malaria and training for chemical sellers to ensure effective use of anti-malaria drugs (Opiyo, 2007; Buabeng et al., 2007; De La Cruz et al., 2007). BCC should stress promptness of healthcare facility visits, improved access to appropriate drugs, and accurate dosing for home-based treatments (Kazembe, 2007). Webber advocated that, if

multiplicity of simple methods is likely to be more successful, there should be community participation and health authorities must advise and assist them in achieving this.

When the understanding of the symptoms of folk illness seems to correspond to biomedical malaria while local epidemiological knowledge departs considerably from the biomedical model, enormous problems confront malaria control efforts. Issues regarding the cause, recognition, treatment and prevention have far-reaching implications for bed-net use. Simply informing communities that mosquitoes cause malaria does not appeal to people. Studies have shown that poor people often spent a larger proportion of household income on malaria prevention than the rich, and mosquito coils were the most common product (Conteh, 2006). BCC needs to move beyond that and inform people why is it that mosquito causes malaria and not other insects. It would require a comprehensive scientific explanation of the complexity of malaria transmission; both the entomology and epidemiology of malaria would have to be explained in simple language for communities to comprehend.

## CHAPTER THREE

### METHODS

#### 3.1 Study Area

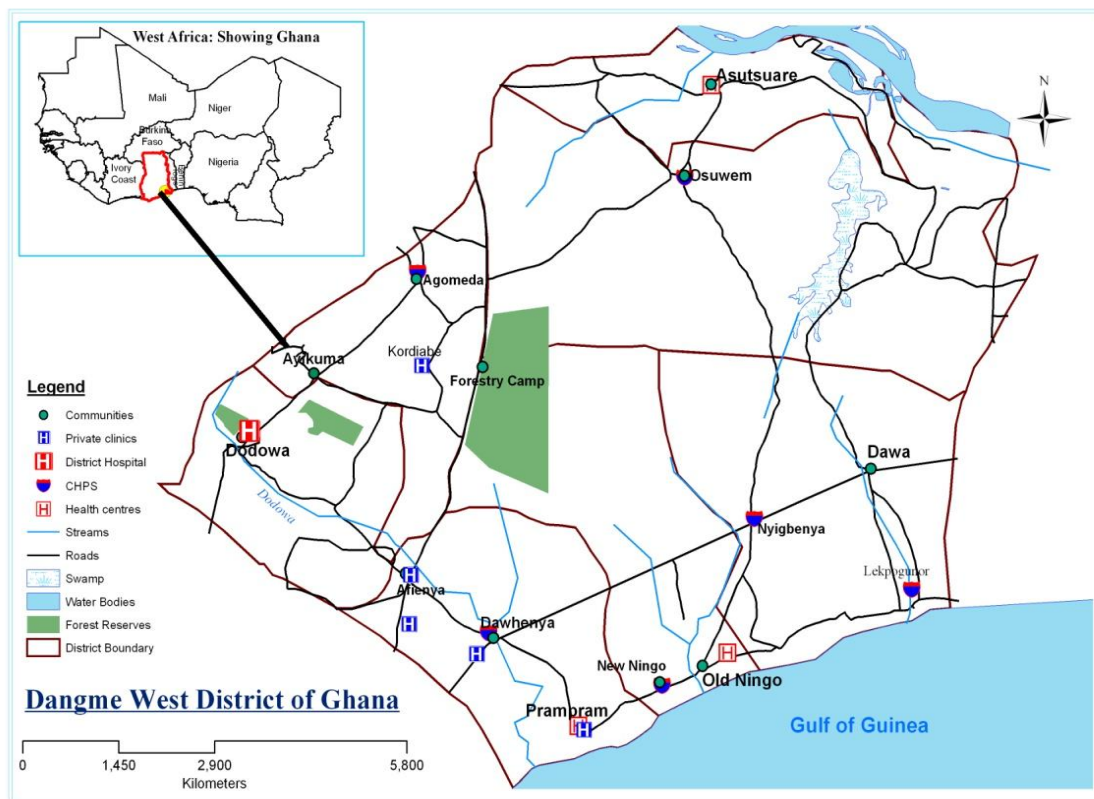
The Dangme-West District is located in the south-eastern part of Ghana, in close proximity to Tema, the country's largest seaport, and Accra, the capital city. The district was carved out of the former Dangme District in 1988 as part of the government's decentralization policy. It is the largest district (about 1700 square kilometers) in the Greater Accra Region and its capital is Dodowa. The district is one of the two rural districts in the Greater Accra region which has not yet been caught up by the rapid urbanization of the peripheral areas surrounding the city of Accra.

The Dangme West district according to GSS (2000) is extremely poor and predominantly rural with both poor socio-economic and infrastructural development (Kpabitey, 1996) making financial access to health quite difficult. The land is flat and at sea level with isolated hills. Among the hills are the ancient "SHAI HILLS" which is a tourist attraction for the region. The district is gifted with rivers, streams and lagoons, with the River Volta flowing along the Osudoku sub-district. The vegetation is mainly coastal savannah.

The district is sparsely populated with most inhabitants living in scattered small communities less than 2000 people, sometimes with very poor road access which gets worse in the rainy season. Pipe-borne water and electricity are only available in a few larger communities. Inhabitants are mainly subsistence farmers, fishermen and petty traders, with a handful of artisans and civil servants, leaving majority of the people migrating to find jobs in the urban centres. Current population is estimated to be 125,348. Dangme West is made up of four sub-districts; Dodowa, Prampram, Great Ningo and Osudoku. Table 3.1 shows the projected

population of Dangme West district for 2006 using a growth rate of 4.4 percent. The district was selected for the study because it is among the first 20 districts that implemented the RBM programme supported by the Global Fund.

**Figure 3.1: Dangme West District Map Showing the Location of Health Facilities**



Source: HRU (2008)

**Table 3.1: Population Projection for Dangme West District Using 4.4% Growth Rate**

Age Group	Population %	District	Sub-districts			
			Dodowa	Prampram	Ningo	Osudoku
Total	100	125348	34569	28762	41690	20327
Child 0-11mths	4	5014	1383	1150	1668	813
Child 12-23 mths	2.21	2770	764	636	921	449
Child 24-59 mths	6.63	8311	2292	1907	2764	1348
Child 5-14 years	22.8	28580	7882	6558	9505	4635
Women 15-49 yrs	28.5	35724	9852	8191	11882	5793
Men 15-49 years	27	33844	9334	7766	11256	5488
Men/Women 50-60	4.58	5742	1584	1318	1910	930
Men/Women 60 <sup>+</sup>	5	6268	1729	1439	2085	1017
Expected Pregnancy	4	5014	1383	1150	1668	813

Source: Annual report (2005)

**Table 3.2 Dangme West District Healthcare Facilities and Staff (2007)**

Sub-district	Name of HCF	Type of HCF	Number of staff
Dodowa	District health directorate	District health administration	19
	Dodowa health centre	Public HCF	54
	Agomeda community clinic	Public HCF	2
	Afiencya community clinic	Private HCF	3
	Grace maternity home	Private HCF	4
	St. Andrews clinic	Private-not-for-profit HCF	6
Prampram	Prampram health centre	Public HCF	33
	Dawhenya community clinic	Public HCF	2
	Godia clinic	Private HCF	4
	Ebenezer clinic	Private HCF	4
Osudoku	Asutuare health centre	Public HCF	20
	Osuwem community clinic	Public HCF	2
Old Ningo	Old Ningo health centre	Public HCF	29
	New Ningo CHPS zone	Public HCF	1
	Nyigbenya community clinic	Public HCF	2

Source: DHD (2007)

### 3.2 Study Design

The study was a cross-sectional exploratory descriptive study of the processes for the management of malaria control activities in the Dangme West based on the conceptual model (Fig 1.3). The study used both quantitative and qualitative methods of data collection in assessing strategic management practice and status of key malaria control programme indicators in the district.

### 3.3 Data Collection tools

The study developed two different questionnaires with both closed and open-ended questions to collect data from healthcare managers and healthcare consumers. In addition two interview guides were developed and used for other healthcare providers and opinion leaders within the district. The questionnaires and interview guides were based on the conceptual framework to generate information from both the healthcare providers and the community as a whole in

order to describe the practice of strategic management and assess status of key malaria control indicators in the district.

The healthcare consumers were involved in the study because the researcher wanted to assess participation of the community in the management of malaria, the perspective of healthcare consumers in the management of malaria by health providers and to validate information collected from the healthcare providers.

### **3.4 Data Collection Technique**

The researcher held semi-structured in-depth interviews with all the healthcare managers both in public and private practice in their HCFs and chemical sellers in their shops because the research tool was technical to the respondents. To support data collected from the healthcare managers, other healthcare providers present were engaged in the interviews. Semi structured interviews of healthcare consumers such as heads of households or guardians, and pregnant women in their homes were carried out. Interviews of opinion leaders (chiefs, assemblymen, head-teachers) were also held using interview guide to ascertain involvement of stakeholders in malaria control.

Furthermore, discussions were held with the district pharmacist, the Global Fund representative of the district and the Public Relation Officer at the district assembly to gather information on managerial support to malaria control. Additionally, there was desk review of annual district reports and documents for the past five years to enrich information for the study.

Thus, there were both healthcare facility and community surveys. The community survey was mainly carried out by research assistants, who went to the communities with a list of potential respondents (their names and house numbers), generated from the demographic surveillance system of the HRU. All the respondents were traced to their homes or offices for the

interviews. The qualitative part of the research tools was used to substantiate information given by the respondents concerning malaria control and to ensure that all factors influencing the programme have been truly identified.

### 3.5 Operational Definition of Variables

**Table 3.3: Operational Definition of Variables**

Study Objective variable is related to	Variable name	Operational definition of variable	Scale of measurement	Data collection tool
Objective 1: To describe the conduct of the situational analysis phase of strategic planning in the district.	Vision of NMCP	Knowledge of the vision of NMCP	Nominal	Questionnaire for Healthcare managers
	Mission of malaria	Communication of mission of malaria by healthcare providers to clients	Nominal 1=all the time 2=most of the time 3=sometimes 4=never	Questionnaire for healthcare managers
	Goals of malaria control program	Selection of goals developed by the facility for the program	Nominal 1=most important 2=more important 3=important 4=not important	Questionnaire for healthcare managers
Objective 2: To describe the planning process of malaria control in the Dangme West district.	Process of planning	Process of planning used for malaria control activities – how did you fit a measurement to this? Did you develop some kind of indicator or what?	Nominal 1=Formal process 2=Informal process 3=combined process	Questionnaire for healthcare managers
	Application of plans	Amount of plans applied for malaria control by the facility – not clear	Discrete: 1 = 80+ 2 = 60-79 3 = 40-59 4 = 20-39 5 = below 20	Questionnaire for healthcare managers
	Duration of plans	Duration of plans for the healthcare facilities – not clear	Discrete: 1= 1 year 2 = 2 years 3 = 5 years 4 = Other (specify)	Questionnaire for healthcare managers
	Frequency of planning meetings	Frequency of planning meetings for the healthcare facilities	Nominal 1 = Annually 2 = Semi-annually 3 = Quarterly 4 = Monthly	Questionnaire for healthcare managers
	Tools used for the planning process	Selection of tools used by the facilities for their planning	Nominal 1 = Information tech. 2 = Scenario building 3 = Consultants 4 = Make reference 5 = Use objectives 6 = SWOT analysis 7= Community assessment	Questionnaire for healthcare managers

			8 = Other (specify)	
Objective 1: To describe the conduct of situational analysis phase of the strategic planning in the district.	Environmental factors	Environmental factors analyzed by the facilities to identified opportunities and threat	Nominal 1 = all the time 2 = most of the time 3 = sometimes 4 = never	Questionnaire for healthcare managers
	Opportunities	Opportunities within the environment that enhance the implementation of malaria control activities.	Nominal	Questionnaire for healthcare managers
	Threats	Threats within the environment that may pose a challenge to malaria control activities	Nominal	Questionnaire for healthcare managers
	Type of self assessment	Type of self assessment carried out by the facilities in identifying strengths and weaknesses	Nominal 1 = Occupancy rate 2 = Govt. assessment 3 = Market share 4 = Study the gap 5 = Benchmarking 6 = Perception testing	Questionnaire for healthcare managers
	Facility weaknesses	Weaknesses identified by the facility self assessment	Nominal 1 = inadequate staff 2 = quality of staff 3=inadequate logistic 4 = no definite plan 5=inadequate finance 6=lack coordination 7=inadequate motivation of staff 8=insensitive attitude of staff 9 = infrequent IST 10=unavailability of anti-malarias	Questionnaire for healthcare managers
	Strengths	Strengths identified within the facility that could be used to take advantage of opportunities within the environment.	Nominal	Questionnaire for healthcare managers
	Community assessment	Methods of community assessment used by the healthcare facilities	Nominal	Question for healthcare managers
	Key partners	Key partners involved in the planning process and the extent of their involvement	Nominal	Questionnaire for healthcare managers
	Managerial activities	Activities held by healthcare managers	Nominal 1 = all the time 2 = most of the time 3 = sometimes 4 = never	Questionnaire for healthcare managers
Objective 3: To describe implementation of	Staff training	Staff of the facilities trained in the principles and strategies of NMCP	Nominal: 1 – Yes 2 – No	Questionnaire for healthcare managers

<p>NMCP strategies in the district.</p> <p>Objective 3: To describe implementation of NMCP strategies in the district.</p>	Frequency of in-service training	Number of in-service training organized for staff	Discrete	Questionnaire for healthcare managers
	Availability of adequate number of staff	Availability of adequate number of clinical staff by the healthcare facilities	Nominal: 1 – Yes 2 – No	Questionnaire for healthcare managers
	Systems for appropriate response and referral	Systems developed by the healthcare facilities to ensure appropriate response and referral	Nominal	Questionnaire for healthcare managers
	Measures to ensure quality of care	Measures identified by the healthcare facilities to ensure quality of care	Nominal	Questionnaire for healthcare managers
	Multiple strategies of malaria control	Multiple strategies adopted by the healthcare facility to reduce incidence of malaria	Nominal	Questionnaire for healthcare managers
	Partners involved in promotion	Partners involved in the promotion of Malaria control activities	Nominal	Questionnaire for healthcare managers
	Measures to monitor clients' concern	Measures put in place by the facility to monitor clients' concern	Nominal	Questionnaire for healthcare managers
	Improvement of home-based care	Efforts made in the development, sustenance and improvement of home-based care.	Nominal	Questionnaire for healthcare managers
	Competitive edge	Efforts made in compelling the communities in using the HCF	Nominal	Questionnaire for healthcare managers
	Multiple strategies	Multiple strategies adopted to reduce the occurrence of malaria.	Nominal 1=promotion of ITNs 2=liaise with Dist. Assembly for BCC 3=encourage drainage, mosquito Proof , gen. sanitation 4=admin of IPT 5=residual spraying 6=larviciding 7 = other (specify)	Questionnaire for healthcare managers
	Constraints	Constraints hindering the efforts of malaria control within the community	Nominal 1-inadequate staff 2-inadequate finance 3-inadequate resources 4-uncommitted staff 5-uncommitted community 6-other (specify)	Questionnaire for healthcare managers
	Resistance to change	Resistance faced by the healthcare managers in the implementation of malaria control	Nominal 1-face much resistance 2-face little resistance 3-face no resistance	Questionnaire for healthcare managers
Averting	Strategies adopted by the	Nominal	Questionnaire for	

Objective 3: To describe implementation of NMCP strategies in the district.	resistance to change	healthcare managers to avert resistance	1-involvement of staff 2-motivation of staff 3-acknowledging stakeholders 4-other (specify)	healthcare managers
	Factors impacting on implementation	Factors identified by healthcare managers/providers to impact on implementation.	Nominal 1-most important 2-important 3-least important	Questionnaire for healthcare managers
	Type of culture	Types of culture adopted by the healthcare managers	Nominal 1-very rigid culture 2-rigid culture 3-neutral culture 4-flexible culture 5-very flexible culture	Questionnaire for healthcare managers
	Leadership style	Leadership style adopted by healthcare managers	Nominal 1-management team 2-combined style 3-coordinator and management 4-autocratic 5-liaiser-faire	Questionnaire for healthcare managers
	Mode of implementation	How the healthcare managers /providers carry out activities	Nominal 1-assignment of resp. 2-establish staff relationship 3-trust and open communication 4-delegation of authority 5-other (specify)	Questionnaire for healthcare managers
	Availability of motivation	Whether there are various forms of motivation available to staff	Nominal: 1 – Yes 2 – No	Questionnaire for healthcare managers
	Structure	Structures formal or informal created or maintained to enhance implementation.	Nominal	Questionnaire for healthcare managers
	Partnership	How partnership is being managed to enhanced implementation.	Nominal	Questionnaire for healthcare managers
Objective 4: To assess systems designed for monitoring and evaluation of malaria control activities within the district.	Types of quality control	Forms of quality control measures available to HCF to ensure client satisfaction	Nominal	Questionnaire for healthcare managers
	Frequency of control process	The frequency of control mechanisms facilitated by the healthcare managers	Nominal 1 – annually 2 – semi-annually 3 – quarterly 4 – monthly 5 – immediate	Questionnaire for healthcare managers
	Feedback approach	The mode feedback approach used by healthcare managers to enhance	Nominal 1 – all the time 2 – most of the time	Questionnaire for healthcare managers

Objective 4: To assess systems designed for monitoring and evaluation of malaria control activities within the district.		commitment.	3 – sometimes 4 – never	
	Indication of reduction in the incidence of malaria	Healthcare managers are to indicate whether incidence of malaria has increased or decrease.	Nominal: 1 – Yes 2 – No	Questionnaire for healthcare managers
	Impact of NMCP strategies	Impact on the morbidity and mortality related to malaria.	Nominal	Questionnaire for healthcare managers
	Drugs used for malaria	Drugs used for the treatment of malaria by healthcare providers.	Nominal	Questionnaire for healthcare managers
Objective 5: To describe the current status of key malaria control program indicators in district.	Definition malaria	Brief meaning of malaria by healthcare consumers	Nominal	Questionnaire for healthcare consumers
	Causes of malaria	Healthcare consumers are to identify causes of malaria	Nominal 1 – mosquitoes 2 – don't know 3 – dirty environment 4 – sun 5 – stagnant water 6 – oily foods	Questionnaire for healthcare consumers
	Knowledge of signs and symptoms	Indicate how signs and symptoms are recognized early by healthcare consumers	Nominal 1 – fever/chills 2 – headaches 3 – malaise 4 – vomiting 5 – diarrhoea 6 – refusal of food 7 – convulsion 8 – dizziness 9 – yellow eyes	Questionnaire for healthcare consumers
	Home-base care	How malaria is managed at home by healthcare consumers	Nominal 1-giving of fluids 2-giving anti-malaria 3-sponging child 4-nothing 5-giving trad. Med. 6-rush child to HCF 7-other (specify)	Questionnaire for healthcare consumers
	Transfer of cases to healthcare facilities	When cases are taken to HCF for further management	Nominal	Questionnaire for healthcare consumers
	Drugs for treating malaria	Mention of drugs used in the treatment of malaria by healthcare consumers	Nominal 1 – Amodiaquine 2 – Artesunate 3 – Chloroquine 4 – Local preparation 5 – Herbs 6–Orthodox medicine	Questionnaire for healthcare consumers
	BCC on malaria	Whether the healthcare consumer have had training on malaria. What they learnt.	Nominal: 1 – Yes 2 – No	Questionnaire for healthcare consumers
	Knowledge of ITNs	Whether healthcare consumers have heard about	Nominal: 1 – Yes	Questionnaire for healthcare consumers

Objective 5: To describe the current status of key malaria control program indicators.		ITNs	2 – No	
	Origin of ITN information	Healthcare consumer to declare where they first had information on ITNS	Nominal 1 – HCF 2 – Media 3 – Market 4 – Friends/relatives 5 – Other (specify)	Questionnaire for healthcare consumers
	Availability of ITNs	Whether the households have ITNs	Nominal: 1 – Yes 2 – No	Questionnaire for healthcare consumers
	Acquisition of ITNs	Where the ITN was acquired by the household	Nominal 1 – market 2 – drug/chem. shop 3 – HCF 4 – Philanthropist 5 – NGOs 6 – Other (specify)	Questionnaire for healthcare consumers
	Use of ITNs	Whether the household uses ITNs	Nominal: 1 – Yes 2 – No	Questionnaire for healthcare consumers
	Use of ITNs	Members of the household who sleep in the ITNs	Nominal 1 – husband 2 – wife 3 – children above 5 4 – children under 5 5 - pregnant women 6 – other (specify)	Questionnaire for healthcare consumers
	Prevention of malaria	Healthcare consumer is to indicate strategy used in preventing malaria	Nominal 1-sleep in ITN 2-mosquito proof 3-drainage 4-general sanitation 5-larviciding 6-residual spraying 7-anti-malaria drugs 8-mosquito coils 9-other (specify)	Questionnaire for healthcare consumers
	Re-treatment of nets	Whether the healthcare consumer knows how to re-treat nets	Nominal: 1 – Yes 2 – No	Questionnaire for healthcare consumers
	Reception at the HCF	Whether household receive prompt attention at the HCF	Nominal: 1 – Yes 2 – No	Questionnaire for healthcare consumers
	Attitude of healthcare providers	Healthcare consumer to declare attitude of healthcare providers	Nominal: 1 – Very satisfactory 2 – Satisfactory; 3 – Fair; 4 – Poor; 5 – Very poor	Questionnaire for healthcare consumers
	Behaviour of healthcare providers	How healthcare providers behave during emergencies	Nominal: 1 – Professional 2 – Non-professional	Questionnaire for healthcare consumers
	Knowledge of IPT	Knowledge of IPT by the pregnant woman	Nominal: 1 – Yes 2 – No	Questionnaire for pregnant women
	Acquisition of knowledge	Where knowledge of IPT was acquired	Nominal: 1 – health staff 2 – CBAs; 3 – TBA	Questionnaire for pregnant women

Objective 5: To describe the current status of key malaria control program indicators.			4 – Relative/friend; 5 - Media	
	Name of drug	Mention name of drug used as IPT by pregnant woman	Nominal: 1–Sulphurdoxine Pyrimethamine; 2 – Folic acid 3 – Iron; 5 – Other (specify)	Questionnaire for pregnant women
	Use of SP	Use of SP by the pregnant woman	Nominal: 1 – Yes 2 – No	Questionnaire for pregnant women
	Course of IPT	Number of courses pregnant women was given IPT	Nominal: 1 – IPT1 only 2 – IPT 1 and IPT 2 3 - IPT1, IPT2 and IPT 3 4 – Other (specify)	Questionnaire for pregnant women
	Advantages of SP	Advantages of SP realized by pregnant women	Nominal	Questionnaire for pregnant women
	Additional dose	Preparedness to take more doses of SP by the woman	Nominal: 1 – Yes 2 – No	Questionnaire for pregnant women
	Adverse effects	Side effects developed by the woman after taking SP	Nominal: 1 – Yes 2 – No	Questionnaire for pregnant women
	Adverse effects	Mention side effects developed by the woman	Nominal: 1 – Vomiting 2 – Nausea; 3 – Itching 4 – Skin rashes 5 – Other (specify)	Questionnaire for pregnant women
	Malaria episodes	Number of malaria episodes developed by the pregnant woman	Discrete	Questionnaire for pregnant women
	Episodes of malaria	Did the episodes of malaria developed by the woman occur after taking SP?	Nominal: 1 – Yes 2 – No	Questionnaire for pregnant women
	Drug use	Type of drug used for the treatment	Nominal 1-Amodiaquine 2-Artesunate	Questionnaire for pregnant women
	Adverse effects	Side effects developed after the medication	Nominal: 1 – Yes 2 – No	Questionnaire for pregnant women
	Involvement of Opinion leaders	Involvement of opinion leaders in the management of malaria control	Nominal	interview guide for opinion leaders
	Perception of healthcare delivery	Perception of healthcare delivery by opinion leaders towards malaria control in the community.	Nominal	Interview guide for opinion leaders
	Collaboration	Collaboration between the HCF and opinion leaders	Nominal	Interview guide for opinion leaders
Modification	Modification put in place by opinion leaders to help reduce incidence of malaria.	Nominal	Interview guide for opinion leaders	
Singular achievement	Singular achievement towards malaria control in	Nominal	Interview guide for opinion leaders	

		the community.		
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### 3.6 Study Population

The study population for the two surveys was all persons who provide and utilize healthcare services and resides in the Dangme West district.

#### Healthcare Facility Survey study population was:

- ✚ All members of the DHD in the Dangme West district; and
- ✚ All healthcare providers in both public and private healthcare facilities, and all chemical sellers in the Dangme West district.

#### Community Survey study population was:

Community survey was carried out to ascertain the status of key malaria programme indicators, and to validate and/or reconcile data collected from the healthcare providers especially the healthcare managers and to assess the involvement of stakeholders in the control and management of malaria. It was also to assess the extent to which the healthcare consumers recognized or appreciated the efforts of the healthcare providers in the management of malaria.

- ✚ All healthcare consumers particularly pregnant women and families with under fives children in the Dangme West district;
- ✚ All opinion leaders namely the public relations officer of the Dangme West district assembly, assemblymen, heads of educational units, chiefs, elders, and heads of NGOs in the Dangme West.

### 3.7 Sample Size Calculation of Healthcare Consumers and Pregnant Women

The sample size for healthcare consumers and pregnant women was calculated using the formula (Daniel, 1999; Cochran, 1977) below.

Thus:

$$n = \frac{Z^2_{1-\alpha/2} \cdot p(1-p)}{d^2} \times \text{deff}$$

Where: n = sample size

Z = z score at  $1-\alpha/2$  confidence level

P = the estimate of the proportion of the population that has a particular characteristic.

d = largest difference of the estimated proportion that could be accepted in the research

deff = design effect which is always between 1 – 2.

The study assumed that at least about 90% of the inhabitants of Dangme West used either the HCFs or the chemical shops. Hence p was assumed to be 90%. The study also assumed a confidence level of 90% and acceptable margin of error was 5%. Since the population size is large that is 125,348 (projected population of the district of 2006 using a growth rate of 4.4%) no adjustment was made.

Thus:

$$\begin{aligned} n &= \frac{(1.6445)^2 \times 90\% (1 - 90\%) \times 2}{(5\%)^2} \\ &= \frac{(1.6445)^2 \times 0.9 (1 - 0.9) \times 2}{(0.05)^2} \\ &= 194.7 \\ &\approx 195 \end{aligned}$$

However for purposes of generalization, the sample size was increased to 400 but the study was able to interview 385 respondents.

For the pregnant women, using the above model, the study assumed that at least 80% of all pregnant women will visit the ante-natal clinic during pregnancy, so p = 80%. The margin of error was assumed to be 10%. Confidence interval was assumed to be 90% and a population of 5014 (expected pregnancy using a growth rate of 4.4 percent).

Thus,

$$\begin{aligned} n &= \frac{(1.6445)^2 \times 0.8(1 - 0.8) \times 2}{(0.1)^2} \\ &= 86.5 \end{aligned}$$

≈ 87

Thus the study interviewed 100 respondents to make it more representative.

### **3.8 Sampling**

#### **Healthcare Facility Survey:**

✚ Purposive sampling was used to interview other healthcare providers from all the healthcare facilities to support information acquired from the healthcare managers. Healthcare providers present at the time of interviews were interviewed together with the healthcare managers in the clinical settings. Whereas in-depth interviews were carried out with all the healthcare providers present at a round table in all the public (10) healthcare managers' consulting rooms to fill in the vague responses from the managers and to give reality to the efforts by providers in curbing the menace of malaria. In all the private healthcare facilities (5), the in-depth interview was carried out with only the healthcare managers in their consulting rooms.

✚ Again purposive sampling was used to select 17 chemical sellers out of 25 chemical shops from the communities selected for the study due to the vast nature of the district and money constraints. The list of chemical shops in the district was collected from the president of the chemical sellers association in his pharmacy shop at Dodowa. The researcher therefore, traveled around the whole district searching for chemical sellers and was able to have in-depth interviews with those who were available, discerning and could give appreciable answers to the contextual questions. Those who couldn't participate were shop assistant or attendants who could barely write and/or had little or no knowledge on current trends in malaria control practices.

#### **Community Survey:**

✚ Multistage cluster sampling was used to select healthcare consumers and pregnant women for the study:

1. 21 communities were conveniently selected from all the four sub-districts because of the vast nature and terrain of the district and inadequate finance, with the assistance of the district director of nursing services. At least five easily accessible communities were selected from each of the sub-districts.
2. Inclusion criterion for the households was that the family should be made up of at least three members one of whom must be under five years in the household (preferably a family made up of at least a guardian, who can be a father or mother and children). This was to find out the family's perception on the efforts of healthcare providers on malaria control. This criterion and the selected communities were used to generate names from the computer.
3. Using the Demographic Surveillance System (DSS) developed by the Dodowa Research centre, 400 households were selected by keying into the computer, the inclusion criteria, name of the selected community and the number of respondents needed. The computer then randomly generated names and house numbers of the healthcare consumers. Twenty (20) respondents were then systematically selected from each of the communities. Thus, armed with these names and house numbers, the research assistants were able to trace and interview the healthcare consumers.
4. 385 households could be traced and interviewed for the study.

### **Pregnant Women**

1. Again using the Demographic Surveillance System, 120 pregnant women were generated from the same communities by the same process.

2. However, only 100 pregnant women could be traced and interviewed for the study.
3. Inclusion criteria were that the woman should either be at least six months pregnant or have delivered at most two month ago.

Pregnant women and under fives were the focus for the study because NMCP had special packages for these two groups. It was therefore important to assess the impact of malaria control using these groups of people.

### **Opinion Leaders**

Purposive sampling was used to also interview 11 opinion leaders made up of chiefs, elders, head-teachers, and assemblymen in the selected communities for the study. Research assistants were urged to interview opinion leaders of all selected communities for the assessment of involvement of stakeholders in malaria control.

### **3.9 Sources of Data**

Data was generated from both primary and secondary sources. Primary sources were data from survey of both healthcare facilities and communities. Secondary sources were desk top review of healthcare facilities' books, district's health annual reports, journals, textbooks, etc.

### **3.10 Recruitment and Training of Data Collectors**

Twelve experienced research assistants who had varying experiences and skills in data collection and one supervisor were recruited from the Health Research Unit and trained for data collection after which ten research assistants were selected. The principal investigator doubled as supervisor and interviewer for the in-depth interviews of the healthcare managers. During the two-days training, both the interviewers and supervisor were introduced to the data collection tools and were allowed to make alterations to the data collection tools.

Role plays were carried out in vernacular for all interviewers to appreciate the substance of the research instrument. After training, they proceeded to pre-test the data collection tools in the Dodowa Township. The pre-test exercise provided the opportunity and ample time for necessary instruments review on potential field difficulties or ambiguous questions before actual data collection began.

### **3.11 Data Quality Control Measures**

To ensure data quality, due consideration was given to research objectives in designing the instruments. Thus, questionnaires and interview guides that reflected and captured the needed information for the various objectives were developed.

Research assistants and supervisors were recruited and trained as well as pre-testing of instruments. Data was collected from the healthcare managers by the same person to ensure that accurate information was generated for the study. Thus, the research tool was extensively explained to the healthcare managers to appreciate the substance of strategic management.

The supervisor also doubled as field editor and helped minimize human errors by periodically checking research instruments for consistency. For reliability purposes, some completed questionnaires were picked at random and re-administered by the field supervisor to the same respondents. Data editing and verification were run before data entry into the computer to ensure that errors were minimized before analysis.

### **3.12 Data Analysis**

Analysis of data was both qualitative and quantitative using the SPSS 12.0.1 for Windows, (2003) and Epi-info <sup>TM</sup> version 3.3.2 for windows, (2005). Qualitative data was analyzed manually by grouping, themes, sub-themes and trends after collating all data. After the

questionnaires have been checked for consistency, they were coded and entered primarily into both Epi-info and SPSS. The Epi-info data was later transferred into the Excel Spreadsheet then to SPSS software for analysis using a number of descriptive statistical techniques such as, cross tabulation, simple frequency tables, means, bar charts and pie chart to describe the various dimensions of the SM process and status of key malaria control indicators. Results were equally generated from Epi-info, SPSS and Excel.

