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Expenditure on medicines in Nyeri county between 2014 and 2017: a retrospective analysis using the ABC and VEN classifications of medicines

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EXPENDITURE ON MEDICINES IN NYERI COUNTY BETWEEN 2014 AND 2017: A RETROSPECTIVE ANALYSIS USING THE ABC AND VEN CLASSIFICATIONS OF MEDICINES.

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DECLARATION

I declare that this MBA Healthcare Management project has not been previously submitted and approved for the award of the degree by this or any other university and does not contain material previously published or written by any person except where due reference is made in the proposal itself.

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This research is submitted with my approval as the supervisor:

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ABSTRACT

This research aimed at evaluating the category of medicines that consumed most of the allocated budget in Nyeri Couty and assessing whether Nyeri County procured the right medicines, at the right cost, in the right quantities. The archival method was used to collect medicines procurement data from the following 5 hospitals: Nyeri County Referral Hospital, Karatina Sub-County Hospital, Mukurwe-ini Sub-County Hospital, Othaya Sub-County Hospital and Mt. Kenya Sub-County Hospital. Medicines shortfall analysis, cost analysis, the ABC method, the VEN method, and ABC-VEN matrix analysis were the study tools used to analyze the data.

The findings revealed that all the five hospitals reported insufficient budgetary allocation for medicines, with Nyeri County Referral Hospital having the highest budgetary shortfall of (58.60%) while Mt.Kenya Sub-District Hospital had the lowest shortfall of (9.44%). To curb these shortages, the researcher proposes that the government should promote economic growth. The ABC-VEN matrix analysis of the five hospitals revealed that about 10% of the items consumed about 70% of the annual drug expenditure (ADE) of the hospitals. These items are vital, hence had to be procured. To prevent locking up of capital due to these items, the researcher proposes that low buffer stock needs to be maintained while keeping a strict vigil on the consumption level and the stock in hand.

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LIST OF ABBREVIATIONS

ABC	An analysis technique for determining and comparing medicine cost within a formulary of essential medicines list according to 3 categories: A, B, and C.
ADE	Annual Drugs Expenditure
EOQ	Economic Order Quantity
KEMSA	Kenya Medical Supplies Authority
LMIS	Logistics Management Information System
MEDs	Mission for Essential Drugs Supplies
TCA	Total Cost Analysis
THE	Total Health Expenditure
TPE	Total Pharmaceutical Expenditure
VEN	Vital Essential and Non-essential
MOH	Ministry of Health
W.H.O	World Health Organization

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CHAPTER ONE: INTRODUCTION

1.1 BACKGROUND TO THE STUDY

Equitable access to essential medicines and medical technologies is identified as one of the six pillars that strengthen any health system. Essential medicines are those that meet the health needs of the majority of the population ("Essential medicines", 2017).

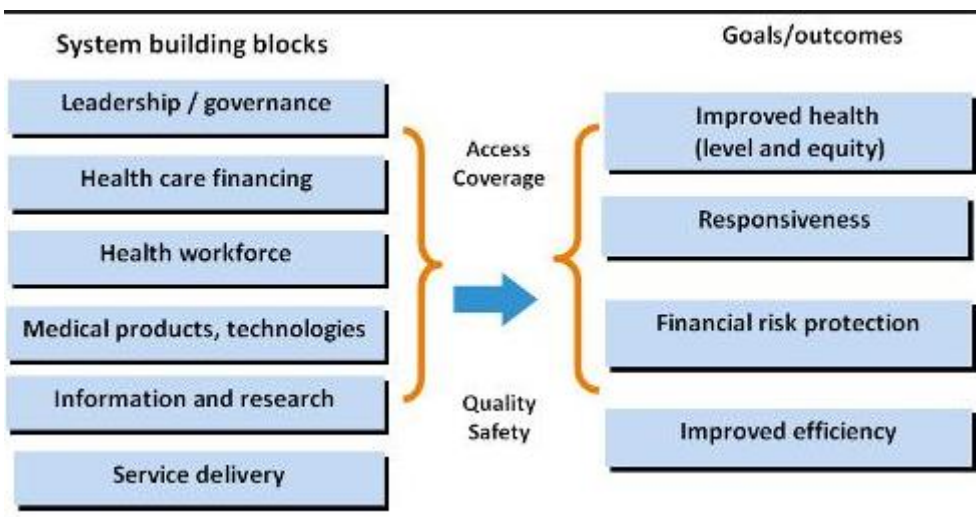
Essential medicines can save lives and improve health, are affordable and their availability at health facilities promotes trust and participation in health services and reduce suffering (Management Science for Health, 2012). They should, therefore, be available at all times in the right quantities, in the right condition, delivered to the right place, at the right time for the right cost. High-cost medicines can negatively affect access to healthcare.

