

**THE EVALUATION OF DRUG SUPPLY
MANAGEMENT IN THE MOH FACILITIES
IN THE DORMAA DISTRICT**

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**IN PARTIAL FULFILMENT OF THE REQUIREMENTS
FOR THE MASTER OF PUBLIC HEALTH DEGREE.**



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DECLARATION

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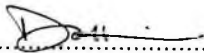
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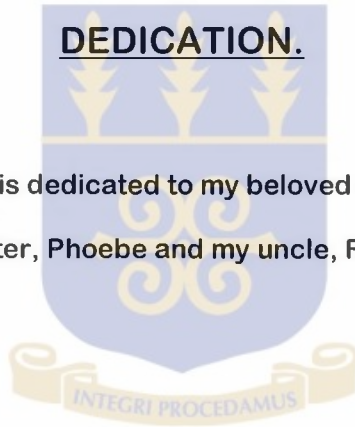


Signed.....



DEDICATION.

This dissertation is dedicated to my beloved wife, Makaria; my cherished daughter, Phoebe and my uncle, Richardson.



ACKNOWLEDGMENTS

I Thank God for His mercies, protection, provisions and above all the free gift of life and good health enjoyed throughout the study period. May His name be glorified, Amen.

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ABBREVIATIONS

CDC	Catholic Drug Centre
CHAG	Christian Health Association of Ghana
CHW	Community Health Worker
DDHS	District Director of Health Services
DDPS	District Director of Pharmaceutical Services
DHA	District Health Administration
DHMT	District Health Management Team
DMS	District Medical Stores
DPT	Diphtheria, Pertussis and Tetanus
EDL	Essential Drug List
FAC	Ferric Ammonium Citrate
FIFO	First expiry date, First Out
IMC	Institutional Management Committee
KDK	KwabenaDwomoKrom
KKK	KwadwoKumiKrom
MOH	Ministry of Health
ORS	Oral Rehydration Salt
PHC	Primary Health Care
RMS	Regional Medical Stores
TBA	Traditional Birth Attendant
WHO	World Health Organization



ABSTRACT

One of the components of the Primary Health Care concept is the provision of essential drugs. Drugs form an important part of any health care delivery system to the extent that most people in Ghana associate the quality of care to the availability of drugs.

To help improve the quality of care provided by the Ministry of Health(MOH) facilities in the district, Dormaa District Health Management Team(DHMT) established a District Medical Stores(DMS) in 1996.

The study was carried out to evaluate the drug supply activities at the DMS and to assess the availability of drugs at the Sub-district Health facilities. The research instruments employed for the study were administration of questionnaires, observation of facilities, equipment and activities and the review of stock records (secondary data). The facilities included in the study were the DMS and six MOH sub-district health facilities. Dormaa Ahenkro sub-district was excluded from the study because it had no MOH facility.

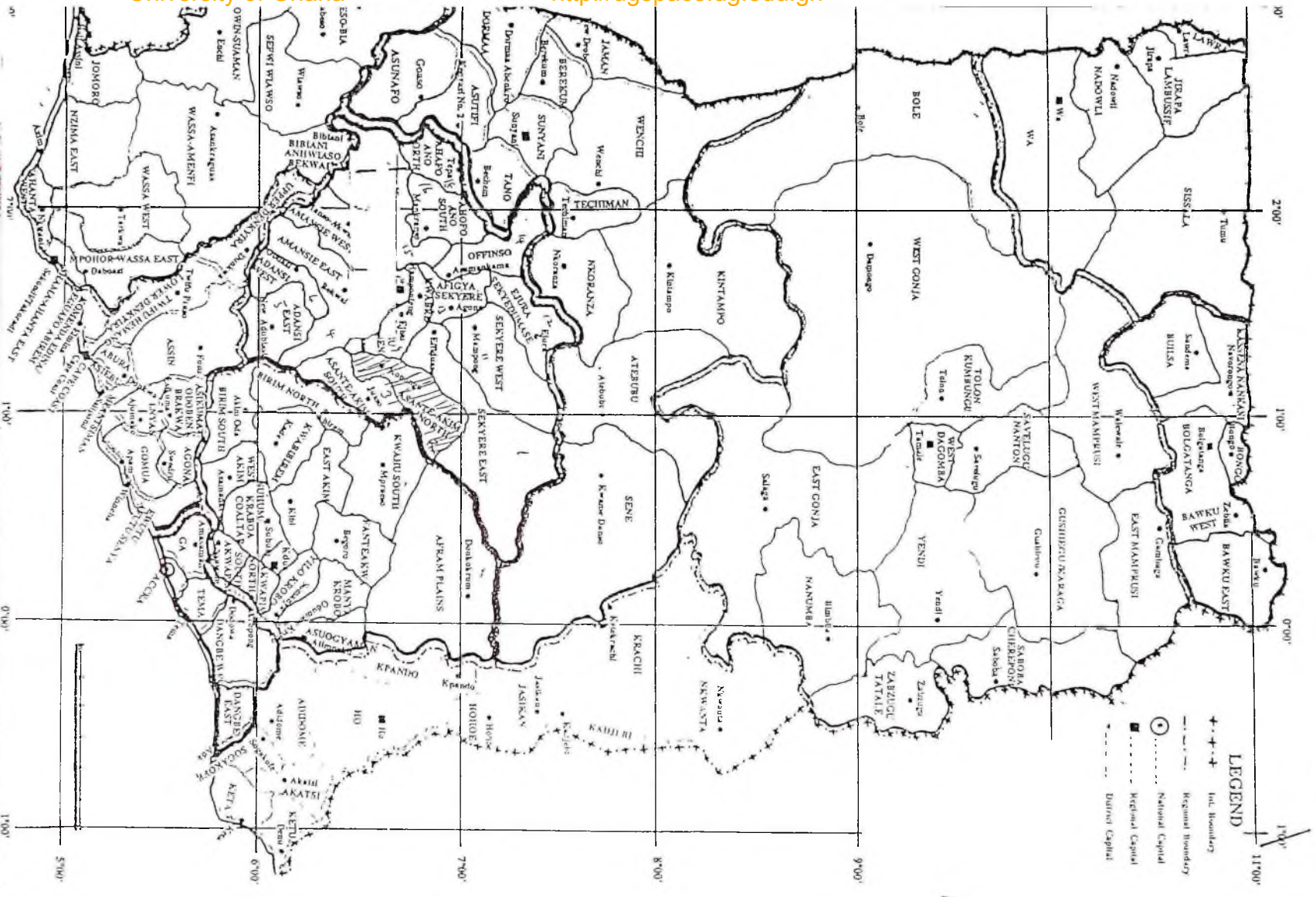
The drug supply activities were found not to be properly organized. Assessment of drug requirement were not based on any authentic rational information from the sub-district health facilities that patronize the DMS. Storage facilities and equipment were either not existing or in poor conditions. Air conditioner, refrigerator telephone facility, fire extinguisher, computer, pallets,

preparation rooms and even an office were all not present. The inventory control records were properly kept even though they were not utilized to make procurement decisions. Drug availability at the sub-district health facility levels was not encouraging. At least three out of the sixteen marker drugs were absent from each of the sub-district health facilities. Amasu Rural Clinic had as high as ten of the marker drugs absent from its store.

Based on the study findings several recommendations were made to help improve drug supply activities and availability of essential drugs in MOH health facilities in the district. These included the following:

- * The sub-district health facilities should submit monthly drug consumption returns to the DMS to be used as the basis for the assessment of drug needs in the district.
- * Effort should be made to provide the store with all the equipment and facilities lacking so as to ensure efficient storage system
- * The DHMT should organize refresher courses and in-service training for the DMS staff and the heads of the sub-district health facilities on drug supply management.

