

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
KUMASI**

**COLLEGE OF ART AND SOCIAL SCIENCES
SCHOOL OF BUSINESS**

**ASSESSING THE EFFECTIVENESS OF STORES DESIGN AND OPERATIONS. A
CASE STUDY AT ASHANTI REGIONAL
MEDICAL STORES, KUMASI.**

by

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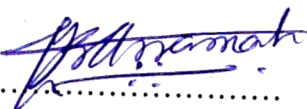
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I hereby declare that this thesis is the result of my own original work and that no part of it has been presented for another degree in this university or elsewhere.

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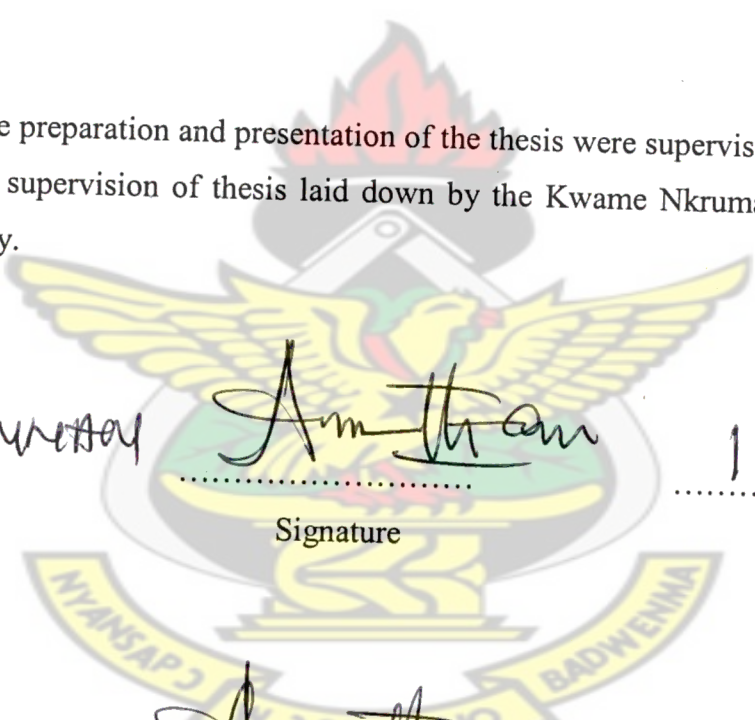


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ABSTRACT

Storing is an integral part of every logistics system and plays a vital role in providing a desired level of customer service at the lowest possible cost. Storage and operations are linked in that, the producer or manufacturer sends the ordered items to the purchaser who receives them, stores them and finally distributes or serves its customers. There is therefore the need for these units to operate together to serve the markets (various districts) to have value for money and customer satisfaction.

The study examined the effectiveness of stores design and operations. It attempted to compile data on issues in stores design and operations on such variables as layout, arrangement of goods, storage, transportation, where and when to order and store goods and procurement of drugs and supplies amongst others.

Data for the study were obtained from respondents using validated questionnaires. In all, 125 questionnaires were prepared and administered to a purposive sample of top management staff whose names were obtained from the Deputy Regional Manager and other workers (staff) of the Regional Medical Stores. Interviews were also conducted.

The results showed that, the design of the Ashanti Regional Medical Stores was effectively done having considered the necessary factors and their operations from procurement, storage, information transfer and movement of goods from one point to the other were effectively executed using proper laid down rules and guidelines.

Among recommendations made for effective stores design and operations are; further training should be given to managers within the procurement section due to technical issues in the procurement law and other workers in the distribution chain with emphasis on the storage and distribution of goods to safeguard stock outs. There must also be effective security measures put in place to check theft and pilfering of goods so as to have value for money.

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DEDICATION

I dedicate this long essay to my beloved wife, Mrs. Evelyn Naana Asiamah Appah and children namely Emmanuella, Samuel and Theophilia for their steadfast love and support.

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CHAPTER ONE

1.1 BACKGROUND OF THE STUDY

According to Kaltchera *et al* (2002), “store design, visual merchandising and display have become closely inter-related and keep all the people in the organization abreast of the latest trends in new materials, featuring, lighting, interior design, ventilation, store layout, props and signage”. The store itself is the most influential salesperson or outlet. It is the store’s design and display that showcase the merchandise, project the store’s image, entice the customer to purchase or procure and create an end-user’s most lasting impression.

The Ministry of Health (MOH) has in place a number of stores in the country where stores design, procedures and operations are very critical issues that they consider. Currently, drugs are procured by the central medical stores (CMS) through international competitive bidding (ICB) and through local private suppliers. The Regional Medical Stores (RMS) and teaching hospitals (TH) procure drugs through the CMS and from the local private sector. All the regional hospitals and service delivery points (SDPs) in turn, procure from the RMS in the respective regions (Ghana Procurement and Suppliers Directorate).

According to Adams *et al* (2004), availability, long stock out durations and affordability are three major factors that affect access to medicines for most people in resource poor setting in Ghana. This stems from the organizational structure and procurement policies of essential medicines which are both on the principles of

decentralization and the autonomy of each facility within the drug management and distribution system.

This is to say that, the various facilities get their supplies from the Regional Medical Stores who in turn have theirs from the Central Medical Stores. Each facility is responsible for making its own procurement decisions under laid down rules.

Poor inventory and financial management issues worsen the problem of availability. The activities of medical representatives who promote certain medicines force some facilities to stock only the medicines which are constantly being promoted Lysons *et al* (2003).

In such a case or situation, the pharmacy will stock only those drugs which are fast moving and leave other essential drugs which are slow moving. Poor inventory and financial management could also stem from lack of skills for those in charge of the drug supply management.

The problem of expired drugs have largely been attributed to poor inventory management. The presence of expired drugs on the shelves of both public and private facilities is of grave concern. Expired drugs that are given to unsuspecting patients can cause other undesired effects in the people. Irrational prescribing has also led to the presence of expired drugs as more drugs are still left in the stores (Ghana Food and Drugs Board).

Managing stock effectively is good for any organization, because without enough stock, production and distribution will grind to a halt thereby affecting the profit margin of the organization.

It is important therefore that a business either holds sufficient stock to meet actual and anticipated orders, or can get stocks quickly enough to meet those orders. For a high street retailer, in practice, this means having products on the shelves or racks (Zinn *et al*, 1988)

According to Vollman *et al* (1988), the aim of stock control is to make sure that, an organization always has sufficient stocks to meet its own needs and those of customers.

Buffer stocks can be built up as a preventive measure against running out of stocks due to unexpected variations in demand. A minimum level will be set, below which it will be hoped that stocks will not fall though this may depend upon the lead-time between placing an order and its receipt.

The typical types of possible hazard the firm needs to consider include goods falling from shelving or racking, someone falling when climbing a shelf or ladder, stock or materials blocking fire exit routes, accumulations of used packaging, poor storage causing increased manual-handling risks, for example, putting building items above head height, spillage of goods causing environmental damage or increasing the risk of slips and trips occurring, exposure to badly stored hazardous substances, contamination or danger caused by storing inappropriate materials together, the use of mechanical-handling equipment, for example, goods and materials falling from forklift trucks, vandalism, theft and arson causing pollution and flammable substances.

An average commercial enterprise disposes of more than half of its income on materials, suppliers and services. A five percent saving in material costs in a business organization can thus equate with an increase in turnover of about twenty-

five percent. Effective purchasing is therefore the key to the overall profitability of a business.

Organizations need to inject professional and profit oriented purchasing practices into the procurement section. Managers need to acquire skills in strategic management, stores management and procurement.

1.2 STATEMENT OF THE PROBLEM

Scaling up access to medicine is a major challenge due to non-availability and unaffordable medicine. The stores in which these drugs and non-drugs are kept are a matter of concern. The design and layout of the stores have not been of much prominence by stores supervisors and managers and other personnel working in the stores.

The Ashanti Regional Medical Stores is one of the public stores in the country that house drugs and other non-drugs for distribution to all districts, sub-districts and private hospitals and health posts and centres in its catchment area.

Notwithstanding these challenges, it is appropriate that conscious efforts must be put in place such that in the layout of the stores, high demand items should be placed in low traffic areas and also complimentary items should be placed near each other.

This will facilitate prompt identification and distribution to customers.

In addition, there should be appropriate separation of duties between staff who place orders, those who receive goods or services and those who authorize payment. At the transfer or putaway stage of its operations, workers must handle both the drugs and non-drugs components well so that their efficacies are not compromised at the hands of the end- user at the in-bound and out-bound portions.

The researcher would therefore like to find out the effectiveness stores design and its operations at the Ashanti Regional Medical Stores, Kumasi.

1.3 OBJECTIVE OF THE STUDY

Sound stores management is a key to the running of every profitable and efficient organization. The specific objectives of this study are to:

- i. Help stores managers and employees working in the stores identify the critical issues in stores design and operations.
- ii. Acquaint staff working in the stores with the techniques of stock recording, stock control and stock taking.
- iii. Acquaint store managers with the knowledge and skills on how, where and when to order and store goods so as to meet operational requirements.
- iv. To make recommendations in the stores especially stores managers on the procedures of procurement of drugs and supplies by the medical sto

1.4 RESEARCH QUESTIONS

1. How is the store designed?
2. What are some of the stock control techniques that are being employed by the personnel in the stores in inventory control system?
3. Where do you order your goods from?
4. How do you store your goods?
5. How is ht procurement of drugs and supplies done by the Regional Medical Store?
6. What Procurement steps do you follow?

1.5 JUSTIFICATION OF THE STUDY

This study would be of immense help and suitable for people whose position entails elements of procurement, storekeeping and stores management.

It would be an ideal literature for a diversity of organizations including the public sector, private companies, non-governmental organizations (NGOs), charitable institutions, banks and educational institutions amongst the lot.

Finally, it would serve as literature for further studies and also promote further research.

1.5 SCOPE OF THE STUDY

Due to the geographical nature of the Ashanti region and the nature of stores or warehouses and of operation of other organizations, the study is limited to only the Ashanti Regional medical stores, Kumasi.

1.6 LIMITATIONS OF THE STUDY

There was difficulty in getting some of the respondents. The tight schedule of the regional manager of the RMS made it difficult for the researcher to obtain certain vital information. This will however not affect the validity of the data much.

1.7. ORGANISATION OF THE STUDY

The study is made up of five (5) chapters with chapter one (1) describing the main background of the study. The problem statement, objectives, research questions, justification of the study, scope of the study, limitations as to which barriers you

faced during the study and how the whole study was organized formed part of chapter one.

The second chapter is the review of the related literature. This throws light on the topic and lends support to the rationale and relevance of the study.

In this chapter, I will look into issue ranging from management and organization of stores, stores layout and design, stores design and operations, quality of stock through to procurement of drugs and supplies.

Chapter three of the study which is the Research Methodology and organizational chart will deal with the instruments and methods used for the study. It will examine the research design, population, sampling procedures, research instruments employed data collection procedures, scoring the instruments and finally, data analysis.

The fourth chapter deals with the analysis or findings of the study. That is, what the respondents of the study have said as captured in the questionnaire and other interviews.

The fifth chapter talks about the summary, conclusion and recommendations of the research. It highlights the general overview of the research and the researcher's suggestions as to how to deal with any developments.

CHAPTER TWO

LITERATURE REVIEW

2.0 INTRODUCTION

This chapter deals with the theoretical framework on the research questions as it has been reviewed.

The process of designing warehouse has not enjoyed a similar attention in determining the arrangement of items in storage, or devising a picking scheme as one may conclude from the review in van den Berg (1999).

According to Yoon and Sharp (1996), "Designing the layout of a warehouse is a complex task for several reasons", amongst them are the following. First, the number of design decisions is large and are difficult to solve optimally. Second, many operations (eg. Picking, dual command, cross-docking, and value added services) and other factors demand, serving global markets, materials handling and just-in-time (JIT) impact travel time, materials handling cost and throughput in a warehouse.

Third, the aforementioned operations and factors interact and such intervention should be accounted for in the design.

Apple (1977) also suggested that other design procedures that have been suggested in the design of warehouse do not address the overall layout of a warehouse.

Yoon and sharp (1996) suggested that, the purpose and mission of the warehouse, that is, whether it is a distribution centre a manufacture warehouse, or a public warehouse should be specified to provide designers with an initial conception of the expected levels of operations and requirements of the design. For example throughput is not important in a public warehouse, and ignoring it should facilitate

the design. Space utilization on the other hand is important therein and maximizing it should be a concern in its design and operation.

This is the main reason why Ballard (1994) argued that warehouses are complex operations because they need people, systems and technology to work effectively together to achieve the best performance. A warehouse does not have to be terminally ill before applying remedies to put things right.

2.1 MANAGEMENT AND ORGANISATION OF STORES

Store management involves all the disciplines necessary to run a successful business. Sales planning and goal setting, overall store image and merchandise presentation, budget and expense control, customer service and sales supervision, personnel administration and development, and finally, community relations. Successful store managers must have the ability to lead and motivate employees. They also need to be sensitive to customers' needs, making sure that merchandise is available and neatly displayed (Levy and Weitz, 2004).

The Regional Medical Store (RMS) is making in consultation with Ghana Health Service (GHS) to develop comprehensive policies, sustainable plans, programmes and budget to cover all the procurement and supply of drugs and equipment needs of the Ghana Health Service and according to laid down institutional policy.

The RMS supplies drugs and materials to all districts, sub-districts and private hospitals and health centres in the Ashanti Region. The Regional Medical Stores is been managed by an Area Manager. He is assisted by three managers who are in charge of Drugs, Non-Drugs and Production respectively. There are various section

heads under the three managers who are also in charge of various functions in the stores.