Medicines represent one of the largest and fastest growing costs for healthcare systems worldwide.

According to data from 161 World Health Organization (WHO) the Member States from 1995 to 2006, per capita spending on pharmaceuticals has increased by approximately 50%, and these increments were more pronounced in middle-income countries, where pharmaceutical expenditure in 2006 was 1.76 times greater than in 1995 (World Health Organization, 2015) .

According to WHO (2015), the medicine expenditure incurred by Kenyan hospitals between 2006 and 2017 has quadrupled (from KSH 30 billion to KSH 120 billion). This, however, has not been matched by the improved quality of services, implying that the rest of the health system building blocks (Figure 1) are probably underfunded. There is, therefore, a need to re-examine the expenditure on medicines with a view to avoiding wastage so that adequate resources are available to support the other health system blocks. By adequately strengthening the six health system blocks then the quality health services can be assured.

Figure 1: WHO health systems building blocks

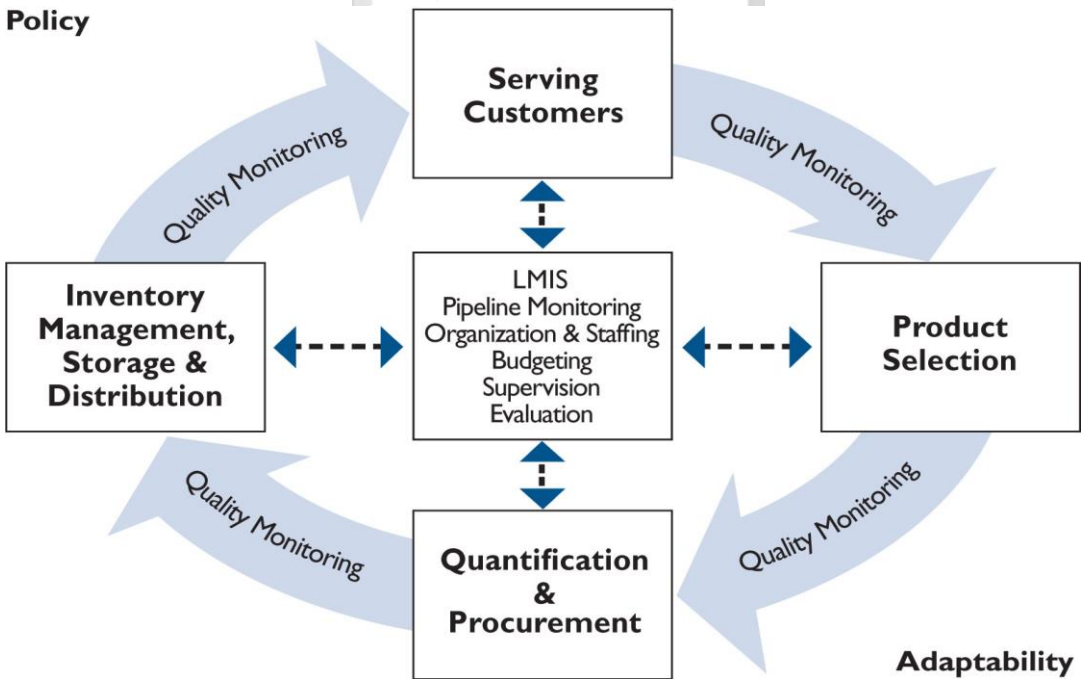


Retrieved from http://www.wpro.who.int/health_services/health_systems_framework/en/

However, with regard to the supply of medicines, simply focusing on health expenditure alone is not enough. Ensuring access to quality medicines at affordable prices, with adequate financing, requires strengthening the pharmaceutical commodity supply logistics to meet patients' expectation. This includes appropriate selection of reliable suppliers of assured-quality products and the procurement of safer and more cost-effective medicines in the right quantities at the lowest possible total cost to the system optimal and timely delivery (Luz, Osorio-De-Castro, *et al*, 2017).