DISTRICT MAP OF GHANA



DORMAA DISTRICT HEALTH SERVICES
SUB-DISTRICT DEMARCATION



KEY

- DORMAA AHENKRO SUBDISTRICT
- NKRANKWANTA SUBDISTRICT
- KWADWOKUMIKROM SUBDISTRICT
- ABOABO SUBDISTRICT
- WAMFIE SUBDISTRICT
- DORMAA AKWAMU SUBDISTRICT
- DANYAME SUBDISTRICT
- ASIKASU SUBDISTRICT



DISTRICT HOSPITAL



HEALTH CENTRE TYPE II



HEALTH CENTRE TYPE I
(RURAL CLINIC)

— SUB-DISTRICT BOUNDARY

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND INFORMATION

Dormaa District is one of the thirteen districts in the Brong Ahafo Region. It covers an area of 2376km² and the fifth largest in the region. Its projected population based on the 1984 census is 160,452 (based on the assumed population growth rate of 3.1%). Women in fertile Age group and children under 5 years (most vulnerable groups of the population) form 40% of the population.(Annual Report,1997)

The district is divided into eight (8) sub-districts, namely:

- Wamfie
- Dormaa-Akwamu
- Nkrankwanta
- Aboabo
- Asikasu
- Danyame
- KwadwoDwomoKrom(K.K.K) and
- Dormaa Ahenkro

The health facilities in the area are as follows:

- 1 District Hospital (owned by the Presbyterian Church of Ghana)
- 3 Health Centres (owned by MOH)
- 10 Rural Clinics (5 each for MOH and Presbyterian Church)
- 17 Community Clinics (owned by Presbyterian Church)
- 8 Private Clinics

The top ten causes of morbidity, admissions to the District Hospital and mortality are as shown on the table 1. Below (Annual Report 1997)

Table 1.

Top ten causes of morbidity, admissions and mortality
in Dormaa District Hospital - 1997

NO	CAUSES OF MORBIDITY	CAUSES OF ADMISSION	CAUSES OF MORTALITY
1	Malaria	Malaria	Meningitis
2	Upper Resp. Tract. Infect.	Preg. related complication	Anaemia
3	Gynae. Disorders	Pneumonia	HIV/AIDS
4	Accidents & Burns	Enteric Fever	Cardiac Failure
5	Intestinal Worms	Hernia(Inguinal)	Pneumonia
6	Skin Diseases	Cellulitis	Malaria
7	Preg. related complication	Anaemia	Septicemia
8	Enteric Fever	Abscesses	Renal Failure
9	Ear infection	Fibroid Uterus	Enteric Failure
10	Anaemia	Meningitis	Hypertension

1.2 **RATIONALE OF THE STUDY**

One of the major objectives of the Primary Health Care (PHC) concept in Ghana, is to ensure the availability of essential drugs to the population. In attempting to achieve this objective the Ministry of

Health (MOH) has been faced with a number of problems including the following:

- There has been increasing total cost of drugs with expanding provision of health services, leading to significant increase of the overall health budget.
- The drug supply system has suffered from lack of qualified and experienced management and technical personnel.
- There has been inadequate drug supply management procedures, unsuitable and insufficient distribution and storage facilities, often resulting in increased procurement cost and losses.
- Irrational prescription and drug use.

In an attempt to address these issues, the M.O.H proposed the establishment of District Medical Stores which will respond adequately to the logistic needs of health facilities of the districts .The proposal for the establishment of District Medical Store was viewed as a means of achieving some of the objectives of the Ghana National Drug Policy, which include rationalizing drug procurement, storage and distribution of essential drugs.

Dormaa District, until 1996, had operated without District Medical Stores. The drug needs of the health facilities within the district were not adequately met. This was primarily due to the long distance each institution had to make to the Regional Medical Stores at Kintampo before getting her drug supply. The problem was made worse due to lack of transportation, poor estimation of drug requirements and inadequate storage facilities at the institutional

levels. The effective stock holdings were relatively small such that they could only stock small quantities at a time. The above constraints caused frequent shortages of drugs within the district and patients prescription needs were not fulfilled. The situation therefore undermined the effectiveness of the health care system, since most people in Ghana associate the performance of a health care institution with availability of drugs. Indeed, from a study conducted in the Eastern Region, drug availability was perceived by clients as their number one concern with regards to quality of care (Dovlo et al 1991).

It was against this background that the Dormaa DHMT made proposals to establish a District Medical Store to rectify the situation. In response to that, the District was allocated an amount of ₵26 million in the form of drugs to be used as a seed capital to establish a district medical stores in 1996 (District Health Annual Report 1996). In spite of the huge investment made, there is little information on the operations of the District Medical Store.

The study therefore evaluated the management of drugs at the District Medical Stores. The emphasis was on how the drugs were acquired (Procurement), stored and distributed to the sub-districts. Availability of essential drugs were also assessed at the sub-district health facilities. The assessment and the review of the drug supply management were made with the view to making recommendations for the improvement of the System and strengthening it to render efficient services.



CHAPTER TWO

LITERATURE REVIEW

2.1 Drug Availability as an Essential Component of PHC

The availability of trained medical staff and facilities which are accessible to the population are necessary components of primary health care programmes. However that alone is not sufficient to provide effective health care. Availability of basic essential drugs, for example, oral rehydration sachets, intravenous solution, vaccines etc. also plays an important major role. Their importance for primary health care programmes are seen from the following observations:

- Drugs improve health.
- Availability of drugs promote trust and attendance of patients to health care services. For instance, studies in Nigeria showed that when Health facilities ran out of commonly used drugs, visit by patients dropped by 50-75% (Better Health in Africa, 1993)
- Drugs are expensive and consume large proportions of the hard earned government's foreign exchange as well as household expenditure. For example, under the Recurrent budget of the Ministry of Health's annual estimates for 1997, supplies and stores constituted 16.65%, ranking second only to personal emoluments (54.92%) (Parliamentary report, 1997). In Senegal between 1981-1989 household expenditure for drugs accounted for 48% of all health expenditures. (Better health in Africa, 1993).

In the light of the above observations, it is important that drugs are managed properly to avoid wastage and to help promote and improve the health of the people.

2.2 Drug Supply Activities:

Drug supply activities includes all aspects of the process required to bring a drug from the supplier to the dispenser and ultimately to the individual patient (Management Science for Health, 1994). The primary functions in the logistics cycle of drug supply system has four main components, namely:

- Selection
- Procurement
- Distribution
- Use.(outside the scope of the study, hence was not discussed here)

Actions to reduce waste are required at all stages of the drug supply chain from the domestic policies to the use of drugs by patients. In Nigeria for example, technical review of public sector health facilities revealed that:

- ineffectual and even dangerous drugs are procured;
- brand- name rather than less expensive generic drugs are purchased;
- drugs are often purchased locally in small quantities instead of bulk;
- many drugs become unusable because of faulty storage practices
- Drugs disappear because of inadequate stock control procedures

- Health personnel tend to prescribe excessive number of drugs for patients in their attempt to treat a number of possible diseases simultaneously (Better health in Africa, 1994)

2.2.1 Drug Selection:

Drug Selection includes issues such as what products should be available and in what quantities. That is, proper drug selection answers questions like “what to buy and how much to buy?”. Selection may often be involved with problems, especially where pharmaceutical knowledge is lacking or the process of selecting drugs is disjointed or haphazard. It includes:

- purchasing of too many products - An unnecessarily large variety of items which duplicate each other and consume limited inventory capital.
- purchasing unnecessarily expensive products which are not included in the essential drug list.
- purchasing of inappropriate quantities resulting in either frequent shortages or expiry drugs.

The national selection of essential drugs for the treatment of the prevailing disorders is the first and most important step in defining the frame of reference of a strategy aimed at efficient management of drug supply system, improved and rational drug therapy, reduced drug bill and increased availability of essential drugs in the health institutions. (M.O.H, 1996) The best way to ensure the availability and access to essential drugs is to develop standard protocols and list of

essential drugs for different levels of health care and to use these as the basis for the supply of drugs. Essential drugs should be selected on the basis of evidence and in accordance with the criteria used for compiling WHO model list (WHO 1997). This criteria for the selection of essential drugs are intended to ensure that the process of selection is unbiased and based on the best available scientific information, yet allow for a degree of variation to take into account local needs and requirements.