### **3.13 Ethical consideration**

At the district, consent was sought from all those who were involved in the study particularly from the DHA, chiefs and opinion leaders of the selected communities and the district assembly. Confidentiality and anonymity was maintained throughout the study.

### **3.14 Utility of the Study**

Results would be presented to the DHMT and the district will be urged to consider the recommendations made to the district directorate. Findings would also be presented to NMCP to help promote the practice in other district. Findings would also be published.

### **3.15 Institutional support for the study**

The study had the support of the Dodowa Health research centre, in the selection of research assistants and supervisor, as well as selection of respondents for the study using the District Surveillance System.

## CHAPTER FOUR

### RESULTS AND FINDINGS

#### 4.1 Introduction

The purpose of this chapter was to present the results of the assessment of the strategic management practice for malaria control in the Dangme West district. The analysis covered all the questionnaires and question guides used in gathering data from healthcare managers, healthcare consumers, opinion leaders and pregnant women. The data has been analyzed to address the core issues and objectives of the study, which were to describe the conduct of situational analysis phase of the strategic planning; to assess the planning process of malaria control in the district; to describe strategies used in the implementation of NMCP strategies in the district; to evaluate systems designed for monitoring and evaluation of malaria control activities within the District; and to assess the status of the key malaria control indicators in the district.

For the qualitative data, quotations from participants were used to highlight the themes of the study and pseudonyms were also used to personalize the quotations to ensure confidentiality and to protect the identity of the participants.

#### 4.1.1 Description of Samples

##### 4.1.1.1 Demographic Characteristics of Healthcare Managers

Table 4.1 is a summary of demographic characteristics of healthcare managers who participated in the study. Out of the 32 healthcare managers 16 (50.0%) were chemical sellers, whereas, 8 (31.3%) were nurses, 34.7% of the healthcare managers were beyond the age of 50 years.

**Table 4.1 Demographic Characteristics of Healthcare Managers**

<b>Profession</b>	<b>Type of healthcare facility</b>			<b>Total (n=32)</b>
	<b>Public(n=10)</b>	<b>Private(n=5)</b>	<b>Chemical shop (n=17)</b>	
Medical officer	1 (50.0%)	1 (50.0%)	-	2 (6.3%)
Nurse	8 (80.0%)	2 (10.0%)	-	10 (31.3%)
Medical assistants	1 (50.0)	1 (50.0%)	-	2 (6.3%)
Community attendant	-	1 (100%)	-	1 (3.1%)
Pharmacy technician	-	-	1 (100%)	1 (3.1%)
Chemical sellers	-	-	16 (100%)	16 (50.0%)
<b>Sex</b>				
Female	9 (69.2%)	2 (15.4%)	2 (15.4%)	13 (40.6%)
Male	1 (5.3%)	3 (15.8%)	15 (78.9%)	19 (59.4%)
<b>Age group</b>				
20 – 29	-	-	4 (100%)	4 (12.5%)
30 – 39	2 (28.6%)	-	5 (71.4%)	7 (21.9%)
40 – 49	3 (30.0%)	1 (10.0%)	6 (60.0%)	10 (31.3%)
50 – 59	5 (55.6%)	2 (22.2%)	2 (22.2%)	9 (28.1%)
60 – 69	-	2 (100%)	-	2 (6.2%)
<b>Additional qualification</b>				
Certificate in management	2 (50.0%)	2 (50.0%)	-	4 (12.5%)

Source: Healthcare facility survey (2007)

#### 4.1.1.2 Demographic Characteristics of Healthcare Consumers

A total of 385 households were selected for the healthcare consumer sample, these respondents were adults responsible for the care and management of the household. Almost all the healthcare consumers 380 (98.7%) were females with only 5 (1.3%) being male. The age range of healthcare consumers was between 15 to 73 years, with the mean age being 30.86 years. Majority of the healthcare consumers were within the age groups of 21 – 30; 202 (52.5%) and 31 – 40; 124 (32.2%). More than three quarters of healthcare consumers 274 (76.4%) were employed while almost a quarter 91 representing 23.6% were unemployed. 179 (46.5%) of the healthcare consumers were traders, they were the majority and represented 71.2% of the working population, and artisans represented 18.2% (70) with farmers representing 8.1% (31) respectively. Again, among the economically active healthcare consumers, the least 1 (0.3%) was from the health sector. Although nearly 82% of healthcare consumers have been to school, less than 8% (30) did attain post secondary education. Majority of the healthcare consumers have attained primary 102 (26.5%) and middle/junior

secondary levels 181 (47.0%). 18.7% (72) of the healthcare consumers have never been to school. As expected, the educational background of healthcare consumers correlated with the sort of economic activities majority were engaged in; artisans (18.2%), farmers (8.1%) and trading (46.5%).

**4.1.1.3 Demographic Characteristics of Pregnant Women**

Table 4.2 is a description of demographic characteristics of pregnant women who participated in the study. Largely the educational background of the women was low, just 8% had secondary education.

**Table 4.2 Demographic Characteristics of Pregnant Women**

	Age group					Total
	15–20	21 –25	26 – 30	31 – 35	36 – 40	
<b>Occupation</b>						
Unemployed	14	12	4	0	0	30
Farmer	2	1	0	0	1	4
Fishmonger	0	0	0	0	1	1
Trader	8	18	15	6	0	47
Civil servant	0	1	1	1	0	3
Artisan	1	7	3	3	1	15
<b>Gestational age/time after delivery</b>						
6	3	7	0	1	1	12
7	3	7	5	3	0	18
8	2	8	4	3	1	18
9	7	8	7	1	0	23
10	9	7	7	2	1	26
11	1	2	0	0	0	3
<b>Educational attainment</b>						
SSS/"O" & "A" Level	3	0	4	1	0	8
JSS/Middle school	12	24	14	8	3	61
Primary	8	11	3	0	0	22
No education	2	4	2	1	0	9
<b>Total</b>	<b>25</b>	<b>39</b>	<b>23</b>	<b>10</b>	<b>3</b>	<b>100</b>

Source: Community Survey (2007)

**4.2 Objective 1: To Describe the Conduct of the Situational Analysis Phase of Strategic Planning in Dangme West.**

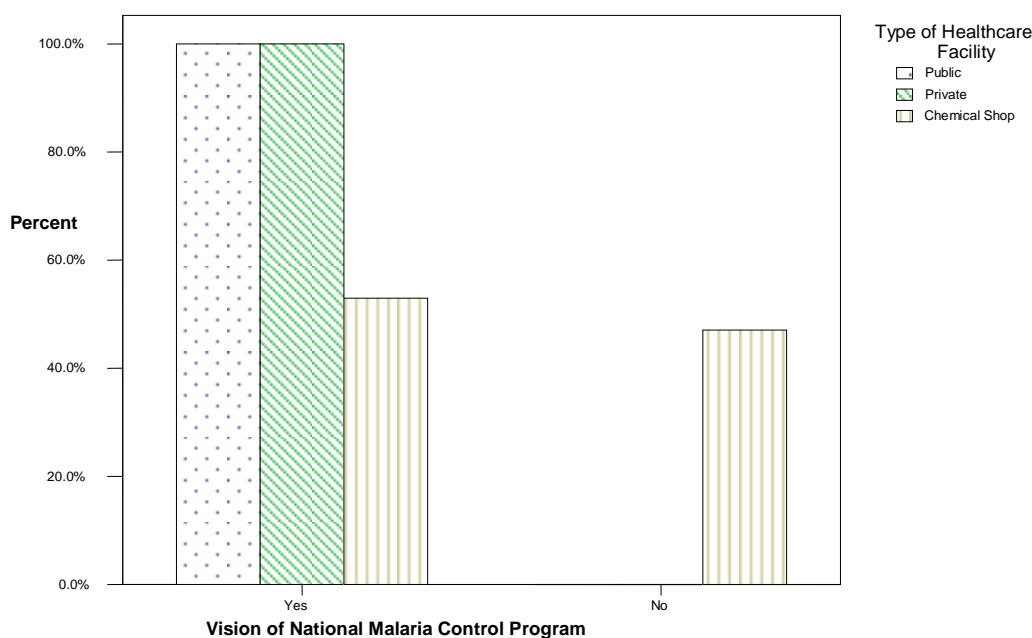
The conduct of the situational analysis involved both internal and external analysis of the HCFs and is the building blocks of strategic planning for managing malaria control activities

in the district. Information presented below informs the healthcare managers on the strengths and weaknesses of their HCFs and the opportunities and threats within their environments. This is used to formulate strategies towards management of malaria control within the district.

#### 4.2.1 The Vision of National Malaria Control Program

Out of 32 healthcare managers interviewed, all the 10 in the public HCFs representing 41.7 percent could state the vision of NMCP, again, all 5 (20.8%) in the private HCFs knew about the vision of NMCP. Whereas, out of the 17 chemical sellers interviewed, 9 (52.9%) knew the vision of NMCP (Figure 4.1).

**Figure 4.1 Vision of National Malaria Control Program**



**Source: Healthcare Facility Survey (2007)**

Vision of the healthcare facilities was found displayed in only 2 facilities and it was a replica of the vision of the parent organization.

#### 4.2.2 Operational Strategy for Malaria Control

Though an operational strategy hasn't been developed by many of the healthcare managers, but because malaria is a household or common disease, intuitively they effectively communicated their ideals through the following strategies. Out of the 32 healthcare managers, only 5 (15.6%) have developed operational strategies for the control of malaria. None of the 17 chemical sellers have developed operational strategies for malaria control because they were interested only in selling their drugs and not particularly interested in any one disease condition. Operational strategies developed by the healthcare managers for management of malaria vividly expressed the intent of management towards healthcare delivery. The healthcare managers acknowledged their desire to give quality care to their clients, ensuring that all the tenets of NMCP were strengthened. The operational strategy of malaria control was given by Miss Cee healthcare manager in a private-not-profit facility as:

To provide quality care in the most effective and innovative manner especially in the areas of curative, preventive and promotive health care to the community we serve at all times acknowledging the dignity of the patient;

Similarly, Madam Aggie, healthcare manager of public healthcare facility stated:

To give quality care, education and effective management, and to ensure all cases are treated with Artesunate-Amodiaquine and encouraged children under five and pregnant women to sleep in ITNs.

Communication of operational strategies has been outlined below and the media was sparingly used as compared to the other mediums of communication.

**Table 4.3 Communication of Operational Strategies**

Medium	Type of HCF	All the time	Most of the time	Sometimes	Never
Word of mouth	Public (10)	8 (80%)	1 (10%)	1 (10%)	0
	Private (5)	3 (60%)	1 (20%)	1 (20%)	0

	Chemical shops (17)	11 (64.7%)	3 (17.6%)	2 (11.8%)	1 (5.9%)
Direct service	Healthcare managers (15)	9 (60%)	4 (26.7%)	2 (13.3%)	0
	Chemical shops (17)	2 (11.8%)	4 (23.5%)	2 (11.8%)	9 (52.9%)
Through staff	Healthcare managers (15)	8 (53.3%)	3 (20.0%)	1 (6.7%)	3 (20.0%)
	Chemical shops	3 (17.6%)	0	1 (5.9%)	13 (76.5%)
Through patients	Healthcare managers (15)	4 (26.7%)	2 (13.3%)	7 (46.7%)	2 (13.3%)
	Chemical shops (17)	2 (11.8%)	0	3 (17.6%)	12 (70.6%)
Through media	Healthcare managers (15)	1 (7.7%)	0	3 (13.3%)	11 (73.3%)
	Chemical shops (17)	0	0	0	17 (100%)

Source: Healthcare Facility survey (2007)

#### 4.2.3 Objectives for the Management of Malaria Control Activities in the district

The NMCP have designed a set of objectives to ensure uniformity in the organization, coordination and implementation of the activities of malaria control within the districts. The table below indicates keen interest of healthcare managers in both public and private HCFs in meeting these objectives. The implementation of these objectives was ardently supervised by the district health administration regularly.

**Table 4.4: Objectives for the Management of Malaria Control Activities**

<b>Respondents</b>	<b>Most important</b>	<b>More important</b>	<b>Important</b>	<b>Unimportant</b>	<b>Total</b>
<b>Providing Quality Care</b>					
Healthcare managers	12 (37.5%)	2 (6.3%)	1 (3.1%)	-	15 (46.9%)
Chemical sellers	2 (6.3%)	4 (12.5%)	1 (3.1%)	10 (31.3%)	17 (53.1%)
<b>Creating Patient Access</b>					
Healthcare managers	9 (28.2%)	3 (9.4%)	1 (3.1%)	2 (6.2%)	15 (46.9%)
Chemical sellers	1 (3.1%)	1 (3.1%)	4 (12.5%)	11 (34.4%)	17 (53.1%)
<b>Improved Case Management</b>					
Healthcare managers	11 (34.4%)	2 (6.2%)	1 (3.1%)	1 (3.1%)	15 (46.9%)
Chemical sellers	3 (9.4%)	1 (3.1%)	2 (6.3%)	11 (34.4%)	17 (53.1%)
<b>Multiple Prevention</b>					
Healthcare managers	13 (40.6%)	-	1 (3.1%)	1 (3.1%)	15 (46.9%)
Chemical sellers	6 (18.8%)	1 (3.1%)	2 (6.3%)	8 (25.0%)	17 (53.1%)
<b>Improved Partnership</b>					
Healthcare managers	8 (25.0%)	2 (6.2%)	-	5 (15.6%)	15 (46.9%)
Chemical sellers	-	5 (15.6%)	2 (6.3%)	10 (31.3%)	17 (53.1%)
<b>Innovation</b>					
Healthcare managers	8 (25.0%)	3 (9.4%)	2 (6.3%)	2 (6.4%)	15 (46.9%)
Chemical sellers	1 (3.1%)	1 (3.1%)	1 (3.1%)	14 (43.8%)	17 (53.1%)
<b>Social Responsibility</b>					
Healthcare managers	7 (21.9%)	5 (15.6%)	2 (6.3%)	1 (3.1%)	15 (46.9%)
Chemical sellers	1 (3.1%)	2 (6.3%)	4 (12.5%)	10 (31.3%)	17 (53.1%)
<b>Motivation of Staff</b>					
Healthcare managers	9 (28.2%)	2 (6.3%)	2 (6.3%)	2 (6.3%)	15 (46.9%)
Chemical sellers	1 (3.1%)	2 (6.3%)	3 (9.4%)	11 (34.4%)	17 (53.1%)
<b>Cost Efficiency</b>					
Healthcare managers	6 (18.8%)	4 (12.5%)	2 (6.3%)	3 (9.4%)	15 (46.9%)
Chemical sellers	2 (6.3%)	2 (6.3%)	1 (3.1%)	12 (37.5%)	17 (53.1%)
<b>Effectiveness</b>					
Healthcare managers	10 (31.3%)	4 (12.5%)	-	1 (3.1%)	15 (46.9%)
Chemical sellers	3 (9.4%)	1 (3.1%)	2 (6.3%)	11 (34.4%)	17 (53.1%)
<b>Focused Research and Development</b>					
Healthcare managers	6 (18.8%)	5 (15.6%)	3 (9.4%)	1 (3.1%)	15 (46.9%)
Chemical sellers	2 (6.3%)	1 (3.1%)	3 (9.4%)	11 (34.4%)	17 (53.1%)
<b>Fulfilling Community Needs</b>					
Healthcare managers	12 (37.5%)	1 (3.1%)	1 (3.1%)	1 (3.1%)	15 (46.9%)
Chemical sellers	4 (12.5%)	3 (9.4%)	2 (6.3%)	8 (25.0%)	17 (53.1%)
<b>Meeting NMCP Regulations</b>					
Healthcare managers	8 (25.0%)	2 (6.3%)	4 (12.5%)	1 (3.1%)	15 (46.9%)
Chemical sellers	4 (12.5%)	-	3 (9.4%)	10 (31.3%)	17 (53.1%)
<b>Reduced incidence of morbidity and mortality</b>					
Healthcare managers	12 (37.5%)	-	2 (6.3%)	1 (3.1%)	15 (46.9%)
Chemical sellers	-	-	4 (12.5%)	13 (40.6%)	17 (53.1%)

Source: Healthcare facility survey (2007)

#### 4.2.4 Management Tools Used in the Situational Analysis

The table 4.5 shows that the most common tools used in the planning process were community assessment (68.8%), objectives set by the NMCP (56.3%), SWOT analysis (40.6%), make

reference to previous objectives with some analysis (50.0%), information technology, expert opinion and finally through scenario building. This indicated that management of malaria in the district was both community and NMCP related.

**Table 4.5 Management Tools Used in the Situational Analysis**

Tools	Percentage	Public	Private	Chem. shop
Information technology 32 (100%)	8 (25.0%)			
Scenario building 32 (100%)	3 (10.7%)			
Expert opinion (Consultants)	10 (31.3%)			
Make reference to previous objectives with some analysis	16 (50.0%)	8 (50.0%)	2 (12.5%)	6 (37.5%)
Make use of objectives of NMCP 32 (100%)	18 (56.3%)	9 (50.0%)	4 (22.2%)	5 (27.8%)
SWOT analysis 32 (100%)	13 (40.6%)	7 (53.8%)	3 (23.1%)	3 (23.1%)
<b>Community assessment 32 (100%)</b>	<b>22 (68.8%)</b>	<b>10 (45.5%)</b>	<b>4 (18.2%)</b>	<b>8 (36.4%)</b>

Source: Healthcare facility survey (2007)

Out of the 32 healthcare managers, 56.3 percent (18) used objectives set by the NMCP for their planning process; 9 (50.0 percent) from the public, 4 (22.2 percent) from the private and 5 (27.8 percent) from the chemical sellers. Additionally, out of the 32 healthcare managers, 40.6 percent (13) used the SWOT analysis; 7 (53.8 percent) from the public, 3 (23.1 percent) from the private with 3 (23.1 percent) being chemical sellers. Table 4.5 gives a complete description of tools used in assessing the environment.

#### 4.2.4.1 SWOT Analysis

Table 4.6 shows the environmental factors analyzed by healthcare managers to identify opportunities and threats within their environment. Whereas healthcare managers in both public and private HCFs were really concerned about the socio-economic background of healthcare consumers, ironically the chemical sellers were not bothered. The concept of competition was nonexistent for the healthcare managers, even the chemical sellers who were business entities. I would recount an amazing incident that chanced during the interview of Miss Bee a healthcare manager and her colleague at Osudoku sub-district:

Having just answered in the negative about competition, a drug peddler carrying his wares passed by. The peddler took some time in exchanging pleasantries with the healthcare manager before continuing on his mission. Then I asked her: You claimed there are no competitors here, what about the peddler who just passed by? Is he not offering some form of healthcare? Don't you have chemical sellers around? Are they not treating malaria? All these questions were answered in the affirmative. She then admitted that both the activities of chemical sellers and drug peddlers posed a great challenge for malaria control within the community.

**Table 4.6 Environmental factors used for external auditing**

Type of HCF	Political				Total
	All the time	Most of the time	Sometimes	Never	
<b>Public</b>	4 (57.15)	2 (40.0%)	4 (44.4%)	0 (0%)	10 (31.3%)
<b>Private</b>	3 (42.9%)	1 (20.0%)	1 (11.1%)	0 (0%)	5 (15.6%)
<b>Chemical shop</b>	0 (0%)	2 (40.0%)	4 (44.0%)	11 (100%)	17 (53.1%)
<b>Total</b>	<b>7 (21.9%)</b>	<b>5 (15.6%)</b>	<b>9 (28.1%)</b>	<b>11 (34.4%)</b>	<b>32 (100.0%)</b>
	Socio-economic				
<b>Public</b>	7 (50.0%)	3 (33.3%)	0 (0%)	0 (0%)	10 (31.3%)
<b>Private</b>	3 (21.4%)	1 (11.1%)	1 (50.0%)	0 (0%)	5 (15.6%)
<b>Chemical shop</b>	4 (28.6%)	5 (55.6%)	1 (50.0%)	7 (100%)	17 (53.1%)
<b>Total</b>	<b>14 (43.8%)</b>	<b>9 (28.1%)</b>	<b>2 (6.3%)</b>	<b>7 (21.7%)</b>	<b>32 (100%)</b>
	Regulatory				
<b>Public</b>	6 (42.9%)	1 (33.3%)	1 (42.9%)	0 (0%)	10 (31.1%)
<b>Private</b>	2 (14.3%)	1 (33.3%)	1 (14.3%)	1 (12.5%)	5 (15.6%)
<b>Chemical shop</b>	6 (42.9%)	1 (33.3%)	3 (42.9%)	7 (87.5%)	17 (53.1%)
<b>Total</b>	<b>14 (43.8%)</b>	<b>3 (9.4%)</b>	<b>5 (21.9%)</b>	<b>8 (25.0%)</b>	<b>32 (100%)</b>
	Epidemiology				
<b>Public</b>	7 (58.3%)	0 (0%)	3 (33.3%)	0 (0%)	10 (31.3%)
<b>Private</b>	2 (16.1%)	1 (50.0%)	1 (11.1%)	1 (11.1%)	5 (15.5%)
<b>Chemical shop</b>	3 (25.0%)	1 (50.0%)	5 (55.6%)	8 (88.9%)	17 (53.1%)
<b>Total</b>	<b>12 (38.7%)</b>	<b>2 (6.5%)</b>	<b>9 (28.1%)</b>	<b>9 (28.1%)</b>	<b>32 (100%)</b>
	Stakeholders				
<b>Public</b>	5 (50.0%)	1 (25.0%)	2 (22.2%)	2 (22.2%)	10 (31.3%)
<b>Private</b>	3 (30.0%)	1 (25.0%)	1 (11.1%)	0 (0%)	5 (15.6%)
<b>Chemical shop</b>	2 (20.0%)	2 (50.0%)	6 (66.7%)	7 (77.8%)	17 (53.1%)
<b>Total</b>	<b>10 (31.3%)</b>	<b>4 (12.5%)</b>	<b>9 (28.1%)</b>	<b>9 (28.1%)</b>	<b>32 (100%)</b>
	Competitors				
<b>Public</b>	5 (45.5%)	2 (33.3%)	1 (33.3%)	2 (16.7%)	10 (31.3%)
<b>Private</b>	3 (27.3%)	1 (16.7%)	0 (0%)	1 (8.35%)	5 (15.6%)
<b>Chemical shop</b>	3 (27.3%)	3 (50.0%)	2 (66.7%)	9 (75.0%)	17 (53.1%)
<b>Total</b>	<b>11 (34.4%)</b>	<b>6 (18.8%)</b>	<b>3 (9.4%)</b>	<b>12 (37.5%)</b>	<b>32 (100%)</b>
	Technological				
<b>Public</b>	5 (56.6%)	1 (25.0%)	1 (16.7%)	3 (23.1%)	10 (31.3%)
<b>Private</b>	2 (27.3%)	0 (0%)	2 (33.3%)	1 (8.3%)	5 (15.6%)
<b>Chemical shop</b>	2 (22.2%)	3 (75.0%)	3 (50.0%)	9 (69.2%)	17 (53.1%)
<b>Total</b>	<b>9 (28.1%)</b>	<b>4 (12.5%)</b>	<b>6 (18.8%)</b>	<b>13 (40.6%)</b>	<b>32 (100%)</b>

Source: Healthcare Facility Survey (2007)

Generally, the healthcare managers utilized most of the environmental factors especially the political, social, regulatory and epidemiological factors in coming up with plans for malaria control. Opportunities identified by healthcare managers within their environment that

enhanced malaria control were generally community participation, interpersonal relationship between staff and clients, extensive use of ITNs, research on rectal Artesunate for children under five and involvement of CBAs in home-base care. Teyi, a healthcare manager of a private HCF in the Prampram sub-district recalled opportunities as:

Good interpersonal relationship between staff and clients urged them to openly discuss their problems, there were also organized groups such as churches, youth clubs, schools, etc., which makes BCC a whole lot easier. Finally the involvement of community based agents in home-base care greatly influenced incidence of malaria in the under fives.

Miss Adotey a healthcare manager of a public HCF on her part claimed:

Community members' are always in haste to identifying health problems for healthcare providers to solve and their eagerness to learn innovative ideas concerning malaria control. There is again, overwhelming collaboration between the healthcare facility and the communities, extensive use of ITNs, communal spirit of most communities, and research on rectal Artesunate for children under five years by the HRU; and administration of rectal Artesunate suppositories to under five-year olds by the CBAs.

Whereas Mr.Kweinor a chemical seller at Ayikuma remarked:

Education of the community on home-base care by the DHD, education of market women and the HE-HA-HO programme by the NMCP on radio have increased the knowledge-base of the people on malaria. Environmental cleanliness is also encouraging.

Threats basically were challenges that impinged on the success of intended objectives.

Generally threats identified by the healthcare managers ranged between environmental sanitation to unemployment, poverty and illiteracy. Threats as retorted by Dr. Kwei a healthcare manager in Prampram sub-district were abound and he remarked:

Since this community is still growing, new buildings are springing up with open trenches all over the place which collect water when it rains thus, creating a convenient environment for the breeding of mosquitoes. Again, there are no toilet facilities in the communities,

so individuals dig holes which become breeding places for mosquitoes.

Miss. Ayi also in the Prampram sub-district described threats identified as:

The activities of chemical shops and drug peddlers, unemployment, poverty, increase in the premium of the National health insurance scheme; high illiteracy rate, lack of transportation and portable water in some communities.

Similarly, Miss Lee at Osudoku sub-district remarked:

The rice farms in the community breed a lot of mosquitoes. The choice of medicine to use for malaria is crucial since there are several options at the chemical shops that are relatively cheaper than the recommended drug for malaria by the government.

Mr. Tetteh a chemical seller in the Ayikuma sub-district declared:

Unemployment with its associate effects of poverty has been a major hindrance in the purchasing of recommended drug Artesunate-Amodiaquine which, they considered expensive. There are also pit latrines all over the communities and these are potential places for breeding of mosquitoes.

At Old Ningo Mr. Agyeman a chemical seller had this to say:

There are no gutters in the community thus; there are pools of standing water all over the community with reckless disposal of refuse also compounding the already compromised situation. Most people are illiterates and there is no communal spirit.

Mr. Akoto also a chemical seller acknowledged that:

The choice of medicine to be used is a major threat to the control of malaria. Clients always come with their demands and preferences, which usually depend on affordability. They reckoned that the recommended drug is too expensive for the ordinary man hence, their reliance on other equally efficacious alternatives such as the herbal preparations.

Methods used for assessing strengths and weakness within the healthcare facilities and conducting community assessment are outlined in table 4.7.

**Table 4.7 Methods Used for Internal Auditing**

Method	Type of healthcare facility			Total (n = 32)
	Public	Private	Chemical shop	
Utility rate	6 (46.2%)	5 (38.5%)	2 (15.4%)	13 (40.6%)
Government assessment	8 (42.1%)	5 (26.7%)	6 (31.6%)	19 (59.4%)
Measuring the market share	5 (38.5%)	3 (23.1%)	5 (38.5%)	13 (40.6%)
Studying the gap	9 (50.0%)	4 (22.2%)	5 (29.4%)	18 (56.3%)
Benchmarking other facilities	4 (40.0%)	2 (20.0%)	4 (40.0%)	10 (31.3%)
Perception testing of key constituency groups	8 (53.3%)	3 (20.0%)	4 (26.7%)	15 (46.9%)
<b>Community assessment</b>				
Activity parameters of the facility	5 (50.0%)	4 (40.0%)	1 (10%)	10 (31.3%)
Simple on-going conversation	7 (33.3%)	5 (23.8%)	9 (42.9%)	21 (65.6%)
Informal gathering of local leaders	6 (40.0%)	4 (26.7%)	5 (33.3%)	15 (46.9%)
Structured questionnaire	4 (36.4%)	2 (18.2%)	5 (45.5%)	11 (34.4%)
Focus group discussion	6 (46.2%)	3 (23.1%)	4 (30.8%)	13 (40.6%)
Healthcare facility's discharge data	9 (56.3%)	4 (25.0%)	3 (18.8%)	16 (50.0%)
Traditional database and health indicators	4 (44.4%)	2 (22.2%)	3 (33.3%)	9 (28.1%)

Source: Healthcare facility survey (2007)

Facility strengths identified by healthcare managers generally were availability of recommended drugs for the management of malaria, relatively moderate fees charged for service delivery, promotion of the tenets of NMCP and knowledgeable staff. This was expressively put by Dr. Nartey a healthcare manager in Prampram as:

We are always ready to receive clients and there is good relationship between clients and us. We charge relatively low fees and clients spend less time at the clinic. Again, we have in stock most of the drugs for malaria.

Similarly Miss Agatha, a healthcare manager in Ayikuma remarked:

We have adequate logistics; provision of free ITNs, provision of free folic acid, and Artesunate Amodiaquine for one year. Additionally, we have stocks of antimalaria drugs e.g. Quinine, Artesunate and Amodiaquine.

Mr. Dakey a chemical seller in Asutuare said:

The experience gained from persistent training ensured delivery of quality service to clients and I have in stock adequate drugs for the management of malaria.

Miss Adotey a healthcare manager in Dodowa declared:

Our staff ensures that clients receive quality care thus; there is good staff-client relationship. We have available all malaria drugs and laboratory facility for confirmation of the diagnosis of malaria.

**Table 4.8 Facility Weakness**

Facility Weakness	Type of healthcare facility			Total (n = 32)
	Public	Private	Chem. shop	
Inadequate staff	7 (58.3%)	3 (25.0%)	2 (16.7%)	12 (37.5%)
Inadequate quality staff	2 (50.0%)	2 (50.0%)	0 (0%)	4 (12.5%)
Inadequate logistics	4 (44.4%)	2 (22.2%)	3 (33.3%)	9 (28.1%)
No definite plan for the program	0 (0%)	2 (66.7%)	1 (33.3%)	3 (9.4%)
Inadequate finance	6 (40.0%)	2 (13.3%)	7 (46.7%)	15 (46.9%)
Inadequate staff motivation	6 (66.7%)	0 (0%)	3 (33.3%)	9 (28.1%)
Lack of frequent in-service training	4 (40.0%)	1 (10%)	5 (50.0%)	10 (31.3%)
Unavailability of requisite drugs	0 (0%)	0 (0%)	2 (100%)	2 (6.3%)
Lack of privacy	1 (100%)	0 (0%)	0 (0%)	1 (3.1%)

Source: Healthcare facility survey (2007)

Facility weaknesses identified by healthcare managers were inadequate quality and quantity of staff; inadequate logistics; no definite plan for the program; inadequate finance; inadequate motivation of staff; insensitive attitude of some staff; infrequent in-service training for staff; and lack of privacy. Table 4.8 shows description of weaknesses identified.

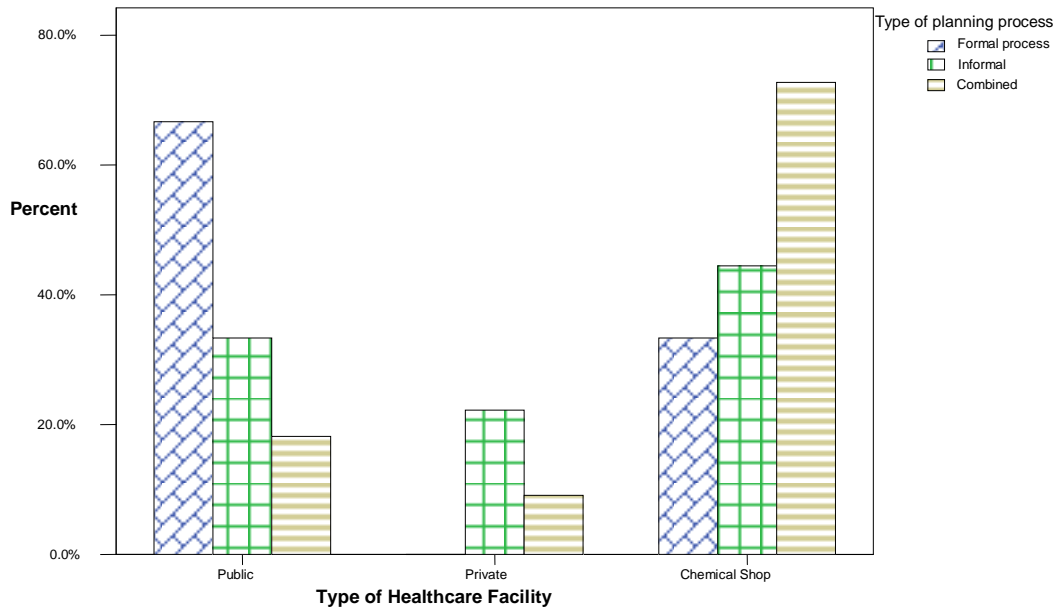
Attitude toward risk was non existence, and all 32 healthcare managers declared they did not encounter any risk in either planning or implementation. Almost all staff especially those in the public healthcare facilities were involved in the planning process whereas in the private and chemical shops only the managers did the planning.