At the core of an efficient pharmaceutical commodity supply logistics management systems are a) a Logistics Management Information System (LMIS), b) an efficient pipeline monitoring system, c) efficient organization and adequate staffing, d) an efficient budget management system, e) an efficient supervision and evaluation system (Figure 2). This study focused on drug expenditure, a key component of the budgeting element of the logistics system described in figure 2.

Figure 2: Logistics Cycle Diagram.



[Source: USAID DELIVER PROJECT, 2011]

The 2010 Kenyan constitution identifies health as a right. Therefore, all citizens have a right to access essential medicines. The constitution also recognizes health as a fully devolved function. However, one of the challenges facing the devolved healthcare systems in Kenya is the fact that the role of financing healthcare expenditure has been left to county governments which often do not have enough funds to meet the expenditure. Moreover, the available funds are not always used in a rational way, especially in the procurement of essential medicines. This is an issue that the study aimed to address with reference to Nyeri County.

Nyeri County is one of the 47 counties created under the new Kenyan constitution. The Nyeri county government operates several hospitals and health centers in Nyeri that provide healthcare to its residents. The main healthcare facilities that consume most of the health budget include the Nyeri County Referral Hospital, Karatina Sub-county Hospital, Mukurwe-ini Sub-county Hospital, Othaya Sub-county Hospital and Mt. Kenya Sub-county Hospital (Figures 3-7).

Every year the county government directly allocates fixed amounts of funds to every pharmacy department of each hospital. This is the first step that contributes to the inefficiency in the pharmaceutical commodity supply logistics system since the allocation of funds is not informed by any evidence about the efficient use of those funds or the level of consumption of medicines procured in the previous years. With this fixed allocation of funds, the pharmacy departments in the various facilities are then tasked with ensuring that the funds are used efficiently so that medicines are available at all times. However, even with the fixed budget for medicines, some of the essential drugs are often not in stock due both to inadequate funding and lack of a system for prioritization of what should be addressed. The prioritization was an issue is that this research did seek to address.

Analysis of drug expenditure for a given financial year can help identify areas where wastage can be avoided. The information can be used to make decisions and formulate policies to inform future.

There are three types of costs associated with medicines in a health care system: direct, indirect and intangible. When calculated together they give the correct assessment of actual medicine cost. Since there are challenges in quantifying indirect and intangible costs, only the direct costs are considered in this study.

The total variable cost of operating a pharmaceutical supply chain system is the sum of the drug purchase cost, inventory holding cost, ordering cost and shortage cost (Uthayakumar & Priyan, 2013)variable costs may be either stable or incremental. Variable cost is a stable cost (sometimes called a fixed cost) if the cost remains the same no matter how many transactions or how much inventory is involved. If the variable cost increases directly with the number of purchases or volume of inventory, then it is an incremental cost. This is significant in decision making because the incremental cost can be controlled by reducing the number of transactions or the quantities of supplies while stable cost cannot.

Pharmaceutical acquisitions costs are the net cost of all drug purchases (Management Sciences for Health, 2007). They are mostly incremental. They increase directly with the number of purchases or volume of inventory. They can, therefore, be controlled by reducing the number of transactions or quantities of supplies.

Inventory holding costs are the costs of storing unsold pharmaceutical commodities, (Management Sciences for Health, 2007). They include financial opportunity costs, losses from inventory,

operating costs for storage and stock management and transport costs to operate units. The bulkier the inventory the higher the inventory holding costs.

Purchasing costs are also called reordering costs. They are costs involving managing tenders, placing purchase orders and receiving goods. Purchasing costs have several components which include salaries and benefits for those staff involved in managing tenders, ordering drugs and receiving them (Management Sciences for Health, 2007). They are both incremental and stable, therefore can be increased by increasing the purchasing activity for example by increasing the frequency of purchases.

According to Management Sciences for Health (2007), there are four types of shortage costs which include excess cost of emergency purchases, loss of revenue when clients purchase outside the system, increased morbidity and mortality due to stock-outs and loss of goodwill due to the erosion of confidence in the system. Excess cost of emergency purchases and loss of revenue when clients purchase outside the system are the only one that can be valued for a public drug supply system.

Supply chain costs vary either directly or indirectly. Increasing the total purchasing costs as a result of buying in large volumes increases the inventory and hence the inventory holding costs, in contrast, shortages are avoided and hence a reduction in shortage costs. By making frequent purchases there will be a reduction in inventory holding costs and an increase in purchasing costs. A tool should be used to find out the ideal order quantity for any item. Economic order quantity (EOQ) is a concept that strikes an optimum balance between inventory holding costs and incremental ordering costs.