An effective drug supply management system should have a good system of estimating how much of each drug needs to be stocked (quantification). Quantification of drugs is part of a sequence of interdependent steps in drug supply management system. An effective quantification requires data concerning morbidity and drug use and fundamental decisions, about which drugs to be dispensed.(WHO,1988). The WHO reference indicators of drug selection are 400-500 drugs in major hospitals and 40 drugs in small health facilities not run by physicians. (W.H.O, 1991)

2.2.2 Drug Procurement:

Procurement is defined as the process of acquiring supplies. Procurement also refers to obtaining pharmaceutical through purchases, donations and manufacturing. Problems that may be associated with this process include:

- **Supplier Selection** - unreliable suppliers withdraw or change their offers during tender process, deliver sub-standard products or goods near expiration dates.

- **Financing - procurement is limited by the lack of funds.**
- **Personnel – Efficiency in procurement activities requires trained personnel,**
- **a suitable organizational structure, with well-designed procedures, and a functioning information system as well as facilities and equipment.**

Most of the important decisions and actions which determines the types of drugs available, the quantities obtained, the prices paid and the quantities of drugs and packaging fall within the procurement cycle. The procurement procedures should avoid delays and possible stock outs. Managers of drugs must be able to fix minimum stock levels (safety stocks), at which to place orders to avoid shortages. They must also consider the Lead Time, that is, time between placing an order and expected time of delivery of consignment to the facility.

(Monokosso and Lambo, 1993)

The main objective of a well-managed procurement system is to ensure that needed high quality supplies are acquired as inexpensively as possible, and delivered promptly. In Delhi, India, a system involving the use of essential drug list and pooled procurement of generic drugs is reported to have significantly increased the availability of essential drugs in all the hospitals and health centres in the state. (Chaudhury and Bapna, 1997).

2.2.3 Drug Distribution

Within the drug distribution cycle fall all of the activities required to receive drugs from the supplier and to move them safely, securely and expeditiously to the many points in the health care system. These activities include :

- Storage
- Inventory control
- Delivery activities

Analysis of distribution cycle often reveals difficulties with the following:

- **Storage:** - Spoilage is hastened by overcrowded disorganized warehouses, temperature, inadequate moisture, pest control, inadequate security leading to losses from theft.
- **Stock Management:-** Store managers are frequently unaware of what supplies they have on hand or where they are. Supplies needed in one health facility may be gathering dust in another, because their presence is unknown or because mechanisms for transferring stocks do not exist.
- **Transportation:** - Disorganized transport scheduling and poor maintenance leading to frequent breakdowns. At times transport may not even be available at all.

2.2.3.1 STORAGE:

Careful drug selection and wise procurement practices are of no benefit for public health, unless the distribution network can properly store and regularly deliver drugs to all health facilities.

Storage comprises the management of storehouses and stockyards, the operation of handling and storage equipment and the safe custody and protection of stock (Jessop and Morrison, 1994).

Medical stores should be positioned to promote the fastest and least expensive transport of supplies from source to users. Factors to consider include:

- Location of supply sources.
- Number and location of clinical facilities
- Transport links between sources and clinical facilities
- Seasonal factors that cut routes, and
- Number, type and capacity of existing storage facilities

Other factors to be considered are access, drainage, security, electrical and telephone services.

The Medical store should be designed to allow for easy movement of supplies, good circulation, bulk storage on pallets, easy maintenance, systematic arrangement of stock, cold storage areas, secure and protected storage areas and fire prevention. (Management sciences for health. 1993). Some categories of supplies require special storage conditions. For example vaccines require both refrigerators and freezers. In the recent power crisis, vaccines were reportedly going bad at Obuasi Government Hospital due to frequent power cuts.(Daily Graphic, 1998). In

a study where DPT and Measles vaccines were subjected to interruptions to power supply for two (2) hours or more, their potencies were compromised (Senanayake et al, 1997). Parenteral Ergometrine, which is widely used for prevention and treatment of excessive uterine bleeding following childbirth has been found to contain very little active ingredient in the tropical climate: 34 out of 100 field samples from Gambia, Malawi, Yemen and other countries were found to contain less than 60% of the active ingredient stated on the label. It is therefore advised that the drug should always be protected from light and also be refrigerated (Hogerzeil and walker, 1996). Ampicillin, erythromycin, sulphaguanidine, furosemide injection, penicillin, trimethoprim and chloroquine have been shown to have more than 10% quantitative loss of their active ingredient when stored in harsh tropical conditions (Ballerean et al, 1997). Thus, it is recommended that these essential drugs be stored for not more than one year in a tropical climate unless refrigerated or air-conditioner is provided.



2.2.3.2 INVENTORY CONTROL:

Inventory, which is the stock on hand at any given time is an essential part of any supply system. Drug inventories exist to ensure drug availability at the right time and at an accessible location.

The total amount of inventory held at any one time at all points in the supply system can be substantial and its maintenance costly, therefore efficient management is crucial. It serves numerous important purposes, the most significant of which are to protect against

uncertainty, permit bulk purchasing, increase transportation efficiency and to anticipate seasonal fluctuations.

Inventory control at the district level is generally determined by transportation and storage considerations. As a result, the most common system is a periodic inventory with a review period and delivery interval of two, three or four months. (Management sciences for health, 1993). At each review period, the storekeeper or the pharmacist reviews the stock records for each item, based on the current inventory position and recent consumption patterns and then estimates drug requirement for the next supply period. These requirements are recorded on an official requisition and transmitted to the Regional Medical Stores for supplies.

Pharmaceuticals are handled on strict “first expiry date, first out” (FIFO) principle. Items of a particular type must always be picked for distribution to the next health facility so as to ensure that drugs that have been longest in stock and are closest to their expiry date are sent out first.(Bathersby and Garnett, 1993).

Maintenance of stock record is very important in inventory control since it forms the basis for important procurement decisions. Several systems are used for keeping manual stock records, and these include file and card systems, ledger formats or visual approaches to stock control.

2.2.3.3 DELIVERY ACTIVITIES

Delivery is frequently the least organized activity in the distribution process and disruption easily occur at any or all levels of the distribution system. Effective delivery system therefore requires careful planning and execution. Vehicle maintenance, stock-outs of spare parts, variations in access routes and other local factors that affect delivery of drugs should all be included in the planning process.

Delivery activities are greatly enhanced by efficient transport management system. In most cases vehicular transport is limited more by the lack of spare parts and mechanical expertise than is by the actual number of vehicles owned. Preventive maintenance, which is done routinely helps to keep the vehicles in good condition and prevent frequent breakdowns.

Inaccessible road network especially during the raining season also affect delivery activities since essential drugs are not able to reach the needed facilities due to the bad nature of road network. This therefore calls for proper planning such that deliveries are made during the dry seasons when roads are relatively good.

2.3 MEDICAL STORES EFFICIENCY

Medical stores play important role in a nation's effort to secure good health for its citizens and effort should be made to make it efficient. There are several ways and systems to measure efficiency in stores. Most of these involve the analysis of records of activities over a

period of time (Jossep and Morrison, 1993). Some of the indicators commonly used in efficiency measurement schemes are :-

- Rate of turnover of stock
- Proportion of stock which is slow moving
- Surplus stock; the quantity and value of stock which are not needed
- Damaged, loss or expired drugs in stock.
- Service level- An indication of the proportion of request from users or customers which are fulfilled at first pick.

CHAPTER THREE

METHODOLOGY

3.1 TYPE OF STUDY:

The study was exploratory in approach and descriptive in content. With the exception of analysis of the purchasing activities which were retrospective, all other studies were cross-sectional with respect to time. It also involved reviewing of secondary data(stock records).