The RMS ensures optimum drugs and equipment availability throughout the districts, sub-districts and private hospitals and health centres in the region.

The RMS ensures that the Ghana Health Service receives value for money and avoids waste occurring through the purchase of poor drugs and equipment quality as well as inadequate storage and weak supply chain management. The RMS promotes high drugs efficacy preservation and safe chemical handling in Regional/District Medical stores and hospitals.

2.2 STORE LAYOUT AND DESIGN

One of the objectives of the store layout is to expose the customer to a layout that facilitates a specific traffic pattern. The stores image is the overall perception the customer has in the store's environment (Levy and Weitz, 2004).

The objectives of the store environment are to come out with tasks designed to create desired store image and increase productivity. The main idea is to get customers into the store (market image) and convert them into customers buying merchandise once they are inside the store (space productivity). This should be done in the most efficient manner possible (Levy and Weitz, 2004).

2.2.1 Store layout and visual merchandise display

According to Harmon (1993), "visual merchandise display is done according to the layout of the store". Visual merchandising, the art of attracting patrons with visual ones, is central to a retailer's ability to generate sales; visual merchandising has an

important part in the selling of a product. Visual merchandising got its start at the turn of the century, when departmental stores began using theatrical set design and lighting to create exotic displays. Today, the way the departments are arranged, the location of the escalators, the lighting- all are carefully planned to earn stores more sales per square foot (Levy and Weitz, 2004).

2.3 TYPES OF LAYOUTS

According to Levy and Weitz (2004) in their book, "Retailing Management," there are four (4) types of layout as explained below:

Free Flow layout: This is a type of store layout in which fixtures and merchandise are grouped into free-flowing patterns on the sales floor.

This layout gives allowance for browsing and wandering freely. It increases impulse purchases and has a visual appeal. It is flexible in nature. It however has some disadvantages. Thus, it encourages loitering and possible confusion and it wastes floor space and is costly and difficult when cleaning.

Grid layouts: This is a type of store layout in which counters and fixtures are placed in long rows or 'runs' usually at right angles, throughout the store.

It is low in cost and promotes customers familiarity. It helps to expose merchandise and it is easier to clean. It has simplified security and the possibility of self-service.

It is plain and interesting and gives room for limited browsing. It stimulates rushed shopping behavior and has limited creativity in decor

Circulation loop layout: This is a type of store layout in which a major customer aisle begins at the entrance, loops through the store, usually in the shape of a circle,

square, a rectangle, and then returns the customer to the front of the store. It exposes customers to the greatest amount of merchandise.

Circulation spine layout: This is a type of store layout in which a single main aisle runs from the front to the back of the store, transporting customers in both directions, and where on either side of this spine, merchandise departments using either a free-flow or grid pattern branch off toward the back aisle walls.

On-shelf merchandising is the display of merchandise on counters, racks, shelves and fixtures throughout the store.

2.4 STORE LAYOUT CONSIDERATIONS

The following store layout be given considerations during planning. High margin items should be placed in high traffic areas. Items that are in high demand should be placed in low traffic areas and also complimentary items should be placed near each other.

Furthermore, the seasonal needs of the people should be considered. Items needing frequent restocking should be placed near storerooms or cash registers. Larger departments should be placed in lower traffic areas and shopping behavior and operational considerations should be recognized (Levy and Weitz, 2004)

2.4.1 Store Planning

Ballou (1967) states that, the plan for facility design concerns the long range decision-making needed to establish the facility for efficient storage of products and the flow of products through the facility. Such decisions often require substantial capital investments that commit the company to design for years. Careful design

planning can mean years of efficient warehouse operation. During store planning, the following should be considered; the space allocation, circulation and shrinkage prevention.

The flow plan is a schematic plan that shows where merchandise and customer service departments are located, how customers circulate through the store, and how much space is dedicated to each department (Smith and Tompkins, 1982).

In allocating space the types of space needed are the back room, office and other functional spaces, aisles, services areas, and other non-selling areas of the main sales floor, wall merchandise space and floor merchandise space.

The following warning signs may however indicate a space problem circulation.

There may be open spaces on the selling floor, even if the product is on hand and cluttered and disorganized aisles, hallways and stock rooms.

The signs may be excessive time required to put away new receipts and insufficient staging space for large shipments of advertised products.

Sales associates are continually required to leave the sales floor to locate additional merchandise and poor utilization of vertical space and excessive time required for retrieving products stored on high shelves all are pointers of a space problem circulation (Lucey, 1994).

Again, sales lag expectations for specific locations where space or fixtures are a known issue and off-site storage or multiple stockrooms required for a single commodity may indicate a space problem circulation.

2.4.2 Merchandise Presentation Planning

Merchandise management attracts people with strong analytical capabilities, an ability to predict what merchandise will appeal to their target markets, and a skill to negotiate with vendors as well as store management to get things done.

Recently, many retailers have broken the merchandising/buying function into two different parallel career paths; buying and merchandise planning. (Levy and Weitz, 2004).

Buyers are responsible for knowing customers' needs and wants, monitoring competition, and working with vendors to select and purchase merchandise. They must constantly stay in contact with their stores by visiting them, by talking to sales associates and managers, and by monitoring the sales data available on their merchandise management systems (Levy and Weitz, 2004).

Vollmann (1988) in his book, "manufacturing planning and control systems" was of the view that, Planners have a more analytical role than buyers do. Planners also are responsible for allocating merchandise to stores. Once the merchandise is in the stores, planners closely monitor sales and work with buyers on decisions such as how much additional merchandise to purchase if the merchandise is doing well, or when to mark down merchandise if sales are below plan.

The following methods of merchandise presentation are used by store managers in their operations.

Shelving is the process of giving a support that consists of a horizontal surface for holding objects.

Hanging, on the other hand is a process of bearing the weight of or strengthening for example products in the store.

Pegging also deals with the process of using a wooden pin pushed or driven into a surface to support products in a store.

Folding as the word may sound, is a process of physically supporting or carrying the weight of merchandise in the store.

Stacking is also a process of doing with a list in which the next item to be removed is the item most recently stored (Last in First out, LIFO).

Dumping is also a term for selling goods abroad at a price below that charged in the domestic market.

2.5 STORES DESIGN AND OPERATIONS

Warehousing is the part of a firm's logistic system that stores products (raw materials, parts, goods - in - process, finished goods) at and between point of origin and point of consumption, and provides information to management on the status, condition and disposition of items being stored (Lambert *et al.*, 1998).

It is an integral part of every logistic system and plays vital roles in proving a desired level of customer service at the lowest possible total cost.

Storing activity is an important link between the producer and the customer through its distribution networks with emphasis on customer satisfaction. Warehouses store all products and the distribution centers hold minimum inventories and predominately high demand items (Dawe, 1995).

With an increasing interest in improving inventory turns and reducing time to market, the role of distribution increasingly focuses on filling orders rapidly and efficiently.

Effective store management therefore involves a thorough understanding of the function of warehousing and stores, the merits of public versus private stores, and the financial and service aspects of store decisions. Managers need knowledge of the methods that can improve stores performance and a strategy for locating store facilities at optimal locations.

Storing has traditionally provided storage of products (referred to as inventory) during all phases of the logistic process. Two basic types of inventories can be placed into storage: (1) raw materials, components, and parts (physical supplies), and (2) finished goods (physical distribution).

The big question is that, in the operations of the Regional Medical Stores in Ashanti, why should they have inventories? Lambert *et al* (1998), were of the view that, traditionally, the storage of products has occurred for one or more of the following reasons:

1. Achieve transportation economies.
2. Maintain a source of supply.
3. Support the firm's customer service policies.
4. Meet changing market conditions (e.g. seasonality, demand fluctuations, competitions)
5. Overcome the time and space differentials that exist between producers and consumers.
6. Support the just-in-time (JIT) programs of suppliers and customers.

The use of the Regional Medical Stores at the various regional capitals especially in Kumasi results in lower transportation costs than direct shipments to customers. Savings are significantly larger than the increased costs resulting from stores and the associated increase in inventory carrying cost.

The design of stores therefore take into account the nature, size and types of products to be stored or housed including any equipment that may be used inside the stores.

Stores serve an important role in a firm's logistic system. In combination with other activities, it provides the firm's customers with an acceptable level of service. The obvious role of stores is to have products, but stores also provide break-bulk, consolidation, and information services. These activities emphasize product flow rather than storage.

Fast and efficient movement of large quantities of raw materials, component parts, and finished goods through the stores, compiled with timely and accurate information about the products being stored, are the goals of every logistic system.

Tompkins *et al* (1996) mentioned that, stores has three basic functions namely movement, storage and information transfer. Recently, the movement function has been receiving the most attention as organizations focus on improving inventory turns and speeding orders from manufacturing to final delivery.

The movement function involves several activities including:

- . Receiving
- . Transfer or put away
- . Order picking / selection
- . Cross- docking

. Shipping.

The receiving activity includes the actual unloading of products from the transportation carrier, the updating of stores inventory records, inspection for damage, and the verification of the merchandise count against orders and shipping records.

Transfer or putaway involves the physical movement of the product into the store for storage, movement to areas for specialized services such as consolidation and movement to outbound shipment.

Customer order selection or order picking is the major movement activity and involves regarding products into the assortments customers desire. Packing slips are made up at this point.

Cross-docking bypasses the store activity by transferring items directly from the receiving dock to the shipping dock. A pure cross-docking operation would avoid putaway, storage and order picking. Information transfer would become paramount because shipments require close coordination.

The Regional Medical Store (RMS) sometimes places orders for some hospitals and clinics and sometimes because of delay in transportation schedules, vehicles from the various districts, hospitals and clinic arrive in Kumasi and have their items transferred directly onto their vehicles. This is to enable the various vehicles to arrive at their destinations and attend to emergency situations.

2.5.0 Figure 1: Some trolleys at the RMS that is used to transfer items directly from vehicles from the Central medical Stores onto the District Vehicles.



Source: (Author's field study, 2009)

According to Harmon (1993), "approximately 75 percent of food distribution involves the cross-docking of products from the supplier to retail food stores." "Eliminating the transfer or putaway of products reduces cost and the time goods remain at the store, thus improving customer service levels." (Murphy *et al*, 1993).

Cross-docking should be considered as an option by firms meeting two or more of the following criteria;

- Inventory destination is known when received.
- Customer is ready to receive inventory immediately.
- More than 70 percent of the inventory is conveyable.
- Some inventory is time sensitive.
- Firm's distribution center is near capacity.
- Some of the inventory is prepriced.

According to Tompkins *et al* (1996), "shipping , the last movement activity, consist of product staging and physically moving the assembled orders onto carrier equipment , adjusting inventory record ,and checking orders to be shipped." It can consist of sortation and packaging of items for specific customers. Products are placed in boxes, cartons, or other containers, placed on pallets or shrink-wrapped (that is, the process of wrapping products in a plastic film), and are marked with information necessary for shipment, such as origin, destination, shipper, consignee and package contents.

Storage, the second function of stores can be performed on a temporary or semi permanent basis. Temporary storage emphasizes the movement function of the warehouse and includes only the storage of product necessary for basic inventory replenishment. Temporary storage is required regardless of the actual inventory turnover. The extent of temporary inventory storage depends on the design of the logistics system and the variability experienced in lead time and demand. A goal of cross-docking is to utilize only the temporary storage function of the store.

Semi permanent storage is the storage of inventory in excess of that required for normal replenishment. This inventory is referred to as buffer or safety stock.

Information transfer, the third major function of stores, occurs simultaneously with the movement and storage functions. Management always needs timely and accurate information as it attempts to administer the stores activity. Information on inventory levels, throughput levels (that is, the amount of product moving through the store) stock keeping location, inbound and outbound shipments, customer data, facility space utilization and personnel is vital to the successful operation of a store.

Organizations are relying increasingly on computerized information transfer utilizing electronic data interchange (EDI) and bar coding to improve both the speed and accuracy of information transfer.

Successful completion of all of the store activities already mentioned eliminates the need for checking. However, errors and mistakes do occur within any store operation, usually making it necessary to conduct a check of previous activities.

Lambert *et al* (1998) mentioned seven things to consider in effective operations in the management of facilities as discussed below.

2.5.1 Store Design

The design of a particular store or warehouse takes into account so many factors such as volume of goods or materials to hold, the safety of the attendants, lighting, discharge or release of the goods or materials amongst the lot (Lambert *et al*, 1998). As such, store supervisors or managers take critical look at some of these factors and the necessary attention accorded.

2.5.2 Store Front Design

The front view of a store facing the street or important facilities usually contains display windows. The storefront design should therefore be made attractive to entice people to care and procure goods and services from the place. This therefore needs special features that may be better than the others within the locality.

2.5.3 Interior Design

This basically is concerned with the total organizational structure of the interior space of the store or warehouse with regards to furnishings and how attractive they will be.

2.5.4 Signs and Lighting

Signs and graphics provide information and can add personality, beauty and romance to a store's image.

Good lighting should do more than illuminate their spaces within the structure. It can highlight merchandise, sculpt space and capture a mood that enhances store's image.

2.5.5 Lighting Design

Contemporary lighting design requires an in-depth knowledge of electrical engineering and the effect of light on color and texture.

RMS makes effective use of lighting to highlight and feature merchandise on display.

2.5.6 Total sensory marketing

Here, businesses make effective use of fragrances and odours to generate smells that reinforce its stores ambiance.