1.2 PROBLEM STATEMENT

The financial resources allocated for purchasing and managing pharmaceutical commodity supply chain logistics in Nyeri County have been and still are fixed at levels that are inadequate to cover the needs of the majority of the population. This inadequacy and inefficient use of resources lead to drug stock-outs which may have grave consequences for the patients.

As a result of drug stock-outs, patients in Nyeri County often seek more expensive services from private facilities, go without the medication they need or take incomplete doses leading to drug resistance. Stock-outs have also led to many patients losing confidence in the public health system. This is having a negative effect on access and quality of healthcare.

The analysis of past annual expenditures on medicines has identified inefficiencies in the pharmaceutical supply system hence there is need to explore the expenditure control interventions to reduce wastage.

1.3. RESEARCH OBJECTIVES

1.3.1 BROAD OBJECTIVE

To assess the extent to which patients in Nyeri County received the right medicines, at the right cost, in the right quantities, in 2014, 2015 and 2016.

1.3.2. SPECIFIC OBJECTIVES

i. To identify, through a retrospective analysis of drug expenditures for 2014, 2015 and 2016, the main items that consumed most of the budget for medicines in Nyeri County.
ii. To assess if these drug items were necessary (i.e., whether they were vital or essential).
iii. To assess whether the drug items were procured at the right price and the right quantities, and delivered on time.

1.4. RESEARCH QUESTIONS

1. What was the total cost of medicines received by facilities in Nyeri County in 2014, 2015 and 2016?
2. Were these funds enough to meet the medicines needs of the County?
3. Were the right medicines, in the right quantities, procured at the right prices?

1.5. THE SCOPE OF THE STUDY

The study was conducted in Nyeri County and involved five study facilities namely: Nyeri Provincial General Hospital Hospital, Karatina Sub- County Hospital, Othaya Sub-County Hospital, Mt.Kenya Sub-County Hospital and Mukurwe-ini Sub-County Hospital.

1.6. THE SIGNIFICANCE OF THE STUDY

The Nyeri county government is expected to make sure that all hospitals have enough medicines despite ever-increasing demand and limited resources. Hence there is a need for the effective and efficient use of available financial resources. The results of this study will be used to come up with an effective county pharmaceutical management system that will ensure the right medicines are procured for each hospital and that adequate medicines are available to the patients.

The knowledge gained on county pharmaceutical supply system expenditures will also help identify training gaps in the pharmaceutical supply logistics system in Nyeri County so that these can be addressed as part of the broader health systems strengthening the county.

CHAPTER TWO: LITERATURE REVIEW

2.1 THEORIES OF INVENTORY MANAGEMENT

According to Croom and Jones (2010), deterministic inventory model is one of the fundamental techniques used by firms to develop inventory reserve estimates. Deterministic models of inventory control are used to determine the optimal inventory of a single item when demand is mostly largely obscure. Under this model inventory, inventory is built up at a constant rate to meet a determined or accepted demand. Dai and Kauffman (2001) argue that a deterministic circumstance is one in which the system parameters can be ascertained precisely. This is also known as a situation of sureness since it is realized that whatever is ascertained, things are sure to occur the same way.

Beamon et al (2006) argue that stochastic one-item models can be used for inventory control. Croom and Jones (2010) indicate that such models are used when demand is not known. Stochastic models are more realistic and thus more relevant. This is because they regard the cost of shortfalls, the cost of arranging and the cost of stacking away, and attempt to formulate an optimal inventory plan. According to the Aberdeen Group (2004), the classical economic order quantity (EOQ) model seeks to find the balance between ordering cost and carrying cost with a view of obtaining the most economical quantity to procure by the distributor. Kotleba (2006) contend that the economic order-quantity model considers the tradeoff between ordering cost and storage cost in choosing the quantity to use in replenishing inventories items. A larger order quantity reduces ordering frequency, and, hence ordering cost per month this helps in mitigating costs but requires holding a larger average inventory, which increases storage (holding) cost per month. The relevance of this theory is that a smaller order-quantity reduces average inventory but requires more frequent ordering and higher ordering cost per month. This is most applicable to small firms that deal with perishable goods and services seeking to mitigate inventory management costs. Dai et al. (2001) explain that the cost of minimizing order-quantity is called the Economic Order Quantity (EOQ).

Beamon et al (2006) posit that one of the advantages often explored to cushion the burden of net inventory cost and to enjoy substantial savings is the benefit from procuring large enough quantity that reduces the unit price of the item. This results in a reduction of aggregate costs which enhances supply chain performance.