3.2 STUDY AREA

Dormaa District in the Brong Ahafo Region was chosen as the area for the study. The district is divided into eight (8) sub-districts (table 1). The District Health Service, since its inception has been a joint effort of the Ministry of Health and the Presbyterian Church of Ghana. The sub-district health facilities within the District are as shown in the table 2.

Table 2.**Sub-District health facilities and their ownership.**

SUB-DISTRICT	HEALTH FACILITY	OWNERSHIP
WAMFIE	1. Wamfie Health Centre 2. Wamanafu Rural Clinic	MOH PRESBYTERIAN CHURCH
DORMAA-AKWAMU	1. Dormaa-Akwamu Health Centre 2. Akontanin Rural Clinic	MOH MOH
NKRANKWANTA	1. Nkrankwanta Health Centre	MOH
ABOABO	1. Aboabo Rural Clinic 2. Kyeremasu Rural Clinic 3. Kwameasua Rural Clinic 4. Amasu Rural Clinic	PRESBYTERIAN CHURCH -DO- -DO- MOH
ASIKASU	1. Asikasu Rural Clinic	MOH
DANYAME	1. Danyame Rural Clinic	MOH
KWADWOKUMIKROM (K.K.K)	1. K.K.K Rural Clinic 2. Kwabena-Dwomo-Krom (K.D.K) Rural Clinic	PRESBYTERIAN CHURCH MOH
DORMAA AHENKRO	1. District Hospital	PRESBYTERIAN CHURCH

Apart from the health facilities indicated on the table above, the Presbyterian Health Services manages two (2) out of the eight sub-districts, namely Aboabo and K.K.K. sub-districts. They also run the only hospital in the district which serves as the District Hospital. The Primary Health Care (PHC) Centre which is primarily involved in the Rural health services, for instance, training of the Community Health Workers(CHW), Traditional Birth Attendants(TBA's) and Traditional Healers is also under the auspices of the Presbyterian Health Services.

Only the MOH health facilities get their drug supply from the DMS, the Presbyterian health facilities do not. The District Hospital gets its drug supply from Christian Health Association of Ghana(CHAG)

and Catholic Drug Centre (CDC), both in Accra , Diocesan Pharmacy in Sunyani and the open market(Personal interview, Pharmacist in-charge of the District Hospital). The PHC mainly procure its drug through donations from the overseas partners of the Presbyterian Church of Ghana(Personal interview, coordinator, PHC Programmes). The sub-district health facilities which belong to the Presbyterian Health Services however obtain their drug supply from the District Hospital pharmacy and the PHC Medical Store. Due to the differences in the sources of drug procurement, the Presbyterian Health Facilities were excluded from the study

3.3 AIM OF THE STUDY:

The aim of the study was to evaluate the drug supply activities at the DMS and to determine the availability of essential drugs at the sub-district health facilities in order to make recommendations for improvement.

3.4 OBJECTIVES:

The objectives of the study were to:

- Describe the drug supply activities and storage facilities at the District Medical Store.
- Review the inventory control system at the District Medical Store.
- Assess drug availability at the health facility levels



3.5 **METHOD:**

The main research instruments designed and used for the collection of data for the study were:

- Administration of questionnaires
- Observation
- Review of stock records

To describe the drug supply activities, questionnaires were administered to find out how drugs were selected, procured and distributed to the sub-district health facilities. The respondents were as follows:

- The Pharmacist
- D.D.H.S
- Transport Officer
- Accountant
- DHMT members(4 members)
- The Storekeeper

These activities were also observed as they were being carried out at the District Medical Stores.

Description of the storage facilities was done through observation. A check-list(refer annexure iii) was prepared and used to find out the storage facilities and equipment that existed at the DMS.

For the inventory control system, tally cards and ledger books were reviewed to assess their completeness, that is, accuracy and up-to-date entries. To help do that, Marker(Tracer) drugs(refer annexure iv) were developed from among the stock of drugs at the DMS. The

selection of the marker drugs was based on the top ten causes of morbidity in the District. These drugs were physically counted to know the quantities available at the store. The figures were then cross-checked with what was recorded on the tally cards and in the ledger books to know whether the entries were current and correct. Records from the issue books were also reconciled with those on the tally cards and in the ledger books to assess the accuracy of information on the movement of drugs at the DMS.

To assess drug availability at the health facility levels, the marker drugs developed at the DMS were traced to the health facilities to determine:

- The presence or absence of usable drugs
- Whether the quantities available (if any) met the minimum stock level
- Whether the quantities available(if any) were within the maximum level

This was done by using tally cards and Physically counting the marker drugs at the facilities to verify the stock records.

Questionnaires were also administered to the heads of health facilities to find out their drug supply activities

3.6 DATA COLLECTION:

One Store Assistant was deployed and trained to assist in the data collection. He was taught how to extract information from the stock records, take stock and to administer questionnaires.

The study was restricted to only the MOH facilities in the District. These were the DMS and a health facility each from the seven sub-districts, namely;

- Wamfie Health Centre.....Wamfie Sub-district
- Dormaa-Akwamu H/C..... Dormaa-Akwamu Sub-district
- Nkrankwanta H/C..... Nkrankwanta Sub-district
- Amasu Rural Clinic.....Aboabo sub-district
- Asikasu Rural Clinic.....Asikasu Sub-district
- Danyame Rural Clinic.....Danyame Sub-district
- Kwodwo-Dwomo-Krom Rural Clinic..K.K.K Sub-district

Dormaa Ahenkro Sub-district was excluded from the study since it had no MOH health facility . The selection of a health facility from Dormaa-Akwamu Sub-district which has two MOH health institutions was done randomly by balloting.

Due to the differences in their sources of drug procurement, the Presbyterian Health Facilities were excluded from the study.

CHAPTER FOUR

RESULT



4.1 DRUG SUPPLY ACTIVITIES AT THE DISTRICT MEDICAL STORES (DMS)

The district has no drug selection committee. The types and the quantities of drugs procured were the sole prerogative of the pharmacist and storekeeper. However, all the drugs stocked at the DMS are enlisted in the essential drug list and are based on their generic names. Out of the nine respondents only three stated that the selected drugs were reviewed periodically. My personal observation also revealed that no review of the selected drugs had been done ever since 1996 when the stores were established. Four, out of the seven respondents indicated that, the drugs stocked at the DMS are not enough to meet the needs of the health facilities. However, only two of the respondents could recommend any drug for its inclusion.

The DHMT has no drug procurement committee. The storekeeper, the pharmacist and the DDHS take the decisions concerning procurement. The DMS obtains all her drug supply from the Regional Medical Stores (RMS). In a situation where needed drugs are not available at the RMS, they currently do not buy them from other sources. However, the Pharmacist gave no tangible reason when contacted. The DDHS was also not available to comment on the issue. Drug procurement in the District from the RMS is scheduled to take place quarterly, however this depended on the availability of transport and funds, which has been one of the major problems facing the DMS.

The signatories to the drug account are the DDHS and the accountant. The pharmacist is however not a signatory to the drug account contrary to the MOH's directives. The final authority to approve of the drug requisition from the DMS to the RMS is the Deputy Director of Pharmaceutical services, Brong Ahafo region in Sunyani.

Drug distribution in the district is severely affected by the availability of transport. The district has only two vehicles which breakdown quite often. Only one vehicle was available throughout the study period until the 10th week when the other one was brought from the mechanic workshop. The roads to the DMS are all accessible even though very bad especially during the raining seasons. Payment of drug bill by the sub-district health facilities is not a problem in the district. However, technical staff to manage the drugs at the sub-district health facilities are lacking. There is no dispensing technician in the district and only two of the sub-districts health facilities have dispensing assistants.

Even though no expired drugs were found at the sub-district health facilities, it was observed that the DMS had some quantities of drugs that were near their expiry dates e.g. infusions Dextrose saline, Normal saline and Dextrose 5% and injections Promethazine Hydrochloride, Chloramphenicol in oil and Lignocaine(5%) in Adrenaline.