2.5.7 Cleanliness of the store or warehouse

Stores supervisors or managers are also concerned with the cleanliness of the facilities in place to store their goods or materials. In view of this, they provide

dustbins, brooms, dusters, rags, detergents and disinfectants to the cleaners to make the stores and warehouses clean at all times.

2.6 CONTROLLING THE QUALITY OF STOCK

Quality control is a vital aspect of stock control, most especially as it may affect the safety of customers or the quality of the finished product.

Efficient stock control should incorporate stock tracking and batch tracking. This means being able to trace a particular item backwards or forward from the source to the finished product, and identifying the other items in its batch (Lambert *et al*, 1998).

Goods are checked systematically for quality, identification of faults so that the bad ones amongst the batch are weeded out to enable the business to raise the matter with its supplier and at the same time to demonstrate the safety and quality of their product.

The workers are able to maintain and monitor cold storage with a temperature chart. The warehouses have working locks and pest free secured ceiling windows and good air vents.

However, the RMS experiences expiry of products and the best way they dispose of these expired products is by burning them and at times, burying them deep underground. The burning sometimes generates harmful smoke into the atmosphere which sometimes becomes injurious to the people living at the vicinity. The expired drugs sometimes also find themselves onto shelves of chemical stores which need to be checked.

2.6.0 Figure 2:Some expired drugs which have been burnt in front of the warehouse as arrowed.



Source: (Author's field study, 2009)

2.6.1 Storage of goods

Within a warehouse or store, randomized and dedicated storage are two examples of how products can be located and arranged. Randomized storage places its products in the closest available slot, bin or rack. Products are then retrieved on a first-in, first-out (FIFO) basis.

In dedicated or fixed slot storage, products are stored in permanent locations within a warehouse(Stock *et al.* 2001).

The RMS ensures that items are stored under the right conditions and temperature. The RMS uses pallets, shelves/bins, rack and refrigerators for storing items in the expandable and drug stores. The storage conditions in the regional medical stores' warehouses are checked periodically to meet the approved standards. The regional

medical stores have satisfactorily clean shelves on which drugs are stored. The drugs are not stored on the floor. They are also stored under the required temperature.

2.6.1.1 Figure 3:Items stored in one of the store rooms under cold temperatures (-8°C) with very cool air circulation using high speed fans on the buildings.



Source: (Author’s field study, 2009)

2.6.2 Health and safety

Health and Safety aspects of stock control are related to the nature of the stock itself. Issues such as where and how items are stored, how they are moved and who moves them are significant—depending on what they are.

The RMS has hazardous materials and goods that deteriorate with time in their store houses. They practice stock rotation by giving out older stock first to help avoid stock deterioration or obsolescence. The workers at the stores houses are given

masks, goggles and hand gloves to protect them from any chemical reaction or infection.

2.6.2.1 Figure 4: A worker of the store with his mask and hand gloves working to prevent any infection or injury.



Source: (Author's field study, 2009)

2.6.3 Fire Risk

According to Pagh *et al* (1998), the prevention of fire is very important in relation to stores security and it is the responsibility of the management of the stores to ensure that all necessary precautions are taken so that all equipment and procedures are employed properly.

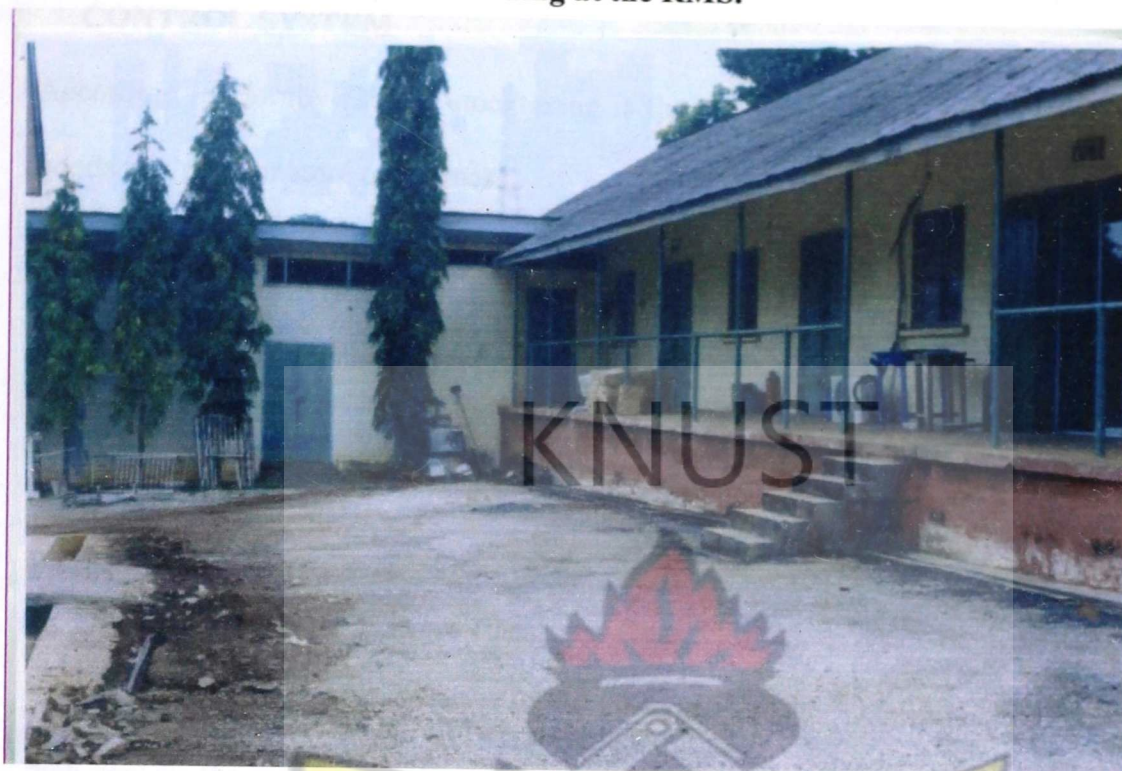
Industrial fire, cost organizations hundreds of millions of dollars and loss of life and high insurance premiums. The prevention of fire is therefore important as part of the storehouse operations (Hollinger *et al*, 1998).

The RMS has therefore instituted the following measures in a bid to prevent fire of the premises. They have posted, "No smoking" notices at all vantage points and locations in the store to tell smokers to desist from smoking cigarettes or other similar products which stands the risk of catching fire while working or loitering around the premises. The storekeeper also ensures that this rule is obeyed by all who patronize the store.

Fire-fighting equipment and tenders have been mounted at strategic points and locations throughout the stores' installations. These equipment are regularly inspected and maintained by the Ghana National Fire Service (GNFS) to ensure a safe, effective and efficient system. The RMS has a water hydrant at their premises and also has fire extinguishers hanged at various points on the walls which they use to fight any fire outbreak.



2.6.3.1 Figure 5: Fire extinguishers placed at various locations in the Non-drug building at the RMS.



Source: (Author's field study, 2009)

Alarm systems are in all the stores to ensure that any outbreak of fire is detected and the alarm raised. They have also ensured that there are no obstructions covering the alarm unit. Fire drills have been placed on the notice board and other places within the stores to make people aware of the actions to be taken in the event of fire, especially if the materials stored are of highly flammable or dangerous nature.

Fire doors and emergency exits are at all times kept absolutely clear to facilitate quick exit from the store in the cause of any fire outbreak.

2.7 STOCK CONTROL TECHNIQUES USED IN INVENTORY

CONTROL SYSTEM

According to Hornby (2005), stocktaking is the process of making a list of all the goods in a shop or store or business.

Stocktaking has been a very prominent feature in most organizations to take inventory of all their products in the store or warehouse. This is to make sure that what they have in place does not run out of order so that they can meet prompt supplies or demand (Schonberger, 1982).

At the Regional Medical Stores (RMS) in Kumasi, stock is taken on a daily basis because of the nature of the market that they serve. The stock that has been taken is then sent to the supervisor who then communicate the information at hand to the manager. The manager then puts in place other measures so that they don't run out of stock by recording the information on the computer which is shared by other line managers so that the stock is not depleted.

2.7.0 Figure 6:A store keeper taking stock inside the room while an attendant is seen packing items into the store.



Source (Author's field survey, 2009)

It can therefore be seen that stocktaking and stock recording are two major functions of the principles of store management. To make the process more effective, efficient and manageable, the storekeeper takes the stock whereby the supervisor after getting the feedback goes for verification. The final document is sent to the manager who then have them recorded so that they can follow the depletion level closely so that any order received is sent as quickly as possible and then the stock replenished.

One of the mathematical representation of the costs involved in stock control is the Economic Order Quantity (EOQ) model or the Economic Batch Quantity (EBQ) model. It is one of the simplest mathematical stock control models and has been found to provide reasonable solutions to a number of practical problems (Russel, 2003).

This model however involves two simplifying assumptions namely:

- There is no uncertainty- demand is assumed to be known and constant.
- The lead time is zero – the lead time is the time between placing on order and receiving the goods; in the derivation of the EOQ model.

The economic order quantity model is developed from two types of cost associated with stock control: ordering costs and holding costs. Ordering costs are those costs incurred each time an order is placed and can involve administrative work, telephone calls, postage, travel, or a combination of two or more of these.

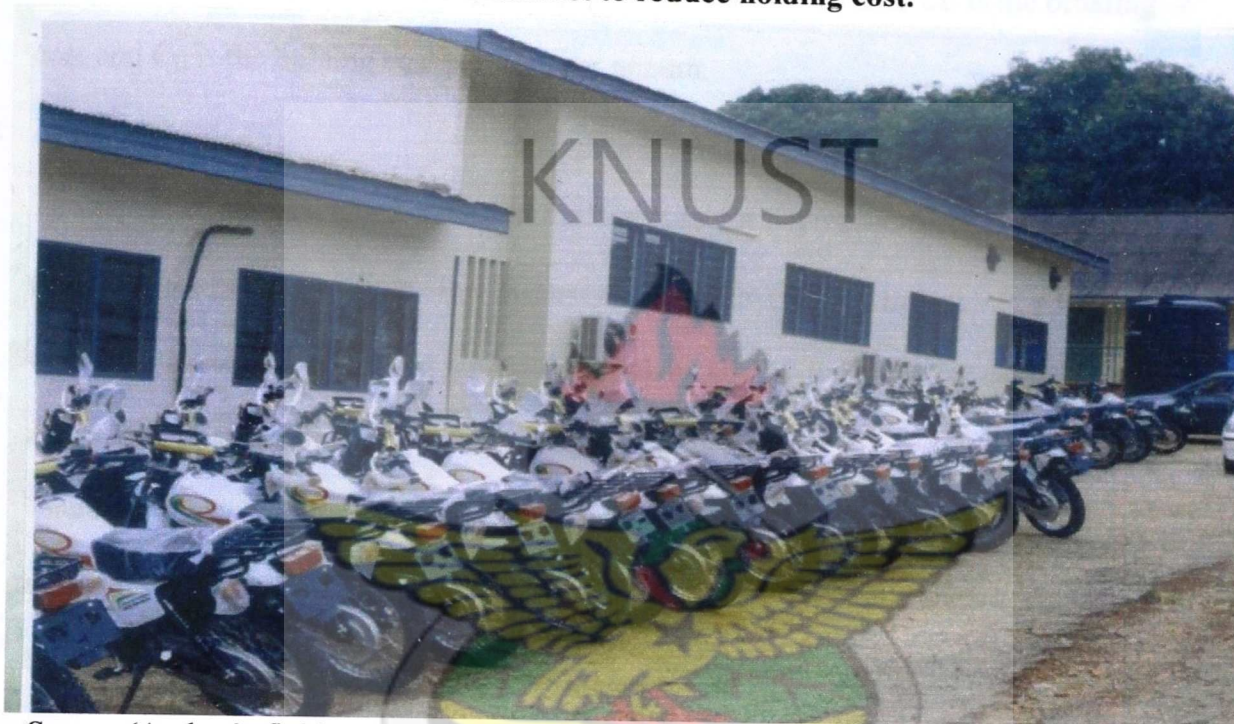
Holding costs on the other hand are costs of keeping an item in stock which includes the cost of capital, handling, storage, insurance, taxes, depreciation, deterioration and obsolescence.

It can therefore be seen that, the more the number of times you place an order, the more ordering cost you incur which at the long run goes to affect your operational cost. In such situations, the Regional Medical Stores places orders for goods that are needed most and frequently at the various hospitals and clinics in the region. They say they do this from the reports they receive at the various locations and markets that they serve.

It is also realized that, the more products or goods that the regional medical stores hold in the store increase this holding cost. This according to the

manager is not encouraged at his outfit since some of the drugs or goods that they keep at the stores have short expiry dates and so they place orders and dispatch these ones as early as possible to keep the facilities they serve going.

2.7.0.1 Figure 7: The RMS ready to dispatch motor bikes to the various health facilities in the district to reduce holding cost.



Source (Author's field survey, 2009)

It should be noted that any increase in the reorder level will increase the average stock level and as a result will increase holding costs. As we include more factors, the model becomes more and more complex. The inclusion of uncertainty, for example, makes the stock control model more realistic in most circumstances.

As we have seen, the economic order quantity can describe some stock control situations and can be developed to describe a number of others. The model can only include those factors we know about and not those unexpected or rare events that can make such a difference if they happen.

The order quantity that minimizes the total variable cost could have been determined by substitutions into the following equation:

$$Q = \sqrt{\frac{2 \times C_o \times D}{C_H}}$$

Where Q is the economic order quantity, D is the annual demand, Co is the ordering cost and C_H is the holding cost per item per annum.