According to Palevich (2012), Radio frequency identification systems are used to minimize the level of inventory. This enables the distributor to maintain stock making the retailer secure. This improves delivery of goods and services to the final consumer while minimizing holding stock to the firm. A lean system provides the organization with a well-defined system to manage inventory effectively and efficiently. Fawcett et al. (2008) noted that firms that use lean inventory management systems

benefit from improved productivity that allows employees to spend more time on value-adding activities.

Lysons (2006) posits that marginal analysis is a technique used to control the optimal levels of perishable goods whose value declines with time. Marginal analysis is used by firms to allocate their scarce resources to maximize their output. For instance, organizations ensure that perishable goods are sold within their expiry period to prevent loss (Eckert, 2012). The periodic demand for the items is uncertain. Too many supplies result in wastage while too little leads to shortages. While the proposed study is not focused on modeling inventory management in Nyeri County, the finding from the proposed study will help identify weaknesses in the current inventory management system and suggest ways to address these weaknesses.

2.2 GLOBAL MEDICINES EXPENDITURES SITUATION

The escalating costs of medicines have become an issue of great concern globally. Today's pharmaceutical commodity supply chain system is more sophisticated, and it is expected to be more complex, yet more effective due to advances in information technology. According to Lu, Hernandez, Abegunde, & Edejer, (2011) the high inflation coupled with increased demands for essential drugs have been implicated in the increased cost of human medicines. The major healthcare challenge nowadays is prioritization of essential drug supplies. For example, an ABC analysis-based study at the Muhimbili University Hospital in Tanzania revealed that 15% of the drugs (category A) consumed 70 % of the annual drug budget, 22% of the drugs (category B) consumed 20% of the budget while the remainder 63% of the drugs (category C) consumed an only 10 % of the annual . These findings are probably comparable to many other situations, including in Nyeri County, pointing to the need for similar analyses to control the cost and ensure the availability of vital and essential drugs in the hospitals (Lu et al., 2011).

Broadly similar results have been reported from studies undertaken in India (Ladusingh & Pandey, 2013). ***The ABC analysis was a primary objective of the proposed study in Nyeri County***. A different study was carried in Greece between 2006 and 2014 to try and explain the increase in drug costs. From the results, it was shown that actual drug expenditure went up by 290 percent despite a 60 percent reduction in the average price of medicines. The rise in cost was mainly due to the switch to more advanced, but more costly, drugs (McWilliams & Schwartz, 2017).

The average per capita expenditure on pharmaceuticals in developed countries was reported to be more than 100 times higher than those of third-world countries (McWilliams & Schwartz, 2017). This is close to USD 400 compared with USD 4. Besides, WHO also approximates that 20 percent of

the global population use more than 90 percent of the world's production of medicines and these are individuals living in developed nations (WHO, 2014). This WHO report also indicated that lack of reliability in medicines supply chains was one of the primary reasons why several third world countries are not able to guarantee a regular and sustainable inventory of vital medicines. Inefficiencies at any point in the drugs supply chain can lead to shortages of stock and uncalled for suffering and mortality. Furthermore, institutions using, inept procurement structures have been reported to pay up to twice the international market price for essential medicines and results in unnecessary waste of resources (Lu et al., 2011).

Several studies have been undertaken to increased efficiency in pharmaceutical commodity supply chain management based on the ABC and VEN analysis in addition to other measures. A study done in Canada used the ABC-EOQ tool to increase the effectiveness of inventory control of a hospital in Saskatchewan (Melis et al, 2015). Based on past year usage of the items, the inventory was classified into A, B and C categories. The economic order quantity (EOQ) was then calculated for items in class A, while B and C items were purchased on a min/max basis. Besides, a weekly ordering schedule for class A items was developed based on the frequency of ordering. The results revealed that the efficiency of the inventory control increased dramatically (by 50%) after project implementation. Even though cost savings were found, they were insignificant compared to previous system (less than $5,000). Out-of-stock situations for B and C items occurred almost as frequently as before project implementation. This study proved that the EOQ concept in conjunction with ABC inventory analysis using a computer was an effective inventory control system in hospital pharmacy. Increased efficiency and cost savings were achieved (Melis et al., 2015).