### **4.3 Objective 2: To Describe the Planning Process of malaria control in the district.**

#### **4.3.1 Types of Planning**

Out of the 32 healthcare managers, 3 (9.4 percent) did have formal plans, 18 (56.3 percent) had informal plans whereas 11 (34.4 percent) had both formal and informal plans. Even the 3 healthcare managers with formal plans could not readily produce their plans.

**Figure 4.2 Type of Planning Process**



Source: Healthcare Facility Survey (2007)

### 4.3.2 Who Does the Planning?

The overall response revealed that the key partners involved in the planning process were the healthcare providers, the DHD, the district assembly, individuals and households, opinion leaders, NGOs, and educational institutions. Generally, apart from the healthcare providers who jointly planned with the healthcare managers, in most instances information was given to these key partners after decision making. Table 4.9 shows a detail description of key planners.

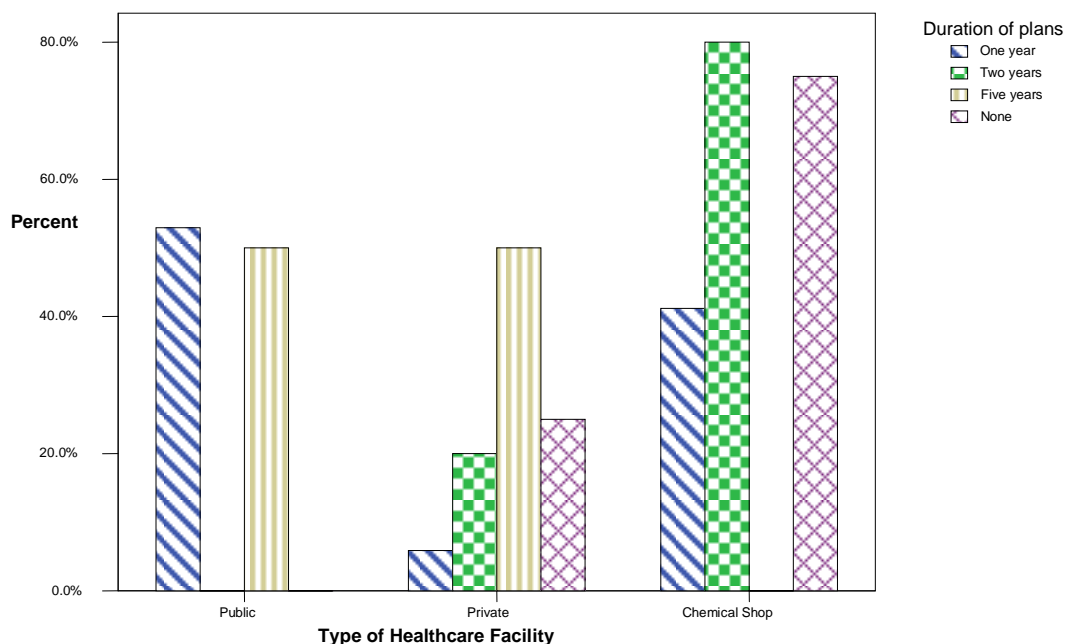
**Table 4.9 Key Partners Involved in the Planning Process**

Partner	Joint decision	Approval sought	Information is given after decision-making	Not involved
<b>DHD</b>	7 (21.9%)	5 (15.6%)	5 (15.6%)	15 (46.9%)
<b>Individuals and households</b>	4 (12.5%)	2 (6.3%)	1 (3.1%)	25 (78.1%)
<b>Healthcare providers</b>	12 (37.5%)	1 (3.1%)	1 (3.1%)	18 (56.3%)
<b>District assembly</b>	6 (18.8%)	2 (6.3%)	5 (15.6%)	19 (59.4%)
<b>Unit committee</b>	1 (3.1%)	-	5 (15.6%)	26 (81.3%)
<b>Opinion leaders</b>	6 (18.8%)	-	8 (25.0%)	18 (56.3%)
<b>NGOs</b>	5 (15.6%)	-	3 (9.4%)	24 (75.0%)
<b>Religious institutions</b>	1 (3.1%)	-	5 (15.6%)	26 (81.3%)
<b>Educational institutions</b>	3 (9.4%)	-	5 (15.6%)	24 (75.0%)

Source: Healthcare Facility Survey (2007)

### 4.3.3 Duration of Plans and Frequency of Planning Meetings for Healthcare Facilities

Figure 4.3 Duration of plans

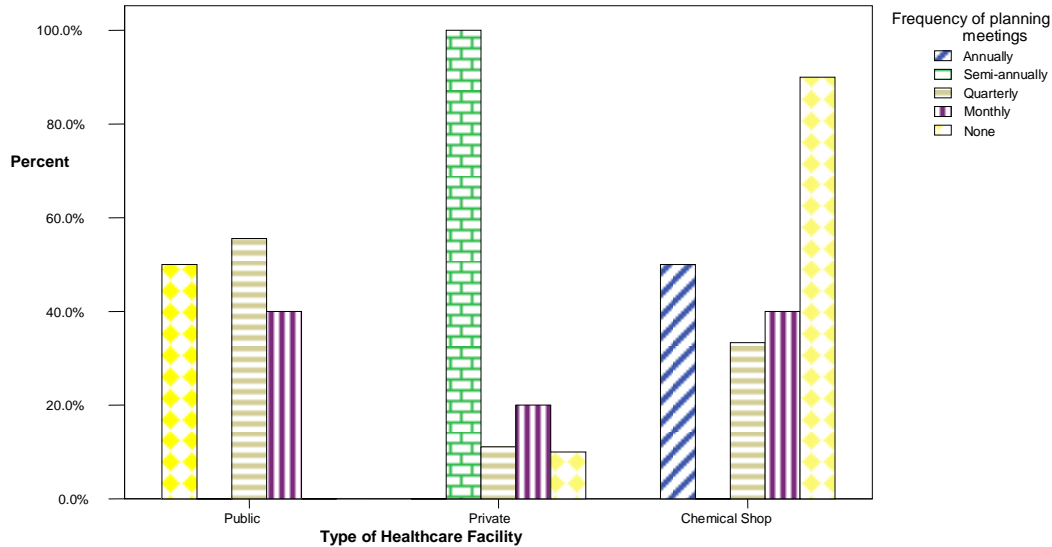


Source: Healthcare Facility Survey (2007)

Out of the 32 healthcare managers, 17 (53.1 percent) developed plans for malaria every year. 6 (15.6 percent) asserted the duration of their plans were two years while 2 (6.3 percent) had five-year plan for their healthcare facilities. The remaining 8 (25.0 percent) healthcare managers declared they neither had plans nor duration for their plans. The mean duration period was 1.5years. Out of the 32 healthcare managers, 2 (6.3 percent) had annual planning meetings. 1 (3.1 percent) had semi-annual meetings, 9 (28.1 percent) had quarterly meetings while 10 (31.3 percent) had monthly meetings.

For 10 (31.3 percent) of the healthcare managers however, planning meetings were contingent and usually ensued as situation demands.

**Figure 4.4 Frequency of Planning Meetings**



Source: Survey of Healthcare Facilities (2007)

#### 4.3.4 Activities Held by Healthcare Managers

Table 4.10 shows that healthcare managers determined the major steps necessary to develop the healthcare facilities from current conditions to desired states, and they also reinforced constant review of the plans.

**Table 4.10 Activities Held by Healthcare Managers**

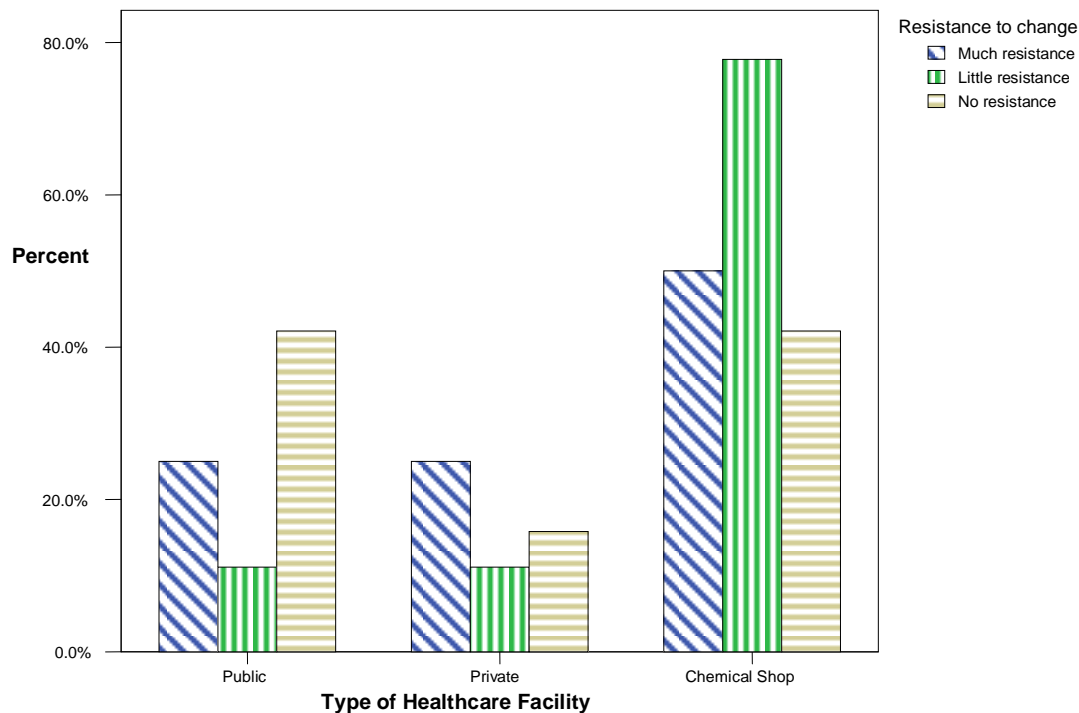
Activities	All the time	Most of the time	Sometimes	Never	Total
Oversees and coordinates the achievements of goals	59.4	12.5	6.3	21.9	100
Assures a constant review of the plan	31.3	28.1	18.8	21.9	100
Oversees the process itself	40.6	15.6	15.6	28.1	100
Establish the ground rules and time-table	37.5	12.5	18.8	31.3	100
Assemble the planning team	28.1	18.8	9.4	43.8	100
Establish criteria and standard to be used	37.5	25.0	9.4	28.1	100
Determine the major steps necessary to move the program to a desired end	40.6	21.9	6.3	31.3	100
Select the basic ways in which these activities will be created	25.0	21.9	15.6	37.5	100
Identify the particular services that the facility should and will be used to measure performance.	37.5	21.9	15.6	25.0	100

Source: Healthcare Facility Survey (2007)

#### 4.4 Objective 3: To Describe Implementation of NMCP Strategies in the District

The first barrier towards implementation in any developmental programme has been resistance to change.

**Figure 4.5 Resistance to Change**



Source: Survey of Healthcare Facility (2007)

Out of the 32 healthcare managers interviewed, 4 (12.5 percent) admitted to facing much resistance to change, 9 (28.1 percent) claimed they faced little resistance, while 15 (59.4 percent) asserted to facing no resistance during implementation.

##### 4.4.1 Factors Impacting on Implementation of Malaria Control

Healthcare managers remarked that factors relevant to implementation of malaria control were leadership, training, adequate resources, and organizational culture. See table 4.11 for detailed description. The factor that ostensibly impacted on implementation of malaria control was

leadership; the use of non coercive influence to shape the HCF's goals, motivate behaviour towards the achievement of goals and help define organizational culture.

**Table 4.11 Factors that Impact on Implementation of Malaria Control**

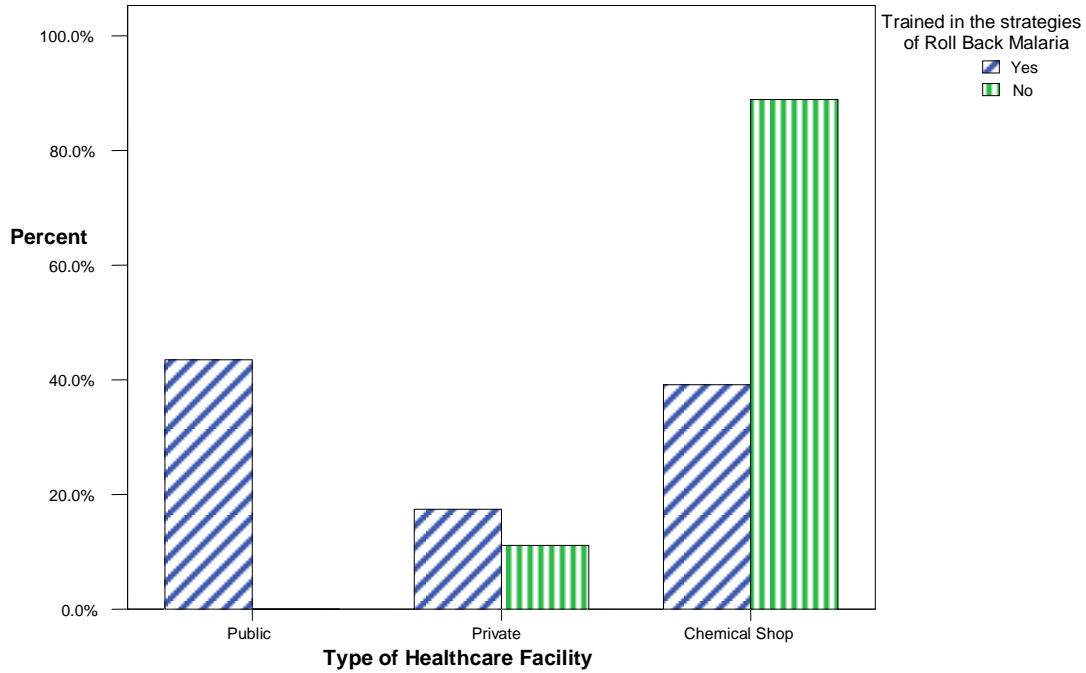
<b>Factor</b>	<b>Most imp.</b>	<b>Imp.</b>	<b>Least imp.</b>	<b>Total</b>
<b>Leadership</b>	19 (59.4%)	7 (21.9%)	6 (18.8%)	100
<b>Training</b>	19 (59.4%)	7 (21.9%)	6 (18.8%)	100
<b>Motivation</b>	10 (31.3%)	10 (31.3%)	12 (37.5%)	100
<b>Adequate resources</b>	15 (46.9%)	5 (15.6%)	12 (37.5%)	100
<b>Need to build Information system</b>	16 (50.0%)	6 (18.8%)	10 (31.3%)	100
<b>Organizational culture</b>	10 (31.3%)	7 (21.9%)	15 (46.9%)	100
<b>Organizational structure</b>	11 (34.4%)	8 (25.0%)	13 (40.6%)	100

Source: Community Survey (2007)

#### **4.4.2 Training of staff**

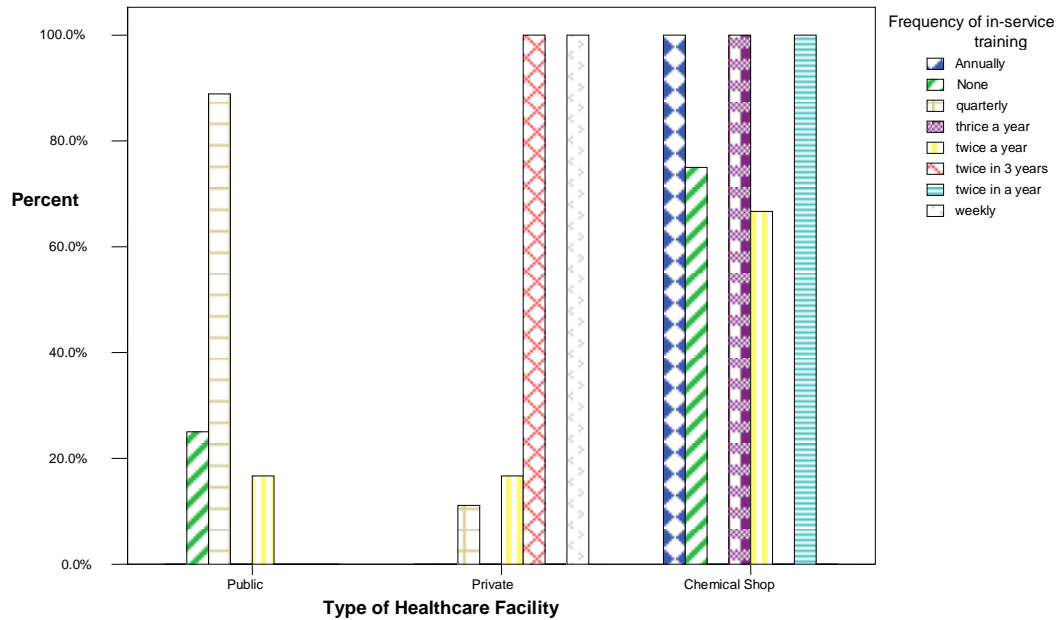
Out of the 32 healthcare managers, 23 (71.9 percent) had their staff trained and delegated the authority needed to produce the quality of healthcare services demanded. All the 10 (43.5 percent) public healthcare managers had their staff trained, 4 (17.4 percent) of the private healthcare facilities also had their staff trained whereas, 9 (39.1 percent) of the chemical shops had their staff trained too. 9 (29.0 percent) healthcare managers had adequate number of qualified clinical staff on duty at all times to ensure that clients receive prompt and high quality healthcare services.

**Figure 4.6 Staff Trained in the Strategies of NMCP**



Source: Survey of Healthcare Facilities (2007)

**Figure 4.7 Frequencies of Staff In-Service Training**



Source: Survey of Healthcare Facilities (2007)

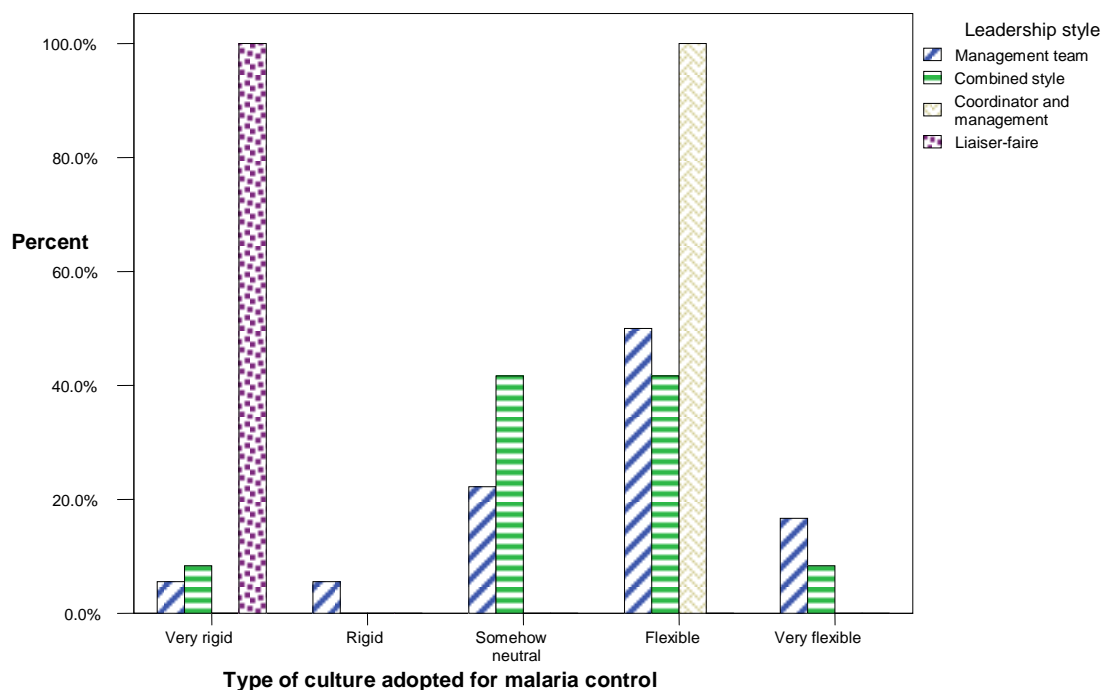
Frequency of In-service training offered to staff to upgrade knowledge, skills and attitude ranged between quarterly 9 (28.1%), annually 8 (25.0%), twice a year 7 (21.9%), weekly 2

(6.3%), thrice a year 1 (3.1%), twice in three years 1 (3.1%) to none 4 (12.5%). Most of the chemical sellers either had annual training 8 (47.1%) or had training twice a year 5 (29.4%).

#### 4.4.3 Culture and Leadership Style Adopted by Healthcare Managers for Malaria

Out of 32 healthcare managers, 15 (46.9 percent) had flexible cultures, 4 (12.5 percent) had very flexible cultures, while the 3 (9.4 percent) had a rigid, and 1 (3.1 percent) had very rigid cultures. 9 (28.1 percent) had somehow neutral culture for malaria control. See figure 4.8 for details.

**Figure 4.8 Culture and Leadership Style Adopted for Malaria Control**



Source: Healthcare Facility Survey (2007)

Leadership style promoted in the HCFs according to the 32 healthcare managers were management team leadership style 18 (56.3 percent), and the combined style of leadership 12 (37.5 percent). Another fact was that all healthcare managers who pursued a combined style of leadership also had flexible cultures. The chi-square was 13.338 with a p-value of 0.345. F-statistics was 3.937 with a p-value of 0.047, and a correlation coefficient of -0.207.

#### **4.4.4 Staff Motivation**

Implementation of malaria control within the facilities was done through the assignment of responsibilities for each aspect of the plan 13 (40.6 percent), trust and open communication 12 (37.5 percent), establishment of relationship among people 11 (34.4 percent) and finally delegation of authority 6 (18.8 percent)

Management of malaria control was carried out in such a way that it provided staff with a sense of security, autonomy and at the same time motivation (91.7 percent). This was done by giving incentives, open recommendation of staff, rewarding extra work, and verbal encouragement of staff. Arguably almost all the healthcare facilities had in place similar motivational strategies.

One important factor was the zeal of healthcare providers to see that everything was in order, thus, even when there were no incentives, work was accomplished without any hindrance. The regular workshops on malaria organized to upgrade knowledge, skills and attitude equally enhanced competence, commitment and confidence. Furthermore, appraisals and good interpersonal relationship between management and staff ensured contentment among colleagues.

#### **4.4.5 Measures Adopted to Ensure Early Case Recognition**

Out of the 32 healthcare managers, 18 (56.3 percent) had their staff trained on the strategies of NMCP, basic S&S and management; 9 (50.0 percent) from the public HCFs, 5 (27.8 percent) from private with 4 (22.2 percent) being chemical sellers. 17 (53.1 percent) out of the 32 healthcare managers did also involve opinion leaders, district assembly and religious institutions in their BCC; 8 (47.1 percent) from the public HCFs, all the 5 (29.9 percent) private HCFs and 4 (23.5 percent) from chemical shops.

Out of the 32 healthcare managers, 14 (43.8percent) had standard case definition of malaria developed and pasted at vantage points within their HCFs; 8 (57.1 percent) from the public, 4 (28.6 percent) from the private and 2 (14.3 percent) chemical sellers. 18 (56.3 percent) healthcare managers out of the 32 persistently carried out BCC on malaria prevention within the communities; 9 (50.0 percent) from the public HCFs, 3 (16.7 percent) from the private HCFs while 6 (33.3 percent) were chemical sellers.

Out of the 32 healthcare managers, 14 (43.8 percent) would request for laboratory test for confirmation of diagnosis; 7 (50.0 percent) were public HCFs, 5 (35.7 percent) were private HCFs while 2 (14.3 percent) were chemical shops. Other measure identified was the requisition for blood film for malaria parasites (BF) for pregnant women before SP was given when clients develop malaria by 1 public healthcare manager. 14 healthcare managers representing (43.8 percent) out of the 32, acknowledged the involvement of school children in their BCC; 7 (50.0 percent) from the public HCFs, 3 (21.4 percent) from the private HCFs while 4 (28.6 percent) were chemical shops. 12 (37.5 percent) healthcare managers out of the 32, developed and distributed simplified case definition of malaria leaflets to households; 7 (58.3 percent) from the public, 1 (8.3 percent) from the private HCF whereas 4 (33.3 percent) were chemical shops.

#### **4.4.6 Appropriate Response and Referral**

Systems developed to ensure appropriate response and referral has been enumerated in table

4.12. Prompt attention to emergency cases and provision of approved treatment was important to the groups.

**Table 4.12 Systems Developed for Appropriate Response and Referral**

System	Type of healthcare facility			Total (n = 32)
	Public (n = 10)	Private (n = 5)	Chem. shop (n = 17)	
Protocol for malaria case management in all clinical areas	9 (60.0%)	4 (26.7%)	2 (13.3%)	15 (46.9%)
Provision of approved malaria treatment in the facility	9 (50.0%)	4 (22.2%)	5 (27.8%)	18 (56.3%)
Prompt attention to emergency cases	9 (42.9%)	5 (23.8%)	7 (33.3%)	21 (65.6%)
Effective system of referral	9 (56.3%)	5 (31.3%)	2 (12.5%)	16 (50.0%)

Source: Survey of Healthcare Facilities (2007)

#### 4.4.7 Delivery of Quality Healthcare Services

In almost all the facilities visited, protocols for case management of malaria were visibly displayed on the walls. Some facilities had drugs such as Artesunate suppositories, Folic acid and iron tablets free for children under five-years and pregnant women. See table 4.13 for detailed description.

**Table 4.13 Measures for Delivering Quality Healthcare Services**

Measures	Type of healthcare facility			Total (n = 32)
	Public (n = 10)	Private (n = 5)	Chem. shop (n = 17)	
Effective use of performance appraisal to identify Staff needs for subsequent training	4 (50.0%)	2 (25.0%)	2 (25.0%)	8 (25.0%)
Patients are given prompt attention	9 (37.5%)	5 (20.8%)	10 (41.7%)	24 (75.0%)
Patients are always given all their treatment At the facility	10 (52.6%)	5 (26.3%)	4 (21.1%)	19 (59.4%)
Improved staff attitude to clients	8 (44.4%)	4 (22.2%)	6 (33.3%)	18 (56.3%)
Horizontal integration with some agencies within the community to ensure easy access to resources	1 (20.0%)	3 (50.0%)	1 (20.0%)	5 (15.6%)
Provision of incentives	1 (16.7%)	4 (66.7%)	1 (16.7%)	6 (18.8%)
Open recommendation of hard working staff	7 (46.7%)	5 (33.3%)	3 (20.0%)	15 (46.9%)

Source: Facility Survey (2007)

#### 4.4.8 Monitoring Clients' Concern

Healthcare managers asserted that clients' concerns were acknowledged through friendly attitude of staff towards clients which coaxed them to air their grievances to them whenever possible; they also questioned clients about effective use of drugs or provision of other

services. Additionally, complaints were sometimes lodged with opinion leaders or the assemblymen, following-up of cases, and open discussions during staff or advisory board meetings. Apart from Dodowa HCF that had a suggestion box, the remaining HCFs basically resorted to informal measures in soliciting for clients' concerns.

#### **4.4.9 Home-Based Management of Malaria**

Qualitative data suggested that home-based management of malaria was essentially carried out by education, counseling and home visits to ensure that mothers did the right thing however; others have not been doing anything. Whereas, the healthcare managers in both the public and private resorted to BCC on care of children at home to care takers, the chemical seller largely engaged in talking to clients on how to take medicine. Namely, mothers were trained to tepid sponged their children when there is fever and to give Paracetamol before sending them to the CBAs for rectal Artesunate, they were also encouraged to use ITNs especially for children under five years and to give ORS when there was diarrhoea and vomiting.

#### **4.4.10 Maintaining Competitive Edge**

Qualitative data suggested that although, healthcare managers were not aware of what they have been doing, maintaining competitive edge was essential to all the HCFs. They ensured prompt attention to clients to avoid client frustration and maintained cordial staff – clients' relationship to enhance maximum satisfaction. Occasionally, mass educational campaigns were carried out, canvassing community members to use their HCFs. Offering of 24-hour quality service to clients and ensuring that clients receive all treatments at the facility. Fees charged were relatively moderate and clients have been encouraged to join the NHIS to be able to always patronize their services.

#### **4.4.11 Special Efforts in Promotion of NMCP Strategies**

Qualitative data indicated that special efforts adopted in both public and private HCFs to enhance NMCP strategies were Behaviour Change Communication (BCC) which was carried out both massively and individually. These educational campaigns emphasized multiple prevention strategies such as the use of ITNs, IPT and environmental cleanliness. HCFs also had in stock recommended drugs. Staff especially, those in the public HCFs have all been trained in current trends and training was carried out periodically to update skills, knowledge and attitude of staff. Distribution of ITNs to children less than two years was on-going in all the public HCFs, together with the administration of SP. The chemical sellers on the other hand, have embarked upon education and counseling of customers.

#### **4.4.12 Multiple Strategies**

Multiple strategies adopted to reduce the occurrence of malaria within the district by healthcare managers were basically promotion of insecticide treated materials, liaising with the district assembly for educational campaigns, encouraging communities on good environmental sanitation and administration of chemotherapy to pregnant women.

24 (75.0 percent) healthcare managers out of the 32 encouraged the use of insecticide treated materials in combating malaria; apart from 9 (37.5 percent) chemical sellers, the 15 (68.5 percent) were all healthcare managers from both public and private HCFs. Out of the 32 healthcare managers, 13 (40.6 percent) liaised with the district assembly for health educational campaigns; 7 (53.8 percent) from the public, 3 (23.1 percent) from the private and 3 (23.1 percent) being chemical sellers. 22 (68.8 percent) out of the 32 healthcare managers, did encourage drainage, mosquito proofing and general sanitation through education campaigns in

the fight against malaria; 9 representing 40.9 percent were public healthcare managers, 4 representing 18.2 percent were from the private and 9 (40.9 percent) being chemical sellers.

Administration of chemotherapy to pregnant women was carried out by 14 (43.8 percent) out of the 32 healthcare managers; 9 (64.3 percent) from the public, 3 (21.4 percent) from the private, with 2 (14.3 percent) being chemical sellers. Additionally, residual spraying was carried out by 6 (18.8 percent) healthcare managers out of the 32, while larviciding was done by 5 (15.6 percent) healthcare managers.

#### **4.4.13 Partners in Implementing NMCP Strategies**

HCFs are primarily community assets thus, the community 32 (100 percent) partner whatever the healthcare managers embarked upon to ensure their effectiveness. Equally important in this partnership was the religious institutions 20 (62.5 percent), educational institutions 13 (40.6 percent) and the district assembly 10 (31.3 percent). Partnering the religious institutions were 7 (35.0 percent) from the public, 5 (25.0 percent) from the private and 8 (40.0 percent) chemical sellers. Partnering educational institutions were 7 (53.8 percent) from the public, 3 (23.1 percent) from the private and 3 (23.1 percent) chemical sellers. Partnering the district assembly were 6 from the public, 3 from the private and 1 chemical seller. The activities of NGOs 5 (15.6 percent) were not wide spread within the district, apart from the World Vision International who was assisting in staff training; the Catholic Church was also assisting with the financial management of one healthcare facility. Hence, community participation in malaria control was exceedingly important to the healthcare managers and every effort was being used to sustain it.