Six respondents were dissatisfied with the services of the DMS, while three stated they were satisfied.

4.2 STORAGE FACILITIES AT THE DISTRICT MEDICAL STORES

The District Medical Store is divided into three sections . The main section covers an area of 240 x160in (6.1x4.1m). This is where the bulk of the items are stored. The other two, are smaller ones measuring 170 x 120in(4.3x3.0m) and 105 x94in(2.7x2.4m) respectively. The former store is used for the storage of syrups and infusions while the latter stores injectables.

The roof of the store is ceilled. There are windows which are not adequate, hence ventilation is poor. Only the main store has a ceiling fan. When it rains water leaks from the doors and windows into the store, thus poses problem especially during the raining seasons.

There are no pallets and shelves too are not sufficient hence the heavy items in boxes and many other drugs are sitting on the bare floor. This makes the store very crowded and movement very difficult.

The main store is used for drugs as well as all other items purchased by the District Health Administration. For instance, drugs, car spare parts, plates, soaps and detergents , inflammables e.g. oil paints, engine oil, gear oil, methylated spirit etc. are all mixed up at same the store.

The District Medical Store lacks a number of essential facilities. These include Air conditioner, telephone, fire extinguisher, refrigerator, an office preparation room etc.

Security system at the stores is however very good. The main door to the stores has three keys, which are kept by the Pharmacist, the DDHS and the Accountant. Thus, all the three has to be around to

be able to open the main door. The DDHS however, keeps spare of all the keys at his office for emergencies.

4.3 INVENTORY CONTROL SYSTEM AT THE DISTRICT MEDICAL STORES

The main inventory records kept at the stores are the tally cards, Requisition books, Issue vouchers and the ledger books. They also prepare monthly drug returns as well as quarterly inventory taking. The physical stock counted, reconciled with figures in the stock records. They check the expire dates of drugs when taking inventory at the end of every quarter of the year. The stock records were correctly kept and gave current information about stock level, consumption pattern, slow and quick moving drugs at the DMS. However, the sub-district health facilities do not submit monthly drug returns to the DMS.

4.4 DRUG SUPPLY ACTIVITIES AT THE HEALTH FACILITIES

Out of the seven health facilities selected for the study, one was excluded (K.D.K Rural clinic in K.K.K Sub-district). The officer in-charge of the rural clinic was out of the station throughout the data collection period (9th and 10th week) and the orderly assisting her could not be of any help.

The sub-district health facilities visit the DMS for their drug supply on the average of once every two months. Five, out of the six facilities visited claimed that they are not able to get all their requested drugs from the DMS at all times. Three of these health

facilities seek permission from the DDHS to purchase the non-available drugs from the District hospital pharmacy or the Primary Health Care Store. The other two health facilities however do not buy the non- available drugs from anywhere, but rather write them for the patients to buy from the open market.

Before the inception of the DMS, all the health facilities in the district were buying their drugs from the RMS at Kintampo. Comparing the current drug availability in the health facilities to the days when the DMS were not established yielded various responses. Two health facilities said the situation is better than before, another two facilities also said there has been no improvement while one said that the situation has deteriorated. The other health facility however could not assess the situation because the head was not at post at the time when the DMS was not established.

Some of the problems facing the health facilities in relation to their drug supply activities and were stated during the interview were as follows:

- The non- availability of mixtures at the DMS.
- Difficulty in getting some of the IMC Chairman to sign the cheques to purchase drugs
- DMS not providing some of the facilities with a vehicle to convey their drugs to their institutions.

4.5 STORAGE FACILITIES AT THE HEALTH FACILITIES

The conditions at the sub-district health facilities were not different from those at the DMS. With the exception of Wamfie Health Centre, all the other health facilities by the MOH are not supplied with electricity. Dormaa Akwamu Health Centre and Danyame Rural Clinic are provided with solar and kerosene refrigerators respectively. However, apart from vaccines all other drugs that needed refrigeration are not stored in them.

The stores at the sub-district health facilities are generally small and the storage facilities are virtually lacking. Dormaa Akwamu and Danyame medical stores lack ceiling and when it rains the Dormaa Akwamu store leaks. All the stores in the sub-district health facilities do not have sufficient shelves, hence the drugs are packed closely together, making identification difficult. However all of them have their tally cards neatly displayed on them. They also lack pallets and as such, heavy drugs in boxes are kept on the bare floor.

With the exception of Dormaa Akwamu Health Centre and Asikasu Rural Clinic stores, all other stores are poorly ventilated due to inadequate windows. This problem is made worse, due to general lack of fans in the stores(not even at Wamfie Health Centre which is connected to the national electricity grid).

4.6 DRUG AVAILABILITY AT THE SUB-DISTRICT HEALTH FACILITIES

Availability of drugs at the health facilities as shown on the tables 3-8, indicated that a minimum of three marker drugs were absent from each health facility. Amasu Rural Clinic had as high as

10(62.5%) of the marker drugs being absent from its store. Danyame Rural Clinic with 7(43.8%) and Dormaa Akwamu Health Centre haven 5(31.3%) of the marker drugs being absent. Wamfie and Nkrankwanta health centres and Asikasu Rural Clinic had 3(18.8%) each of the marker drugs being absent. Analysis of the tables also indicated that not even a single drug was present at all the health facilities at the time of the data collection. Tablet Co-trimoxazole, Syrup Piperazine Citrate and Mixture F.A.C. were each absent in three different health facilities. Three of the health facilities had some of the drugs ineffectively stocked, that is, their quantities were outside the minimum and the maximum stock levels.

Table3.**(1) WAMFIE HEALTH CENTRE:**

S. NO	NAME OF DRUG	DRUG AVAILABILITY		EFFECTIVE STOCK RANGE		REMARKS
		PRESENT	ABSENT	ABOVE MINIMUM	BELOW MAXIMUM	
1	Tab. Chloroquine	✓		✓	✓	Good Stock
2	Tab. Paracetamol	✓		✓	✓	-do-
3	Tab. Co-trimoxazole	✓		✓	✓	-do-
4	Tab. Mebendazole		✓	—	—	Shortage
5	Tab. Ferrous Sulphate	✓		✓	✓	Good Stock
6	Tab. Folic Acid	✓		✓	✓	-do-
7	Syr. Chloroquine	✓		✓	✓	-do-
8	Syr. Paracetamol	✓		✓	✓	-do-
9	Syr. Co-trimoxazole		✓	—	—	Shortage
10	Syr. Piperazine Citrate		✓	—	—	Shortage
11	Mixt. F. A. C.	✓		✓	✓	Good stock
12	Inj. Pro. Penicillin	✓		✓	✓	-do-
13	Inj. Ergometrine	✓		✓	✓	-do-
14	Inj. Chloroquine	✓		✓	✓	-do-
15	Inf. Dextrose Saline	✓		✓	✓	-do-
16	O. R. S	✓		✓	✓	-do-

✓ -- Yes

× -- No

— -- Nil

Table 4.**(2) DORMAA-AKWAMU HEALTH CENTRE:**

S. NO	NAME OF DRUG	DRUG AVAILABILITY		EFFECTIVE STOCK RANGE		REMARKS
		PRESENT	ABSENT	ABOVE MINIMUM	BELOW MAXIMUM	
1	Tab. Chloroquine	✓		✓	✓	Good Stock
2	Tab. Paracetamol	✓		✓	✓	-do-
3	Tab. Co-trimoxazole		✓	—	—	Shortage
4	Tab. Mebendazole	✓		×	✓	Under-stock
5	Tab. Ferrous Sulphate	✓		✓	✓	Good stock
6	Tab. Folic Acid	✓		✓	✓	-do-
7	Syr. Chloroquine	✓		✓	✓	-do-
8	Syr. Paracetamol	✓		✓	✓	-do-
9	Syr. Co-trimoxazole	✓		✓	✓	-do-
10	Syr. Piperazine Citrate		✓	—	—	Shortage
11	Mixt. F. A. C.		✓	—	—	Shortage
12	Inj. Pro. Penicillin	✓		✓	✓	Good Stock
13	Inj. Ergometrine	✓		×	✓	Under-stock
14	Inj. Chloroquine	✓		✓	✓	Good Stock
15	Inf. Dextrose Saline		✓	—	—	Shortage
16	O. R. S		✓	—	—	Shortage