The aspect of stores administration in the health sector have been in existence over a considerable period of time, the Ministry of Health (MOH) thought it wise and established stores outside the national capital in all the ten regional capitals as a result of increase in the demand for health materials grew.

There are many administrative tasks associated with stock control. Depending on the size and complexity of the business, this is done as part of the manager's duties, or by a dedicated stock controller.

For security reasons, it is good practice to have different staff responsible for finance and stock.

There is potential scope for automation in various aspects of warehouses serving volatile markets. For example A-frame dispensers, pick-to-line systems, conveyors and sortation systems are all listed as examples of appropriate equipment for an e-fulfillment centre (Tarn *et al*, 2003).

On the other hand, research by Fermie *et al*. (2000) has indicated that automated sortation systems are being developed by retailers to accommodate the picking of case quantities.

This is supported by Rushton *et al.* (2000) who stated that, “high-tech” installations should be based on some assurance of long-term demand for the products handled.

Automation may also be viewed as offering the flexibility to handle peak throughputs at short notice, particularly in areas where staff availability is a problem or in operations where the use of additional staffing may result in congestion and productivity issues (Naish and Baker, 2004).

The RMS uses a good computerized stock control system and manual stock control methods in its inventory control system.

Computer application assists the reduction in inventory levels and provides a more efficient service to users. Computers help reduce administrative costs and reduce the volume of documentation and tedious clerical duties.

The computer also helps in the speedier storage and retrieval of data and in the ability to handle urgent complex forecasting and speedier arithmetical calculations relating to inventory levels. It also helps in prompt updating of facility for all users and quicker and better decision-making from a wider range of options.

Ballard (1994) comments that, even though the computer has a lot of advantages, it has its limitations. Some of these drawbacks are the huge financial cost associated with the procurement and use of the computer, periodic hardware problems and the effects of virus on information stored on the hard disks and other removable storage devices. The major drawback however is unreliable electrical power supply. The issue of unreliable electrical power supply in the country coupled with the intermittent repair works on some transformers which keep some communities out of electrical power at the “peak” periods when they are needed to do useful work. This

and many other unfortunate power cuts are affecting the spate of work in the organization considerably.

The use of the manual stock control methods in the inventory control system are typically applied in the following circumstances: delivery and supplier notes for incoming goods, purchase orders (PO), receipt and credit notes, return notes, requisitions and issue notes for outgoing goods and materials, and the likes.

The stock controller uses the manual system to check the level of stock in the store by counting the items on the shelves. This system of stock-taking involves making an inventory, or list, of stock, and noting its location and value.

More sophisticated manual systems incorporate coding to classify items. The codes indicate the value of the stock, its location and the batch it is from, which is useful for quality control. The coding is done by using alphabets, numerals or a combination of the two. Items are given code names depending on their nature and also their end use. For coding to be efficient, it must cover the entire range of stock in use, the classification should meet the organization's need and the letters or digits should be consistent for all items (Tarn *et al* 2003).

The number is arranged such that there is adequate room for future expansion and amendment and it is understood by all those who will be using them such as stores, purchasing or users who request for items. This makes the whole process much easier but it is still quite time-consuming.

Checking stock more frequently- a rolling stock take – avoids a massive yearly exercise, but demands constant attention throughout the year.

The simplest manual system is the stock books, which, suits small businesses with few stock items. It enables businesses to keep a log of stock received and stock issued.

It can be used alongside a simple re-order system. For example, the two-bin system works by having two containers of stock items. When one is empty, it is time to start using the second bin and order more stock to fill up the empty one (Rushton, 2000).

Stock cards are used for more complex systems. Each type of stock has an associated card, with information such as: description, value, location, re-order levels, quantities and lead times (if this method is used), supplier details, and information about past or previous stock history and similar situations.

Rushton (2000) further argues that, stock tie up a large slice of the business capital, so accurate information about stock levels and values are essential for the organization's accounting. Figures should be checked systematically, either through a regular audit of stock- stocktaking – or an ongoing programme of checking stock-rolling stock take.

If the figures do not add up, the firm needs to investigate as there could be stock security problems or a failure in the system. Stocktaking is a good time to check for any obsolete or out of date stock that needs to be disposed of (Sage, 1984).

The issue of stock control is very critical to the safety of goods in various stores or warehouses so that goods and materials do not go bad before getting on the market.

In view of this, some stock control techniques need to be followed (Lucey, 1994).

This is the main reason why major stock control techniques such as Lead time, re-order level, maximum level amongst the lot should be considered.

The RMS uses the following stock control techniques in its store management:

Lead or procurement time: The period of time between ordering (externally or internally) and replenishment, that is, when the goods are available for use.

Re-order level: The level of stock (usually free stock) at which a further replenishment order should be placed. The re-order level is dependent on the lead time and the rate of demand during the lead time. This is the point at which the firm will re-order stock.

First in, first out (FIFO): This is a system used to ensure that perishable stock is used efficiently so that it does not deteriorate, stock is identified by date received and moves on through each stage of production in strict order.

Maximum level: This is the stock level calculated as the maximum desirable which is an indicator to management to show when stocks have risen too high. This stock control technique is used to find out the most stock that the firm is willing or able to hold.

2.7.1 Security Measures put in Place to Detect and Prevent Theft in the Stores

The Ghana Pharmacy Council has in place code and ethics governing the production and distribution of products (drugs) to various health facilities and locations before they get to the end-users.

The pharmacy council therefore checks drugs moving from one destination to the other according to the specifications and quality of the production unit (producers).

The staff at the Regional Medical Stores checks incoming items according to their specifications and the quality and quantity. When they are satisfied with all the details of the items under question, they write and sign against their names indicating

receipts of the items. They also see to it that the goods are moved to the various shelves in the store houses.

2.7.1.1 Figure 8:A store attendant who has just sent some goods into the store and returning for others.



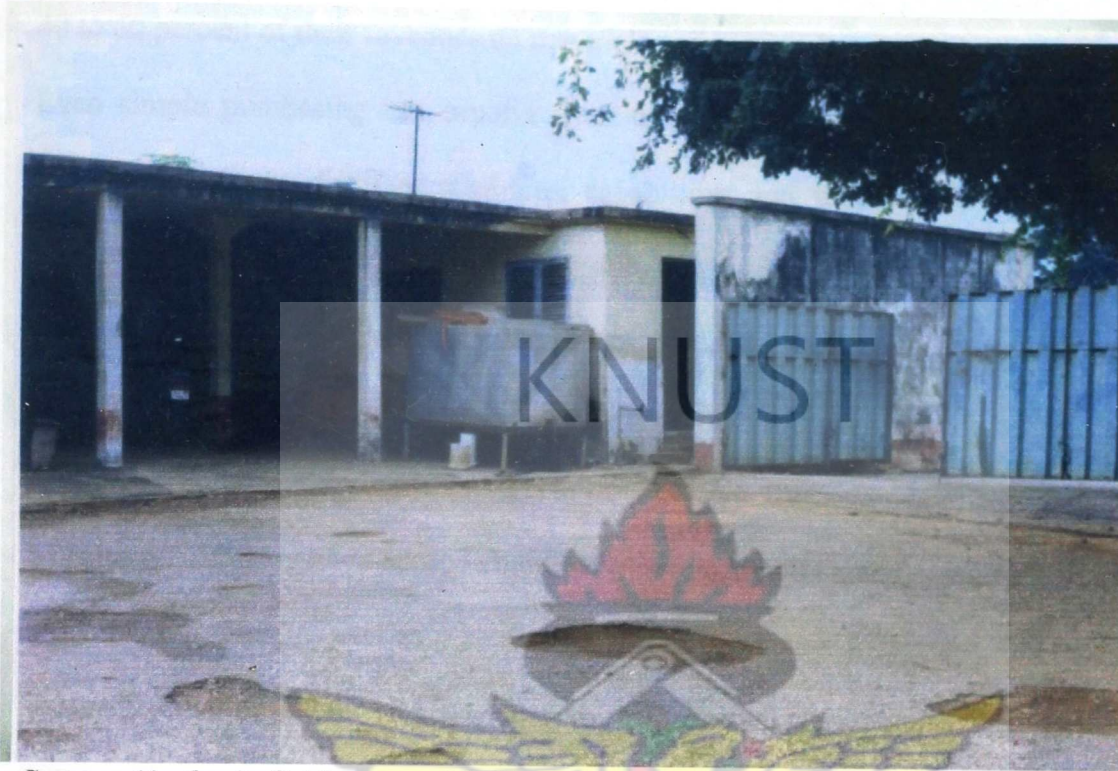
Source: (Author's field survey, 2009)

They issue items to facilities or institutions that make requisitions for their products. They cross check the requisition orders made of these facilities and make sure all the necessary paper work is complete and precise or accurate. Goods are then issued to the institutions based on their recommendations.

The storehouse is restricted to only store employees and to a limited extent to the company's customers. The staff is reshuffled every five years to avoid collusion and bad practices in a bid to prevent theft and misuse of goods in the store.

The store managers are therefore able to reduce inventory losses due to employee theft and shoplifting.

2.7.1.2 Figure 9: The security check point at the RMS which is used to check movement of goods and materials to prevent theft.



Source: (Author's field survey, 2009)

2.8 PROCUREMENT OF DRUGS AND SUPPLIES BY THE REGIONAL MEDICAL STORES

Procurement is the acquisition of goods or services at the best possible total cost of ownership, in the right quantity and quality, at the right time, in the right place for the direct benefit or use of governments, corporate or individuals generally via, a contract (World Bank, 2002).

Simple procurement may involve nothing more than repeat purchasing. Complex procurement could involve finding long-term partners- or even “co-destiny” suppliers that might fundamentally commit one organization to another (Leenders and Fearon, 1993).

Leenders and Fearon further stress that, every company relies to some extent on materials and services supplied by other firms. In most industries, companies spend 40 to 60 percent of their revenues on materials and service from outside sources.

Even simple purchasing can involve trade-offs. The timing can be critical. Each supplier may have different attributes, capabilities and values. The total cost of acquisition should be considered alongside the total lifetime cost, not just the purchase price. The physical handling of any products should be considered, with links to methods of transport, logistics and warehousing.

A key question in procurement is what to buy, given a limited budget. A manager in a health service may have a large choice of possible health technologies which could be purchased. The hospital may choose for example whether to buy an MRI scanner for the hospital or pay for an advertising campaign to encourage parents to have their children vaccinated. A military officer may wish to choose between buying more fighter aircraft or more trucks. Availability of good data can help store managers make use of economic analysis methods such as cost-benefit analysis or cost-utility analysis.

2.8.1 Procurement Types

Based on the consumption purposes of the acquired goods and services, procurement activities are often split into two distinct categories and these are direct, production related procurement and indirect, non-production-related procurement.

Direct procurement occurs in manufacturing settings only. It encompasses all items that are part of finished products, such as raw materials, components and parts.

Direct procurement, which is the focus in supply chain management, directly affects the production process of manufacturing firms.

In contrast, indirect procurement activities concern “operating resources” that a company purchases to enable its operations. It comprises a wide variety of goods and services, from standardized low value items like office supplies and machine lubricants to complex and costly products and services like heavy equipment and consulting services (Stock *et al*, 2001).

2.8.2 Procurement Steps

The procurement activities of all government departments and agencies, including health, education and the local authorities represent generally accepted scope of public procurement, although characteristics specific to defence procurement tend to exclude it from some of the mainstream public procurement legal and policy frameworks (World Bank, 2002).

Procurement life cycle in modern businesses usually consists of seven steps which can be explained and discussed as follows:

Information Gathering: This is the case where, if the potential client or customer does not already have an established relationship with sales and marketing functions of suppliers of needed products and services, it is necessary to search for suppliers who can satisfy the requirements.

Supplier contact: When one or more suitable suppliers have been identified, requests for Quotations (RFQ), Requests for proposals (RFP), request for

information (RFI) or Requests for Tender (RFT) may be advertised, or direct contract may be made with the suppliers.

Background Review: Reference for product or service quality is consulted, and any requirements for follow-up services including installation, maintenance and warranty are investigated. Samples of the products and services being considered may be examined or trials undertaken.

Negotiation: Negotiation is undertaken, and price, availability, and customization possibilities are established. Delivery schedules are negotiated, and a contract to acquire the product or service is completed.

Fulfillment: Supplier preparation, shipment, delivery, and payment for the products or services are completed, based on contract terms. Installation and training may also be included.

Consumption, maintenance and disposal: During this phase the company evaluates the performance of the product or service and any accompanying service support, as they are consumed.

Renewal: When the product or service has been consumed and /or disposed of, the contract expires, or service is to be re-ordered, company experience with the product or service is to be re-ordered, company experience with the product or service is reviewed. If the product or service is to be re-ordered, the company determines whether to consider other suppliers or to continue with the existing supplier.

2.8.3 Procurement by the Regional Medical stores (RMS)

The passage of the Procurement Act has placed premium on the modalities and procedures used to procure goods and services.

By law, procurement is supposed to be done through National Competitive bidding (NCB). This has made purchases too cumbersome and bureaucratic for the need for economy and efficiency, give the eligible bidders opportunity to compete, to make procurement process transparent, to have value for money amongst the lot (Procurement Act, 2003).

The Regional Medical Stores procure medicines through the Central Medical Stores (CMS), through national competitive bidding and from the local private sector. All the districts, sub-districts and private hospitals and health centers in turn, procure drugs and other materials from the Regional Medical Stores in their respective regions.