Protection against unpredictable demand and avoidance of out-of-stock situations can be achieved by closer adherence to stated ordering procedures for B and C items (Mousnad et al, 2016). An assessment of pharmacy and inventory control in Ministry of Health hospitals in Jordan revealed that medicines quantification requirements were not estimated according to actual hospital needs and standard procedures (Mausnad et al, 2016). Estimation of medication needs was processed centrally without direct involvement or active contribution of the hospital pharmacists. These are the key stakeholders that must be involved in the selection and quantification of medicines. It was also observed in the Jordanian study that no hospital had a policy for keeping an emergency stock of essential medicines at the time of the survey (Mousnad et al., 2016).

In Thailand, a study was conducted in hospitals to explore the processes of drug inventory control systems, as well as develop and evaluate the performance indicators of the drug inventory control system (Chiemchaisri et al, 2007). A list of drug inventory indicators from literature review was

assessed by 20 hospital pharmacists and 9 experts according to the 3 criteria of the good indicators. The second part was a survey of drug inventory process and performance by mailing questionnaires to 720 samples of both public and private hospitals in Thailand. The researchers used descriptive statistics to explain the process and performance of drug inventory control. This study provided a thorough understanding of drug inventory processes and their impact on medicine inventory performance. The study results were to serve as a guideline for hospital pharmacists in both the public and private sectors and help them maximize the efficiency of drug inventory systems.

Economic analysis is another method that has been used to improve management of medical stores, hence expenditure on medicines. This was shown by a study done in a Tertiary Care Hospital in Central India. The main objectives of this study were to consider an (ABC-VEN) analysis with economic order quantity (EOQ), comparison of indexed cost and the actual cost, and to assess the expenditure for the forthcoming years (Khurana et al, 2013). Based on cost and criticality, a matrix of nine groups was formulated by combining ABC and VEN analysis. Drug categories were narrowed down for prioritization to direct supervisory monitoring. According to this method, the subgroups AE and AV of categories I and II should be ordered based on EOQ. The difference between the actual annual drug expenditure (ADE) and the derived indexed cost using the cost inflation index (CII) was then calculated. Linear regression was used to assess the expenditure for the forthcoming years. The total ADE for the financial year of 2010–2011 was Rs. 19,144,253 which was only 7.68% of annual hospital expenditure. Using the inflation index, the indexed cost of acquisition of ADE for the year 2010–2011 was Rs. 19,510,387. The difference between the two was estimated to be 2.11%. Thus, the CII justified the demand for an increased budget for next year and prompted stakeholders for cautious use of medicines. By taking into consideration the ADE of last 10 years, the budget for forthcoming years was forecasted. This is a helpful concept significantly for making policies according to the available budget (Mahatme et.al, 2012).

From the findings of Mahatme et.al (2012), the researchers found out that: a) ABC-VEN analysis identified medicines requiring stringent control for the optimal use of resources; b) Due to inflation, total expenditure for the medicine was found to increase each year, t supporting the higher budgetary requirement for the forthcoming years; c) Forecasting of budget was found to be helpful for better management of medical store, and d) ABC-VEN along with EOQ and integrated economic analysis optimizes the costs of Medicare services besides making materials available to the patients which can increase the quality of healthcare services (Mahatme et al., 2012).

Apart from the various methods of analysis described above, computerization improves pharmaceutical purchasing and inventory control systems and hence controls overall expenditure.

For example, a study by Kumar et al (2014) showed that computerization made the system of purchase and inventory control effective and cost-efficient.

Poor quality medicines can also escalate expenditure on medicines. Thus, pharmaceutical purchasing and inventory control also require a quality assurance program so as to ensure that quality medicines are purchased at the lowest price, and are available when needed. To meet these objectives, product quality, vendor performance, the department's system of internal controls, purchasing data, and storage conditions should be monitored. A checklist for evaluating purchasing and inventory practices and a sample audit form listing quality assurance criteria, standards, procedures, and recommended actions should be provided (Wandalkar, Pandit, & Zite, 2013). A quality assurance program for pharmaceutical purchasing and inventory control should define institution-specific criteria and standards and use these standards for continual evaluation of all aspects of the purchasing and inventory control system. Documentation of quality assurance activities should be provided for use by the purchasing department, hospital administration, and regulatory bodies (Kumar & Chakravarty, 2015)**.**