✓ -- Yes

× -- No

— -- Nil

Table 5.**(3) NKRANKWANTA HEALTH CENTRE**

S. NO	NAME OF DRUG	DRUG AVAILABILITY		EFFECTIVE STOCK RANGE		REMARKS
		PRESENT	ABSENT	ABOVE MINIMUM	BELOW MAXIMUM	
1	Tab. Chloroquine	✓		✓	✓	Good Stock
2	Tab. Paracetamol	✓		✓	×	Over-stock
3	Tab. Co-trimoxazole	✓		✓	✓	Good Stock
4	Tab. Mebendazole	✓		✓	✓	-do-
5	Tab. Ferrous Sulphate	✓		✓	✓	-do-
6	Tab. Folic Acid	✓		✓	✓	-do-
7	Syr. Chloroquine	✓		✓	✓	-do-
8	Syr. Paracetamol	✓		✓	✓	-do-
9	Syr. Co-trimoxazole	✓		✓	✓	-do-
10	Syr. Piperazine Citrate		✓	—	—	Shortage
11	Mixt. F. A. C.	✓		×	✓	Under-stock
12	Inj. Pro. Penicillin		✓	—	—	Shortage
13	Inj. Ergometrine	✓		✓	✓	Good Stock
14	Inj. Chloroquine		✓	—	—	Shortage
15	Inf. Dextrose Saline	✓		✓	×	Over-stock
16	O. R. S	✓		×	✓	Under-stock

✓ -- Yes

× -- No

— -- Nil

Table 6.**(4) AMASU RURAL CLINIC:**

S. NO	NAME OF DRUG	DRUG AVAILABILITY		EFFECTIVE STOCK RANGE		REMARKS
		PRESENT	ABSENT	ABOVE MINIMUM	BELOW MAXIMUM	
1	Tab. Chloroquine		✓	—	—	Shortage
2	Tab. Paracetamol		✓	—	—	-do-
3	Tab. Co-trimoxazole		✓	—	—	-do-
4	Tab. Mebendazole	✓		✓	✓	Good Stock
5	Tab. Ferrous Sulphate		✓	—	—	Shortage
6	Tab. Folic Acid		✓	—	—	-do-
7	Syr. Chloroquine		✓	—	—	-do-
8	Syr. Paracetamol		✓	—	—	-do-
9	Syr. Co-trimoxazole	✓		✓	✓	Good Stock
10	Syr. Piperazine Citrate		✓	—	—	Shortage
11	Mixt. F. A. C.		✓	—	—	-do-
12	Inj. Pro. Penicillin	✓		✓	✓	Good Stock
13	Inj. Ergometrine		✓	—	—	Shortage
14	Inj. Chloroquine	✓		✓	✓	Good Stock
15	Inf. Dextrose Saline	✓		✓	✓	-do-
16	O. R. S	✓		✓	✓	-do-

✓ -- Yes

× -- No

— -- Nil

Table 7.**(5) ASIKASU RURAL CLINIC:**

S. NO	NAME OF DRUG	DRUG AVAILABILITY		EFFECTIVE STOCK RANGE		REMARKS
		PRESENT	ABSENT	ABOVE MINIMUM	BELOW MAXIMUM	
1	Tab. Chloroquine	✓		×	✓	Under-stock
2	Tab. Paracetamol	✓		✓	✓	Good Stock
3	Tab. Co-trimoxazole	✓		✓	×	Over-stock
4	Tab. Mebendazole		✓	—	—	Shortage
5	Tab. Ferrous Sulphate	✓		✓	✓	Good Stock
6	Tab. Folic Acid	✓		✓	✓	-do-
7	Syr. Chloroquine	✓		✓	✓	-do-
8	Syr. Paracetamol	✓		✓	✓	-do-
9	Syr. Co-trimoxazole		✓	—	—	Shortage
10	Syr. Piperazine Citrate	✓		✓	✓	Good Stock
11	Mixt. F. A. C.	✓		✓	✓	-do-
12	Inj. Pro. Penicillin	✓		✓	✓	-do-
13	Inj. Ergometrine		✓	—	—	Shortage
14	Inj. Chloroquine	✓		✓	✓	Good Stock
15	Inf. Dextrose Saline	✓		×	✓	Under-stock
16	O. R. S	✓		✓	✓	Good Stock

✓ -- Yes

× -- No

— -- Nil

Table 8.**(6) DANYAME RURAL CLINIC:**

S. NO	NAME OF DRUG	DRUG AVAILABILITY		EFFECTIVE STOCK RANGE		REMARKS
		PRESENT	ABSENT	ABOVE MINIMUM	BELOW MAXIMUM	
1	Tab. Chloroquine		✓	—	—	Shortage
2	Tab. Paracetamol	✓		✓	✓	Good Stock
3	Tab. Co-trimoxazole		✓	—	—	Shortage
4	Tab. Mebendazole		✓	—	—	-do-
5	Tab. Ferrous Sulphate		✓	—	—	-do-
6	Tab. Folic Acid		✓	—	—	-do-
7	Syr. Chloroquine	✓		✓	✓	Good Stock
8	Syr. Paracetamol	✓		✓	✓	Good Stock
9	Syr. Co-trimoxazole	✓		✓	✓	-do-
10	Syr. Piperazine Citrate	✓		✓	✓	-do-
11	Mixt. F. A. C.		✓	—	—	Shortage
12	Inj. Pro. Penicillin	✓		✓	✓	Good Stock
13	Inj. Ergometrine	✓		✓	✓	-do-
14	Inj. Chloroquine	✓		✓	✓	-do-
15	Inf. Dextrose Saline		✓	—	—	Shortage
16	O. R. S	✓		✓	✓	Good Stock

✓ -- Yes

× -- No

— -- Nil

CHAPTER FIVE

DISCUSSION. CONCLUSION AND RECOMMENDATION

5.1 DISCUSSION

5.1.1 DRUG SUPPLY ACTIVITIES AT THE DMS:-

The selection of drugs to be stocked at the DMS was found to be the responsibility of the pharmacist and the storekeeper. There was no drug selection committee. This made it impossible to review the drugs periodically. The responses from the DHMT members revealed that, they had very little idea about the procedures used in the selection of drugs stocked at the DMS. The problem was compounded by the non-submission of monthly drug consumption returns to the DMS by the sub-district health facilities . These returns when submitted could serve as the basis for determining drug utilization levels at the health facilities and can help to make rational procurement decisions, such as estimation of drug requirement(quantification). Absence of proper drug selection procedures had resulted in the stocking of certain drugs which are not used in the district. For instance, injection Lignocaine(5%) in Adrenaline had never been requested by any institution and was near its expiration date.

Due to inappropriate drug selection procedures, the DMS frequently run short of some basic essential drugs. This severely affect drug availability at the sub-district health facilities. For instance, it was observed that basic essential drugs like ORS, Syrup Paracetamol and

F.A.C Mixture were all out of stock. On the other hand, injections Chloramphenicol in oil, Promethazine hydrochloride and infusion Dextrose Saline were also near their expiration date. This problem, I believe, came as a result of the inability of the DMS to estimate rationally the drug requirement of the district due to lack of information on the drug consumption levels at the sub-district health facilities. The assessment of the drug requirement(quantification) in the district is therefore seen as a top-down approach rather than the desired bottom-up approach.

One good thing about the DMS is that all the drugs are listed in the national Essential Drug List (EDL) and are generics. Thus, they are relatively cheaper than those sold under trade names. This good practice is attributed to the fact that the DMS get all her drug supply from the RMS which mainly stocks generic and essential drugs.