#### 4.4.14 Constraints Hindering Malaria Control

The Dangme West district is typically rural and extremely poor (GSS 2000) thus, despite being few kilometers away from Accra staff always refuse posting to the district. Table 4.14 below gives a detailed description of constraints hindering malaria control activities.

Efforts adopted by healthcare managers in addressing constraints were increased BCC to community members especially, the opinion leaders to enhance communal spirit, collaboration with the chiefs and the district assembly to punish recalcitrant individuals.

**Table 4.14 Constraints Hindering Malaria Control**

Constraints	Type of healthcare facility			Total (n = 32)
	Public (n = 10)	Private (n = 5)	Chem. shop (n = 17)	
Inadequate number of requisite qualified staff	7 (50.0%)	5 (35.7%)	2 (14.3%)	14 (43.8%)
Inadequate financial resources	7 (38.9%)	4 (22.2%)	7 (38.9%)	18 (56.3%)
Inadequate logistics	9 (56.3%)	3 (18.8%)	4 (25.0%)	16 (50.0%)
Uncommitted staff	1 (25.0%)	-	3 (75.0%)	4 (12.5%)
Commitment of the community	5 (29.4%)	5 (29.4%)	7 (41.2%)	17 (53.1%)

Source: Survey of Healthcare Facilities (2007)

Additionally, requisitions were normally given to the DHD to address the constraints. As expressed by Angie a healthcare manager in a private-not for-profit facility:

Requisitions have been given to the DHD to supply adequate staff, but then we have also sponsored the education of one student to pursue general nursing and another to pursue midwifery. Hopefully they would finish and join us here. Apart from that, I have submitted names of our utility staff, now casual to be absorbed by government payroll. But mostly our problems are usually addressed by the church.

#### 4.4.15 Structures Adapted for Implementation of NMCP Strategies

The health system in the district has been using the integrated approach to public health diseases in the management of malaria. Thus, there has not been any structural change within the HCFs for the sole management of malaria. Qualitative data suggested there have been the creation of community based agents (CBAs) in the communities. These volunteers have been identified and trained to administer rectal artesunate suppository at the community level. They

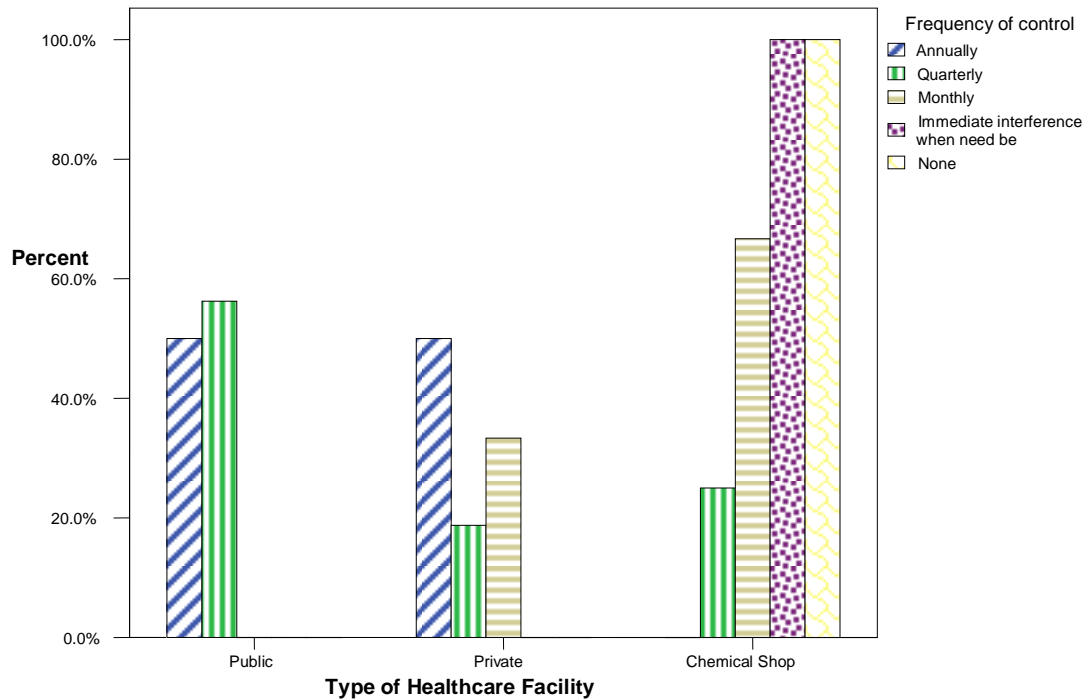
have been given artesunate suppositories to be used as first aid in the management of malaria in the under fives.

Caretakers were instructed to rush their infants to the CBAs for insertion of the suppository before taking them to HCF for treatment continuation. However, because the rectal artesunate was free, many caretakers preferred going to just the CBAs for the free rectal suppository without going to HCFs for further management due to cost. The CBAs have also been trained in the principles of IPT; they roamed the community to ensure that all pregnant women attended ANC. The defaulters were then referred to the HCFs for antenatal care and SP. The midwives would then issue these women chits to be given to the CBAs so as to ensure constant communication between the CBA and the client.

#### **4.5 Objective 4: To Assess Systems Designed for Monitoring and Evaluation of Malaria Control Activities within the district**

The reporting system used sporadically to conduct the control process indicated that out of the 32 healthcare managers, 50.0 percent (16) followed a quarterly control approach whereas 6.3 percent (2) had an annual approach. The remaining 9.4 percent (3) of the healthcare managers conducted it monthly while 12.5 percent (4) did interfere immediately when the need arose. 7 (21.9%) did not have any control mechanism in place.

**Figure 4.9 Frequency of Control Process**



Source: Survey of Healthcare Facilities (2007)

#### 4.5.1 The Control Process

Table 4.15 depicts the control process for malaria activities. The process common to all the groups was studying, analyzing and evaluating the outcomes and taking corrective measures where necessary (62.5 percent).

**Table 4.15 Control Process Enacted for Malaria Control**

Control process	Type of healthcare			Total (n = 32)
	Public (n = 10)	Private (n = 5)	Chem. (n = 17)	
An evaluation of what was accomplished versus the Targeted/predefined criteria, and reasons behind the gap	8 (61.5%)	4 (30.8%)	1 (7.7%)	13 (40.6%)
Gathering with staff to see if targets are met	7 (50.0%)	5 (35.7%)	2 (14.3%)	14 (43.8%)
Frequent reporting and establishment of deadlines; control is done during implementation	7 (63.6%)	2 (18.2%)	2 (18.2%)	11 (34.4%)
Studying, analyzing and evaluating the outcomes	8 (40.0%)	4 (20.0%)	8 (40.0%)	20 (62.5%)
And taking corrective measures if necessary	7 (53.8%)	3 (23.1%)	3 (23.1%)	13 (40.6%)

Source: Survey of Healthcare Facilities (2007)

#### 4.5.2 The Feedback Approach

**Table 4.16 Feedback approach for the control process**

Feedback	Facility	All the time	Most of the time	Sometimes	Never
Conversation		12 (37.5%)	4 (12.5%)	1 (3.1%)	15 (46.9%)
	Public	7 (58.3%)	1 (25.0%)	1 (100%)	1 (6.7%)
	Private	3 (25.0%)	2 (50.0%)	-	-
Reports	Chem. shop	2 (16.7%)	1 (25.0%)	-	14 (82.4%)
	Public	7 (21.9%)	5 (15.6%)	1 (3.1%)	19 (59.4%)
	Private	5 (71.4%)	3 (60.0%)	-	2 (10.5%)
	Chem. shop	2 (28.6%)	1 (20.0%)	-	2 (10.5%)
Frequent team meetings	Chem. shop	-	1 (20.0%)	1 (100%)	15 (78.9%)
	Public	4 (12.5%)	5 (15.6%)	3 (9.4%)	20 (62.5%)
	Private	3 (75.0%)	3 (60.0%)	1 (33.3%)	3 (15.0%)
	Chem. shop	1 (25.0%)	1 (20.0%)	1 (33.3%)	2 (10.0%)
Direct contact	Chem. shop	-	1 (20.0%)	1 (33.3%)	15 (75.0%)
	Public	8 (25.0%)	1 (3.1%)	1 (3.1%)	22 (62.8%)
	Private	4 (50.0%)	-	-	6 (23.3%)
	Chem. shop	2 (25.0%)	1 (100%)	-	2 (9.1%)
Interviews	Chem. shop	2 (25.0%)	-	1 (100%)	14 (63.6%)
	Public	3 (9.4%)	2 (6.3%)	4 (12.5%)	23 (71.9%)
	Private	2 (66.7%)	1 (50.0%)	2 (50.0%)	5 (21.7%)
	Chem. shop	-	1 (50.0%)	-	4 (17.4%)
Use of questionnaires	Chem. shop	1 (33.3%)	-	2 (50.0%)	14 (60.9%)
	Public	1 (3.1%)	-	1 (3.1%)	30 (90.8%)
	Private	1 (100%)	-	-	9 (30.0%)
	Chem. shop	-	-	-	5 (16.7%)
	Chem. shop	-	-	1 (100%)	16 (53.3%)

Source: Survey of Healthcare Facilities (2007)

Informal processes such as feedback through conversation, frequent team meetings, direct contact and interviews were used in all the HCFs. There was no doubt that the healthcare managers' ability to orchestrate planning and implementation in the light of changing conditions was greatly strengthened by the operation of this sensitive process, see table 4.16 for details. Use of feedback in supervision was mainly verbal and immediate or during staff meetings.

### 4.5.3 Partnerships

Partners involved in the management of malaria within the district were the Health research unit, NGOs such as World vision international and the Catholic Church, the district assembly, educational and religious institutions, opinion leaders and the community as a whole. These agencies carried out periodic researches, pilot surveys; provided assistance for BCC,

distribution of ITNs, training and organized communal labours. Most of these partners were members of the DHMT; they communicated constantly to plans and constituted a core group within the district helping to reduce morbidity and mortality attributable to malaria.

**Table 4.17 Partners Involved in Monitoring and Evaluation**

<b>Partners</b>	Joint M&E	Have veto powers	Their approval Is sought	Information given on M&E	Not Involved
DHD	5 (15.6%)	-	1 (3.1%)	7 (21.9%)	19 (59.4%)
Healthcare providers	9 (28.1%)	-	1 (3.1%)	2 (6.3%)	20 (62.5%)
Individuals and households	5 (15.6%)	-	1 (3.1%)	2 (6.3%)	24 (75.0%)
District assembly	1 (3.1%)	-	2(6.3%)	6 (18.8%)	23 (71.9%)
Unit committees	1 (3.1%)	-	1 (3.1%)	3 (9.4%)	27 (84.4%)
Opinion leaders, chiefs & elders	1 (3.1%)	-	3 (9.4%)	3 (9.4%)	25 (78.1%)
NGOs	2 (6.3%)	-	-	4 (12.5%)	26 (81.3%)
Religious institutions	1 (3.1%)	-	1 (3.1%)	6 (18.8%)	24 (75.0%)
Educational institutions	-	-	2 (6.3%)	3 (9.4%)	27 (84.4%)

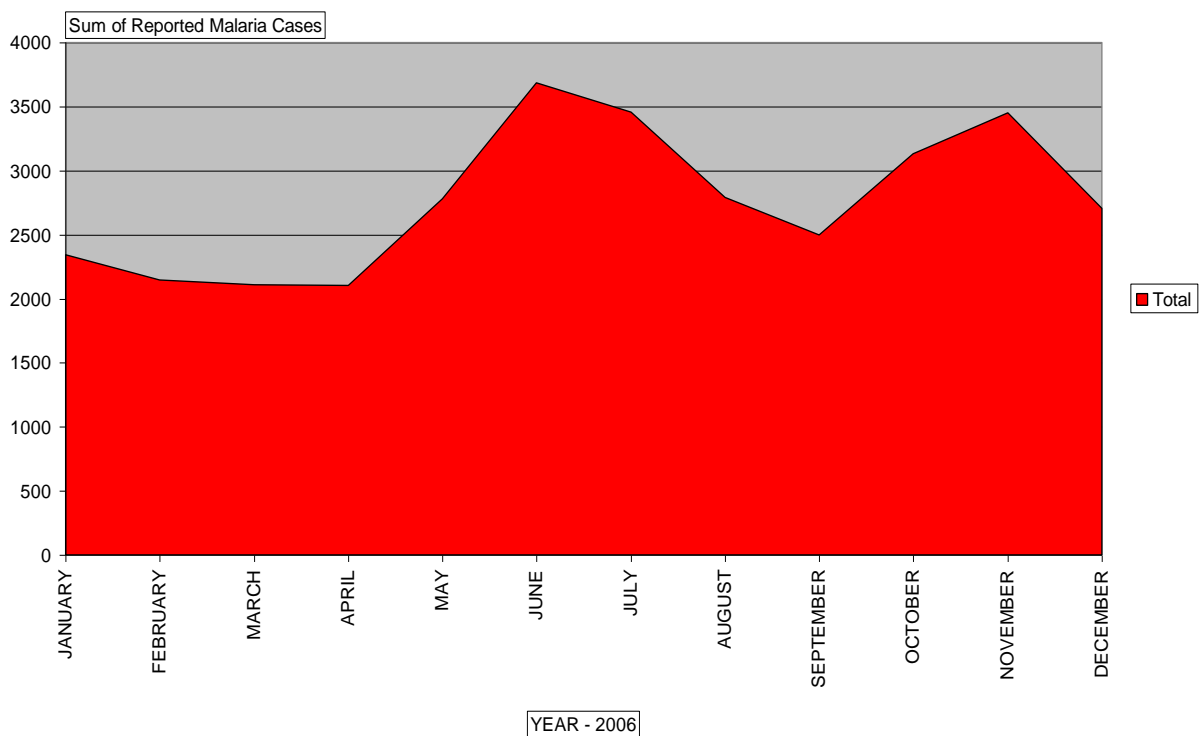
Source: Survey of Healthcare Facilities (2007)

Partnership according to healthcare managers was maintained by constant communication. The DHMT for instance would confront them with their problems after receiving quarterly reports. Challenges were addressed by these partners through dialogue and feedback on how resources have been utilized. Key partners involved in evaluation of malaria control programme and the extent of their involvement have been described in the table above but it was obvious that healthcare managers excluded these stakeholders from the evaluation process especially private practitioners and chemical sellers.

## **4.6 Objective 5: To Describe the Status of Key Malaria Control Indicators**

### **4.6.1 Reported Malaria Cases at Outpatient Department**

#### **Figure 4.10 Reported Cases of Malaria in 2006**



Source: Facility Survey and Annual report (2006)

Reported cases of malaria at the OPD continued to increase persistently over the years even with the immense efforts of the Health Research Unit and the District Health Directorate. Figure 4.10 is a pictorial recording of reported cases in 2006 and clearly June, July and November were the peak periods for malaria attacks.

Monitoring and evaluation was very much in evidence in all the HCFs, though the mix of formal and informal means used varied. Thus, access to data, to scientifically confirm whether prevalence of severe malaria have actually reduced in the district was awfully impossible. All healthcare managers acknowledged that severe malaria have reduced especially with the inception of rectal Artesunate and use of Artemether-Lumefantrine for management of fevers in children aged 6 – 59 months (HRU, 2005) by CBAs. For instance, Miss Cee, a healthcare manager in Ayikuma remarked:

For the past one year or more convulsion in children have ceased, nobody has reported to the clinic with convulsion.

Similarly, Miss Bee in Osudoku sub-district declared:

Convulsion in children with malaria has ceased. There has been increased antenatal attendance and clients looked healthier throughout their pregnancies. Complications such as post partum haemorrhage have reduced and babies have been delivered at term with normal birth weights.

Mr. Kay in Prampram sub-district had this to say:

There has been reduction in malaria cases. There has been prompt recovery of people with severe malaria and reduction in cases of severe malaria.

Miss Dee in Ningo sub-district added:

Pregnant women who have taken SP did not normally develop malaria. Malaria has reduced considerably and so was reaction to Artesunate-Amodiaquine. Babies born to mothers who were given SP did not as a rule also develop malaria within the first three months at least.

In Dodowa, Miss Gee remarked:

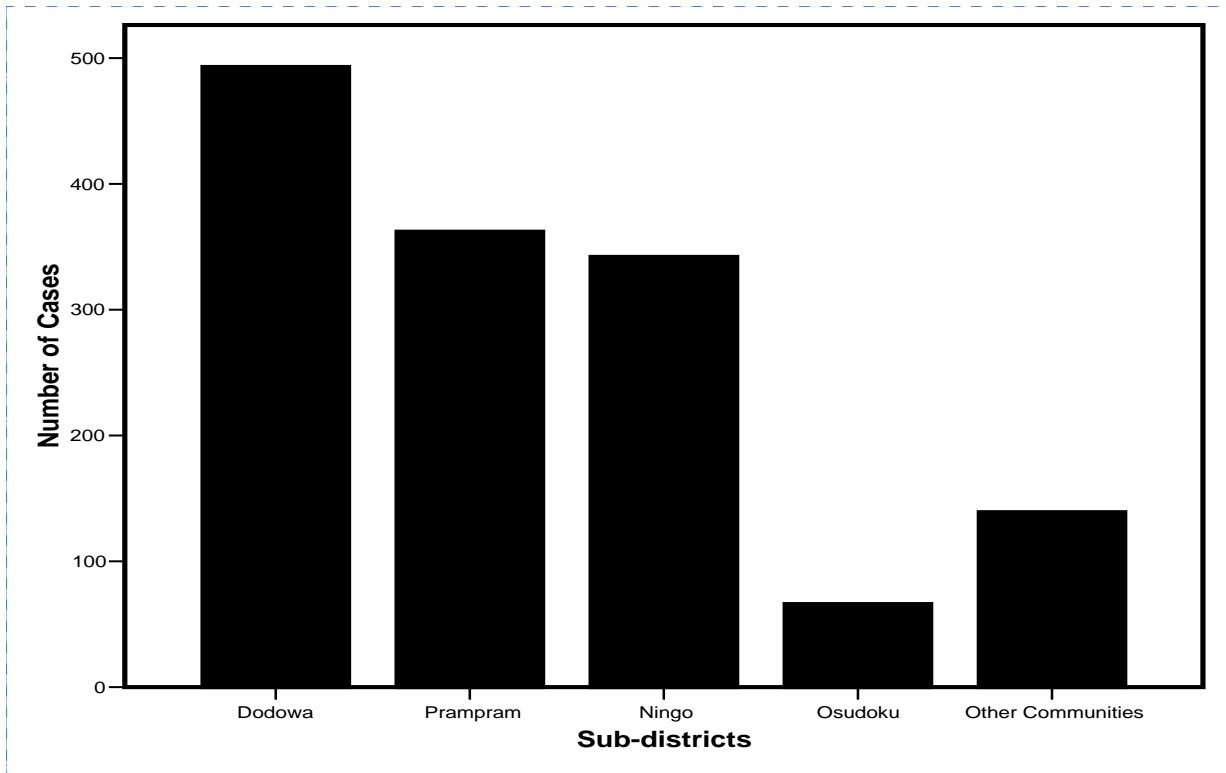
SP prevents pregnant women from getting malaria. Their babies after birth did not develop malaria for at least six months and their birth weights too were good.

#### **4.6.2 Reported Malaria Cases in the Under Fives by the CBAs**

Contrarily, to the perception of healthcare managers' vis-à-vis prevalence of severe malaria in the district, the CBAs had a different story to tell. Caretakers typically would visit them with their sick children to access free medication. Thus, from July 2005 to March 2007, the CBAs recorded 1,402 severe malaria cases from all the communities within the sub-districts as shown in figure 4.11. Dodowa sub-district recorded the highest number of cases with the least coming

from Osudoku sub-district. Although I intended to assess the trend of severe malaria within the period, the CBAs were not time inclined.

**Figure 4.11 Severe Malaria Cases in children under fives recorded by CBAs (July 2005 to March 2007)**



Source: Health Research Unit (2007)

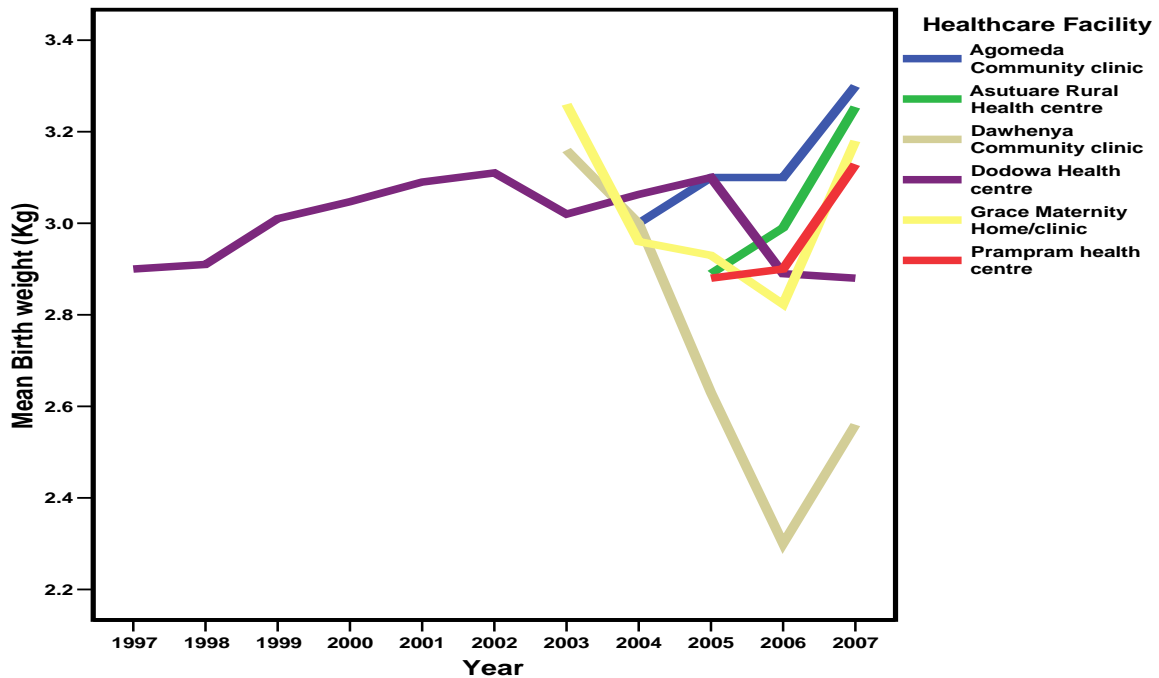
#### 4.6.3 Outcome of Labour

Qualitative data from above suggested that since the inception of SP, babies have generally been born at term with normal birth weights; labour have also been normal with shorter time of placenta separation; complications such as PPH have reduced as compared to those who did not take SP. Additionally, there have been a reduction in incidence of still-births since SP prevents malaria in pregnancy thus; clients looked healthier throughout the period of pregnancy.

There have also been increased antenatal attendance and babies born to mothers who were given SP did not usually develop malaria within the first six months of life. Figure 4.12

depicts the average birth weight of babies before and after the introduction of SP in the HCFs and clearly it could be observed that birth weight was appreciating. Appreciation of birth weight could however be accounted for by other confounding factors such as improved diet, easy access to professional care, education, etc.

**Figure 4.12 Average Birth Weights of Babies Before and After the Inception of SP**



Source: Survey of Healthcare Facilities (2007)

#### 4.7.4 Affordability and Efficacy of Artesunate Amodiaquine

Qualitative data from the study suggested that the advantages of the Artesunate-Amodiaquine far outweighed the side effects and it worked better in adults. Many chemical sellers remarked they were still holding on to Chloroquine and other cheaper drugs because of the expensive new regime. Again, considering the fact that many people were unemployment in the district, they preferred the bottled herbal preparations which were equally efficacious e.g. “Class malacure”, “Yafoo bitters”, “Angel herbal mixture”, etc. The principal researcher witnessed a situation where someone came with ten thousand cedis (¢10,000.00) to buy medicine for

malaria at the chemical shop. The chemical seller was able to give full course of malaria treatment with haematemics using Malafan which is a Sulphurdoxine Pyrimethadrin. Thus,

Mr. Tee a chemical seller in Prampram sub-district remarked:

The recommended drug is too expensive, people don't like it here, and they prefer mono therapy. The last time my uncle brought some it took too long to get finished since then we have not gone for some.

Mr. Pee a pharmacy technician in Dodowa had this to say:

The standard treatment book for 2004 and 2000 all declared that Artesunate should not be used for first trimester, thus, Chloroquine is still the drug of choice for pregnant women. Some doctors are still prescribing it.

Mr. Kane also a chemical seller in Ningo sub-district mentioned:

The NMCP strategies have helped a lot, it has reduced malaria considerably but the drug is expensive and we want to advice that the drug price be reduced so that the rural people can afford it.

In Osudoku sub-district, Mr. Tei a chemical seller had this to say:

The new drug is very expensive, many people can't afford and there are still problems with it. I took the drug and I almost collapsed, and had to take Ventolin for relief. It is also difficult to acquire Artesunate-Amodiaquine. Demand usually exceed supply, hence the unavailability of the product.

#### 4.6.5 Drugs Administered by Healthcare Managers

Drugs used for management of malaria by healthcare managers varied depending on the type of HCF. Above is a detailed description of drugs used for the treatment of malaria. Sulphurdoxine Pyrimethadrin (96.9%) and Chloroquine (68.8%) was used more than any other drug by the facilities.

**Table 4.18 Drugs for Management of Malaria**

Drug	Type of healthcare			Total (n = 32)
	Public (n = 10)	Private (n = 5)	Chem. (n = 17)	

Artesunate-Amodiaquine	10 (55.6%)	3 (16.7%)	5 (27.8%)	18 (56.3%)
Sulphurdoxine Pyrimethadrin	10 (32.3%)	5 (16.1%)	16 (51.6%)	31 (96.9%)
Chloroquine	1 (4.5%)	4 (18.2%)	17 (77.3%)	22 (68.8%)
Artesunate	-	3 (15.8%)	16 (84.3%)	19 (59.4%)
Amodiaquine	-	2 (11.1%)	16 (88.9%)	18 (56.3%)
Herbal preparation	-	-	17 (100%)	17 (53.1%)

Source: Healthcare Facilities Survey (2007)

#### 4.6.6 Knowledge and Management of Malaria by Healthcare Consumers

A basic definition of malaria by healthcare consumers revealed that many people were aware of malaria; even though majority said malaria is a disease caused by mosquitoes (82.3 percent), quite a sizable number 59 representing 15.3 percent also maintained that malaria results from heat from the sun, eating oily food and dirty surrounding. 8 healthcare consumers representing 2.1 percent however, claimed not to know the actual cause of malaria. The table 4.19 summarizes healthcare consumers' views on the causes of malaria. 90 healthcare consumers representing 23.3 percent gave multiple causes for malaria. Multiple early signs, symptoms and danger signs of malaria in children were recognized by healthcare consumers as fever/chills, headaches, malaise, vomiting, diarrhoea, yellow eyes and urine, refusal of food, dizziness and convulsion.

The most common multiple signs and symptoms were 3 signs which accounted for 50.4 percent and 2 signs also accounted for 28.1 percent. Out of 385 healthcare consumers, the most common multiple signs and symptoms presented were fever/chills, vomiting, and refusal of food 78 (20.3 percent), fever/chills and vomiting 37 (9.6 percent), fever/chills, malaise and refusal of food 36 (9.4 percent), fever/chills, malaise and vomiting 21 (5.5 percent) and fever 20 (5.2 percent). Healthcare consumers readily recounted all these signs and symptoms. Individually, the major overriding sign and symptom was fever/chills 357 (92.7 percent), vomiting 232 (60.3 percent), refusal of food 202 (52.5 percent) and malaise 122 (31.7 percent).

Dizziness 2 (0.5 percent) was the least symptom recounted by the respondents. Convulsion accounted for 2.6 percent (10) of the S&S.

**Table 4.19 Knowledge of Malaria by Healthcare Consumers**

Causes	Frequency	Percent
Mosquitoes	258	67.0
Mosquitoes + dirty environment + stagnant water	1	0.3
Mosquitoes + dirty environment + sun	2	0.5
Mosquitoes + sun + stagnant water	1	0.3
Mosquitoes + sun + oily foods	1	0.3
Mosquitoes + dirty environment	31	8.1
Mosquitoes + sun	17	4.4
Mosquitoes + stagnant water	4	1.0
Mosquitoes + oily foods	3	0.7
Sun	26	6.8
Sun + dirty environment	2	0.5
Sun + oily foods	2	0.5
Sun + stagnant water	1	0.3
Dirty environment	21	5.5
Dirty environment + stagnant water	1	0.3
Dirty environment + oily foods	3	0.7
Oily foods	3	0.7
Don't know	8	2.1
Total	385	100
<b>Signs and Symptoms</b>		
6 signs	1	0.3
5 signs	9	2.3
4 signs	45	11.7
3 signs	194	50.4
2 signs	108	28.1
1 sign	26	6.8

Source: Community Survey (2007)

#### 4.6.7 Home-Base Management of Children with Malaria

Healthcare consumers acknowledged that home-base care of malaria was mainly carried out by giving anti-malaria drugs (32.4 percent), giving anti-malaria drugs and sponging of child (23.1 percent). 52 representing 13.5 percent used traditional medicine for home-base management of malaria whereas, 10 (2.6 percent) absolutely did nothing at home, 28 (7.3 percent) would simply rush child to HCF for treatment and management. Below is a detailed summary of actions taken by households in the home-base management of children. Drugs used as anti-malaria drugs were mostly Chloroquine, and Paracetamol or Ibrufen and more recently Artesunate and Amodiaquine.

**Table 4.20 Home-Base Management of Children with Malaria**

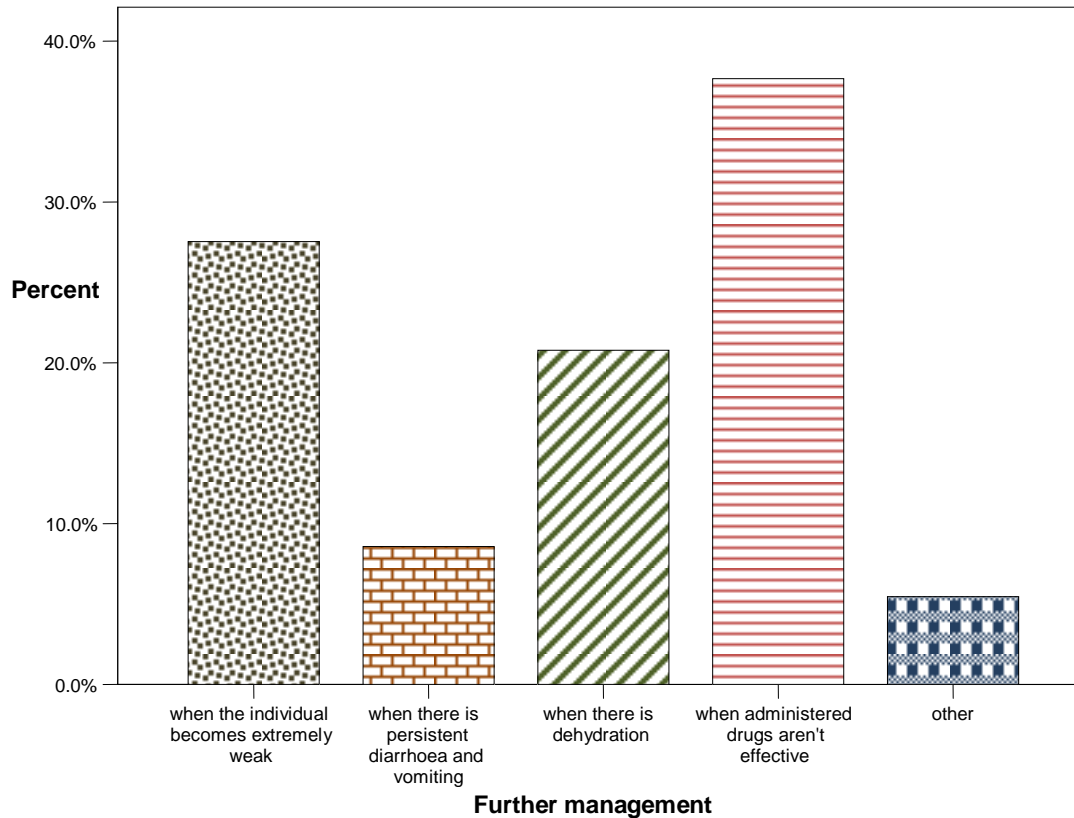
Type of management	Frequency	Percent
Giving of plenty fluids + anti-malaria drugs + sponging child	2	0.5
Giving of plenty fluids + anti-malaria drugs	3	0.7
Giving of plenty fluids + sponging of child	12	3.1
Giving of plenty fluids + sponging of child + rush child to HCF	1	0.3
Giving of plenty fluids + rush child to HCF	1	0.3
Giving of plenty fluids + traditional medicine + sponging of child	2	0.5
Giving of plenty fluids	2	0.5
Giving of anti-malaria drugs	125	32.4
Giving of anti-malaria drugs + sponging of child	1	0.3
Giving of anti-malaria drugs + sponging of child + rush child to HCF	5	1.3
Giving of anti-malaria drug + rush child to HCF	9	2.3
Giving of anti-malaria drug + sponging of child	89	23.1
Giving of anti-malaria drugs + traditional medicine	4	1.0
Sponging of child + traditional medicine + rush child to HCF	1	0.3
Sponging of child + traditional medicine	13	3.4
Sponging of child + rush child to HCF	14	3.6
Sponging of child	29	7.5
Nothing	10	2.6
Giving of traditional medicine + rush child to HCF	7	1.8
Giving of traditional concoction/medicine	25	6.5
Rush child to HCF	28	7.3
Other: herbs	2	0.5
Total	385	100

Source: Community Survey (2007)

#### 4.6.8 Further Management of Malaria

Out of the 385 healthcare consumers, 145 (37.7 percent) of them would mostly send children to HCFs for further management when administered drugs weren't effective, 107 (27.8%) healthcare consumers would send children to HCF when the individual was extremely weak and 80 (20.8%) of them would require further management at the HCF when there was dehydration. 8.6 percent (32) of the healthcare consumers would send their children to HCF for further management when there was persistent diarrhoea and vomiting. The remaining 5.5 percent (21) would either send their children to HCFs after at least three days without results or when there was loss of appetite and refusal of food.