2.8.3.1 Figure 10: A vehicle which has off-loaded goods from the Central Medical Stores in Tema into the Non-drug building.



Source: (Author's field survey, 2009)

The Regional Medical Stores is responsible for the appropriate storage and handling of all drugs, chemicals and equipment that are in their warehouses. It also provides appropriate skills required for the storage and handling of all drugs, chemicals and equipment at all levels.

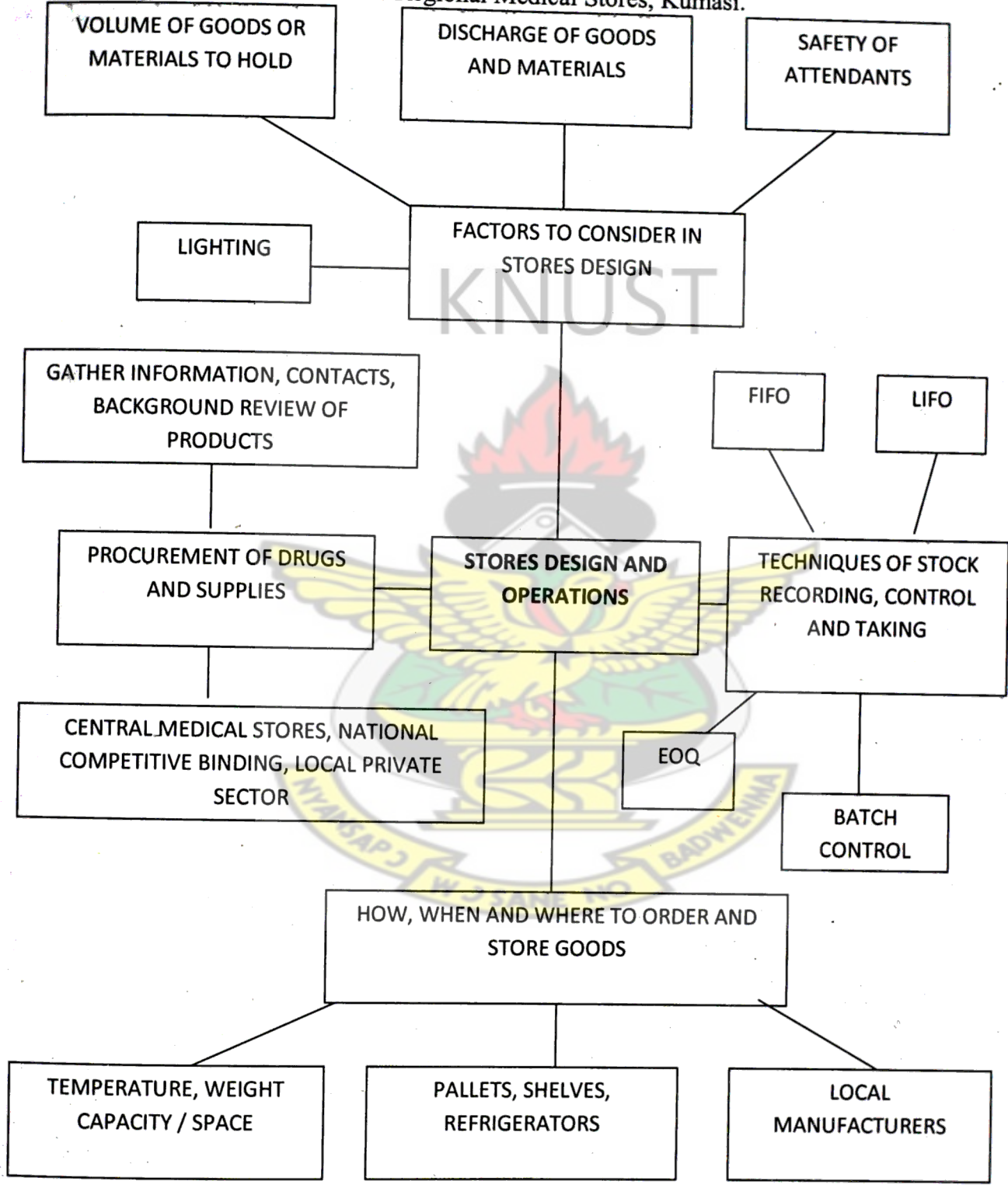
2.8.3.2 Figure11. The RMS storing some equipment and chemicals in one of their warehouses ready to be used at the premises and others to be distributed to the various districts



Source: (Author's field survey 2009)

2.9 CONCEPTUAL FRAMEWORK

2.9.1 Figure 12:Activities at the Regional Medical Stores, Kumasi.



Source: (Author's field study, 2009)

The conceptual framework as shown above gives a brief idea about how stores design and operations are carried out at the Regional Medical Stores in Kumasi. In choosing stores or warehouses, some factors such as volume of goods to hold, the discharge of goods, safety of attendants and lighting are considered.

This then will pave way as to some techniques (LIFO, FIFO, EOQ and batch control) to think of in stock recording control and taking at the warehouse or store. After these techniques are known, the procurement officer opens tender to procure the goods (drugs and non-drugs) or materials by gathering information about the needs of the RMS and then conducting a background review on the products before contacting the suppliers. Once the suppliers are known, goods or materials are then ordered through national competitive bidding from outside and the central medical stores or local private sector.

The goods once received are then stored on pallets, shelves and refrigerators depending on the weight, capacity or space and temperature. The goods are then stored until a time that the various customers from the various districts are supplied.

CHAPTER THREE

RESEARCH METHODOLOGY AND ORGANISATIONAL PROFILE

3.0 INTRODUCTION

This chapter deals with the instrument and methods used for the study. Thus, how the research work was carried out so as to gathering information about the objective of the study.

It examines the following areas: research design, population, sampling procedures, research instruments employed, data collection procedures, scoring the instruments and finally, data analysis.

3.1 RESEARCH DESIGN

Various techniques of data collection like face- to- face interview, responses to questionnaire and observations were used.

The study is an assessment and aims at assessing the effectiveness of stores design and operations of Ashanti Regional Medical Stores, Kumasi.

Detailed information was collected on the design of the stores and how they went about their operations.

3.2 POPULATION

The research was carried out having considered two (2) main groups as the population. They were:

Top management of the Ashanti Regional Medical Stores.

Workers (Staff) of the Regional Medical Stores.

It was believed that, this population will be able to provide the relevant information in the area of the study.

The first category which is the top management of the RMS, who are at the same time the planners, implementers and financiers of the various decision- making programmers, will be of immense help to the success of the study.

The second category, which involves staff (workers) of the RMS, was to find out what they do inside and outside the stores, the way they operate and the challenges they face in executing their duties.

3.3 SAMPLING PROCEDURES

Sampling for respondents for the research was done using both random and purposive sampling depending on the aspects of information needed. There were some workers who were contacted directly after their names were given due to the various roles they played in the operations at the Regional Medical Stores.

Some top management of the RMS and workers were however selected randomly since they have been involved in some form of activities in the store or the office.

Others in these groups were contacted directly due to their roles in the planning, monitoring and evaluation at the various stages in the store's design and operations.

A sample size of one hundred and twenty-five was taken out of the management and the other workers of the entire population. This was to make the whole process inexpensive and short.

This was made up of twelve (12) top management and one hundred and thirteen (113) other staff (workers) with different levels of competencies.

The reason of my selection was that stores design and operations is a strategic issue which is normally addressed by management and the other workers who are also the implementers of the management decisions.

3.4 RESEARCH INSTRUMENTS

The main instruments used for the research was questionnaire. A set of questionnaire was prepared for both top management and workers of the Regional Medical Stores (RMS). Literature research was used to collect additional data from the management of the RMS.

The researcher made use of questionnaires and interviews schedules. The questionnaires comprise a list of questions which demand a choice by respondents.

The interview was structured to interview the respondents to find out their views on stores design, layout, and caliber of personnel in the stores and so on.

3.4.1 QUESTIONNAIRE SCHEDULE

Questionnaires were prepared and administered by the researcher to seek information from the management and the workers (staff). The questionnaires were

distributed to the respondents earlier for their study and completion for about two weeks before collection.

The questionnaires were used for the study because it required little time of the respondents and also not time – consuming for distribution as most of the respondents for the study were easily located.

3.4.2 INTERVIEW SCHEDULE

The researcher used both structured and unstructured interviews. The questions the respondents responded to were based on stores design and layout. The researcher wrote the answers that the respondents responded orally. The unstructured interview was a flexible approach by the researcher to probe for the respondent's comments on stores design and operations at the Ashanti Regional Medical Stores.

These types of interviews also ensured a high response rate and helped the researcher to clarify certain issues on the topic. The researcher was able to probe for specific meanings and explanations to responses made.

3.5 DATA COLLECTION PROCEDURES

The questionnaires were solely presented personally to management and other workers of the RMS and the responses collected after two weeks.

The researcher also interviewed the management and staff of the RMS, Ashanti. The interview took three (3) days for completion with each day's interview lasting for a little over thirty minutes. Data was collected from documents, books, and articles written by knowledgeable people in the field.

In some cases the stores were visited where the workers were actually loading goods into the stores and off – loading some goods from the stores onto vehicles for distribution into some district hospitals.

3.6 SCORING THE INSTRUMENTS

The research designed a system for scoring the instrument. Most of these items in the questionnaire used were scored for “ticking” the boxes provided with a few demanding brief answers to the spaces provided.

All the instruments and techniques that were used for scoring were recorded on the data input sheet for easy checking and analysis.

While some people who could read and write were given questionnaires to answer, the illiterate ones were taken through an interview schedule using the same set of questionnaires.

3.7 DATA ANALYSIS

Data collected from the respondents were screened manually to ensure consistency of responses under the various sections.

The data were then inputted into Statistical Package for Social Sciences (SPSS) software before analysis.

Throughout the work, frequency tables, charts and percentages were used to help the researcher gain an overall view of findings, to identify the trends, and to display the relationship between parts of the findings.

The data were analyzed according to major theme so as to reflect the order of the research questions. Qualitative data analysis was employed throughout the process to reflect the research design.

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3.8 ORGANISATION PROFILE

3.8.1 Background of Ashanti Regional Medical Stores.

The Regional Medical Stores (RMS) is part of the Regional Health Directorate and for that matter, the Ghana Health Service (GHS) and was established during the colonial days(1950,) of Dr. Kwame Nkrumah.

It is largely involved in the distribution of health commodities which is made up of Drugs and Non-drug consumables in the Ashanti region.

The core functions of the RMS are;

1. Receipt of health commodities
2. Storage of goods and materials in good conditions
3. Distribution of goods and materials to various health facilities.

The Regional Medical Stores get their items directly form the Central Medical Stores (CMS) based in Tema and serve as the National distributors of which the Ashanti region takes its supplies and serve the various districts and health facilities within the region. Items not received from the CMS are tendered for National Competitive Bidding (NCB) and go through the procurement law.

When items are received at the premises of the RMS, they are sent to the stores where the various packages are selected and stored at the appropriate places in good conditions. The drugs are stored at appropriate temperatures to maintain its efficacy. The Non-drug consumables (vaccines, syringes, glycometers and so on) are however stored at negative eight degrees centigrade (-8°C).

The items once stored are distributed to the various districts under the RMS's door-to-door activities. The various districts have their days of the week to collect their supplies.



3.8.0 Table 1: Districts Schedules for Supplies from Regional Medical Stores,
Drugs and Non-Drugs

DAYS OF THE MONTH	DISTRICT/HOSPITAL
1 ST WEEK	
1 ST MONDAY	KWABRE DISTIRC
1 ST TUESDAY	ADANSI EAST/TAFO HOSPITAL
1 ST WEDNESDAY	EJISU-JUABEN
1 ST THURSDAY	AMANSIE WEST/MCHH
2 ND WEEK	
2 ND MONDAY	ATWIMA DISTRICT/KMA/SEPE DOTE
2 ND TUESDAY	AHAFO ANO NORTH/SUNTRESO HOSPITAL
2 ND WEDNESDAY	SEKYERE WEST/SEKYERE CENTRAL
2 ND THURSDAY	ASANTE AKIM NOTH
3 RD WEEK	
3 RD MONDAY	EJURA SEKO/OFFINSO DISTRICT
3 RD TUESDAY	AHAFO ANO SOUTH
3 RD WEDNESDAY	MANHYIA HOSPITAL/ADANSI WEST
3 RD THURSDAY	ASANTE AKIM SOUTH
4 TH WEEK	
4 TH MONDAY	BOSOMTWI/ATWIMA-KWANWOMA DISTRICT
4 TH TUESDAY	SEKYERE EAST/KUMASI SOUTH
4 TH WEDNESDAY	AMANSIE EAST
4 TH THURSDAY	AFIGYA SEKYERE/AFFIGAY KWABRE

NOTE: WHEN FACILITIES DAY FALL ON A PUBLIC HOLIDAY, SUPPLIES
WILL BE MADE ON FRIDAY OF THAT WEEK

Source: (Author's field study, 2009)

3.8.1 Vision Statement

The vision of the Regional Medical Store is to provide appropriate leadership for the health sector to improve the health status of the people in the Ashanti region.