Procurement, as a means of acquiring drugs is mainly through purchasing. Small scale manufacturing of simple preparations are not done even though they are needed at the health facilities; Mixtures e.g. Magnesium Trisilicate and Kaolin, Lotions e.g. Calamine, Solutions e.g. Eusol and Ointments e.g. Whitfield, Sulphur etc. which could easily be prepared at the DMS are all not available. This is mainly due to the lack of facilities and simple preparation equipment such as preparation room, mortars and pestles, homogenizer, weighing scale etc. It is hoped that the new DMS block under construction when completed would be able to address some of these issues if not all of them.

Transportation has been a major problem as far as drug procurement and its distribution in the district are concerned. Almost all the people interviewed mentioned this problem. They said that the scheduled quarterly visit to the RMS, were subjected to the availability of a vehicle. There were instances where purchases from the RMS were delayed due to lack of transport. The two vehicles owned by the District Health Administration (DHA) broke down frequently due to bad conditions of roads in the district and poor maintenance practices of the vehicles. Therefore, they may not be available at the time that they were needed, contributing greatly to the frequent shortage of drugs that occur at the DMS.

It is interesting also to note that in this era of the history of MOH where decentralization policy is seriously being pursued, the Brong Ahafo Region still maintains that all drug requisitions to the RMS at Kintampo should receive approval from the DDPS in Sunyani. This system creates delays and causes inconvenience as well as financial wastage.

The statements by the Pharmacist and the Storekeeper that they were not allowed to buy the non-available drugs from the open market was an unfortunate situation since there were instances that the RMS run out of some of their drugs. Investigations revealed that Diocesan Pharmacy(owned by the Catholic Church) in Sunyani, sells good quality and affordable drugs to the health institutions in the region, however the District Pharmacist was not allowed to buy from them. This problem could be solved if a drug procurement committee was put in

place to take care of the non available drugs from the RMS so as to ensure that those drugs are obtained at a reasonable price and of good quality.

The District pharmacist who is responsible for the selection and procurement of drugs at the DMS is sidelined when it comes to the financial management of the drug account. She is not a signatory to the account and does not know if the drug money is used for other things apart from for drugs alone as stipulated by MOH.

The DHA was supposed to convey the drugs from the DMS to the health facilities whenever they present their drug requisition. However, Asikasu and Amasu Rural Clinics did not enjoy this facility. This has been a problem to the health facilities since traveling with drugs in public transport is not very safe and also causes delay and creates inconveniences.

A question to find out the level of satisfaction of the services provided at the DMS showed that only three out of the nine respondents were satisfied, suggesting that there are lapses in the management of the drug supply system in the district and steps must be taken rectify the situation so as to perform efficiently.

5.1.2 STORAGE FACILITIES AT THE DMS:-

The storage capacity of the DMS is small and overcrowded, making movement of drugs within the stores difficult. This problem coupled with insufficient shelves and poor ventilation due to inadequate windows are likely to affect the potency of the drugs. This

is even more so since there is no air conditioner at the store. Personal conversation with the Storekeeper revealed that at times the store become so hot that that he rarely sit there when there are no work to be done. Such harsh condition hastens deterioration of drugs at the store as was found by Ballerean et al, 1997. Injection Ergometrine showed clear physical signs of deterioration even though it was far from its expiry date. Greater attention needs to be paid to the storage facilities since it will be a great financial loss if drugs acquired are rendered ineffective as a result of improper storage system.

Leakage of water from the doors and windows when it rained was a problem that needed immediate attention since it could destroy a number drugs. The problem was even more serious, in that, there were no pallets and about half of the drugs in boxes were sitting on the bare floor.

The practice at the DMS whereby drugs and non-drugs were kept under the same roof at the store is a very bad practice and should be stopped. Non-drugs should be separated from the drugs and cold rooms should be provided to store the drugs that need such facility .

Lack of telephone and fire extinguisher at the DMS posed serious safety lapses at the store. For instance, on 1st June, 1998, there was a fire outbreak at the DMS due to electrical fault, someone had to run to the offices of the District Fire Service to inform them. Such emergency situations are what need to be prevented by providing these facilities.

It must be stated that wastage due to pilfering and theft were not detected. The very good security measures put in place needs recommendation. I must also add that the DHMT has recognized the poor storage conditions at the store and is currently putting up a new DMS block which when completed will address most of the storage problems talked about, if not all.

5.1.3 INVENTORY CONTROL SYSTEM:-

The inventory records were properly kept at the DMS. Entries were promptly and correctly made in the ledger books and on the tally cards. made. Review of the stock records reconciled with the physical stock on the shelves. This is a very good practice which should help to eliminate the problem of shortages. Unfortunately, that was not the situation. This situation arises probably due to non utilization of inventory records to take purchasing decisions or lack of knowledge on the use of stock records in inventory control system in the stores management. This is quite clear if one comes to think that the sub-district health facilities do not submit monthly drug consumption returns to the DMS. One may then want to know how the DMS assess the drug requirements of the sub-district health facilities. It is obvious that quantification of drug needs at the DMS has not been based on any fact from the user facilities. This might have accounted for the shortages and expiration of drugs that often occur at the DMS.

Effort should be made to offer in-service training to the Storekeeper and the Pharmacist on the proper utilization of inventory records in stores management.

5.1.4 DRUG AVAILABILITY AT THE HEALTH FACILITY LEVELS:-

Majority of the sub-district health facilities stated that the DMS at times run short of some essential drugs and do not fully satisfy their drug needs. This should raise much concern on the part of the DHMT. The drug availability at the DMS as perceived by the health facilities that utilize it clearly showed that the establishment of the DMS has not improved the availability of drugs in the health facilities. If anything at all, the situation is just as it was previously, when each health facility goes to the RMS at Kintampo for her own drugs. They based their assertion on the frequent shortage of drugs that occur at the DMS.

Assessing the availability of drugs at the health facilities showed that a minimum of three marker drugs were absent from each health facility. Amasu Rural Clinic had as high as 10(62.5%) of the marker drugs being absent from its store. It was followed by Danyame Rural Clinic with 7(43.8%) and Dormaa Akwamu Health Centre had 5(31.3%) of the marker drugs being absent. Wamfie and Nkrankwanta health centres and Asikasu Rural Clinic had 3(18.8%) each of the marker drugs. Look at the various drugs that were absent at the health facilities could not be directly attributed to the shortage of the drugs at the DMS. They may be due to lack of knowledge of stores management on the part of the heads of health facilities who were also managers of

the drugs at the facility levels. The concept of minimum and maximum stock levels is virtually not being followed. Their reason was that, they often wait for more drugs to get finished in order to buy more drugs when they visit the DMS. Another problem too was that their stock holdings were so small that maintaining a minimum stock level would mean a lock up of a portion of the revolving fund .To avoid that they often waited until the drugs were almost finished before they go in for replacement. This practice should be discouraged and they should be taught to maintain minimum stock levels so that at any point in time all the essential drugs being used would be present at the health facility. This is very necessary in any health care delivery service since availability of drugs is perceived by clients as their number one indicator for quality of service provided by the health facilities (Dovlo et al,1991).

5.2 CONCLUSION

The establishment of DMS in the Dormaa District, though seen as a means of improving drug availability within the MOH facilities and therefore improving upon the quality of service being provided, still has a long way to go so far as the achievement of this objective is concerned. The drug supply activities are not coordinated.

Assessment of drug requirement for the MOH facilities is not based on any authentic rational information from the sub-district health facilities that patronize the DMS. This often leads to frequent shortage of essential drugs as well as expiration of slow moving drugs at the DMS.

Storage facilities and equipment are woefully inadequate. Air conditioner, cold room or refrigerator, telephone system, fire extinguisher, computer, pallets, preparation room and equipment for small scale pharmaceutical preparations are lacking at the store. Storage conditions too are not satisfactory. The store is crowded and ventilation is poor making temperature at the store undesirable. However it is very gratifying to note that the DHMT has noticed the very deplorable state of the store and are putting up a new DMS. This is a vision in the right direction and it is hoped that upon the completion of the block, which is at the roofing stage, most of these problems would be solved.