**Figure 4.13: When to Seek Further Management for Malaria at HCF**



Source: Community Survey (2007)

#### 4.6.9 Drugs Used by Healthcare Consumers for Management of Malaria

Drugs given to children to treat malaria by caretakers have been outlined in table 4.21. Drugs used in the management of malaria according to healthcare consumers were largely Amodiaquine-Artesunate (23.9 percent), Chloroquine (21.3 percent) and orthodox medicine (19.5 percent). Healthcare consumers who couldn't remember the name of the drug indicated that orthodox medicine was used in the management. Thus, generally only 8.5 percent of traditional medicine was used in the management of malaria.

**Table 4.21: Drugs Used in the Management of Malaria**

Drugs	Frequency	Percent
Amodiaquine + Artesunate	92	23.9
Amodiaquine + Artesunate + Chloroquine	11	2.8
Amodiaquine + Chloroquine	16	4.1
Amodiaquine + herbal preparation + Artesunate	1	0.3
Amodiaquine + orthodox medicine	1	0.3
Amodiaquine	25	6.5

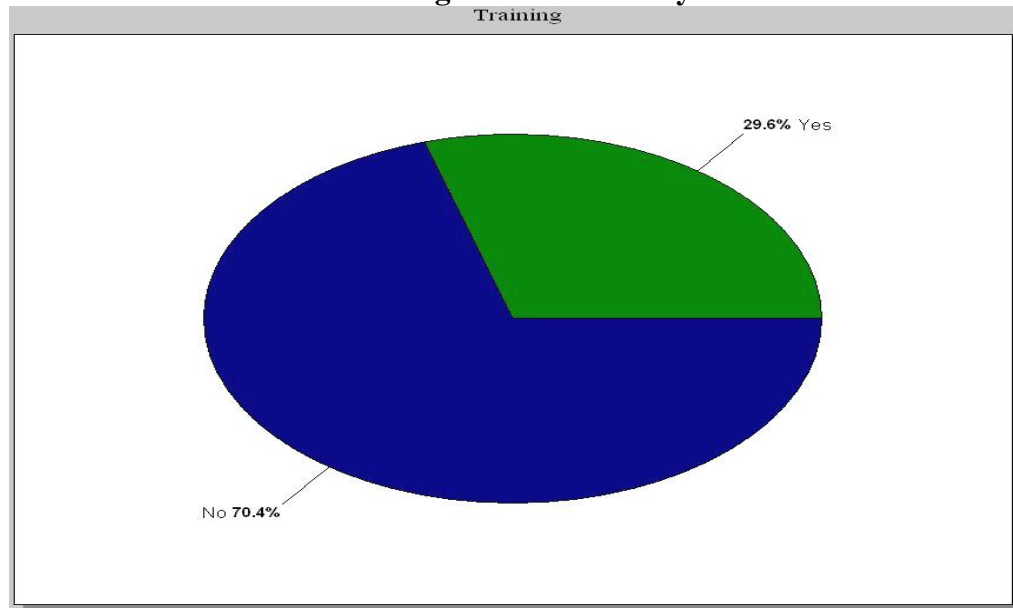
Amodiaquine + herbal preparation	2	0.5
Artesunate + Chloroquine	10	2.6
Amodiaquine + Artesunate +orthodox medicine	1	0.3
Artesunate + herbal preparation	3	0.7
Chloroquine + orthodox medicine	7	1.8
Artesunate	29	7.5
Chloroquine + herbal preparations	6	1.5
Chloroquine	82	21.3
Herbal preparation + orthodox medicine	4	1.0
Herbal preparation	15	3.9
Orthodox medicine	75	19.5
Other: Paracetamol	5	1.3
<b>Total</b>	<b>385</b>	<b>100</b>

Source: Community Survey (2007)

#### 4.7.10 Behaviour Change and Communication (BCC)

Healthcare providers acknowledged that there have been massive BCC on malaria in the district particularly on prevention using multiple strategies such as environmental sanitation, ITNs and IPT. The figure 4.14 however tells a different story. Out of 385 healthcare consumers only 29.6 percent (114) had training on malaria. 271 healthcare consumers representing 70.4 percent had no training on malaria.

**Figure 4.14 Education on NMCP Strategies to Community Members**



Source: Community Survey (2007)

Qualitative data implied healthcare consumers were generally taught causes and prevention of malaria, basic principles of home-base management of children with malaria, advantages and use of ITNs, balance diet, management of diarrhoea with oral rehydration salt, environmental hygiene and to consult the CBAs for insertion of rectal Artesunate as a first aid measure whilst getting to the clinic. For instance Nancy a trader in Prampram remarked:

We were taught that when a child develops malaria we should give first aid in the house then take him to the clinic; again we should live in a clean environment and prevent mosquitoes from biting our children.

Similarly Mary in Dodowa stated:

I learnt the causes and prevention of malaria, and also if a child is having high temperature I should sponge her and give some drugs before sending her to the clinic.

Whereas Kwemeile in Osuwem also declared:

We were encouraged to use ITNs, eat balance diet; and mothers have to consult the CBAs in the community whenever their children develop severe malaria so that rectal Artesunate could be inserted as first aid before sending them to the clinic.

Laadi an artisan in Ayikuma expressed:

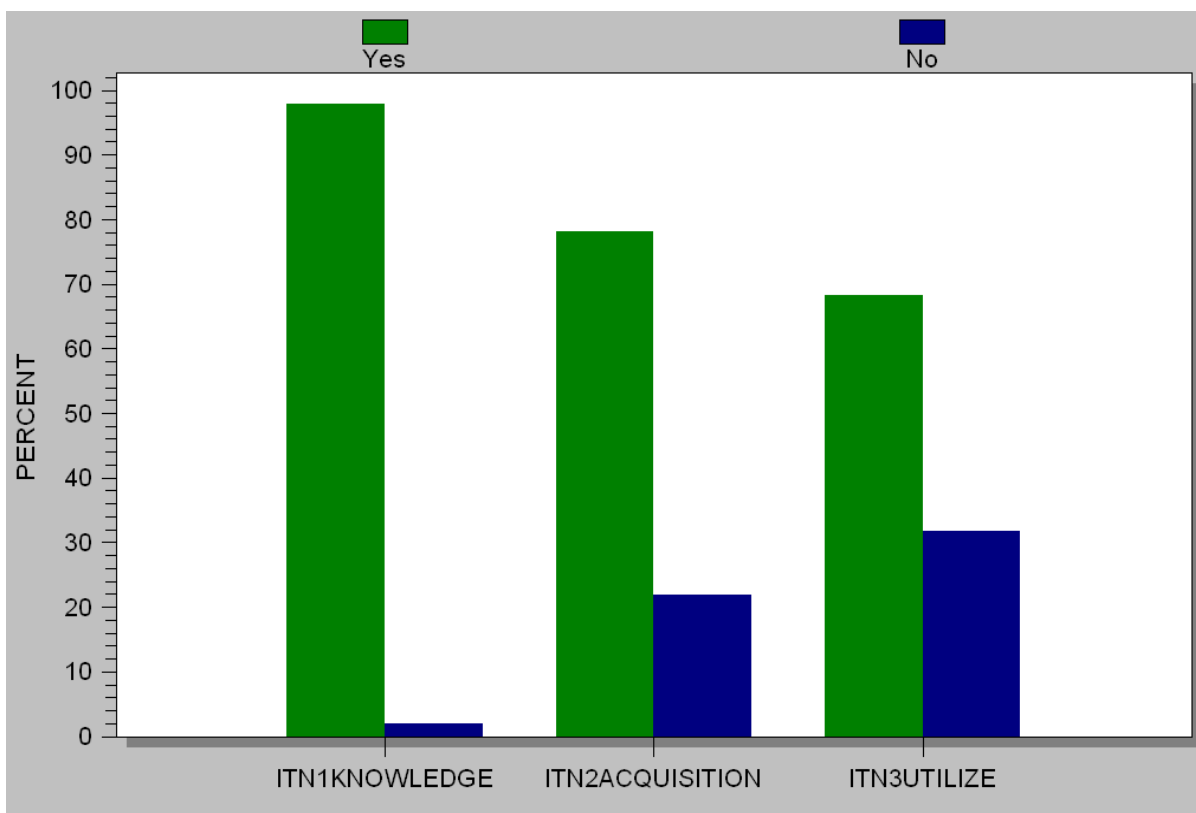
We were taught prevention of stagnant water and weeding of surroundings to destroy the breeding places of mosquitoes, keen interest was devoted to the drug of choice for the treatment of malaria that is Artesunate – Amodiaquine, the use of ITNs and IPT.

#### **4.7.10 Knowledge, Acquirement and Utilization of ITNs**

Out of 385 healthcare consumers, 97.9 percent (377) have heard about insecticide treated nets.

More than half of the healthcare consumers heard it from the HCFs 223 (57.9 percent), 15.3 percent (59) heard it from both the HCF and the media, whereas, 9.1 percent (35) heard it from just the media and 5.4 percent (21) heard it from the HCF and market. 5.2 percent (20) also heard it from the HCF and friends/relatives.

**Figure 4.15 Knowledge, Acquisition and Utilization of ITNs**



Source: Community Survey (2007)

The remaining 7.1 percent (27) either heard it from the HCF, friends/relatives, market and the media or from other sources respectively. Out of 385 healthcare consumers, 78.2 percent (301) had ITNs. 87.7 percent (264) of those who had ITNs acquired them from the HCFs whereas, 7.9 percent (24) acquired them from the market. 2.6 percent (8) had the ITNs from both HCFs and the market. Just 0.6 percent (2) acquired them from the chemical shop. Figure 4.15 shows a pictorial outlay between information, acquisition and utilization. The relative risk of having information on ITNs and its acquisition was 6.3660 with confidence interval of 1.0170 to 39.8493.

**Table 4.22: Household Utilization of ITNs**

Household	Frequency	Percent
Husband + children above five + wife	14	5.3
Husband + children under five + wife	41	15.6
Husband + children under five	3	1.1

Husband + wife	27	10.2
Wife	4	1.5
Wife + children above five + children under five	17	6.4
Wife + children above five	3	1.1
Wife + children under five	123	46.7
Children above five + children under five	4	1.5
Children above five	2	0.7
Children under five	25	9.5
Total	263	100

Source: Community Survey (2007)

Out of 385 healthcare consumers, 68.3 percent (263) slept in ITNs, and 87.3 percent (263) of those who had ITNs slept in them. Of those who were sleeping in ITNs; 46.7 percent (123) were children under five and wives, 15.6 percent (41) were husbands, wives and children under five and 10.2 percent (27) were husbands and wives. In all about 85.9 percent (226) of those who slept in ITNs were children under five. The relative risk of acquiring ITNs and sleeping in ITNs was 6.8093 with a confidence interval of 3.7962 to 12.2141. See table 4.22 for a detailed description.

Largely, reasons given by healthcare consumers for not using ITNs after acquisition ranged between feeling uncomfortable in them because of heat, no-one to fix it for them and not having mosquitoes in the room. Others also claimed that the nets were too small for their large families or their rooms were too tiny. But, Aku a trader in Wedokum remarked:

My child nearly died when I fixed it for him for the first time I was given because I don't know I have to air it for sometime before use.

Quite a sizable number of the healthcare consumers stated that their houses were mosquito proof or they preferred using mosquito coils because of the hot weather or fans. For those who didn't have it at all, their main bane was finance, they claimed it was expensive thus; they had resorted to the use of mosquito coils. Ama a farmer in Dodowa had this to say:

We used to have one but it was too old and we are yet to buy one so we use mosquito coil.

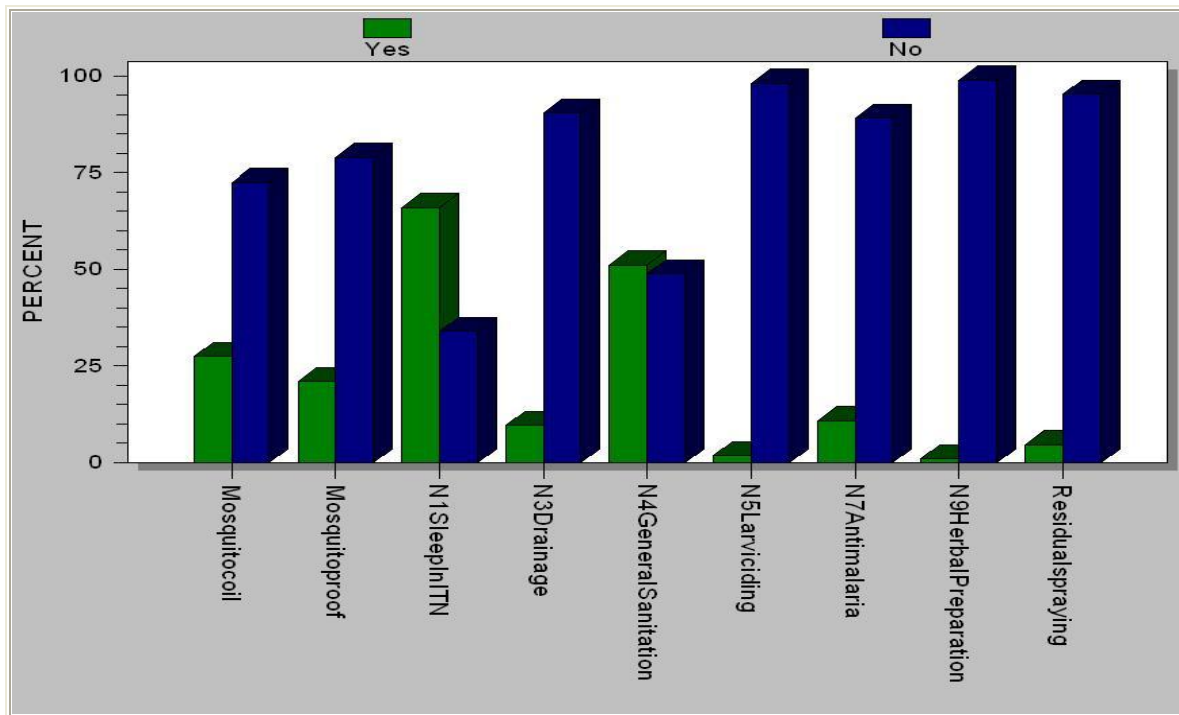
On the other hand some healthcare consumers claimed they did not know where to acquire ITNs and were in doubt of its efficacy in preventing malaria. Dede a trader in Dodowa expressed this feeling:

I don't sleep in the net because the net does not prevent malaria.

#### 4.7.12 Multiple Preventive Strategies of Malaria Control

Out of 385 healthcare consumers, 66.0 percent (254) used ITNs in preventing malaria. 197 (51.2 percent) embarked on general sanitation, whereas 105 (27.1 percent) used mosquito coil and 21.0% (81) resorted to mosquito proofing in preventing malaria. See figure 4.16 for detailed description. Significant among the combinations was sleeping in ITNs and general sanitation 116 (30.1 percent), and sleeping in ITN and use of mosquito coils. Whereas 189 healthcare consumers (49.1 percent) could retreat mosquito nets, 196 (50.9 percent) could not.

**Figure 4.16: Multiple Prevention of Malaria by Healthcare Consumers**



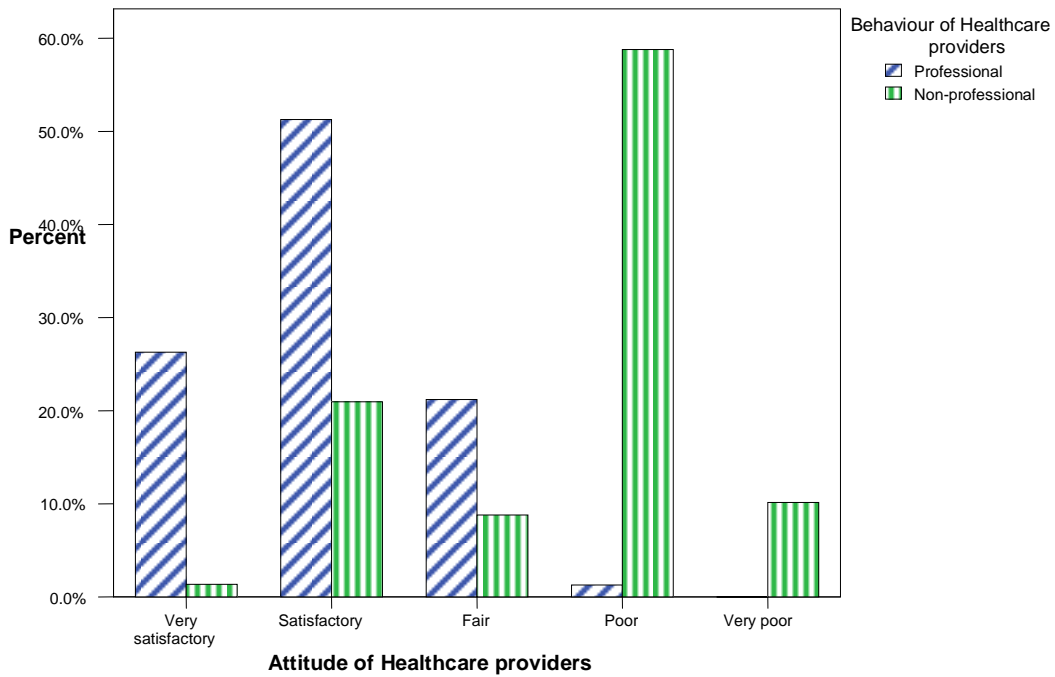
Source: Community Survey (2007)

#### **4.7.13 Reception and Attitude of Healthcare Providers**

Out of 385 healthcare consumers, 265 (68.8 percent) declared they always have prompt attention whenever they visit the HCF whereas, 120 (31.2 percent) remarked their dissatisfaction with the attention accorded them at the HCFs. Again, 216 healthcare consumers (56.1 percent) considered the attitude of healthcare providers towards clients as satisfactory while 169 (44.0 percent) considered attitude of healthcare providers to be fair, poor or very poor. 16.4 percent (63) considered attitude of healthcare providers to be just average/fair. In emergency situations, 237 (61.6 percent) healthcare consumers contended that healthcare providers behaved professionally whereas 148 (38.4 percent) considered behaviour of healthcare providers to be unprofessional.

Ironically, 33 (22.3 percent) healthcare consumers who declared that healthcare providers behaviour during emergencies was unprofessional also declared their attitude to be very satisfactory. Whereas, 3 (1.3 percent) who remarked that healthcare providers behaved professionally during emergencies, maintained that their attitude was poor. The chi-square was 215.838 with a p-value of 0.000, f-statistics of 327.829 with a p-value of 0.000, coefficient of correlation of 0.680.

**Figure 4.17: Perception and Attitude of Healthcare Providers**

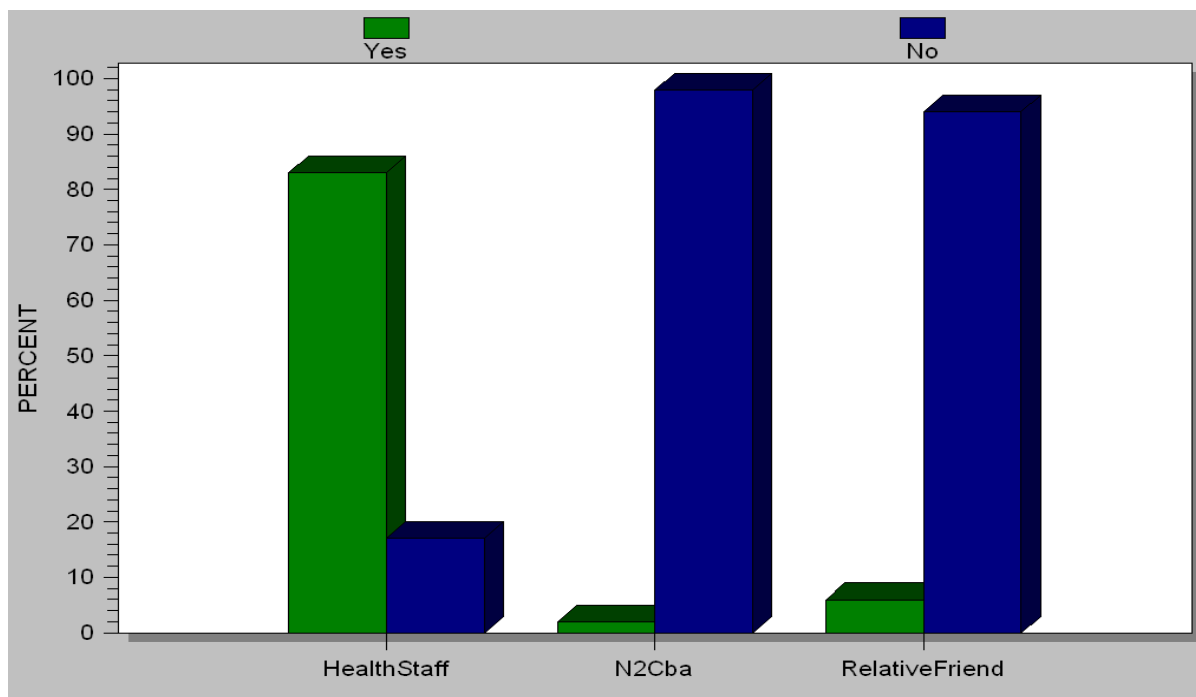


Source: Community Survey (2007)

**4.7.14 Intermittent Preventive Treatment Using Sulphadoxine Pyrimethamine (IPTp-SP)**

Information on IPTp-SP was massive in the district, out of 100 pregnant women, 91 had information on IPTp-SP with only 9 who have not heard about IPTp-SP. 83 (91 percent) of those who have heard of IPTp-SP, heard it from the HCF with less than a tenth of them hearing the information from relatives/friends (6.6 percent) and the CBAs (2.2 percent).

**Figure 4.18 Source of Information on IPTp-SP**



Source: Community Survey (2007)

Pregnant women were asked to give the name of the drug used for IPTp-SP. Out of 100 pregnant women, more than half (64.0 percent) were able to give the correct name. 28.0 percent did not know the name whereas 8.0 percent gave the name as either folic acid or iron tablets. See table 4.23 for name of drug distribution.

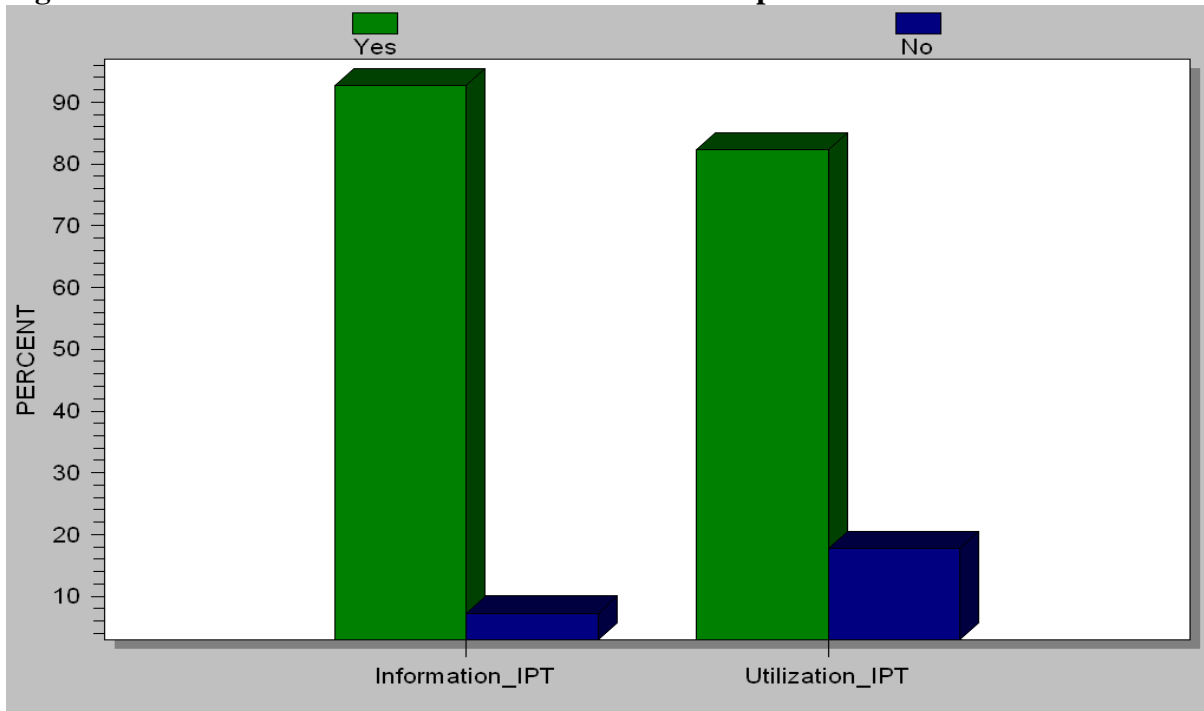
**Table 4.23: Name of Drug Used for IPTp-SP as Given by the Women**

Drugs	Frequency	Percent
Sulphurdioxine Pyrimethamine	64	64
Folic acid + iron tablets	4	4
Folic acid	3	3
Iron tablet	1	1
Don't know	28	28
Total	100	100

Source: Community Survey (2007)

Whereas 79 pregnant women representing 79.0 percent had taken SP before, a great proportion (86.8 percent) of those who had heard about SP had actually taken the drug.

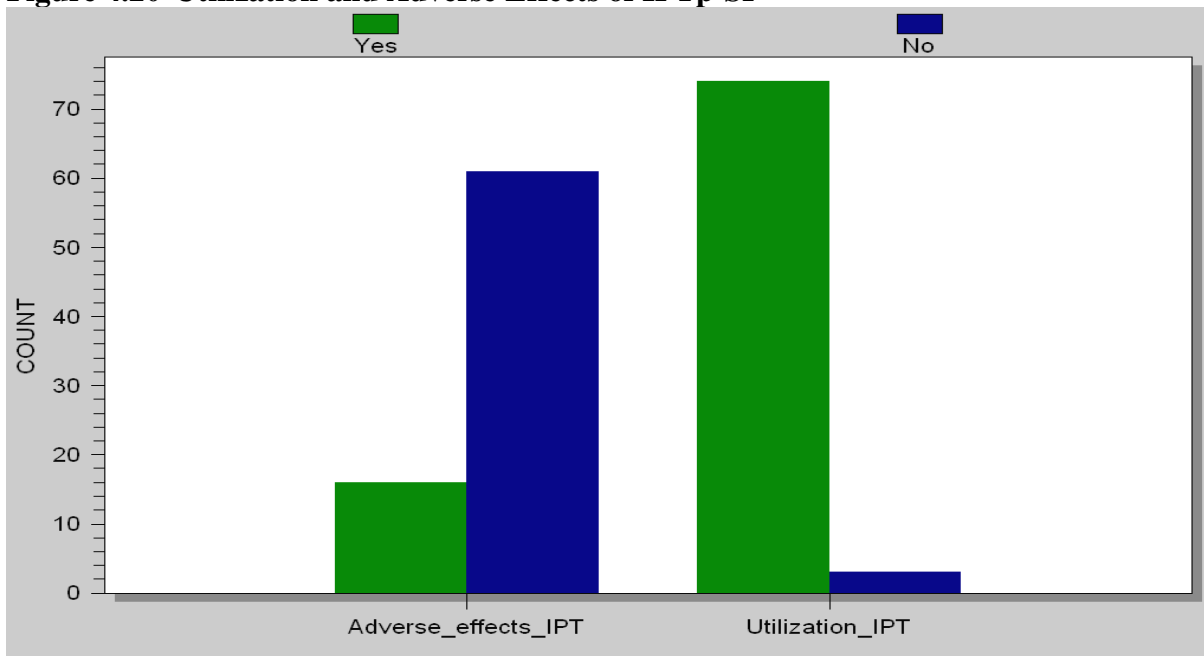
**Figure 4.19: Information on IPT and Utilization of IPTp-SP**



Source: Community Survey (2007)

Out of 100 pregnant women, 79 did take SP and 16 representing 20.2 percent did develop adverse effects respectively while 21 percent did not take SP. See fig. 4.20.