3.8.2 Mission Statement

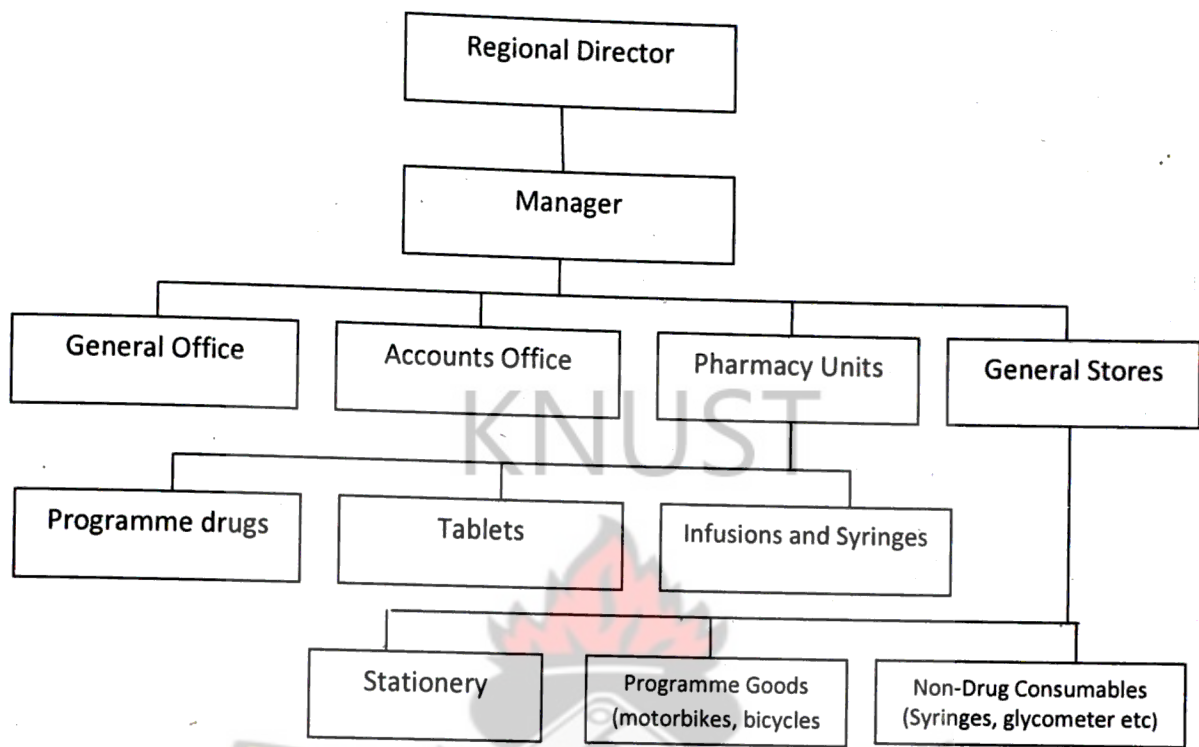
The mission statement of the Regional Medical Store is to receive goods of good quality, store them and distribute to various health facilities within the Ashanti region.

3.8.3 Operations of the Regional Medical Store.

As discussed above, the RMS receives items from the Central Medical Stores and local producers/manufacturers and discharge them into the storeroom after inventories have been checked and authenticated.

The RMS also take delivery of motorbikes and bicycles parts which they assemble and distribute them to all districts, sub-districts and health facilities in the Ashanti region.

3.8.3.1 Figure 13: Organizational Chart.



Source: Author’s Field Survey, 2009

The organizational chart provides information about the organization’s structure and its characteristics to both employees and external partners of the organization. It clearly spells out the channel of communication and what the organization seeks to achieve.

CHAPTER FOUR

RESULTS OF THE STUDY

4.0 INTRODUCTION

This chapter consists of the general analysis of responses to the questionnaire and interview administered. It again discusses findings supported by literature review and other supportive views as well as on the spot findings.

4.1 BACKGROUND ANALYSIS OF THE DATA

The result of the study was based on data taken from the source of the case study, Kumasi.

Questionnaires were given to top management and other staff (workers) who were involved in the day-to-day activities at the Ashanti Regional Medical Stores and other districts and health facilities who receive supplies from the medical stores.

The questionnaires were given to these groups of people directly at their various locations with the assistance of some top management staff. Interviews were also conducted at various departments and offices for additional information.

4.1.1 Figure 14: The front view of the Accounting department and the General Office of the Regional Medical Store, Kumasi.

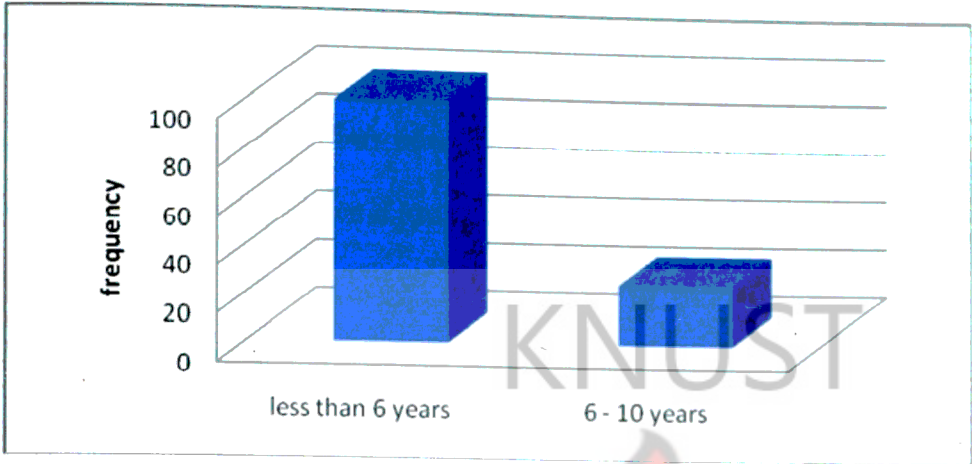


Source: Author's Field Survey, 2009



4.2 DESCRIPTIVE ANALYSIS

4.2.1 Figure 15: Working experience of respondent

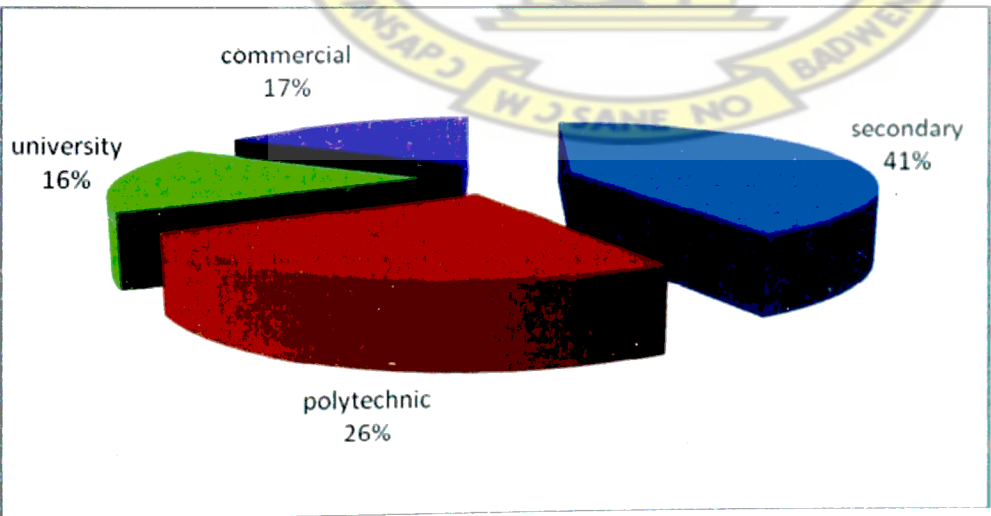


Source:

(Author’s field survey, 2009)

As shown in figure fifteen (15) regarding the working experience of the respondents, majority of them had worked not more than six years representing 80%. This means smaller section of the respondents, 25 out of the 125 representing 20% had worked for the duration of six to ten years at Ashanti Regional Stores.

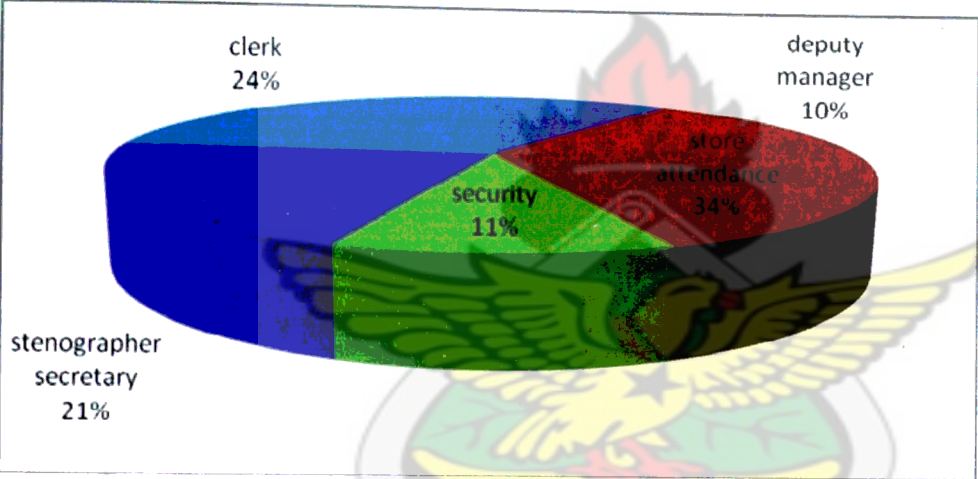
4.2.2 Figure 16: Educational background of respondents



Source: (Author’s field survey, 2009)

From figure 16 above, it can be observed that most of the respondents had had secondary education representing 41% of the total respondents. The least number of interviewees had had commercial education also representing 17%. 33% of the total respondents had had tertiary education. It can therefore be observed that most of the workers of Ashanti Regional Medical Stores are secondary graduates.

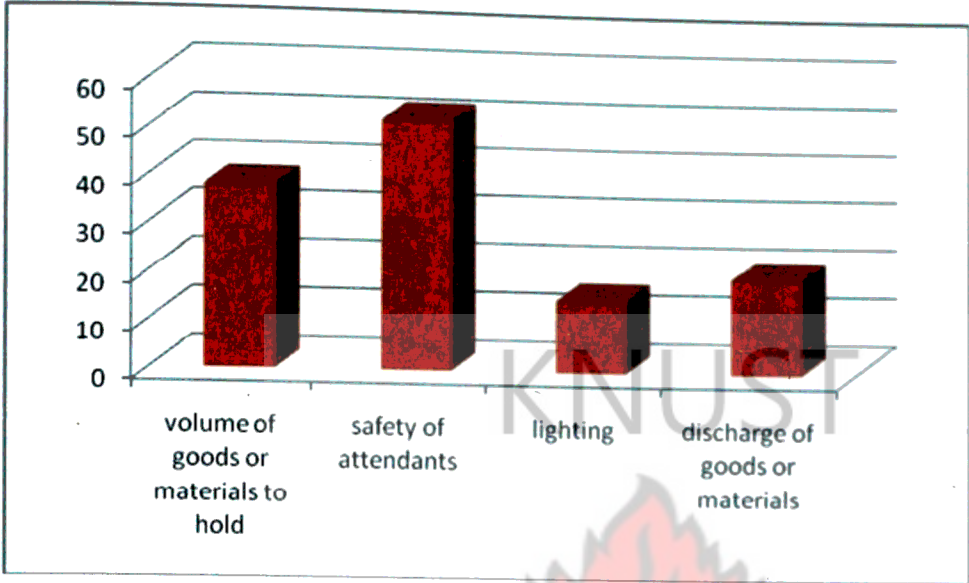
4.2.3 Figure 17: Capacity of work of respondents



Source: (Author's field survey, 2009)

It is observed from figure 17 above that, different capacities of workers were interviewed. They include clerks, securities, stenographers, store attendants and deputy managers. Most of these respondents interviewed were store attendants representing 34%. The least number of interviewees were deputy manager and it is represented by 10%.

4.2.4 Figure 18: Factors to consider when choosing stores



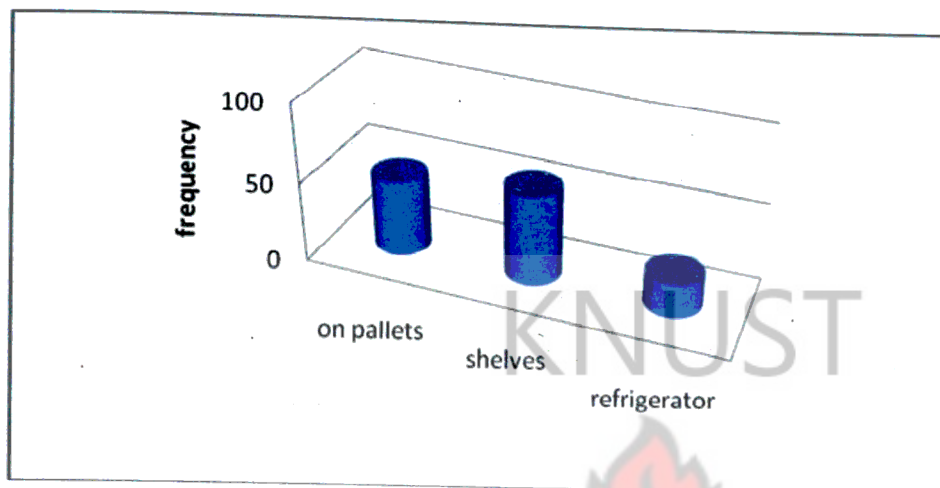
Source: (Author’s field survey, 2009)

Figure eighteen above shows one of the critical issues in stores design and operation. All the four factors are very important to consider by managers and employees working in the stores. The most important factor observed from the analysis is the safety of the attendants which represents 42% followed by the volume of goods/materials to hold which is also represented by 30%. The least important factor to consider in stores design and operations is lighting, representing 12%.