The distribution of medicines can also be a major consumer of the budget for medicines. For better medication distribution and pharmacy services management, numerous models can be used. This was observed in 2013 through a joint pharmacy management program undertaken by the University Of Rhode Island College Of Pharmacy and the Rhode Island Department of Corrections (RIDOC). The program was designed to better integrate medical care, improve medication utilization, and reduce pharmaceuticals costs. As a result of this program, RIDOC pharmaceutical expenditures grew at a rate of approximately 1.5% per inmate per Year from 2006 to 2014, considerably below the annual pharmaceutical inflation rate. The analyses of projected and actual medicine spending indicated that RIDOC benefited from savings of almost $5 million during this period. Another important aspect of this program was a provision of educational opportunities for doctor of pharmacy students in this practice setting concerning cost containment and inventory management (Marcoux, et al 2012)**.**

2.3 BACKGROUND OF HEALTH SYSTEM IN NYERI COUNTY

Nyeri County has one level- 5 hospitals, four levels- 4, three missions and three private Hospitals. It also has one nursing home, 30 levels- 3, 84 levels- 2, 33 levels- 1, one hospice and 228 private clinics spread across the county. The doctor/population ratio is about 1:7610 and a nurse/population ratio of 1:834 depicting shortage of medical personnel to serve the people. The county through the Public Health and Sanitation sub-sector funded by APHIA II and GOK have been able to train 365 Community Health Workers to help the households in maintaining good health status and sanitation.

The morbidity rate for the county is 28.8 percent with that of a male being 27.03 percent and 30.5 percent for female. In the county, the maternal mortality rate stands at 318 per 100,000, while the child mortality rate stands at 10 out of 1000.

The most common diseases, in the county, in order of prevalence are Upper Respiratory Trachea Infection, with a prevalence rate of 54.4 percent, skin diseases 15.4 percent, Rheumatic and joint pains 13.1 percent, hypertension 11 percent and diarrhea 6.2 percent. HIV and AIDS prevalence in the county is 2.1 percent, affecting mostly the youth between 15-34 years with the highest percentage being among females. HIV and AIDS prevalence is high in urban areas. There is a general increase in non-communicable diseases such as cancer, diabetes, kidney failure among others.

2.4 THE COST OF MEDICINE IN AND INVENTORY MANAGEMENT IN NYERI COUNTY

In general, the sources of funding for the health sector in Nyeri County are mainly the Nyeri County Government (NCG) and other development partners, where expenditure for medicines and medical supplies accounts for more than a third of the total health budget in the county. In 2015 to 2016, the NCG 34 percent and development partners, including the Global Fund, contributed 15 percent (NYERI COUNTY GOVERNMENT 2016). Even though Nyeri County has made significant progress in recent years and medicines for all the vertical programs are available, consistent availability of other medicines and supplies in the County health facilities remains a challenge. The government has irregularly and insufficiently funded Medicines Supplies Department which affects its ability to procure sufficient volumes on a timely basis. For instance, the government funding fell from 40 percent in 2015 to 34 percent in 2016 (Nyeri County Government 2017). This has an implication on the procurement of medicines for health facilities as they have to procure most of the items from local suppliers which increase the expenditures since most of the time they are sold at higher prices.

The Health Expenditure in Nyeri County was reported as KES 2,277,960,150 in 2016. The costs covered the provision of health services (preventive and curative), family planning activities, nutrition activities, and emergency aid designated for health but do not include the provision of water and sanitation (NYERI COUNTY GOVERNMENT 2017).

The 2015/2016 NCG budget shows that the government's contribution in health sector especially medicines budget has decreased by 6 percent whereas the development partner’s contribution has increased to by 2 percent (NYERI COUNTY GOVERNMENT 2017). A report by the Ministry of Health in Nyeri County showed that there were more areas in the health facilities management

systems that required improvement. This was in comparison with how the supply chain management was managed at the regional, central and national levels. It was also revealed that there were challenges regarding the quantification processes and staff interviewed did not have a unified system for determining what to order from the Central Store (Oballah et al, 2015). The 2015/16 report of the Controller and Auditor General in Nyeri uncovered a series of shortcomings which point to failings in the procurement and distribution system. The report showed that 50 million Kenya shillings worth of medicines had expired within Medicines Supply Department stores while at the same time facilities were experiencing shortages of key medicines. Medicines Supply Department records indicated that they had 400 million Kenyan shillings worth of stock at hand, a figure that was later revised to 409 million Kenyan shillings, a significant variation from the original figure. This is a challenge to Nyeri County since the region has limited funds to spend on medicines and therefore it calls for cost-conscious expending on medicines and effective inventory management as per objective economy perspectives.