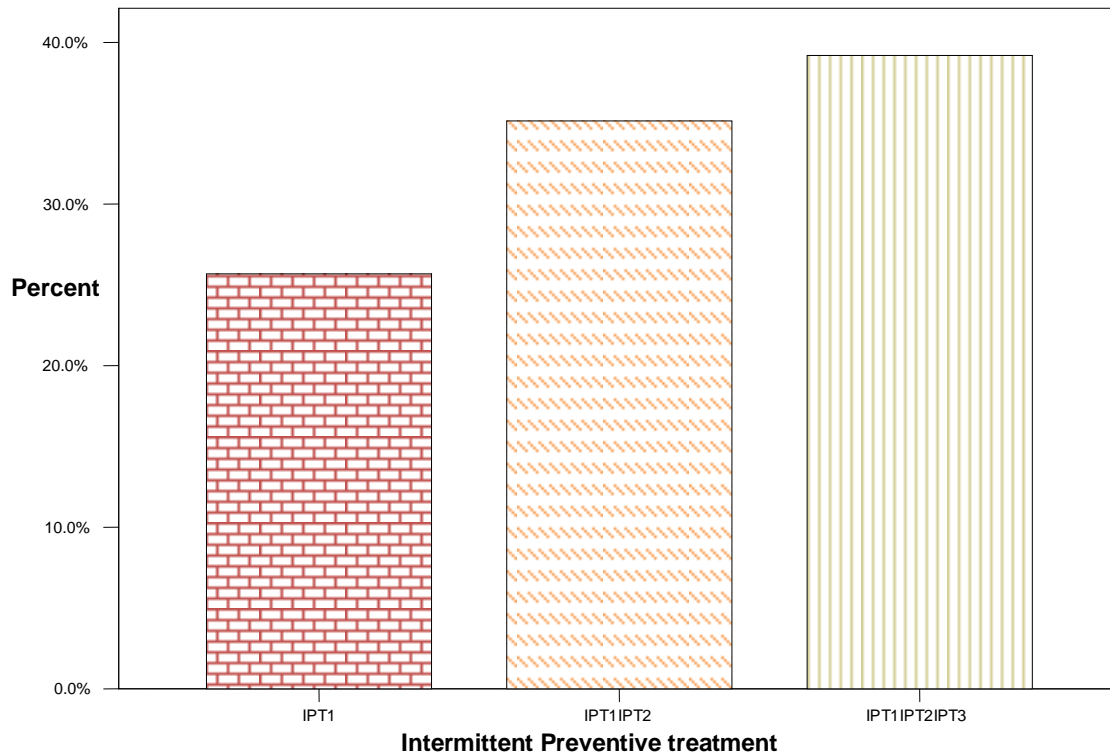
**Figure 4.20 Utilization and Adverse Effects of IPTp-SP**



Source: Community Survey (2007)

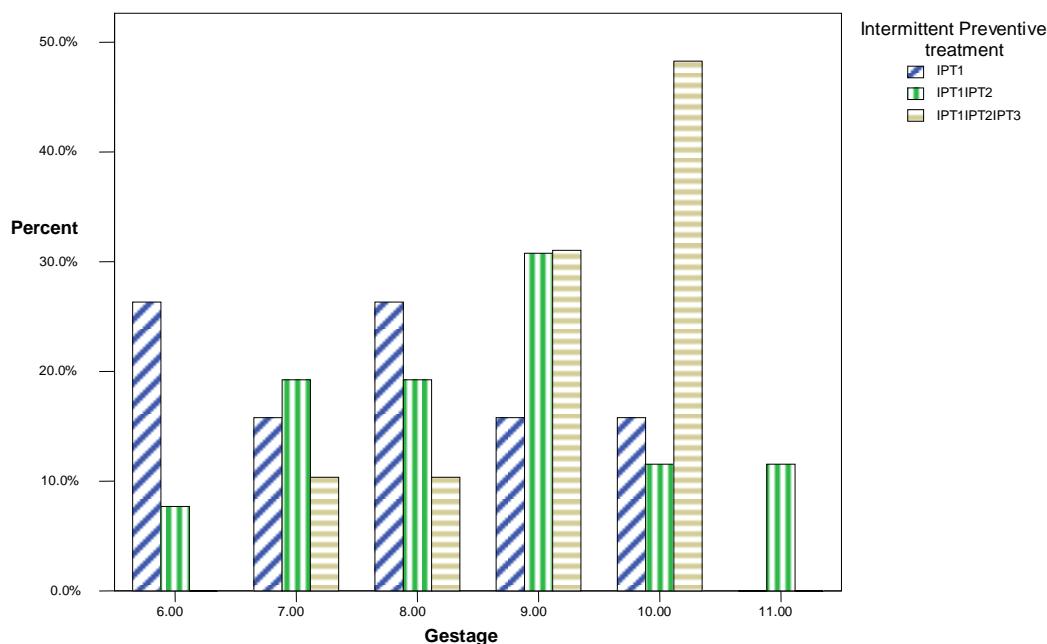
Out of 100 pregnant women, uptake of IPT 1 was 25.7%, IPT 1 & IPT 2 was 35.1% and IPT 1, IPT 2 & IPT 3 was 39.2% respectively (figure 4.21).

**Figure 4.21: Uptake of IPTp-SP**



**Source: Community Survey (2007)**

The figure 4.22 depicts uptake of IPTp-SP and age of pregnancy/time after delivery. Out of 19 pregnant women who took IPT1, 31.6 percent (6) were from 9 -11 months group, while 13 (68.4 percent) were from the 6 – 8 months group. Out of 26 pregnant women who took IPT1 & IPT2, 14 (53.8 percent) were from 9 – 11categories. Furthermore, out of 74 pregnant women who took IPTp-SP, 28.6 percent (20) were from 9 – 11 categories and 25 percent did not have all the three doses of IPTp-SP. But from the distribution below only 3 women (4.1 percent) were able to complete the course at the requisite time. The chi-square was 25.782 with a p-value of 0.004, f-statistics of 13.461 with p-value of 0.000, and coefficient of correlation of 0.397.

**Figure 4.22: Uptake of IPTp-SP versus Gestational Age/Time after Delivery (mths)**

Source: Community Survey (2007)

Qualitative data suggested reasons for not taking IPTp-SP was mainly non attendance however, the following reasons were recounted by some pregnant women:

Because I was on folic acid and iron tablets; because it was not good for me, whenever I took it I vomited; I had been to ANC four times but did not know why the nurses did not given me SP; I was not given because in my fifth month I was asked to go to Madina for laboratory investigation; I went to the HCF once and was asked to go to the laboratory, I did not go because I had no money but as I am well I did not attend ANC again; I was not given even though I attended ANC; the doctor said it was not good for me; I was not given; and the nurse told me it was not good for my system.

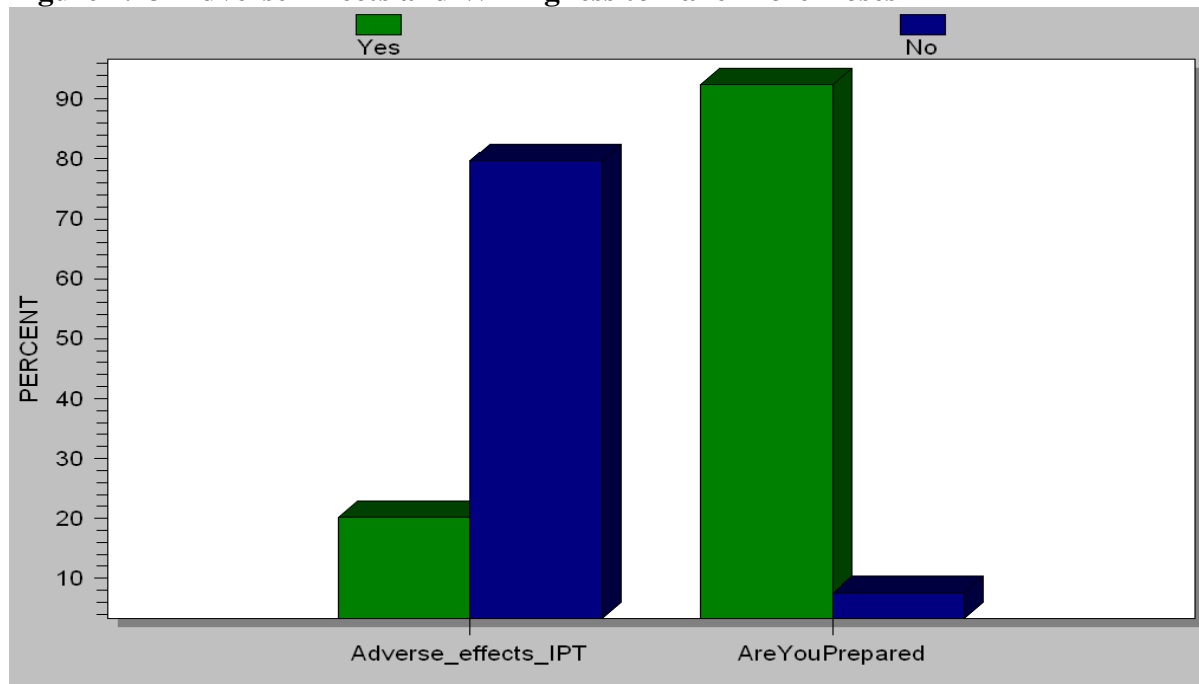
Finally, out of 100 pregnant women, 11 percent have not taken SP before because they did not attend ANC. The pregnant women made these remarks about IPTp-SP:

After taking the drug I felt like throwing up but I realized it reduced the rate at which I developed malaria; during this pregnancy I couldn't eat well but after taking the SP I could eat well; I used to fall sick in previous pregnancies but this have ceased because of SP; my baby was strong and healthy at birth and SP had prevented her from developing malaria; I was strong, healthy and had good appetite through-out pregnancy after taken SP; I used to be sick but

not malaria with the introduction of SP I felt relieved; I haven't realized any of the advantage of SP; SP prevented me from developing malaria and made me active throughout pregnancy; SP made me urinated excessively.

The pregnant women generally had recommendable comments regarding SP, apart from the 20.3 percent who had not realized yet the attributes of SP, 66 (81.5 percent) openly recommended SP.

**Figure 4.23 Adverse Effects and Willingness to Take More Doses**



Source: Community Survey (2007)

Out of 100 pregnant women, 73 (92.4 percent) declared they would take additional doses of SP whereas 6 (7.6 percent) declined to take additional doses of SP. Out of 16 pregnant women who developed adverse effects, 10 (62.5 percent) declared they would take additional doses of SP, 6 (37.5 percent) said they would not take any additional doses. Out of the 73 pregnant women who were prepared to take additional doses of IPTp-SP, 63 (86.3 percent) did not develop any adverse effects and were prepared to take additional doses of SP. The adverse effects recounted by the pregnant women were basically vomiting, nausea, itching, dizziness,

malaise and palpitations. Table 4.24 below depicts the minor adverse effects suffered by the pregnant women. The pregnant women acknowledged that even though they did report to the clinic nothing was done for them. One did say that she was asked to stop taking SP and another was given Piriton tablets.

**Table 4.24: Adverse Effects Developed by Pregnant Women**

Adverse effects	Frequency	Percent
Vomiting	8	37.8
Nausea	5	21.7
Itching	4	17.4
Skin rashes	1	4.3
Dizziness	2	8.7
Malaise	1	4.3
Palpitation	2	8.7
Total	23	100

Source: Community Survey (2007)

#### 4.7.15 Malaria in Pregnancy and Management

**Table 4.25: Development of Malaria in Pregnancy and SP**

How many times did you develop malaria during this pregnancy?							
Was it after taking the SP?	0	1	2	3	4	6	Total
<b>Yes</b>	1	3		2			6
Row %	16.	50.	0	33.	0	0	100
Col %	7	0	0.0	3	0.0	0.0	.0
	16.	17.	0.0	22.	0.0	0.0	13.
	7	6		2			0
<b>No</b>	5	14	9	7	4	1	40
Row %	12.	35.	22.	17.	10.	2.5	100
Col %	5	0	5	5	0	100	.0
	83.	82.	100	77.	100	.0	87.
	3	4	.0	8	.0	.0	0
<b>Total</b>	6	17	9	9	4	1	46
Row %	13.	37.	19.	19.	8.7	2.2	100
Col %	0	0	6	6	100	100	.0
	100	100	100	100	.0	.0	100
	.0	.0	.0	.0	.0	.0	.0

Source: Community Survey (2007)

Out of the 46 pregnant women who developed malaria, 6 (13 percent) did develop malaria after taking the SP; 3 (50.0 percent) of them had it once whilst 2 (33.3 percent) had it thrice. 17 (37.0 percent) had just one episode but 39.2 percent (18) developed between 2 - 3 episodes of malaria. The chi-square was 3.1556 with a p-value of 0.6760, indicating that there were variations for all the categories. See table 4.25 for elaborate description.

**Table 4.26: Treatment for Malaria in Pregnancy**

<b>Treatment</b>	<b>Frequency</b>	<b>Percent</b>
Amodiaquine + Paracetamol + Multivite	9	25.7
Paracetamol + Multivite	1	2.8
Amodiaquine + Artesunate + Paracetamol	4	11.4
Amodiaquine + Artesunate + Multivite	1	2.8
Amodiaquine + Artesunate	2	5.7
Artesunate	2	5.7
Amodiaquine + Paracetamol	6	17.1
Amodiaquine + concoction	1	2.8
Amodiaquine	3	8.5
Chloroquine	3	8.5
Total	35	100

Source: Community Survey (2007)

Drugs used in the management of malaria during pregnancy are shown in the table 4.26 and Amodiaquine was the favourite choice. As could be seen mono-therapy is still prevailing, 21 (60%) respondents did receive mono-therapy. Chloroquine (8.5%) was still been used for the management of malaria and the use of concoction (20.0%) could also not be ignored; the role played by traditional medicine was really essential in any rural setting in Ghana where poverty was ubiquitous.

#### **4.7 16 Roles Played by Opinion Leaders' in Malaria Control**

Roles played by opinion leaders towards malaria control have been both supportive and collaborative in most communities whereas in some communities' opinion leaders have not played any active role. All the chiefs simultaneously reported as:

I was once chairman of interim management committee at the health centre so I have been assisting with the planning of activities; I have involved myself in taking decisions on the general sanitation of the community and also educating community members on ways to prevent malaria; I organized communal labour to clean our surroundings and educated people on causes and effects of malaria, and the importance and use of ITNs.

Whereas the head teacher and the assembly man concurrently remarked:

I have not been involved in any of the activities of malaria control since I assumed office. I hope to assist in malaria control activities later as I get used to obligations.

#### **4.7.17 Contributions of Opinion Leaders' Towards Malaria Control**

Generally, opinion leaders' contributions towards malaria control have been encouraging community members in using ITNs, assisting with the cleanliness of the communities, and ensuring that basic needs of the communities were met and breeding places of mosquitoes destroyed. As expressed by Mr. Kokuvi the head teacher of X community:

On my own volition I encouraged people to sleep under treated mosquito nets, cleared the bush in their surroundings and visit the healthcare facility whenever they develop fever thus, I even walked from house to house in the evenings to ensure that children did sleep in mosquito nets.

On the other hand, Mr. Lanyo an elder of Manya community declared:

I always organized people to clean the community, I had been out on several occasions to educate people who left water in their gutters to sweep them and to keep their gutters clean since this could breed mosquitoes and bring about malaria outbreak.

Similarly, Nene Abeti expressed:

I provided the people with food during periods of communal activities and tools to work with, and I organized residents to partake in communal activities to clean the environment.

Mr. Kofi another head teacher in one of the communities remarked:

I organized pupils to dig hole for dumping of refuse so as to destroy breeding places for mosquitoes and encouraged pupils to educate their parents on the importance of both environmental and personal cleanliness.

Mr. Francis the assemblyman of Agomeda remarked:

I built toilet and employed labourers to keep the community clean and organized communal labours periodically.

#### **4.7.18 Opinion Leaders' Perception of Delivery of Healthcare Services**

Perceptions of opinion leaders were varied in all dimensions of healthcare delivery. Many were of the view that the healthcare system was doing its best in the care of the sick and education of the general public, because of better drugs being given to the sick. There were some who also believed the health system was not doing much in curbing the incidence of malaria. According to Mr. Akpabli assemblyman of Agomeda:

Delivery of health service is on course because of the prompt attention and better drugs being given to the sick, I have had interactions with people who attend the clinic and have to attest to the fact that they are really doing well.

Mr. Lawey the head teacher of Osuwem however remarked:

There had not been any cordial relationship between the health centre and the people in the community; poor sanitation is a major problem and much education would be needed to enlighten people.

#### **4.7.19 Constraints Stalling Malaria Control**

The chiefs, elders, assemblymen and head teachers of the district generally admitted that constraints hindering the goal of malaria control were disregard to advice, lack of unity, inadequate funds, and lack of basic needs such as toilets and refuse dumps. Mr. Francis, the assembly man of Agomeda narrated:

Most people did not attend the malaria control activities and did not take the education serious, there was also the problem of poor drainage in some houses, lack of refuse dump and toilet.

Mr. Adongo the head teacher had this to say:

Lack of qualified doctor at the health post and lack of place of convenient in most parts of the community made healthcare delivery a major issue; many people had to be transferred to other communities for healthcare in emergency situations.

Nukadumor Kwasi of community B remarked:

The problem was that there were no follow-ups, because the HCF did not take their time to educate the people within the community, so the officers were not doing well and we had been saddled with uncooperative community members.

#### **4.7.20 Modifications Embarked Upon to Reduce Incidence of Malaria**

Opinion leaders conceded that they have put in enough efforts to help the programme achieve some of its objectives. As stated by Mr. X the assemblyman of Agomeda:

I built a toilet and have also employed labourers to keep the community clean in order to prevent malaria. I have put someone in-charge of the refuse dump in the community to always keep the place clean to prevent mosquitoes breeding around the dump.

Nene Tematey chief of Aperkon had this to say:

Quite recently a refuse dump and toilet were built; sanitary workers summon people who didn't keep their gutters clean, and dry. I had been advising pregnant women to visit HCF for IPTp. I organized for the registration of the elderly and the teens into the health insurance scheme and community members to dig wells.

Nene Ogum chief of community X expressed:

Rules had been developed to guide activities of the community and individuals had been advised to keep their surroundings neat.

Residents had been advised to sleep in treated nets, clear bush in their immediate surrounding and report cases to the clinic.

#### **4.7.21 Health System's Effort in Reducing Incidence of Malaria**

When asked whether the health system have done enough to reduce morbidity and mortality of malaria, many were of the view that much have been done to reduce the incidence of malaria but there were few who did not share this opinion. Thus, the following were their responses:

Was not enough; Malaria had reduced a bit; So far I would say yes because things were going on well, the only thing done was provision of community health centre (CHPS compound) with only one attendant; They were doing 100 percent work because when you compared now to former times you could see there was much improvement; Malaria had reduced; They were doing very well, but there was not enough drugs to take care of the sick and the little available was expensive; There was also monopoly in the type of medicine used for malaria and you could hear people saying they were given Chloroquine and Paracetamol.

## CHAPTER FIVE

### DISCUSSION OF FINDINGS

#### 5.0 Introduction

The major objective of this study was to describe the processes of management of malaria control at the Dangme West district and the extent to which the principles of SM is being applied. This approach was adopted because the SM process gives a holistic intent to management by ensuring a fit between the programme and its external environment. The scheme for discussion was based on the objectives and assumption of the study.

The assumption was that “the degree to which malaria control is systematically managed using the process of SM will enhance the status of malaria control programme indicators. The vast nature of the district with its poor road network played a key role in respondents’ selection; communities for the study were conveniently chosen from the four sub-districts for equal representation. This meant that generalization of information on the community survey could be a bit hesitant due to selection bias.

Although, the study found all the elements of SM practice present in the management of malaria in the district, the actual orientation of the practice was evidently absent because there was no analytical coordination between the elements. The findings on the status of key malaria control indicators confirmed other research findings within the district such as perception of the causes of malaria, etc. (Agyepong 1992; Gyapong 2005) and sub-Saharan Africa (Buabeng et al. 2007; Falade 2007; Gersti 2007; Kamat 2006; Nyamongo et al. 2006; Anh et al. 2005; Mubyazi 2005; Njagi 2002). The study again realized that healthcare managers were more interested in the day-to-day management of the HCFs but due to the homogeneity of the district, culture was unconsciously been managed. Planning was

however, informal and as such inadequate for effective and efficient malaria control programme as realized also by Decker and Sullivan, (1992). Generally there was enhancement in the status of key malaria control indicators.

## **5.1 Objective 1: To Describe the Conduct of the Situational Analysis Phase of Strategic Planning in the Dangme West district.**

According to data collected from the healthcare managers, conduction of situational analysis was prevalent though, the researcher couldn't really fathom usage of information generated from the analysis. There was no formal documentation of any conduct of situational analysis; as formal plans were infrequently used in the management of HCFs. Data presented therefore, were simply perceived conduct of situational analysis by the healthcare managers.

### **5.1.1 Vision, Mission and Objectives of Malaria Control**

The vision of NMCP which was in line with the global RBM vision was widely known by all the healthcare managers in both private and public HCFs. The high knowledge of the strategic vision could be due to the increased in-service training and promotion of malaria control within the district by the DHD. As suggested by Hussey (1994) and Senge (1990) knowledge of the vision is critical because it would guide the direction of the programme and create energy for changing reality which would lead to higher performance, thus armed with the vision of NMCP healthcare managers were more likely to work towards its achievement. Whereas all healthcare providers in the HCFs knew the vision of NMCP, only 52.9 percent of chemical sellers were familiar with this vision. Chemical sellers though are private business entities, play a critical role in malaria control especially home-based management in the district. It is therefore, important that they have adequate knowledge about the pursuits

of the NMCP for them to appreciate efforts being made by the government in controlling the prevalence of malaria so as to adequately deal with the community's malaria control.

The operational strategy which gives a tangible purpose for the existence of malaria control was very much unknown to the healthcare managers (15.6 percent). Thus, due to the prevalence of malaria, intuitively the mission was communicated adequately through direct service and education. The media was sparingly used as a form of communication because the district wasn't endowed with one. The inadequate knowledge of the operational strategy which was the fundamental purpose of the programme was worrisome because when clearly understood by healthcare providers, the complexity of the environment could be simplified and analyzed for effective planning thereby, inspiring high performance. Healthcare managers should be encouraged to boldly display their mission statements at the HCFs so that the mission statement would not be "worthless" as claimed by Ackoff, (1987) but would be a "living document" to remind staff of the existence of the entity; e.g. GHS. Hence, the mission would be capable of harnessing commitment and confidence of stakeholders.

Dangme West typically was an indigenous district and as indicated by Duncan et al., (1995), her environment was naturally uncompetitive or "homogenous" and all the healthcare managers were pursuing multiple goal and multiple service strategies as acknowledged by Paul, (1983) to yield better outputs for malaria control. Healthcare managers in both private and public HCFs considered multiple prevention, improved partnership, creating patient access, innovation, social responsibility, motivation of staff, improved case management, effectiveness, fulfilling community needs, providing quality care, meeting the goals of NMCP and reducing incidence of malaria as very important to malaria control and were assiduously pursuing these goals prescribed by the NMCP in controlling malaria. The

chemical sellers on the other hand were operating selectively mainly to maximization of profit. Due to the uncompetitive nature of the environment most of them were not anxious about any of the goals of NMCP. The district was therefore using the strategic components of NMCP as recounted by MOH, (2000) in controlling malaria.

The vision, mission and objectives of any programme would define the strategic direction of the programme and what it hopes to achieve. It is of utmost importance that healthcare managers would be well informed about the vision, mission and objectives of the programme to enable them translate them into reality to create a disciplined programme as acclaimed by Drucker, (1989) and also to give direction to management of malaria. Training of healthcare providers should therefore be initiated with these fundamentals and their implications for quality delivery of healthcare services.

### **5.1.2 Management Tools Used in Planning**

Findings suggested that whereas, objectives set by the NMCP was profoundly (92.3 percent) used by healthcare managers of both private and public HCF, chemical sellers cautiously (29.4 percent) utilized the objectives of NMCP to maximize profit. Reference to previous objectives was used by many of the healthcare managers especially those from the public because in writing quarterly periodic reports, reference was always made to targets in terms of achievements, outcomes and expenditure. Most of the healthcare managers were not very conversant with the additional tools used in planning even though, they traditionally made reference to them; that is SWOT analysis, and community assessment. Care was taken by the principal investigator to explain the tools vividly to them and eventually they realized that the tools were fundamental accessories which they often used in planning. It was very sad though, that in this era of technological age none of the healthcare facilities could boast of

any computer, which is very basic to effective planning. The development of timely, accurate, systematic, consistent and useful information system is crucial for analysis of the dynamic forces of the environment for efficient planning as noted by Sprague and McNurlin, (1993). Therefore, to have a structured plan the DHD should endeavour to equip the healthcare facilities with these implements of planning and facilitate staff training for its maximum utilization.

### **5.1.3 SWOT Analysis**

SWOT analysis according to Duncan (1996) is an essential logical element that combines analysis with judgment in planning. Findings from both quantitative and qualitative data showed that political, socio-economic, regulatory and epidemiological factors were important to management of malaria and healthcare managers constantly assessed them to enhance collaboration with the communities as also indicated by both Bopp (1994) and Ofosu-Amaah (1983). Community participation in malaria control was important to global RBM (WHO, 1998) and frantic efforts were being made by the healthcare managers to enhance this objective. The concept of competition among healthcare managers was extremely exciting; Dangme West has a relatively homogenous environment and it is worth mentioning that the district according to GSS (2000) and Kpabitey (1996) is extremely poor. Thus, competition to healthcare delivery was non-existent just as Duncan, (1996) and Macmillan & Tampoe, (2000) declared that no competition exist in any indigenous society. Hence, healthcare managers and chemical sellers within the same “market” offering similar services were neither hesitant nor interested in knowing what strengths other players possessed and how they would be used to their advantage. Healthcare managers should therefore be educated on

the importance of these competitive forces within the environment and how they could be exploited for competitive gains, effectiveness and efficiency.

**Opportunities identified:** Most of the healthcare managers were so busy nurturing current malaria control activities that it was hard to step out and see threats or opportunities. Accordingly, healthcare managers were urged to identify opportunities within their environment that would enhance malaria control. Significantly, there was overwhelming collaboration between healthcare facilities and the communities, extensive use of ITNs, increased communal spirit within some communities and research on rectal Artesunate for children under five years by the HRU.

It is worth mentioning that the activities of the HRU have kept malaria control active in the district for instance; the rectal Artesunate has effectively adapted the programme to its environment. Integration of pilot projects according to Paul (1983) is an innovative feature which would enhance programme effectiveness and also keeping the programme re-engineered. It was therefore, no surprise that incidence in severe malaria among the under-fives was reported by all the healthcare managers to be declining due to the administration of rectal Artesunate. This approach would not only lead to the formulation of more realistic strategies but would no doubt ensure achievement of goals or enhancement of strategic malaria control indicators.

**Threats identified:** Qualitative assessment of threats identified unemployment and illiteracy with its ensuing menace poverty as major threats in the district. Even though the district is about 40 kilometers away from Accra, the district is predominantly rural with poor socio-economic and infra-structural development thus, job opportunities was simply absent and the Ghana Statistics survey (2000) described the district as being extremely poor. Consequently,

in some communities the NHIS was instigated and sponsored by ILO, this encouraged many residents to utilize the healthcare facilities. The project had since been over and residents were to pay their own premium, many of them simply stopped using the HCFs due to finance. Increase in the premium of the health insurance has also been a bane, preventing many people from utilizing the HCFs. This is of immense concern to the management of malaria.

Another major issue was the high illiteracy and poor environmental conditions in the district which makes malaria very recurrent and recalcitrant thus posing a challenge for control. Mr. Akoto, a chemical seller expressed that the major challenge to malaria control was the choice of drugs. Clients would normally come with their demands and preferences based on affordability and acclaimed efficacy due to the expensive nature of Artesunate-Amodiaquine. External factor that had the highest impact was socio-economic situation of clients due to affordability of services rendered by healthcare providers and the level of poverty in the district (GSS, 2000). The success of NHIS is therefore, very crucial to the sustenance of malaria control and maximum support should be given by all stakeholders to make it work. A peculiar situation captured during the study, was a virtually empty HCF during working hours. Explanation given was that residents were looking for money to pay-up their premiums thus, they hardly used the facility. This study was carried out in the first quarter of the year during the dry season when, there was hardly any money for the peasant farmers, fisher-folks, or petty traders to lay their hands on or spare for health care.

**Facility assessment** is used to identify strengths and weaknesses within a facility. This augments planning by assisting healthcare managers to avoid weaknesses and adequately neutralize threats posed by the external environment resourcefully whilst creatively

exploiting the opportunities and strengths as admonished by Duncan et al., (1995). The study clearly showed that conventional methods were used in assessing strengths and weaknesses of the HCFs and common among them were government assessment, perception testing of key constituency groups and studying the gap. These methods were enormously used by the public HCFs because of centralization of administration within the district health system. In budgeting for a particular period reference was always made to previous targets and how resources supplied earlier had been used. Benchmarking was a novelty and was sparingly (31.3 percent) used by the healthcare managers probably because of its uncertainties in practice as stated by Macmillan and Tampoe, (2000) or its comparative nature as planning was basically informal. Healthcare managers must be encouraged to use this method to enhance peer review and coordination among healthcare providers within the district.

Community assessment was fairly utilized by all the healthcare managers; simple on-going conversation and informal gathering of local leaders appeared to be the most favoured method. This fact adds to the assertion that healthcare managers were more comfortable with informal processes as seen earlier. Apart from the chemical sellers, the remaining healthcare managers highly made use of healthcare facility's data in assessing strengths and weaknesses. Analyzing data from the facility was a subtle way of identifying capabilities and problems which would ultimately shape the direction of strategy, enhancing competitive advantage as noted by Macmillian and Tampoe, (2000). Healthcare managers should therefore be commended for this effort.

**Strengths:** Qualitative data suggested that there was commonality of strengths among the HCFs and these were basically availability of recommended anti-malarias, charging of moderate fees and promotion of the tenets of NMCP. This is very recommendable and

healthcare managers need to be supported and encouraged to keep it up, as it's a major step towards malaria control. Because of the indigenous nature of the district most healthcare providers were particularly careful with their attitude, thus good interpersonal relationship was a fundamental principle. There was only one laboratory facility in the district and this made confirmation of clinical presentations of malaria very tedious as cases were mostly referred outside the district.

**Weaknesses:** Facility weaknesses were skills and capabilities that did not enable the facility to implement strategies as identified by Griffins, (1999) that would support the management of malaria. Healthcare managers readily accepted that due to the rural nature of the district, most professionals refused postings to the area hence, inadequate quality and quantity of healthcare providers was a major weakness to almost all the healthcare facilities (GHS). Additionally, inadequate logistics, no definite plans for the programme, inadequate finance, inadequate motivation of staff, insensitive attitude of some staff, infrequent in-service training for staff, and lack of privacy were some weaknesses identified with the healthcare facilities. In most of the healthcare facilities work have been organized in such a manner that goals were accomplished using the skills and capabilities the healthcare facility already possessed and according to Paul (1983) so as to avoid competitive disadvantage. Lack of privacy was observed in one public HCF and because of that parturient women refused to have their babies in the facility.

Due to the simple management structures that most HCFs had, attitude towards risk in planning was non existence as a result of the integrated approach to management of public health diseases adopted by all. This enhanced communication and coordination among

healthcare providers in their quest to control morbidity and mortality associated with malaria. Analysis of all the above data set the pace for effective planning to take place, though there was no formal plans in almost all the healthcare facilities just as Botchie, (1986) confirmed this to be very common in public services in Ghana.

## **5.2 Objective 2: To Describe the Planning Process of Malaria Control in the District.**

Planning for malaria control activities in the district was much more informal than formal. Decision making was highly participatory and all health care providers were actively involved in the management of malaria control in the district. Healthcare managers were more interested in the day-to-day management of their facilities and less attention was paid to management of culture due to the homogenous nature of district. Planning in such an environment according to Duncan et al., (1996) can be mostly informal especially with smaller entities such as the HCFs found in the district.

### **5.2.1 Types of Planning**

Findings suggested that even though almost all the healthcare managers used either informal or combined planning process relevant to the situation, there was consistency in decision making, and management of malaria control within the HCFs was relatively effective. Duncan (1996) reiterated that when there is either increase in the level of competition or changes in environmental factors, the need for a formal planning process appreciates. The attitude of these healthcare managers therefore was due to the fact that they did business in an uncompetitive relatively stable environment but it is hoped that as the district develops

this would change and healthcare providers will learn to be competitive to ensure that clients have the best, value for their money and alternatives to choose from.

Generally, as the NMCP is encouraging partnership in the management of malaria, stakeholders collaborating in the planning process were healthcare providers, who were directly involved in the delivery of healthcare services, and the district assembly who has been giving to the management of malaria control, 1 percent of its annual budget but for the past three years this has not been forthcoming. The role of opinion leaders and NGOs was advisory, supportive and collaborative.

### **5.2.2 Duration of Plans and Frequency of Planning Meetings**

As discovered by Hussin et al. (2000), the general practice of HCFs was more towards short-term than long term, and the duration ranged between one to five years with an average of 1.5 years. Generally, it can be concluded that strategic orientation did not exist in the district and so was strategic thinking since plans were mostly informal or combined with a short-term duration. This was not unforeseen; the districts are the operational level and normally are implementers of plans orchestrated either by the regional or national levels of GHS. Frequency of planning meetings ranged between quarterly and monthly meetings though, many preferred contingency planning meetings to bridge up gap on trends of malaria control with colleagues. These meetings took place whenever necessary depending on the complexity of events.