Lambert et al (1998) are of the view that, warehousing is the part of a firm’s logistic system that stores products (raw materials, parts, goods- in - process, finished goods) and provides information to management on the status, condition and disposition of items being stored. He mentioned seven things to consider in effective operations in the management of facilities which has store design as one of them and this

considers volume of goods or materials to hold, the safety of the attendants, lighting, discharge or release of the goods or materials amongst the lot.

4.2.5 Figure 19: How goods are stored by respondents

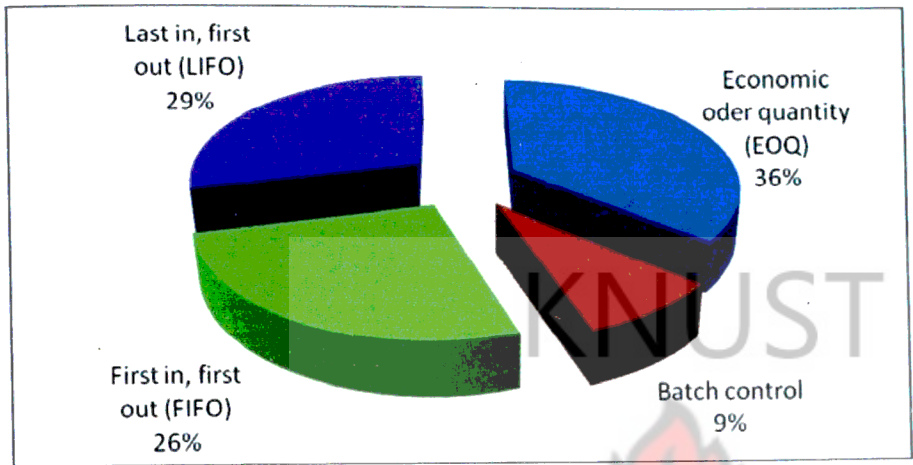


Source: (Author's field survey, 2009)

As can be seen in figure nineteen above, another critical issue to consider in stores design and operations is storage. Figure nineteen above shows different means of storage in design and operations. Majority of the respondents store their goods on shelves which is represented by 46%. The least means of storage expressed by the respondents was through refrigeration represented by 17%. Notwithstanding that fact, other means of storage include bins and racks to mention just a few.

Tompkins et al (1996) mentioned that, stores had three basic functions namely movement, storage and information transfer. This they argued would make the products or materials maintain their potency and efficacy before they get to consumers.

4.2.6 Figure 20: stock control techniques



Source: Author’s field survey, 2009

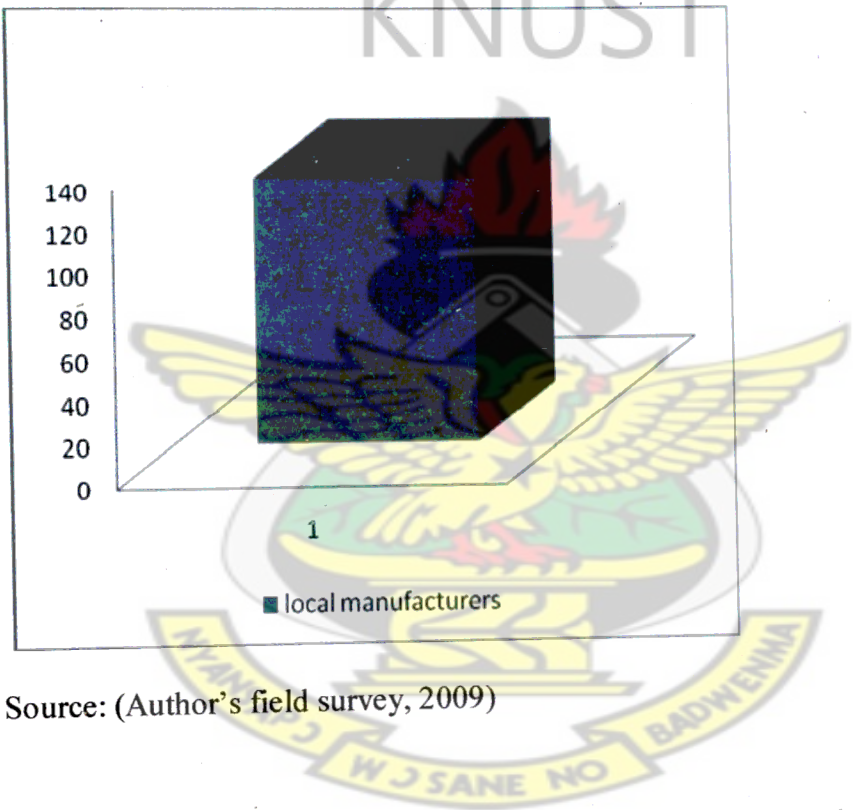
From figure 20 above, there are so many techniques of stock control used by management of stores but respondents were unfamiliar with these few mentioned above. The technique used by most respondents or management of stores is the Economic Order Quantity (EOQ) which was approved by 45 respondents out of the 125 total respondents representing 36%. Batch control is the technique used by few respondents. This is represented by 9%. Re-order lead time is another technique but unfamiliar to respondents.

According to Schonberger (1992), stock control is a prominent feature in most organizations and this is to make sure that what they have in place does not run out of order so that they can meet prompt supplies or demand.

This Russel (2003) buttresses by saying that, EOQ is one of the simplest mathematical stock control models and has been found to provide reasonable solutions to a number of practical problems.

This is the main reason why Lucey (1994), hinted that, the issue of stock control is very critical to the safety of goods in various stores or warehouses before getting to the market. This he mentioned lead time, re-order level, first in, first out (FIFO), maximum level and last in, first out (LIFO) as some of the techniques to be employed.

4.2.7 Figure 21: How respondents order goods



Source: (Author’s field survey, 2009)

Figure twenty-one above shows how respondents order goods. All the respondents confirmed that in order to meet operational requirements, they ordered goods by making a list of required items and then given to the procurement officer to open tender.

4.2.8 Table 2: Where respondents order goods

PLACE OF ORDER	FREQUENCY	PERCENTAGE
Local manufacturers	125	100.0
Total	125	100.0

Source: (Author’s field survey, 2009)

Respondents were asked to indicate where they order their goods from. None indicated African market nor developed countries. All the respondents said they order goods from local manufacturers only in order to meet operational requirements as can be seen in table 2 above:

4.2.9 Table 3: Procurement procedures

PROCEDURE	FREQUENCY	PERCENTAGE
Information gathering	37	30.0
Supplier constant	30	24.0
Background review of product(s) and material	58	46.0
Negotiation	0	0.0
Fulfillment	0	0.0
Renewal	0	0.0
Consumption, maintenance and disposal	0	0.0
Total	125	100.0

Source: (Author’s field survey, 2009)

Table 3 above, represents the procurement steps used by the medical stores in procurement of drugs. The step respondents use most is the background review of products and materials. This is represented by 46% of the total percentage. Some of the respondents also used information gathering and supplier contact represented by 30% and 24% respectively. Though there are other steps for procurement of drugs such as fulfillment, negotiation and so on, respondents were not familiar with them.

Leenders and Fearon (1993) were of the view that, simple procurement may involve nothing more than repeat purchasing whereas complex procurement could involve finding long-term partners or even “co-destiny” suppliers that might fundamentally connect one organization to another.

However, a World Bank (2002) report in procurement life cycle in modern businesses usually consists of seven steps which are information transfer, supplier contract, background review, negotiation, fulfillment, consumption, maintenance and disposal and renewal. This the report emphasized should be the accepted scope of public procurement.

4.2.10 Table 4: Means of procuring drugs and materials

MEANS	FREQUENCY	PERCENTAGE
Through Central Medical Stores	37	30.0
Through National Competitive bidding	35	28.0
Through Local Private Sector	53	42.0
	125	100.0

Source: (Author's field survey, 2009)

As can be seen in table 4, respondents were asked to indicate means through which they procure drugs and materials and it was observed that most respondents procure drugs and materials through local private sector represented by 42%. The rest procure drugs and materials through Central Medical Stores (CMS) and National Competitive Bidding also represented by 30% and 28% respectively.

However, the passage of the procurement act (2003) has placed premium on the modalities and procedures used to procure goods and services and is supposed to be done through National Competitive Bidding (NCB). This has made purchases too cumbersome and bureaucratic for the need for economy and efficiency, give eligible bidders opportunity to compete, make procurement process transparent and have value for money amongst the lot.

On the interview schedule (Appendix B), I managed to get in touch with some top management and customers (Various district representatives) who receive supplies from the Regional Medical Stores (RMS) who responded as follows.

On question one (1), this was what was gathered from the respondents on how they perceive the image of the store from Kwabre, Amansie -East and Ahafo -Ano South districts on their scheduled days of the month for their supplies painted a nice picture about the Regional Medical Stores. They said they received prompt supplies, enjoy good relations with management and workers (Staff) and sometimes receive credit facilities with enhanced payment terms.

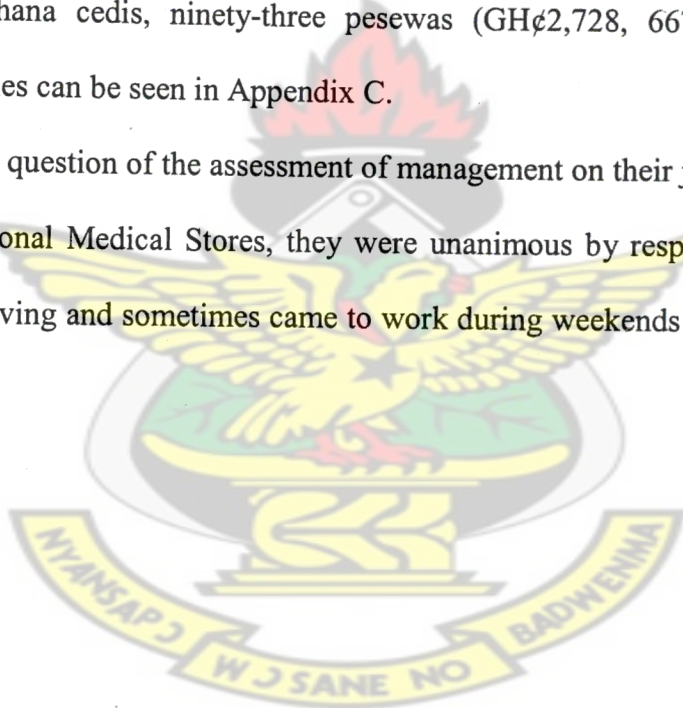
Regarding some of the elements that make up the store environment, it was generally gathered that, there was a security post at the entrance to check the movement of humans, vehicles and materials. Non-drug stores, essential medicines for the various

districts, programme medicines (for treatment of TB, HIV/AIDS, Leprosy, buruli ulcer etc), programme logistics (eg. Motor bikes, mosquito-treated nets, computers, printers etc) were also there to cater for the various needs as and when they come.

On the lighting of the stores, it was seen that there were Halogen lamps for the compound and CFL and fluorescent lights inside the store room to check the rightful temperatures of the drugs by the suppliers and manufacturers

The total sales of drugs and non-drugs for the first half of 2009 (January-June 2009) amounted to Two million, seven hundred and twenty-eight thousand, six hundred and sixty-seven Ghana cedis, ninety-three pesewas (GH¢2,728, 667. 93). The month-by-month sales can be seen in Appendix C.

When it came to the question of the assessment of management on their job schedule at the Ashanti Regional Medical Stores, they were unanimous by responding that, the job is very involving and sometimes came to work during weekends to complete other paper works.



CHAPTER FIVE

SUMMARY, CONCLUSION, RECOMMENDATIONS AND SUGGESTIONS

5.0 INTRODUCTION

This chapter is the final one and relates to the findings of the study. It includes the summary of the findings of the research, the conclusions with reference to findings, recommendations and suggestions for future research.

5.1 Summary of Main Findings

This study sought out to assess the effectiveness of stores design and operations.

The specific objectives were to

1. Help stores managers and employees working in the stores identify the critical issues in stores design and operations.
2. Acquaint staff working in the stores with the techniques of stock recording, stock control and stock taking.
3. Acquaint store managers with the knowledge and skills on how, where and when to order and store goods so as to meet operational requirements.
4. To make recommendations in the stores especially stores managers on the procedures of procurement of drugs and supplies by the medical stores.

Pertaining to specific objective one, the study revealed that, stores managers and employees considered critical issues in the designing of stores and operations employed. It was found that, the volume of goods or materials to hold, safety of the

attendants, lighting and discharge of goods or materials into the stores were some of the factors they considered when designing stores for their operations. Safety of the attendants had the highest frequency amongst the modules of designing stores. The study also shared that, 46% of the goods were stored on shelves with the lowest number of 17% being stored in refrigerators which were drugs and syringes to be stored at specific temperatures.

With respect to the second specific objective which was to find out techniques of stock recording, stock control and stock taking, the findings showed that the Regional Medical Stores (RMS) use the Economic Order Quantity technique more often to control stock whiles sometimes use the FIFO and LIFO techniques when it became necessary. They however, hardly consider the batch control as a technique.

Most of the workers of the Regional Medical Stores argued that, the use of these stock control techniques were useful and helpful in the sense that, the management of stores varies with the receipt of goods or materials.

It was noted that, the RMS managed the stores effectively when they used the different techniques hand-in-hand in their operations. The use of these techniques according to the study gave the managers of the store much aspiration in their operations and management.

Regarding the third specific objective which was to acquaint store managers with the knowledge and skills on how, where and when to order and store goods so as to meet operational requirements, the finding was that, in ordering goods, a list of items required is given to the procurement officer to open tender. This in fact, was the only means by which they ordered goods as all the respondents said.