Stock records were properly kept and gave current and accurate information about the state of stock levels, unfortunately they were not properly utilized to make procurement decisions

Drug availability at the health facility levels is not encouraging. Each health facility had three or more of the marker drugs being absent from their stores. The perfect situation is that all the essential drugs should be present in their desired quantities i.e. within the maximum and the minimum ranges. As it has been stated earlier on in the discussion, shortages of drugs at the health facilities are due primarily to the lack of knowledge on drug supply management of the heads of the facilities. However, shortages at the DMS is also a contributing factor.

5.3 RECOMMENDATIONS:-

In the light of the results, observations, discussions and conclusion of the research study, I wish to make the following recommendations to the DHMT. It is hoped that these recommendations when implemented would help solve some of the lapses recognized in the drug supply system at the Dormaa DMS and many other DMS throughout the country which are facing similar problems

- The DHMT should establish a Therapeutic and drug committee headed by the Pharmacist, who will be responsible for the selection and procurement of drugs at the DMS.
- In a situation where an essential drug is not obtained at the RMS, the committee that would be formed should be charged with the responsibility of looking up for some to buy from a recognized pharmaceutical wholesaler at an affordable price.
- The situation where the pharmacist is not a signatory to the drug account creates suspicion among the Pharmacist, the DDHS and the Accountant. To ensure transparency and trust among them, the Pharmacist, should as a matter of urgency, be made a mandatory signatory to the drug account in accordance with the MOH directives and be provided with a copy of the monthly bank statements.

The system where the DDPS in Sunyani is required to approve of the entire drug requisitions going to the RMS at Kintampo causes financial losses as

well as delays and inconveniences. The decentralization policy places a lot of responsibilities on the DHMT's. The DDHS and the District Pharmacist are competent enough to make good procurement decisions. Hence, the district should be allowed to exercise responsibility over their drug procurement issues. Thus the DDHS should be given the mandate to approve of the drug requisitions to the RMS without going to Sunyani.

- The Institutional Management Committee(IMC) Chairmen who counter-sign cheques from the sub-district health facilities should be those who are normal residents of the villages and are always available to sign the cheques whenever the needs arises.
- The storage facilities and equipment that are lacking at the DMS should be provided to ensure efficient storage system e.g. air conditioner, refrigerator, pallets, fire extinguisher, extra shelves, computer, an office, preparation room etc.
- The non-drugs in the DMS should be separated from the drugs to prevent contamination.
- The construction work currently going on at the new DMS should be expedited to ensure early completion. This will offer a good storage place for the drugs.
- The sub-district health facilities should be made to submit their monthly drug consumption returns to the DMS. This and other stock records should be used as the basis for the assessment of drug needs in the district.

- **Transportation, which forms the backbone of any good drug supply system needs to be managed properly. Routine maintenance of the vehicles should be ensured and a weekly itinerary for the vehicles should be drawn, taking into account all the activities of the various units that may need a vehicle. This will help to reduce the transportation problems.**
- **The District should provide all the health facilities with a vehicle to convey the drugs to their stations whenever they visit the DMS.**
- **The DHMT should organize refresher courses and in-service training for the DMS staff and the heads of the sub-district health facilities on the drug supply management to improve upon their performance.**
- **The District Pharmacist should be made to present a quarterly report to the DHMT meetings, so as to keep the members informed about the operations of the DMS.**

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ANNEXURE

ANNEXURE I

QUESTIONNAIRE

(TO DESCRIBE THE DRUG SUPPLY ACTIVITIES AT THE DMS)

A. DRUG SELECTION

(1) What criteria is used in the selection of drugs?

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.....

(2) Who does the selection

(3) Do you have all the selected drugs enlisted in the essential drug list ?

☐ Yes ☐ No

(4) Are the drugs selected for procurement based on their generic or trade names?

(5) Do you have a drug selection committee? ☐ Yes ☐ No

(6) Do you periodically review the selected drugs ? ☐ Yes ☐ No

(7) Do you think the selected drugs are enough to satisfy the drug needs of the health facilities in the district ? ☐ Yes ☐ No

(8) If no, what other essential drugs do you recommend inclusion?

.....

.....

.....

B. PROCUREMENT

- (9) Are you involved in the procurement of drugs to the District Medical Store (DMS)? ☐ Yes ☐ No
- (10) Who else is involved
-
- (11) Do you always have enough funds in the drug account to procure the needed quantities of drugs ? ☐ Yes ☐ No
- (12) How often do you procure drugs for the store ? ☐ Monthly
- ☐ Every two months ☐ Quarterly ☐ When necessary
- (13) Are you a signatory to the drug account ? ☐ Yes ☐ No
- (14) What are the problems facing the DMS in getting her drug supply from the Regional Medical Store (RMS) ?
-
-
-
- (15) Who is the final authority to approve of the drug requisition for the RMS?.....
-
- (16) Apart from the RMS, where else do you get drug supply?
-
- (17) Does the DHMT has a drug procurement committee ?
- ☐ Yes ☐ No

C. DISTRIBUTION

(18) What problems have you observed to be associated with the distribution of drugs in the district?

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.....

(19) Are the health facilities able to pay for drugs they obtain from the DMS?

☐ Yes

☐ No

(20) Do you have trained staffs to take care of the drugs at the sub-district health facilities ? ☐ Yes ☐ No

(21) Are there enough means of transport to support the drug supply activities in the district ? ☐ Yes ☐ No

(22) Would you recommend the establishment of sub-district medical stores ?

☐ Yes

☐ No

Explain your

answer.....

.....

.....

.....

.....

(23) Are the roads to the DMS accessible to all the health facilities all year round?

☐ Yes

☐ No

(24) Are you happy with the services of the DMS? ☐ Yes ☐ No

(25) Give suggestions for improved services?

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(26) Any other comment you would wish to make concerning drug supply activities at the DMS ?

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ANNEXURE II

(DRUG AVAILABILITY AT THE HEALTH FACILITIES)

Questionnaire for the heads of health facilities.

- (1)

How often do you go to the district medical stores ?

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- (2)

Do you always get all the drugs requested for at the medical stores ?

☐ Yes

☐ No
- (3)

What do you do if a drug you need at your facility is not available at the district medical store ?

.....

.....
- (4)

Before the inception of the District Medical Stores, where were you getting your drugs ?
- (5)

How do you compare drug availability at your health facility as at now, to the days when the district medical store was not available ?

.....

.....
- (6)

Do you have a convenient place to keep the drugs at your health facility ?

☐ Yes

☐ No
- (7)

What are some of the problems you encounter in getting your drugs supply from the District Medical Store ?

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.....

.....

(8) What do you think are the possible solutions to the problems that you face?

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(9) Any other comment you wish to make concerning drug availability in your health facility ?

.....

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ANNEXURE III**OBSERVATIONAL CHECK LIST FOR STORAGE FACILITIES**

- Storage capacity(Area of the store)
- Shelves
- Pallets
- Openings for ventilation
- Leakage
- Water supply
- Electricity
- Ceiling fans
- Air conditioner
- Refrigerator
- Preparation room
- Telephone
- Fire extinguisher
- Computer
- An office for the Pharmacist
- Security

ANNEXURE IV**MARKER DRUGS USED FOR THE STUDY**

• Chloroquine		Tablets, Syrup and Injection
• Paracetamol		Tablets and Syrup
• Co-trimoxazole	-	Tablets and Syrup
• Procaine Penicillin	-	Injection
• Mebendazole		Tablets and Syrup
• ORS		Sachets
• Ergometrine	-	Injection
• Ferrous Sulphate		Tablets and Syrup
• Folic Acid	-	Tablets
• Dextrose Saline	-	Infusion