Findings illustrated that healthcare managers determined the major steps necessary to develop activities of malaria control from current states to desired states, coordinated these activities, assured constant review of the plans and maintained firm grip of all processes,

especially monitoring to enhance programme effectiveness. This attitude of the healthcare managers assisted in the enhancement of key malaria control indicators that were identified.

### **5.3 Objective 3: To Describe Implementation of NMCP Strategies in the District**

Resistance to change is the first barrier towards implementation as recognized by Hussin et al., (2000) but findings suggested that because of the participatory nature of the planning process resistance to change was generally minimal. Healthcare managers consistently involved their colleagues in the internal rumblings of the routine malaria control activities, thus they all truly identified with the achievements of the programme.

Factors that had profound impact on promotion of malaria were leadership, training, and adequate resources. Naturally, these factors enhanced programme performance but Duncan et al., (1996) contended that inadequate resources should not in anyway prevent the programme from achieving its aim. Thus, even though most HCFs generally had genuine weaknesses they weren't perturbed and strived for effectiveness. The need for building information systems, motivation, organizational culture and organizational structure all impacted moderately on implementation. These factors created an enabling environment for effective and efficient implementation of malaria control activities.

All the strategic objectives of global RBM (WHO, 1998) were effectively being implemented in the HCFs especially GHS facilities. There was massive collaboration of stakeholders namely CBAs in the distribution of drugs which was also cited by Gyapong (2005), the district assembly in the organization of BCC, the opinion leaders in the cleanliness of the community and provision of basic amenities, religious institutions and schools were not left

out in this campaign against malaria. Truly malaria control is a community-based activity in the Dangme West district.

### **5.3.1 Training of Staff**

Contrary to Ijumba and Kitua's (2004) assertion on the inadequacy of strengthening capacity for malaria control through training in sub-Saharan Africa, almost all healthcare providers in both public and private healthcare facilities have had their knowledge, skills and attitude on the management of malaria updated. The GHS Training Policy, (2006) for instance, has it that every staff should at least have one relevant training every three years. Again most of the professional councils have made training mandatory for renewal of professional identification number (PIN). This would no doubt ensure quality delivery of healthcare and eventual success of the programme as indicated by Acharya, (2000). It was however, sad to note that just half (52.9 percent) the number of chemical sellers interviewed have had their staff trained in the strategies of NMCP. Most of the people selling drugs in the district knew very little about the combined therapy and were still issuing out mono-therapy to innocent consumers. This was mainly due to poor financial standing of most residents and ignorance on both the healthcare consumers and the healthcare providers. This situation is of grave concern to the programme and must be urgently addressed.

Frequency of training ranged between quarterly, semi-annually, annually, twice in three years and none. Adequacy of training is in tune with GHS policy on IST. Training was mostly organized by the DHD and supported by NGO (World Vision International) for both public and private HCF and sometimes chemical sellers, although the pharmacy council was in-charge of their periodic training. Training was observed to be a source of incentive for healthcare providers in the district as little incentives were normally given and this was also

asserted by Duncan et al., (1996) and Cohen & Bradford, (1990). Training is effective in ensuring that healthcare providers remain knowledgeable and skillful in current trends of health and must be demanded as a right by healthcare providers as enshrined in the labour law of Ghana.

### **5.3.2 Culture and Leadership Style for Malaria Control**

Excellence begins with culture which permeates the environment of programme activities and is important in determining the internal capabilities of a programme (Duncan, 1996). It was observed that healthcare managers have extensively adopted flexible culture in managing malaria control activities, in facilitating their anticipation and adaptation to environmental changes and ensuring that the “fit” between malaria control and the external environment (Kotter and Heskett, 1992) is sustained. Again leadership style adopted by the healthcare managers was management team and combined leadership. All these leadership styles were very compatible with flexible culture and this encouraged participation of all parties in the control of malaria. The relationship between leadership style and organizational culture was very significant and though fairly negative because there was no consistency between type of organizational culture and leadership style with the HCFs. This fairly inverse relationship meant healthcare managers were not very definite when it comes to leadership style and this depended so much on current environmental circumstances.

### **5.3.3 Staff Motivation**

Internally, promotion of malaria control was done through the assignment of responsibility for each aspect of the plan with authority, trust and open communication, and establishment of relationship among people. The promotion was carried out in such a manner that it abundantly provided staff with a sense of security, autonomy and motivation. Motivational

strategies adopted were relatively common to all healthcare managers. Motivational efforts facilitated by the DHD, healthcare providers confided were woefully inadequate but they asserted that their inspirations were normally from their achievements, the frequent trainings offered to boost their knowledge, skill and attitude and their privileged positions in society as stated by Cohen and Bradford, (1990). Thus, intrinsic satisfaction was the major source of their motivation. As remarked by the following:

. X a healthcare manager in Ningo sub-district remarked as:

Most of the time they organize workshops on malaria to upgrade our knowledge, skills and attitudes. Small incentives would be given as 'take aways' and it's our passion to see projects initiated and completed successfully even when incentives aren't forthcoming.

Similarly, B a healthcare manager in the Ayikuma sub-district stated:

The staff here are all casuals but we hope to engage them fully and mechanize their salaries, hence, their eagerness in accomplishing assignments with enthusiasm. We acknowledge and reward extra work and incentives are given when available.

#### **5.3.4 Ensuring Early Case Recognition**

To ensure early case recognition, healthcare managers had their staff massively trained in the strategies of NMCP, basic S&S and management of malaria however; only 23.5 percent of the chemical sellers had their staff trained. This is of grave concern to the promotion of malaria and poses a major threat to home-based management of malaria since the chemical shop as a rule of the thumb, is the first stop for seeking healthcare in any community. Additionally, healthcare managers largely involved school children, opinion leaders, district assembly, and religious institutions in their persistent BCC sometimes using simplified case definitions of malaria. Unfortunately, only just a quarter (23.5 percent) of the chemical sellers did engage in the above. The involvement of school children in this campaign was

crucial because it assisted in the facilitation of the goals. This is because children could be used as effective agents of communication to inform their parents and the larger community into good behavioural practices.

Whereas, almost all the healthcare facilities had standard case definitions of malaria boldly displayed, only 11.8 percent chemical sellers could boast of the above. Most of the shops looked pathetic and unattractive with few drugs displayed on dirty shelves. Findings strongly suggested that most healthcare facilities would have requested for laboratory test for confirmation of diagnosis but apart from Dodowa HCF where there is a laboratory, all the other facilities had none; hence most clients were referred to nearby communities for laboratory investigations which sometimes never got done. Obviously, this is disincentive and discouraged the persistent use of the facilities by these individuals who always ignored medical care due to the extra fees imposed by laboratory investigations and transportation.

### **5.3.5 Appropriate Response and Referral**

System developed for appropriate response and referral were prompt attention to emergency cases, provision of approved malaria treatment in the healthcare facility, protocol for malaria case management in all clinical area and effective system of referral, all is tenets of NMCP objectives. All the healthcare facilities especially the GHS ones have improved version of referral note pads which was completed for every case transferred out of the healthcare facility. For promotion of malaria control, the 10 healthcare facilities of GHS had for free, Artesunate suppositories, folic acid, and iron tablets for children under five and IPTp-SP for pregnant women.

### **5.3.6 Delivery of Quality Healthcare**

Ensuring access to basic quality healthcare services was a key strategic objective of the health sector (PoW, 2002 – 06) and since various studies (de Savigny et al., 2004; Goodman, 2003) have observed relationship between user-perception of quality of care and healthcare seeking behaviour for malaria and other illnesses, clients were assured of prompt attention for all treatment being given at the facility and more importantly improved attitude of healthcare providers. As Wyss (2004) rightly put it a well-functioning health system depended on motivated workforce, much more was being done both at the district and national level to help motivate healthcare providers to give off their best. But Cohen and Bradford (1990) also intimated that there is more to motivation of healthcare providers than just extrinsic (monetary) rewards thus; even though healthcare providers would always agitate for more money this will not affect the quality of healthcare delivery in the district unless conditions of service is improved especially the working environment of healthcare delivery. The use of extensive training of healthcare providers with provision of little incentives afterwards helped cushion healthcare providers and this enhanced motivation and quality healthcare delivery as Cohen and Bradford, (1990) confirmed it in their work.

The use of performance appraisal has always been a thorny issue in the GHS and there have been several attempts in reviewing its use. Only a quarter of the healthcare providers admitted to using the tool although, it is very efficient and effective in identifying weaknesses in terms of knowledge, skills and attitudes for further training. It is an open secret that this important management tool is used just for promotional purposes and its contents were never analyzed for developmental gains.

Horizontal integration with other agencies within the community to ensure easy access to resources was uncommon in the district. Few NGOs were operating in the district and they

were involved in training. It was the quasi-healthcare facility that had provision of some of its resources from the church e.g. ITNs, for distribution to the vulnerable within the communities.

Monitoring of client's concern is an essential way of assessing clients' perception on quality healthcare delivery and improving performance based on user perspective which would ultimately guide healthcare providers in satisfying clients' needs. Although the DHD has recommended the use of suggestion boxes to formalize concerns, like the proverbial African, concerns were still generated through informal means. This again is of great concern since clients could be victimized and/or ignored through this process. Healthcare managers need to be encouraged to have suggestion boxes installed in all HCFs so as to generate impartial perceptions of their output or impact from the general public which would ultimately improve performance and attitude of staff.

Healthcare managers iterated that in encouraging home-based management, this was done through persistent education; counseling and home visits to ensure that caretakers did adhere to basic instructions just as Agyepong (1992) asserted. The involvement of the CBAs in the administration of rectal Artesunate-suppository and Artemether-Lumefantrine tablets has helped greatly in consolidating the home-based management approach in malaria control.

### **5.3.7 Maintaining Competitive Edge**

In maintaining competitive edge healthcare managers naively used a combination of approaches suggested by Macmillan and Tampoe (2000). Time based approach was significantly used to avoid client frustration and maximize satisfaction; this approach couldn't be well executed at the public facilities where work load was almost always high. For instance Felix a healthcare manager in Dodowa acknowledged:

Cordial staff - client relationship, prompt attention and ensuring that clients receive all their medications urged people to continually use our facility. But above all our smart and knowledgeable staff are ever ready to take care of clients' needs.

Similarly Kweinor a chemical seller in Ayikuma remarked:

Needed drugs are always available and I ensured provision of good customer care and interpersonal relationship to clients at all time.

Whereas Asante another chemical seller in Old Ningo also remarked:

I am not a native of this area but I have managed to do business within this indigenous community because I believe in excellent customer care, being friendly and sometimes giving free medication when the need arise.

Healthcare delivery being a professional service was undoubtedly a knowledge-intensive enterprise thus; development of knowledge have been a strategy in sustaining commitment, competencies, and confidence of the workforce to guarantee delivery of quality healthcare to clients in the district as confirmed in all these studies (GHS Training Policy, 2006; Maister, 1993; Scott, 1998; Katz, 1998). Hence, in carrying out most of their mandate, knowledge and technology generated from research (MOH, 2000) were used in curbing the ascendancy of severe malaria.

Special efforts adopted by the healthcare managers were liaising with the district assembly for BCC, emphasizing on multiple prevention strategies such as use of ITNs, IPT and environmental cleanliness. Additionally, all the public HCFs were giving out free ITNs to children under two years and SP to pregnant women. Periodic training of healthcare staff was on-going, together with the research on Artesunate suppository with antibiotics for the treatment of malaria in under-five years to prevent pneumonia by the HRU.

Constraints to the promotion of malaria in the district were the same as the environmental threats. Efforts adopted by healthcare managers in addressing these constraints were

increased community participation (WHO, 1998; Bopp, 1994; Ofosu-Amaah, 1983) in malaria control activities, sponsoring of qualified persons for professional education and liaising with the DHD to supply additional staff whenever there is transfer of staff to the district. This confirmed James's (2004) assertion that resources were essential for programmes to deliver the products and services that justify their existence. These products and services were determined by the programme's strategies. In order for resources, such as skills and know-how, to be effective, they were transformed into organizational capabilities through routines, activities as stated by Grant (1991) and training. The district in curbing the prevalence of malaria was massively training her human resource thus, the district could conveniently boast of organizational capability for malaria control.

### **5.3.8 Structures Adapted for Implementation of NMCP Strategies**

Creation of structures largely follows the evolution of programme strategies due to changes in the external environment and government objectives (Paul, 1983). To realize the dream of global RBM and NMCP therefore, there was the need to penetrate the fabric of the community to ensure that incidence of severe malaria is greatly reduced. Thus, the community-based agents were engaged to ensure the above. The CBAs were literate, honest, experienced and respected volunteers who lived in the communities and this made accessibility to them far easier and faster in emergency situations than HCFs who worked mostly during the day. The HRU (2005) described them as the good thing that ever happened to the control of malaria.

There were however, challenges associated with this strategy, caretakers after the administration of the suppository and with the subsequent reduction of temperature, usually felt that taking the child to HCF was unnecessary and expensive because this initial treatment

was free. Their involvement with pregnant women equally enhanced the uptake of Sulphadoxine Pyrimethamine, thus ensuring that pregnant women remained free of malaria throughout pregnancy.

#### **5.4 Objective 5: To Assess Systems Designed for Monitoring and Evaluation of Malaria Control**

With the upsurge of morbidity and mortality, strengthening of programme evaluation was essential to ensure effectiveness and efficiency of malaria control (Bryce, et al., 1994). Healthcare managers in evaluating malaria control activities mostly studied, analyzed and evaluated outcomes; taking immediate steps to make amends where necessary. They again organized frequent staff durbars to discuss achievements and the way forward. Thus, healthcare managers used both outcome-based and impact-based approach in their evaluation and extensively involved their colleagues which encouraged commitment to the ideals of malaria control.

An effective feedback system provides the workforce with the opportunity to reflect on their past performance and improve upon it, thereby enhancing performance. Feedback again promotes commitment among staff, strengthening competence and confidence. The study acknowledged that healthcare managers used more informal approaches such as conversation than the formal approaches. This was seen more with the HCFs, where conversation appeared to be the favourite of the healthcare managers. Chemical sellers appeared not to be bothered about this approach and never really patronized it. It is however; important to note that giving constructive feedback is very essential in management as stated by Mary Parker Follet that management is “working through people to achieve organizational goals”. Feedback always have the magic of ensuring that individuals’ creative ability is accessed

jointly as a team to boost competitive edge, achieving organizational goals and ensuring that workforce becomes committed, competent and confidence.

Partnership in malaria control was very important and was maintained by effective communication. Partners involved in the control process were the DHD, HRU, NGOs and the wider society. These partners had roles in planning, sometimes implementation and even evaluation; they assisted wherever necessary to ensure that malaria control remained effective and efficient. They assisted in capability building of healthcare providers and provision of resources such as ITNs and drugs for curbing the menace of malaria.

## **5.5 Objective 6: To Describe the Status of Key Malaria Control Indicators**

### **5.5.1 Reported Malaria Cases**

Qualitative data from the healthcare facilities suggested that the incidence of severe malaria in the under-fives in the district have drastically reduced though this assertion could not be proven statistically. In many of the HCFs, healthcare managers remarked that for the past one year or more, they have not encountered convulsion in children. This was attributed to the insertion of rectal Artesunate by the CBAs at the community level as affirmed by Gyapong et al., (2005) and distribution of Artemether-Lumefantrine tablets (HRU, 2005). Access to the CBAs was readily available and without cost, so more and more caretakers utilized their services. Coupled with effective BCC and free widely distribution of ITNs people were gradually taking precautionary measures against malaria.

Contrary to the assertion of the healthcare managers' vis-à-vis drastic reduction of severe malaria in the under-fives; the CBAs have been managing the under fives and within a period of almost 2 years (March 2005 to July 2007) have recorded 1402 cases. Incidentally, this figure recorded by the CBAs wasn't captured by the DHD in their annual report and so were

the many customers who trooped to the chemical shops with complaints of malaria. The DHD should therefore, align itself to these two groups if they really intend to capture incidence and prevalence of malaria within the district. Giving of IPTp-SP did significantly improve the quality of life of pregnant women and their unborn children as also reported by other studies (GMP, 2006; Mubyazi, 2005).

### **5.5.2 Outcome of Childbirth**

Qualitative data indicated that outcome of childbirth have generally improved in the district; almost all babies were born at term with increasing birth weights devoid of problems normally associated with childbirth as other studies confirmed (Schulman et al., 1999; Njagi, 2002; Falade, 2007). Healthcare managers acknowledged increase in ANC attendance and reduction in the incidence of still births. They also declared that babies born to mothers who have taken SP did not usually develop malaria during the first six months of life. This was commendable and more research work needs to be done to affirm this assertion.

A review of the yearly average birth weights for a period of 10 years in some HCFs clearly showed an initial decline of birth weights which gradually peaked over time though, this could be due to some factors other than IPTp-SP. The average birth weights ranged between 2.9 in 1997 when IPTp-SP policy has not been initiated to 3.3 in 2007 with the full implementation of the policy in all HCFs. Though the increase in weight could be due to other confounding factors such as improvement in nutrition, etc, the fact that there was a consistent increase in all the HCFs over the period, suggests that SP prevents malaria thereby improving placental perfusion hence, the resultant increase in birth weights.

### **5.5.3 Drugs for Malaria**

Findings suggested that contrary to earlier submissions of the side effects by the general public with the inception of Artesunate-Amodiaquine, the advantages of the drug now outweigh the above; clients get well quicker and stay healthy far longer than when Chloroquine was in vogue. Dangme West according to GSS (2000) was classified as extremely poor thus; it was not amazing that due to the cost of the drug many people were being denied effective treatment. Some chemical sellers also remarked that apart from Artesunate-Amodiaquine being expensive, drug accessibility was also difficult. Drug manufacturers should be encouraged to adopt economies of scale and produce in large quantities to ensure that demand never exceeded supply.

Findings again, suggested that drugs used by healthcare managers depended on the type of HCF. Whereas almost all public HCFs were using Artesunate-Amodiaquine (Gersti et al., 2007), only 75 percent of the private HCF and 29.4 percent of chemical sellers used it. The reasons were due to mainly the soaring price of the drug, which many people could not afford as Williams (2006) also found. Use of Chloroquine was so wide spread that, even some public facilities were found using it and they found reasons for its usage. At the time of visit, one healthcare provider had run out of Artesunate-Amodiaquine and prescriptions were being issued to clients to purchase from chemical shops. Chloroquine could visibly be seen in all the chemical shops I visited and some HCFs; the syrup, tablets and even the injectables. One healthcare manager who is a pharmacy technician remarked that they do get prescriptions even from the public HCFs for Chloroquine.

Chloroquine was therefore, extensively being used in the district especially the syrup for the under fives. I witnessed on several occasions where either Chloroquine or Amodiaquine was being given alone with Paracetamol to customers for children under-five. This is of great

concern and needs urgent attention of the DHD. Sulphurdoxine Pyrimethamine was stocked in almost all the HCFs because it was relatively cheap and the preferred drug of choice as indicated also by the RBM baseline study (2001). Mono-therapy using Alaxin (Artesunate), Amodin (Amodiaquine) or Chloroquine was again quite common in the district. Caretakers were being given either one for malaria but never two because of the cost. Herbal preparations were conspicuously displayed in all the chemical shops with their colourful packagings and names. Patronage was good and efficacy was also commendable. One chemical seller remarked that he always used “Yafoo co” bitters for malaria because it is good and within some few hours after ingestion I always become renewed in body and spirit. This no doubt may have accounted for the increase in its patronage.

Ghanaians are becoming more accustomed to neo-traditionalists due to the marketing strategies adopted by them, accessibility and affordability of the drug. They are relatively cheap and their efficacy can always be heard on the media and challenged. Thus, due to soaring cost and side effects of Artesunate-Amodiaquine, this consumer shift is being progressively enhanced.

#### **5.5.4 Knowledge and Management of Malaria**

Findings confirmed earlier studies carried out in the district (Agyepong and Manderson, 1999; Gyapong et al., 2005) and other places (Anh et al., 2005), majority (82.3 percent) of the healthcare consumers were aware that mosquitoes cause malaria, even though some still perceived malaria as a result of the heat from the sun and other factors. Caretakers were able to give correct signs and symptoms and danger signs of malaria in children just as Gyapong et al., (2005) and Anh, et al., (2005) also confirmed. The most common signs and symptoms reported were fever, vomiting, refusal of food and malaise. Convulsion accounted for 2.6

percent of the signs and symptoms; this confirmed earlier assertion by healthcare managers that for the past year or more they had not received any case, thus severe malaria was uncommon within the district. Severe malaria therefore has actually been reduced in the district as a result of increased community participation; distribution of rectal Artesunate (Gyapong, 2005) and tablets Artemether-Lumefantrine (HRU, 2005).

#### **5.5.5 Home-Based Management of Malaria**

Findings suggested that home-based management was mainly carried out by giving anti-malaria drugs and sponging of children by caretakers and this agreed with Gyapong and colleagues (2005) in a previous study. Most of the anti-malaria drugs (Chloroquine, Artesunate, and Amodiaquine) were acquired from chemical sellers and this too was confirmed by Buabeng et al., (2007) in an earlier study. Over a tenth (13.5 percent) of the caretakers used traditional medicine for malaria; an earlier study in the district by Gyapong et al., (2005) also concluded that traditional medicine is still used. This clearly showed why all the chemical shops had stocks of herbal preparations. This also affirmed the fact that perceptions about malaria have not really changed much in the district. Whereas, 2.6 percent of them would do nothing, 7.3 percent would simply rush the child to the HCF. This is of grave concern as malaria requires immediate therapy to avert complications and death and previous studies all affirmed this (Buabeng et al., 2007; Nyamongo et al., 2006; NMCP, 2005; Marsh et al., 2004; Binka et al., 1994).

Additionally, findings suggested that all caretakers would send their children to HCFs for further management when administered drugs are not effective and the child's condition is deteriorating as suggested also by Kamat (2006). Home-based management of malaria was well appreciated by the community and effort is needed to improve uptake of this strategy.

Systematic enhanced community sensitization, community dialogue and strengthening of CBAs are therefore, crucial for the fight against malaria as suggested also by Nsabagasani (2007).

#### **5.5.6 Behaviour Change and Communication (BCC)**

Findings suggested that contrary to the contention of the healthcare managers about their antics and coverage of the district with massive BCC, only 29.6 percent of healthcare consumers had some form of BCC on malaria. This figure is woefully unacceptable and more needs to be done by the healthcare managers. There is the need for enhanced public health BCC on home-based management of malaria and training of chemical sellers to ensure effective use of anti-malaria drugs (Opiyo, 2007; Buabeng et al., 2007; De La Cruz et al., 2007). BCC interventions should stress prevention using multiple strategies such as ITNs, environmental cleanliness, IPTp, etc., promptness of healthcare facility visits, improved access to appropriate drugs, and accurate dosing for home-based treatments (Kazembe, 2007). However, Agyepong and Manderson asserted that people's ability to comply with interventions and to treat sickness is influenced by their acceptance of the interventions, their understanding of the nature of the illness and the relationship between vector and infection, and other social, economic and cultural factor thus, BCC should increasingly be locally oriented to be appreciated.

#### **5.5.7 Knowledge, Acquisition and Utilization of ITNs**

The study noted that knowledge, acquisition and utilization of ITNs among healthcare consumers were extremely high. Information and acquisition of ITNs was mostly free or heavily subsidized at the HCFs. Just a little over a tenth (11.1 percent) of healthcare consumers purchased the ITNs. Whereas 97.9 percent knew about ITNs, 79.8 percent of

those who had the knowledge, had ITNs and 87.3 percent of those who had ITNs utilized them. The relative risk of having information on ITNs and acquisition was 6.3660. This shows a positive relationship between dissemination of information and acquisition; a person had 6.3 chances of acquiring ITN when given accurate and adequate information on ITN. The relative risk of acquiring the ITN and sleeping in it was 6.8093. This also shows a positive relationship, thus once you acquired ITN, the chance of sleeping in it was high (6.8). Therefore the chance of sleeping in ITN when you have it was even higher than the decision to acquire one when given accurate adequate information. This is quite encouraging and shows that with increasing access to ITNs at heavily subsidized rate in poorest district like the Dangme West, this could lead to increase utilization rate as revealed also by Agha et al., (2006).

The study showed that, in the household children under five and wives (46.7 percent) were sleeping in nets more than any other group although the figure of husband and wife was quite substantial (10.2 percent), but on the whole more women and children under five utilized ITNs within the household. In all more than three quarters (85.9 percent) of children under-five slept in nets. Dangme West has been used for many pilot studies and there have been extensive distribution of ITNs by both the government and other agencies and this could account for the increased use despite their low socio-economic status. Again it was realized that the use of nets declined with age as seen also by GMICS (2006) and older children were more likely not to sleep in ITNs.

Reasons for not using the net were not different from those found in other studies (Conteh and Ahorlu, 2006; Stephens and Ahorlu, 2006; Conteh, 2006) and this was mainly due to financial constraints. Other remarkable reasons were the side effects of the insecticide when

used first without adequate precautions, healthcare consumers' preference for mosquito coils (Conteh, 2006), small size of the net, size of their rooms and doubts about its efficacy (Conteh, 2006). Again, this was of great concern to the promotion of ITNs, more BCC would have to be carried to dissipate these misconceptions as suggested by Agyepong & Manderson (1994).

Findings also suggested there was increased use of ITNs (66.0 percent) as a preventive measure in the district than any other strategy. The use of mosquito coils was just a little above a quarter (27.1 percent), while general sanitation constituted a little above half (51.2 percent), with mosquito proofing accounting for a fifth (21.0 percent). Indeed many people used several strategies in controlling malaria within the district and this was also concluded by GMP (2006) as the perception of the causes of malaria was varied.

#### **5.5.8 Reception and Attitude of Healthcare Providers**

Reception and attitude of healthcare providers was generally not the best, over a quarter (31.2 percent) of healthcare consumers were dissatisfied about reception of healthcare providers while more than two fifths (44.0 percent) also considered attitude of healthcare providers to be unacceptable and awkward. In emergencies healthcare consumers acknowledge behaviour of healthcare providers was fairly (61.6 percent) professional. The relationship between the two was highly significant and moderately positive (0.6800), thus healthcare providers' whose behaviour was of professional standard were bound to have better attitude and good disposition towards clients.

#### **5.5.9 Intermittent Preventive Treatment (IPTp) Strategy**

Information on IPTp was very extensive among the pregnant women, only 9 percent have not heard about IPTp and information was received mostly from the HCFs, just a small percentage heard it from friends and CBAs. This confirmed the chit system facilitated by the

CBAAs which ensured that all pregnant women within the communities participated in IPTp. Thus, the successful implementation of the IPTp strategy depended not only on proper planning, support and training of healthcare providers but sustained sensitization of pregnant women both at the facility and community level as confirmed also by previous studies (Mubyazi, 2005; Bopp, 1994, Ofosu-Amaah, 1983).

Findings suggested that majority (64 percent) of the women were quite familiar with the name of the drug being used for IPTp that is Sulphurdoxine Pyrimethamine (SP). Again, one fifth (21.0 percent) of those who took SP did develop adverse effects. Fairly a large percentage (62.5 percent) of those who developed adverse effects declared they would take additional doses. The relative risk of utilization and adverse effects was 0.8125, signifying a protective effect for using SP. The adverse effects were mainly minor symptoms common to many pregnant women who did not demand any therapy thus; many women would use the drug despite their reaction to it. The relative risk was 0.6250, signifying a positive relationship between adverse effects and willingness to take additional doses of SP, thus SP had a protective effect on pregnancy especially the outcome.

According to IPTp-SP policy by six months the pregnant woman should have all the 3 doses starting at 16 weeks and ending before 36 weeks, but none of them received all the three doses by the sixth month. Only 4.1 percent received all the 3 doses by the seventh month but altogether almost two fifths (39.2 percent) received all the 3 doses before delivery. 18 percent did receive 2 doses of IPTp-SP at the time of delivery whereas 8.1 percent had just a dose. At eight months 6.8 percent had just a single dose, meaning they would have their babies with single dose of IPTp-SP. In all about 41.7 percent would not receive all the three doses of IPTp. This figure was just too high for malaria control in pregnancy and great care

should be taken in planning such that community participation could be enhanced to strengthen and sustained the programme as suggested by Mubyazi et al., (2005). Since administration of SP correlates with early attendance, pregnant women should be encouraged to start attending ANC early so that IPTp-SP can be given at the recommended time. The relationship between IPTp-SP and gestational age was very significant and moderately positive.

Reason for not taking IPTp was mainly non attendance of ANC, a tenth of the pregnant women were defaulters. Taking of folic acid was given as a reason for not been given SP but the two drugs could be used concurrently without complications (GMP, 2006), other reasons were simply due to transfer to neighbouring communities for laboratory confirmation of malaria. Advantages of SP recounted by the pregnant women were indeed significant; many of them confirmed that even though there were few insignificant problems initially, the fact that the drug sustained them throughout pregnancy with good health and appetite was great and all the problems were totally ignored. Many of them actually acknowledged that the drug prevented them from developing malaria throughout pregnancy and their babies were born strong and healthy thus, efficacy of SP was undeniably strong.

Findings illustrated gradual resistance to SP; 13 percent of those who developed malaria did take SP, 50 percent had it once whilst 33.3 percent had it thrice and the coefficient of correlation was 0.14 signifying a feeble positive relationship. Treatment given for malaria wasn't definite; it was a combination of mono and dual therapy which consisted mostly of Artesunate-Amodiaquine though Chloroquine was also being used.

#### **5.5.10 Roles Played by the Opinion Leaders**

Qualitative data suggested that roles played by opinion leaders were supportive and collaborative; liaising with the district assembly especially on massive BCC embarked upon by the healthcare providers. They have been encouraging residents to adopt multiple preventive strategies such as the use of ITNs, environmental cleanliness and provision of basic needs. Others ensured that there was abundant food to eat during organized communal labour. Perception of most opinion leaders on delivery of healthcare services was fairly good although some were of the view that much needed to be done by the healthcare providers in the abatement of malaria.

Constraints identified by the opinion leaders were not different from those recounted by the healthcare managers, though many were mourning the absence of medical officers in their healthcare facilities which precipitated transfer of people out of the district for medical care. Equally dear to them was the absence of places of convenience and lack of follow-ups by healthcare providers. Modifications carried out to enhance the living standard of the communities were namely the building of places of convenience, refuse dumps, provision of good drinking water, building of HCF and improvement of sanitation by frequent organization of communal labour.

### **5.6 Key Findings**

Planning was mostly informal and short ranged. Management was more of an internal routine affair than trying to manage a fit between the internal and the external environments. Management of healthcare was very much monopolistic with limited care to the external environment.

The concept of competition in the healthcare system in the district was nonexistent. HCFs were mainly pursuing multiple goals and multiple service strategies and management of

organizational culture was not given much significance. The strategic objectives of NMCP were ardently being pursued by the district.

The vision of NMCP was well known in the district. The chemical sellers were not involved much in malaria control training programmes and this have crippled their knowledge and skills on the modern trends of malaria control.

Pilot surveys of the HRU strengthened and re-engineered the malaria control programme especially, community participation. With the exception of some chemical shops, all the HCFs had in stock the recommended drugs for treatment of malaria.

Major threats identified were clients' demand for particular anti-malarias at the chemical shops, inadequate quality and quantity of healthcare providers coupled with poor basic social amenities and illiteracy.

In promoting NMCP strategies, home-based management was encouraged through BCC, counselling and home visits. Clients were given prompt attention and all medication supplied at the HCFs.

Healthcare providers were mostly motivated intrinsically by the care they render to clients more than the rewards they physically generated formally. Factors that had profound impact on malaria control were leadership, training and adequate resources. Apart from their intrinsic desires in the absence of incentives, training played a major role in soaring effectiveness and efficiency of malaria control. Healthcare managers' preference for flexible culture ensured the adoption of management style leadership with many HCFs thereby broadening the decision making process.

Involvement of stakeholders was extensive, though this was not used to cash in the opportunities within the environment given the strengths of HCFs. The role of opinion

leaders was both supportive and collaborative liaising with the district assembly for malaria control activities.