As to where they ordered their goods from, the RMS got their goods from local manufacturers where orders are placed when the re-order level is reached for supplies to be received. It was also revealed that, the central medical stores (CMS) and Government of Ghana sometimes supply goods and materials on emergency situations.

With respect to the fourth objective which was to find out the procedures of procurement of drugs and supplies by the medical stores, the findings showed that, procurement of drugs and materials were done through national competitive bidding, which is considered the least and through local private sector with the highest consideration.

It was also revealed that, the RMS in its operations went through three (3) major steps in procuring drugs and materials. They went through the background review of the products and materials as the major step with the least being supplier contact having gathered information about the suppliers.

5.2 Conclusion

Having gone through the research, the conclusions below were drawn from the findings of the study.

Though there were not enough engineers at the RMS to fall on to give the type of store or warehouse to choose from, the managers and staff were able to see safety of attendants, how to discharge goods or materials at their bay and stores, lighting and volume of goods to store as key issues to consider when choosing a particular store or warehouse.

Again, the RMS used different techniques in recording stock, control and taking though they mostly used Economic Order Quantity. They (RMS) also procured drugs and materials mainly through the local private sector through the procurement officer who opens tender.

The various store clerks also served the various districts when they receive instructions from the store supervisor through signed documents. This, they again checked from the issuance vouchers, recorded them and gave the items required to the store attendants who then issued the items.

The various store attendants also served the various districts in the region by specific schedules and further made arrangements for those who missed their turn in a particular day of the week.

Moreso, the Regional Medical Stores (RMS) in the procurement of goods, works or services, the various departments were responsible and accountable to the procurement officer for achieving value for money.

These notwithstanding, not all the procurement steps as stipulated by the World Bank were followed. This makes the procurement law of Ghana far different from those of the World Bank.

Subject to those legal requirements in the procurement law and the government's policy on value for money, accountable officers were responsible for determining circumstances in which contracts were awarded without competition.

5.3 Recommendations

The following recommendations are worthy of consideration.

1. Where suppliers are transporting goods or materials and their vehicle break down mid-way in the journey, the RMS should be in a position to help them transport their goods or materials to the stores premises.

This, it is believed will prevent theft and spoilage because some drugs which are to be kept at specific temperatures in the refrigerators may not have that requirement.

2. There must be frantic efforts to check the movement of humans and goods in and out of the stores premises to minimize pilfering and theft.

My observation was that, people and vehicles which entered and left the Regional Medical Stores did so without proper checks at the main entrance. This could be dangerous as some people may take advantage of such lapses and steal from the stores. It is thus recommended that invoices issued to customers should be checked with the items being sent out.

3. The Regional Medical Stores must collaborate with the Regional Health Administration to train the store attendants on the proper techniques in stock taking, materials and goods handling as well as storage of goods and materials in the stores.

This will help the store attendants to properly place in-bound materials and goods at the proper places within the stores to maintain its efficacy. Again it will also help the attendants handle various items with care to prevent spillage of liquid contents.

4. The RMS must encourage other districts to pay for their supplies promptly so that they are not denied supplies because of non-payment of earlier supplies.

The Regional Medical Stores can do this by educating them on the need to desist from supplying their customers on credit. This should be explained that, the RMS is using what to pay back as a revolving fund (RF) and so if they default, it will not help the RMS.

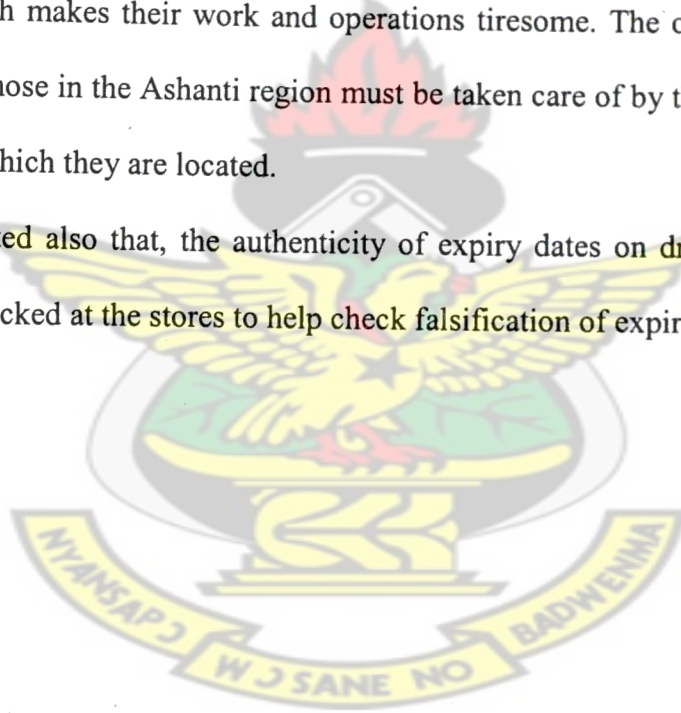
5. The Regional Medical Stores must reward districts who make high returns and also pay promptly their sales of drugs so that other people will be motivated to improve their monthly returns of sales.
6. In dealing with, Regional Medical Store's attendants and procurement officers, purchasers should do their best to preserve the highest standards of honesty, integrity, impartiality and objectivity.
7. Departments should ensure that all staff responsible for the procurement of goods, works or services are made aware of the procurement policy guidelines.
8. Since drugs have different storage temperatures, efforts must be made to have additional refrigerators to adhere strictly to best storage principles.

5.4 Suggestions for Future Research

Due to the importance of the topic, the following suggestions are made to enhance researches into the future.

1. There was the problem of people understanding the need to be trained in the various disciplines of the stores operations so extensive research should be conducted into it to bring out the best roles the RMS can play in convincing the staff to attend such training programmes.

2. The study involved extensive contacts to the various people at the RMS, however, a departmental head (production) could not receive me and so people must be encouraged to give free information to help the development of the various sectors of the economy.
3. Because the procurement law is so cumbersome and bureaucratic, provision must be made in it to help essential departments such as the health and security agencies to procure goods and services with some form of flexibility.
4. The study found that, the RMS even serves some districts outside the Ashanti region which makes their work and operations tiresome. The other districts other than those in the Ashanti region must be taken care of by the respective regions in which they are located.
5. It is suggested also that, the authenticity of expiry dates on drugs must be properly checked at the stores to help check falsification of expiry dates.



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APPENDIX A

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF BUSINESS

INTRODUCTION

The following questions are aimed at collecting data that will keep the researcher to assess the effectiveness of stores design and operations of Ashanti Regional Medical Stores in Kumasi.

This is purely for academic purposes. All information provided by you will be treated as private and confidential.

INSTRUCTION

You are kindly requested to tick (☒) the appropriate boxes and give brief answers to the others where necessary.

A. PERSONAL DATA

1. Gender a. Male [☐] b. Female [☐]
2. Age (years) a. 20-30 [☐] b. 31-40 [☐]
 c. 41-50 [☐] d. above 50 [☐]
3. Marital Status..... a. Single [☐] b. Married [☐]
 c. Widow(er) [☐] d. Divorced [☐]
4. Education level a. Non formal [☐] b. Primary [☐]
 c. Middle school [☐] d. Junior Secondary [☐] e. Secondary [☐]
 f. Polytechnic [☐] g. Tertiary [☐] h. Others (specify).....

5. How long have you worked with the Regional Medical Stores?

- Less than 6 years [] 6 – 10 years [] 11-15 years []
16-20 years [] 21-25 years [] 26 years and above []

6. In what capacity do you work with the Regional Medical Stores?

- Deputy Manager [] Stores Attendant [] Stores Supervisor []
Security [] Others (Specify)

KNUST

B. ISSUES IN STORES DESIGN AND OPERATIONS

7. What factors do you consider when designing stores?

- Volume of goods or materials to hold [] Safety of attendants []
Lighting [] Discharge of goods or materials []
Others (Specify).....

8. What is the layout of the store?

- Free flow layout [] Circulation loop layout []
Circulation spine layout [] On- shelf merchandising []

9. Why are they arranged that way?.....
.....
.....
.....

10. How do you store the goods?

- On pallets [] Shelves [] Bins [] Racks []

Refrigerators [] Others (Specify).....

11. Which metrics do you use internally in your operations?

1-Strongly disagree 2- Disagree 3- Agree 4- Strongly agree

Statement	1	2	3	4
a. Delivery lead time				
b. Speed of response				
c. Reliability of customers' demand				
d. Number of customers served				
e. Errors and mistakes are eliminated				
f. Electronic data interchange (EDI) and bar coding are used to improve speed and accuracy of information transfer				
g. Movement of assembled orders onto carrier equipment				
h. Products are placed on pallets, boxes, cartons, shelves and other containers prior to shipment				

12. How important are the following tasks to your work?

1 Not applicable (N/A) 2-not important 3-important 4-very important

Statement	1	2	3	4
a. Transportation				
b. Information transfer				
c. Storing				
d. Purchasing/Procurement				
e. Materials/Goods handling				
f. Stocking/Packaging				
g. Quality control of Goods				
h. Policy advancement				
i. Customer and supplier relations				
j. Health and safety of materials and humans				
k. Interior design				
l. theft and pilfering control				

13. What basic functions do you apply in your operations?

Movement of goods from one point to the other []

Storage of goods/materials []

Information transfer []

Others (Specify)

C. TECHNIQUES OF STOCK RECORDING, CONTROL AND TAKING

14. What are some of the stock control techniques used by the management of the stores? Re-order lead time []

Economic order quantity (EOQ) []

Batch control []

First in, first out (FIFO) []

Last in, first out (LIFO) []

15. What Health and safety measures do you use to control stock?

Use of Masks [] Use of Gloves [] Use of Goggles []

Practice stock rotation [] Others (Specify).....

16. Why do you have to keep inventories?

Maintain a source of supply []

Support the Just – In- Time programs of suppliers and customers []

Achieve transportation economies []

Support the RMS's customer service policies []

Others (Specify).....

17. How do the following statements apply to, control of stocks in the Regional Medical Stores?

1-Not applicable (N/A)

2-Moderately apply

3-Apply 4 -Strongly apply

Statement	1	2	3	4
a. Goods are checked systematically for quality				
b. Bad ones amongst the batch are weeded out				
c. Temperature chart is used to monitor and maintain cold storage				
d. Stock tracking is used to control stock				
e. Quality control has been a vital aspect of stock control				
f. Efficient stock control incorporate batch tracking				
g. Working locks and pest-free secured ceiling windows and good air vents are attached to the stores				

D. SKILLS ON HOW, WHERE AND WHEN TO ORDER AND STORE GOODS

18. How do you order your goods?.....

19. Where do you order your goods from?

a. local manufacturers [] b. Africa [] c. Developed countries []

20. How do you store the goods?

a. On pallets [] b. Shelves [] c. Bins [] d. Racks []

e. Refrigerators [] f. Others (Specify).....

21. Which of the following do you consider when storing goods and materials?

a. Temperature [] b. Weight []

c. Capacity/space [] d. Expiry dates [] e. Others

(specify).....

22. When do you have to order goods and materials?

.....

.....

23. Who is/are your major supplier(s)?.....

.....

.....

E. PROCUREMENT OF DRUGS AND SUPPLIES

24. Which of the following procurement types do you consider?

- a. Direct, production-related [] b. Non-direct, production-related []

25. How do you procure drugs and materials? Through;

- a. Central Medical Stores [] b. National Competitive bidding []
- c. Local private sector [] d. Others (specify).....

26. Why do you have to employ national competitive bidding (if any)?

- a. Need for economy and efficiency [] b. Opportunity for competition []
- c. Transparency [] d. To have value for money []
- e. Others (Specify)

27. Which of the following procurement steps do you use?

- a. Information gathering [] b. Supplier contact []
- c. Background review of product(s) and materials []
- d. Negotiation [] e. Fulfillment []
- f. Renewal [] g. Consumption, maintenance and disposal []

28. Which of the following statements do you use in procuring items form your suppliers?

1-Not applicable (N/A) 2-Not important 3 – Important 4 – Very important

Statement	1	2	3	4
a. We use the procurement law procedures				
b. We share capacity (vehicles, storage items)				
c. We communicate on different levels				
d. We co-ordinate our cargo movements				
e. We pool our purchasing power				
f. We use the same suppliers				
g. We have joint planning				
h. We look for quality standards				
i. We stick to prompt deliveries				

29. What other information can you give which is not captured but very useful in the research study?.....

.....

THANK YOU.

APPENDIX B

INTERVIEW SCHEDULE

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF BUSINESS

INTRODUCTION

The following questions are aimed at collecting data that will keep the researcher to assess the effectiveness of stores design and operations of Ashanti Regional Medical Stores in Kumasi.

This is purely for academic purposes. All information provided by you will be treated as private and confidential.

INSTRUCTION

You are kindly requested to provide brief answers to the following questions.

1. How do people perceive the image of the store?
2. What are some of the elements that make up the store environment?
3. What is the lighting of the stores?
4. What is the total sales of drugs and non drugs in a month?
5. How can you assess your job schedule at the Ashanti Regional Medical Store?

APPENDIX C

MONTHLY SALES OF DRUGS BETWEEN JANUARY AND JUNE 2009

MONTHS	AMOUNT IN GH¢
Jan	427,167.36
Feb	631,747.45
Mar	434,072.67
April	538,113.31
May	393,955.21
June	<u>313,641.93</u>
	<u>2,728,697.93</u>