The only structure was created for the management of malaria in the district was informal that is, the community-based agents (CBAs). These volunteers were used extensively by the HRU for the administration of rectal Artesunate and Artemether-Lumefantrine to the under-fives to prevent severe malaria and the administration of IPTp-SP to pregnant women. Home-based management of malaria was greatly enhanced by the volunteers and this generally boosted community participation in malaria control.

Quality of healthcare improved tremendously due to increased IST and performance appraisal was marginally utilized.

Approaches used by healthcare managers in maintaining competitive edge were time-based, knowledge, capability and technology in providing quality professional healthcare services to clients. Healthcare managers adopted multiple strategies such as the use of ITNs, IPTp, environmental cleanliness and massive BCC in controlling malaria.

Evaluation of programme was both outcome-based and impact-based in assessing effectiveness and efficiency of malaria control.

Antenatal attendance and administration of IPTp increased greatly and this directly improved birth weights and the general condition of pregnant women. Use of ITNs was extensive in the district with children under-five and women using it more than any other group whereas the use decreased with age.

Knowledge and perception of malaria have not changed much despite the numerous researches and BCC in the district. People still believed that malaria is caused by other factors such as heat from the sun and oily food apart from mosquitoes.

Partners involved in malaria control were the HRU, district assembly, educational and religious institutions, the World vision international, the Catholic Church and the society at large. Their roles were varied, ranging from giving of information on decisions taken on planning, implementation and evaluation.

Key malaria control indicators were enhanced and this confirms the assumption of the study though elements of the SM were not effectively coordinated.

## **CHAPTER SIX**

### **CONCLUSIONS, POLICY AND RECOMMENDATION**

#### **6.0 Introduction**

In this chapter, the implications for management, public health practice and policy with recommendations for further research are presented. The exploration of the processes of management practice of malaria control and the challenges posed by the demands of the external environment has been immensely enriching and exciting. It is hoped that a number of issues relating not only to management practices but also to conducting both quantitative and qualitative research have been emphasized.

#### **6.1 Implications for Health Policy, Planning and Management**

The diverse findings identified presents implications for public health practice, education, research, and policy formulation. SM is a relatively new model of management in the health sector which, would assist in bringing on board the external environment where healthcare providers operate by capitalizing on the opportunities prevailing while avoiding threats that normally disadvantage quality healthcare delivery. SM is very fundamental and exciting and gives a holistic entity to management by creating a “fit” between the internal and external environment (Macmillan & Tampoe, 2000). The In-Service Training of GHS should endeavour to develop it as a taught course for senior managers using the experiential teaching method to give it a practical approach. This no doubt would enhance management in GHS and guarantee the achievement of goals thereby promoting wealth through health.

Healthcare managers who have had the advantage of being at GIMPA and exposed to the SM course should be encouraged to make use of knowledge acquired through training to enrich malaria control and other health issues of public health concern. Malaria is basically a

developmental issue which increasingly needs the collaboration of the society at large to control its effects. By using the body of knowledge and the art of SM, healthcare managers can really manipulate the environment to their advantage when familiar with their nuances. This study has also affirmed that practice of SM can truly enhance key malaria control indicators when the elements are fully integrated.

It is a common fact that healthcare managers and providers find it very difficult to plan formally for healthcare activities and it is equally known that when plans are made, managers are committed to a narrower range of actions than when no formal plans are made. Thus, even though planning is an intensive, time consuming and mental task, planning makes evident the uncertainty of future events so that paradoxically the future seem more certain after planning. Healthcare managers must be made aware of the importance of planning through persistent management trainings for appointed managers at all levels of the health structure especially the operational levels namely, the hospital, districts, sub-districts, etc. Management should be included in the curricula of all levels of nursing institutions since most of the healthcare facilities were manned by middle level cadres. Continuous sensitization of healthcare managers and providers should be initiated through IST. This will encourage many healthcare managers to have realistic formal plans in place which will set the pace for effective implementation and evaluation.

IST of healthcare providers should of necessity occasionally include chemical sellers operating within the district and so is supervision of their activities by the DHD to enhance compliance to regulations. Activities of chemical sellers affect healthcare delivery in any community especially home-based management of malaria; many clients visit the chemical shops first for treatment because of their flexible operating times. Once they are acquainted

with current trends and skills in healthcare delivery, home-based management would vividly enhance, whereas the health and standard of living would generally also improve.

BCC should be encouraged within the district and more effort is still needed to extend community participation. This will enhance acknowledgment of health programmes and usage of basic tools developed to improve health. DHD should persuade healthcare managers to have continuous BCC, taking advantage of local nuances so as to increase knowledge and acceptance of new health trends and issues. The involvement of CBAs in healthcare delivery is very commendable and this should be encouraged to ensure that all pregnant women attend ANC and caretakers improve their skills on home-based care of malaria.

The DHD should align themselves with the chemical shops to supervise their activities, to ensure that they at least record malaria or febrile cases handled and also to ensure that they follow regulations promulgated by the Pharmacy Council. This would at least help in the assessment of actual incidence and prevalence of malaria because lots of chemical sellers are selling and dispensing drugs wrongly to unsuspected healthcare consumers. There should be a firm grip on the chemical sellers within the district since the Pharmacy Council is too remote and their infrequent visits are not helping much.

There was a bit of confusion about IPTp - SP, folates and malaria in pregnancy, the DHD should try and sort this out with the midwives and the chemical sellers. Drug manufacturers should also be encouraged to adopt economies of scale using low cost strategy so that cost of recommended drugs could be affordable. On the other hand, government can come in with subsidies for the recommended drug since malaria causes 10.6% of lost Disability Adjusted

Life years (DALYs) in the WHO Regional office for Africa (AFRO), second only to HIV/AIDS (MOH, 2000).

### **6.3 Implications for Future Research**

The present study provides direction for other areas in public health planning, policy and management research in the future. All the findings that emerged from the data symbolized the management processes and status of key malaria control indicators in the Dangme West district. The SM framework can be used to assess other developmental programmes such as TB, HIV/AIDS, etc. in rural, urban and peri-urban areas. Strategies to enhance integration of the external environment in management and long-term planning need to be investigated.

### **6.4 Insight Gained**

In employing both quantitative and qualitative approach to the research, I was able to diligently explore all the stages of the SM process. Information given by the healthcare managers were validated by the involvement of the healthcare consumers and pregnant women in the study. Again, the qualitative data generated explained better the quantitative data thus, giving a holistic and vivid picture of the processes reviewed.

I witnessed instances in chemical shops where caretakers were being given mono-therapy for treatment of malaria for the under-fives. Chloroquine, Amodiaquine or Alaxin were mostly given with Paracetamol syrup coupled with inadequate instructions to caretakers. Caretakers' first health seeking abode was the chemical shop where the licensed chemical seller would be given all the complaints over the counter. There were times where individuals came with barely any money, yet required that medicine be given for malaria. The chemical sellers just looked around for the less expensive drugs for the consumer

regardless of its efficacy. Some also came with their demands for particular drugs though the drugs were outdated. Chloroquine was extensively used and was seen in almost all the chemical shops and some HCFs. I was reliably informed that accessibility to the drug was quite easy, since manufacturers still manufacture the drug. I particularly noticed that some shop assistants selling drugs in the chemical shops haven't been trained and sold drugs without adequate education or counseling and seemed to have inadequate knowledge about the new regimen for malaria.

On my rounds in the HCFs, not even a computer was seen in any of the healthcare facilities apart from the HRU and the DHD. This may well explain why healthcare managers were extremely in love with informal approach to planning and feedback. No one could show me his/her work plan; they all acknowledged they knew their responsibilities and what was demanded of them. I was equally amazed at the uncoordinated nature of information collation between the HRU and the DHD. The DHD could easily liaise with the HRU to generate accurate figures of malaria in the district. The concept of competition was indeed interesting; attitude towards competition was nonexistence probably because the district has a homogenous environment (Duncan, 1996) or due to its rural and poor socio-economic background (Kpabitey, 1996). I was particularly glad of the numerous trips I made around the district which happened to be my first time of exploring rural sub-districts. I did learn a lot and I believe this study has entirely changed my perception of healthcare delivery at the peripheral or operational level.

Finally, I learnt that effective coordination of the practices of leadership and management which are all aspects of SM definitely would improve status of health indicators as proven by the study.

## **6.5 Limitations of the study**

This study aimed to explore the practice of SM of malaria control at the Dangme West district. The approach used for data collection was both quantitative and qualitative but generally due to the technical nature of management and the educational background of most of the respondents especially the healthcare managers, most questions had to be explained vividly before they could complete the data collection tools. This may perhaps have affected some of the responses that were generated therefore making generalization indefinite. Communities selected for the study was based on convenient sampling and this again may possibly affect generalization of results.

The study again clearly set out to measure the status of key malaria control indicators especially, the trend of severe malaria but for obvious reasons this objective couldn't be achieved because both simple and complicated malaria were recorded together by the healthcare providers.

## **6.6 Conclusions**

The study generally identified many elements of the practice of SM in the district. However, these elements were not being managed holistically thus, construing the main tenets of the systems' theory, on which the SM theory was developed; that is the whole is greater than the sum of its part. Thus, though the status of key malaria control indicators was remarkable, this would have been further enhanced if SM had been holistically practiced in the district; the assumption of the study therefore was confirmed.

Healthcare managers were interested mostly in the day-to-day management of their facilities, allowing organizational culture to manage itself due to the homogenous nature of the environment and the simple management structures of the HCFs. Thus, healthcare managers

rarely developed environmental-based strategies for malaria control. This according to Johnson (1992) is disincentive to the control programme because for synergetic effect all three should have been managed concurrently. Relatively however, the healthcare managers claimed they did plan with some concern to their external environment. Stakeholders especially, the communities were highly involved in the activities of malaria. The district being the operational level, one did not expect to have long term plans since they implement plans formulated by the national level i.e. NMCP. Thus, though healthcare managers were putting in much effort in the planning and implementation of malaria control activities with the cooperation of other stakeholders, due to informal planning much of their exuberance in controlling malaria was totally being ignored. The district was widely implementing all the strategic objectives of NMCP with some success.

The experience of conducting this research has been very insightful and rewarding. The findings generally have increased my desire for health planning, policy and management. Healthcare providers generally are technical people who in their routine roles have to handle some administrative work. Most of them take the challenges posed by management as trivial issues hence the many problems bedeviling healthcare delivery in Ghana. Management is an art and science which has body of knowledge that needs to be learnt and applied for programmes to be effective and efficient. SM should be developed as a course and integrated into the curricula of In-Service Training in the Ghana Health Service for healthcare managers. Planning is very important in SM and lays the foundation for effective implementation and evaluation, taking into account internal resources and the challenges posed by the external environment.

It is hoped that through this discussion, a number of issues related to not only management of Healthcare institutions but also to the approach adopted for the study have been tinted for those planning to undertake a similar study. The informal planning process of malaria control activities and short range planning calls for further investigations.

Obviously, all the tenets of SM was present in the district especially all the GHS facilities and this accounted for the favourable outcome of the status of key malaria control indicators in the district. The tenets of SM however, were not being holistically coordinated, making it difficult to conclude that the practice of SM was present. Locally blended BCC needs to be implemented to increase uptake and address misconceptions on new interventions such as home-based management (Nsungwa-Sabliti et al., 2004). It would be expedient to embrace the chemical sellers in the training of healthcare providers to enhance the effective use of anti-malaria drugs. The numerous efforts of distributing rectal Artesunate and tablets Artemether-Lumefantrine by the Health Research Unit has certainly paid off, although prevalence of malaria persistently increased, incidence of severe malaria amongst the under-fives reduced significantly.

## **6.7 Recommendations**

Based on the results from the study the following recommendations have been made with the aim of improving malaria control in the district health system.

**National level:** Support from the national level is crucial to the success of the malaria control programme. The role of national level is to give direction and support to regions in the implementation of malaria control. The underlying recommendations have therefore been suggested to help strengthen operations of malaria control.

- SM should be developed as a taught course in the In-Service Training curricula of GHS and all persons in managerial positions especially healthcare managers should go through the programme before appointment.
- The NMCP together with the reproductive health unit should clarify the confusion of IPTp-SP, foliates and malaria in pregnancy.
- The NMCP should pursue the links with the traditional sector to ensure that standardized and approved herbs are used for malaria management.
- The NMCP should liaise with the government and drug manufacturers to ensure that recommended drugs for malaria are subsidized.
- The NMCP should liaise with the Pharmacy Council to develop policies and strategies that will consistently strengthen the knowledge, attitude and skills of chemical sellers especially the shop attendants.

**Regional level:** The regions have an important role in supporting districts through facilitation, coaching, monitoring and supervision. This can be done through:

- The region should develop region-specific standards on malaria by adapting national policies and organize malaria control workshops and seminars for all professionals or persons whose job or activity assists in controlling the prevalence of malaria.
- The region should also organize workshops and seminars on the principles of business management especially, customer care and work ethics.

**District level:** This is a very important level that serves to co-ordinate and support HCFs in the district. Therefore to ensure efficiency and effectiveness of malaria control the following have been recommended:

- The DHD should encourage high performance by benchmarking; comparing HCFs or peer review and promoting best practice.
- Healthcare managers, who have been to GIMPA for the Health managers' course, should be encouraged to practice what they learnt especially SM.
- The DHD should look for financial aid to support the training of healthcare managers in the principles of management and some business principles, especially customer care.
- Healthcare managers should be encouraged to have formal management plans to guide and to restrict their actions while promoting effective monitoring and evaluation.
- Caretakers report to chemical sellers frequently, therefore there is the need for them to be given the right information. To this end, the NMCP should collaborate with the Pharmacy Council to give support to the DHDs' to train chemical sellers. This should be with treatment guidelines, regular supervision and approved sources of drug supply.
- There should be effective coordination between the HRU and DHD so that prevalence of diseases of public health concern could be conveniently captured especially through their pilot surveys.

**Facility level:** HCFs should be able to define its needs based on the needs of the community and develop a plan; for the surrounding environment is a major source of information, if approached creatively will lead to competitive advantage.

- Healthcare managers should coerced stakeholders to participate in the management of malaria control activities.

- Staff with good attitude, affable personality, decent and courteous should be put at our out-patient department to improve our corporate image to the public.
- Finally, healthcare managers should focus on persistent upgrading of knowledge, skills and attitudes of their staff to ensure sustainable delivery of quality healthcare.

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## APPENDICE

### Appendix 1

#### **School of Public Health University of Ghana**

#### **Questionnaire for healthcare facility managers**

This questionnaire is part of a study on the assessment of Strategic Management practice of malaria control in the Dangme West district. The research is a thesis for the award of Master of Philosophy degree (MPhil) in Public Health. Information obtained from this study will be confidential. Thank you.

Healthcare facility ----- No -----

#### **Section A. Demographic Characteristics**

1. Profession/Extra qualification:
  1. Master of Business Administration
  2. Master of Hospital Administration
  3. Medical officer
  4. Nurse
  5. Pharmacist
  6. Medical Assistant
  7. Diploma in Management
  8. Other (specify) -----
2. Sex:
  1. Female
  2. Male
3. Age -----

#### **Section B. Strategic Planning phase:**

1. What is the vision of NMCP? -----  
-----
2. What is the mission of the malaria control in your facility? -----  
-----
3. Please select from the table below how the mission of malaria control is communicated?  
*Ratings: 1 = all the time; 2 = most of the time; 3 = sometimes; and 4 = never.*

Medium	1	2	3	4
Word of mouth				
Direct services				
Through the medical staff (doctors)				
Through patients				
Through the media				

4. Select from the table goals developed for malaria control?

Ratings: 1 = Most important; 2 = More important; 3 =important; 4 = not important.

Goals	1	2	3	4
Multiple prevention				
Improved partnership				
Marketing-creating patient access				
Innovation-avoidance of obsolescence				
Social responsibility				
Motivation of staff				
Improved malaria case management				
Cost efficiency				
Effectiveness				
Focused research & development				
Quality patient care				
Fulfilling community needs				
Meeting NMCP regulations				
Reduced incidence of morbidity and mortality				
Providing quality health care				
Other (specify)				

5. Please indicate type of planning process used for the management of malaria control?

1. Formal process
2. Informal process
3. Combined process

6. What is the duration of your plans?

1. One year
2. Two years
3. Five years
4. Other (specify) -----

7. How often do you have planning meetings?

1. Annually
2. Semi-annually
3. Quarterly
4. Monthly

8. Select the tools used for the planning process?

1. Information technology
2. Scenario building
3. Expert opinion (consultants)
4. Make reference to previous objectives/targets without any form of analysis.
5. Make reference to previous objectives/targets with some form of analysis.
6. Make use of the objectives given by the NMCP.
7. SWOT analysis
8. Community assessment
9. Other (specify) -----

9. Please select from the list below environmental factors analysed for the assessment of opportunities and threats for malaria control?

Ratings: 1 = all the time; 2 = most of the time; 3 = sometimes; and 4 = never.

Environmental factors	1	2	3	4
Political				
Socio-economic				
Regulatory				
Epidemiological				
Stakeholders/Partnerships				
Competitors				
Technological				
Other (specify)				

10. What are the opportunities identified within the environment that can enhance malaria control? -----  
-----

11. Indicate the threats identified within the environment that posed a challenge for malaria control? -----  
-----

12. Please indicate the type of self-assessment that the facility carries out in assessing strengths and weaknesses for the malaria control?

1. Occupancy rate
2. Government assessment
3. Measuring the market share
4. Studying the gap: accomplishment versus planned
5. Benchmarking other facilities
6. Perception testing of key constituency groups
7. Other (specify) -----

13. Please indicate strengths identified within the facility that would enhance malaria control within the surrounding communities? -----  
-----

14. Please indicate weaknesses identified within the facility that could stall the progress of malaria control?

1. Inadequate staff
2. Quality of staff
3. Inadequate Logistics
4. No definite plan for the control program
5. Inadequate finance
6. Lack of coordination among staff
7. Inadequate motivation of staff
8. Insensitive attitude of staff
9. Lack of frequent in-service training for staff
10. Unavailability of requisite drugs for malaria
11. Other (specify) -----

15. Please select from the list below methods used for community assessment?

Methods	
Activity parameters of the facility	
Simple ongoing conversation	
Informal gatherings of local leaders	
Structured questionnaires (Household interviews, market research)	
Focus group	
Healthcare facility's discharge data	
Traditional database and health status indicators like morbidity and mortality	

22. Please indicate the activities held by healthcare managers?

*Ratings: 1 = all the time; 2 = most of the time; 3 = sometimes; and 4 = never.*

Activity	1	2	3	4
Oversees and coordinates the achievement of goals				
Assures a constant review of the plan				
Oversees the process itself				
Establish the ground rules and time table				
Assemble the planning team				
Establish criteria and standards to be used				
Determine the major steps necessary to move the program from its present course to the desired one				
Select the basic ways in which these activities will be created				
Identify the particular services that the facility should and will be used to measure performance				

### **Section C. Promotion of NMCP Strategies**

1. Are your staff trained in the principles of RBM and delegated the authority needed to produce the work demanded? 1. Yes

2. No

How frequent is in-service training offered to upgrade skills of staff? -----

2. Do you have adequate number of qualified clinical staff members on duty at all times to ensure that patients receive prompt and high quality care? 1. Yes

2. No

3. Please indicate measures put in place to ensure early case recognition?

1. Standard case definition of malaria developed and pasted at vantage points within the facility

2. All staff trained on the principles of RBM, basic S&S of malaria and management

3. Distribute simplified case definition of malaria to households

4. Persistent educational campaigns on malaria prevention in the communities

5. Involvement of school children in the educational campaign

6. Involvement of opinion leaders, chiefs, district assembly and religious groups

7. Laboratory testing for confirmation of diagnosis

8. Other (specify) -----

4. Please indicate systems developed to ensure appropriate response and referral?
  1. Protocol for malaria case management in all clinical areas
  2. Provision of approved malaria treatment in the facility
  3. Prompt attention to emergency cases
  4. Effective system of referral developed and communicated to all staff
  5. Other (specify) -----
  
5. Please identify measures put in place to ensure quality of care?
  1. Effective use of the performance appraisal to identify staff needs and subsequent training
  2. Patients are given prompt attention
  3. Patients are always given all their treatments at the facility
  4. Improved staff attitude to clients/patients
  5. Horizontal integration with some agencies within the community to ensure easy access to resources
  6. Provision of incentives
  7. Open recommendation of hard working staff
  8. Other (specify) -----
  
6. Please indicate measures put in place to monitor clients' concerns? -----  
-----  
-----
  
7. Please indicate efforts made, in the development, sustenance and improvement of Home-based care? -----  
-----  
-----
  
8. Please indicate efforts made in maintaining competitive edge or compelling the communities in using your facility? -----  
-----  
-----
  
9. What multiple strategies have you adopted to reduce the occurrence of Malaria?
  1. Promotion of the use of insecticide treated materials
  2. Liaise with the district assembly for health educational campaigns
  3. Encourage drainage, mosquito proofing and general sanitation through the educational campaigns
  4. Administration of chemotherapy to pregnant women
  5. Residual spraying
  6. Larviciding
  7. Other (specify) -----
  
10. Please indicate the promotional strategies adopted to promote the principles of RBM? --  
-----  
-----
  
11. Please indicate all the special efforts put in place to enhance the promotion of the strategies of NMCP? -----  
-----  
-----

12. Who else apart from your staff have you involved in this promotion?

1. Community
2. NGOs
3. Education institutions
4. Religious institutions
5. District assembly
6. Other (specify)

13. Please indicate the constraints stalling the efforts of malaria control within the community?

1. Requisite number of qualified staff
2. Adequate financial resources
3. Adequate logistics
4. Commitment of staff
5. Commitment of the community
6. Other (specify) -----

14. What efforts have you made towards addressing the constraints? -----  
-----  
-----

**Section D: Implementation Phase**

1. Is there any resistance to change in the implementation of malaria control?

1. Face much resistance
2. Face little resistance
3. Face no resistance

2. If there is? What is being done to avoid the above?

1. Involvement of staff in the planning process
2. Motivation of staff both materially and emotionally
3. Acknowledging the input of all stakeholders
4. Other (specify) -----

3. Please identify factors which impact on the implementation of malaria control activities?

*Ratings: 1 = most important; 2 = important; and 3 = least important.*

<b>Factors</b>	<b>1</b>	<b>2</b>	<b>3</b>
leadership			
Training			
Motivation			
Adequate resources			
Need to build Information systems			
Organizational culture			
Organizational structure			
Other (specify)			

4. Please identify the type of culture adopted for malaria control?
  1. Very rigid culture
  2. Rigid culture
  3. Somehow a neutral culture
  4. Flexible culture
  5. Very flexible culture
  
5. Please declare the leadership style adopted for malaria control?
  1. Management team leader
  2. Combined style of leadership
  3. Coordinator and management leader
  4. Autocratic leadership
  5. Liaiser-faire leadership
  
6. Please indicate how implementation of malaria control is carried out?
  1. Assignment of responsibilities for each aspect of the plan
  2. Establishment of relationship among people.
  3. Trust and open communications
  4. Delegation of authority
  5. Other (specify) -----
  
7. Is the program managed in a way that provides staff with a sense of security and at the same time offers motivation and fulfils a need to serve?
  1. Yes
  2. NoIf Yes what motivational measures have you adopted? -----  
-----
  
9. Please indicate new/old structures created or maintained to enhance malaria control.-----  
-----  
-----  
-----

**Section E: Create and sustain partnership**

1. Please indicate how partnership is being managed to generate resources for the sustenance of malaria control?-----  
-----  
-----
  
2. Please indicate efforts made in creating and sustaining partnership for malaria control? --  
-----  
-----  
-----



5. Please indicate the key partners involved in the monitoring and evaluation of malaria control and the extent of their involvement?

*Ratings:*

*1 = Joint monitoring and evaluation; 2 = Have veto powers; 3 = their approval is sought for monitoring and evaluation; 4 = given information on monitoring and evaluation; and 5 = Not involved in monitoring and evaluation.*

	1	2	3	4	5
1. DDHS					
2. Individuals and Households					
3. Healthcare Providers					
4. District Assembly					
5. Unit Committees					
6. Opinion Leaders, Chief & Elders					
7. NGOs					
8. Religious Institutions					
9. Educational Institutions					
10. Media					
RDHS					
NMCP					
Others – specify					

7. Comment on the impact of the RBM on morbidity and mortality pattern of malaria: -----  
-----  
-----

8. Please complete the table below

Year	Total Number of malaria cases	Total Number of severe malaria cases
2001		
2002		
2003		
2004		
2005		

9. List below drugs used for the treatment of malaria.

## Appendix 2

**School of Public Health  
University of Ghana  
Questionnaire for Healthcare Consumers`**

Instructions for Interviewer:

Please, inform the respondent that the information s/he will be providing will not be shared with another person. Information generated will be solely used for this research.

\_\_\_\_\_  
Name of community -----  
House number/location -----  
Date of interview -----  
Questionnaire number -----  
Research assistant's name -----

### Section A. Demographic Characteristics

1. Age -----
2. Sex: M [ ]                      F [ ]
3. Number of children -----
4. Educational level
  1. Tertiary (
  2. SSS
  3. JSS/Middle school
  4. Primary
  5. No education
5. Occupation
  1. Farmer
  2. Teacher
  3. Nurse
  4. Trader
  5. Clerk
  6. Unemployed
  7. Artisan
  8. Other (specify) -----

### Section B: Management of malaria

1. What is malaria? -----  
-----
2. What causes malaria?
  1. Mosquitoes
  2. Don't know
  3. Dirty environment
  4. Sun
  5. Stagnant water
  6. Oily foods

3. Please indicate how you recognise early signs and symptoms of malaria, including danger signs in children?
  1. Fever/chills
  2. Headaches
  3. Malaise
  4. Vomiting
  5. Diarrhoea
  6. Refusal of food
  7. Convulsion
  8. Dizziness -----
  9. Yellow eyes
4. Please indicate how malaria is managed at home?
  1. Giving of plenty fluids
  2. Giving of anti-malaria drugs
  3. Sponging of child
  4. Nothing
  5. Giving of traditional medicine/concoctions
  6. Rush individual to a health facility
  7. Other (specify) -----
5. Please indicate at what stage of home management that the individual is taken to the HCF for further management and care?
  1. When the individual becomes extremely weak
  2. When there is persistent diarrhoea and vomiting
  3. When there is dehydration
  4. When administered drugs aren't effective
  5. Other (specify) -----
6. Which drugs do you use in treating malaria?
  1. Amodiaquine
  2. Artesunate
  3. Chloroquine
  4. Local preparations
  5. Herbs
  6. Orthodox medicine
  7. Other (specify) -----
7. Have you ever had any form of education/training on malaria from the healthcare providers?
  1. Yes
  2. No
8. If Yes, what exactly were you taught? -----  
-----  
-----
9. Have you heard about insecticide treated nets?
  1. Yes
  2. No
10. Please indicate where you heard about the insecticide treated nets?
  1. Healthcare facility
  2. Media

3. Market  
5. Other (specify) -----
4. Friends/relatives
10. Do you have treated bed nets?  
1. Yes  
2. No  
If Yes, how did you acquire it?  
1. Market  
3. Healthcare facility  
5. NGOs  
2. Drug/chemical shop  
4. Philanthropist  
6. Other (specify) -----
11. Do your household sleep in them?  
1. Yes  
2. No
12. If Yes, who in your household sleep in the net?  
1. Husband  
2. Myself (wife)  
3. Children (above five)  
4. Children (under five)  
5. Pregnant women  
6. Other (specify) -----
13. If No, why? -----  
-----
14. Please indicate what you do or use in preventing malaria?  
1. Sleep in mosquito net  
2. Mosquito proofing  
3. Drainage  
4. General sanitation  
5. Larviciding  
6. Residual spraying  
7. Anti-malaria drugs  
8. Mosquito coils  
9. Other (specify) -----
15. Can you re-treat mosquito nets?  
1. Yes  
2. No
16. Do you get prompt attention when you visit the HCF?  
1. Yes  
2. No
17. What is the attitude of the health care providers?  
1. Very satisfactory  
2. Satisfactory  
3. Fair  
4. Poor  
5. Very poor
18. How do the health care providers behave in emergencies?  
1. Professional  
2. Non-professional



2. Who mentioned IPT to you for the first time?

1. Health staff
2. CBA
3. TBA
4. Relative/Friend
5. Media
6. Other (Specify) \_\_\_\_\_

4. What is the medicine given for the IPT?

1. Sulphurdoxine Pyrimethamine (SP)
2. Folic acid
3. Iron tablets
4. Other (Specify) -----

5) Have you taken SP before?

1. Yes
2. No

If Yes, how many times have you being given SP for this pregnancy?

1. IPT<sub>1</sub> only
2. IPT<sub>1</sub> and IPT<sub>2</sub>
3. IPT<sub>1</sub>, IPT<sub>2</sub> and IPT<sub>3</sub>
4. Other (Specify) -----

6) If No, why? -----  
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7) What are some of the advantages of the medicine given? -----  
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-----  
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8) Are you prepared to take more doses (For those who have more doses to take)?

1. Yes
2. No

If No why? -----  
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-----  
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9) Did you have any adverse effect after taking SP?

- 1. Yes
- 2. No

If Yes what was it?

- 1. Vomiting
- 2. Nausea
- 3. Itching
- 4. Skin rashes
- 5. Other (Specify) -----

19. What did you do for the adverse effect? -----

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-----  
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**3. Treatment for Malaria**

20. How many times have you developed malaria during this pregnancy? -----

21. Was it after taking the SP?

- 1. Yes
- 2. No

22. Please indicate type of treatment given?

- 1. Amodiaquine
- 2. Artesunate
- 3. Paracetamol
- 4. Multivite
- 5. Concoction
- 6. Other (specify) -----

23. Were there any adverse effects for the treatment?

- 1. Yes
- 2. No

If Yes, what remedy were you given or how did you manage? -----

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## Appendix 4

### Question guide for in-depth interview of healthcare Providers

1. Do you have a Standard treatment guideline on drug efficacy results, chemoprophylaxis for pregnant women and use of pre-packaged tablets?
2. Do you have a schedule for regular in-service training in Malaria management for staff and treatment charts displayed on all walls of consulting rooms and wards to remind staff on the correct management of malaria?
3. What marketing strategies do you embark upon to disseminate/promote the principles of RBM?
4. How best are you collaborating with other community based organizations, drug sellers, traditional healers, the District Assembly, etc. in the control of malaria?
5. Does the health facility/district carry out any environmental or internal analyses before coming up with strategies for malaria control?
6. Specify indicators developed for effective supervision?
7. What motivative measures has management put in place for staff to enhance confidence, competence and commitment?
8. Have there been any structural interventions for malaria control in the HCF?
9. How involved are other stakeholders/partners in decision making for malaria control within the district/HCF?
10. What type of patient/client profile have you developed over time?
11. How satisfied are you with the malaria control activities in the district/HCF?
12. How contemporary is your laboratory in carrying out test for Malaria control?
13. How regular/available are the standard list of anti-malaria drugs, stock levels and prices?
14. Availability and use of treated mosquito nets? Comments
15. What efforts have you made in encouraging the community in using the treated mosquito nets?
16. How often do you organise health promotional campaigns for the community?
17. Malaria in pregnancy
18. How has the trend of malaria been in the HCF/district?
19. What efforts have you put in the development, sustenance and improvement of Home-based care?
20. What are some of the constraints stalling the efforts of malaria control within the community?
21. What efforts have you made towards addressing the constraints?
22. Comments

## **Appendix 5**

### **Question guide for Opinion Leaders/Partners in Malaria Control**

1. Have you ever been involved in Malaria Control activities?
2. How have you been involved?
3. What have been your contributions towards Malaria Control in the community?
4. What are your perceptions of delivery of health services in the community?
5. Is the health system doing enough to avert or reduce the morbidity or mortality of malaria?
6. What has the collaboration between you and the HCF been?
7. What constraints if any have stalled some of your efforts towards malaria control?
8. What form of modification have you put in place as a community to help reduce the incidence of malaria?
9. How do you organize the community for communal activity towards Malaria Control?
10. What in your opinion is your singular achievement towards Malaria Control in the community?