The pharmaceutical commodity supply chain logistics management skills levels of personnel involved in medicines supply as well as inventory management of medicines in public hospitals in Nyeri was assessed by Oballah et al., (2015). The study revealed that there is a need for the supply of medicines to be managed efficiently in order to prevent all types of wastage including overstocking, pilferage and expiry. This wastage may influence the quality of health care provided to patients. Problems of stock outs or overstocking and expiry of medicines in public hospitals were reported. The study also revealed that logistic skill level was poor and inventories were not well managed. Lack of funds and poor logistic skills contributed to stock-outs. The study recommended that personnel dealing with medicines supply should be trained in procurement and inventory management (Oballah et al., 2015).

2.5. RESOURCE ALLOCATION MODELS IN MEDICINES

2.5.1. THE HIPPOCRATIC MODEL

Medicine – and, to reiterate, the present discussion is confined to human healthcare resources as focused in the medical profession – has traditionally presented its nature and purpose as being embodied in the spirit of the Hippocratic oath. In that oath, the physician promises, “Whatever house I may visit, I will come for the benefit of the sick.”(Edelstein 2000). In more modern times, this has been restated in the Declaration of Geneva as the injunction that “the health of [the] patient will be [the physician's] first consideration,” (Veatch 200) and in the International Code of Medical Ethics as the statement that “a physician shall owe his patients complete loyalty and all the resources of his science” (British Medical Association 1984). The same sentiment is also expressed in the clause that

“a physician shall always act in the patient's best interest when providing medical care.”(British Medical Association, 1984). Similar expressions can be found in the codes of ethics of almost every national medical association.

From the Hippocratic perspective, the focus of medical action gravitates around the physician-patient encounter. It establishes a fiduciary relationship between the physician and the patient (Veatch 2000). This means that the physician's duty toward the individual patient overrides all other considerations except insofar as these affect the physician's ability to fulfill her or his patient-related duties. Therefore, the physician must abstain from considerations, such as the social cost of the treatment, the likelihood that the patient will return to a productive life, the effect that ministering to the patient's needs will have on third parties, etc., except as they bear on the welfare of the patient. Above all, it means that when resources are limited and allocation decisions arise, the physician cannot approach the problem by balancing the patient's rights against the interests of other members of society. In fact, because the physician's duty is to advance the good of the patient – to act “for the benefit of the sick” and “in the patient's best’s interest when providing medical care” – the physician cannot even entertain the notion of balancing rights as a legitimate concern.

The point is sufficiently important to deserve restating. If the nature and purpose of medicine are captured by the Hippocratic model, then the fiduciary nature of that model entails that the physician cannot treat allocation issues as genuine issues that involve competition, and cannot approach the scarcity of resources from the perspective of balancing competing rights. Instead, the physician is obligated to determine what is in the best interests of the patient and has a fiduciary duty to acquire the resources that are necessary to meet those interests and to advance the good of the patient. The physician must do so regardless of the impact that such actions might have on other persons who might also have a need, on overall healthcare budgets, or on the ability of society to provide healthcare for its members (Veatch 2000).

In other words, the concept of balancing rights, whether that is at the individual or at the aggregate level, cannot then be part of the physician's conceptual framework. Balancing would never be in the patient's best interests. Moreover, outcome considerations will be relevant only if in this specific case the outcome is negative for this specific patient. Therefore, outcome considerations are germane only insofar as they are therapeutically relevant, i.e., only insofar as they allow the physician to determine what particular treatment is therapeutically the most appropriate. Cost-benefit and cost-effectiveness considerations must be completely abandoned because they violate the fiduciary obligation that this physician has this patient here and now.

Scarcity does not give rise to an allocation problem but to an acquisition problem, i.e., the issue for the physician is not one of how to allocate – of what counts as a fair and equitable distribution – but one of acquisition: of how to acquire the resources that are necessary for the physician to fulfill the fiduciary duty of care that is triggered by the inception of the physician-patient relationship. Each physician must proceed as though her/his patient's right was supreme. The study used the Hippocratic model to assess how hospital staff utilized the pharmacy medicine in Nyeri county.

2.5.2. THE SOCIAL SERVICE MODEL

By contrast, what might be called the social service model approaches medicine from a much broader perspective. It construes medicine as one among several social enterprises of which the overall purpose is to advance the well-being of members of society (Caelleigh 2001). The sole distinguishing feature of medicine, when viewed from this perspective, is that, unlike other social undertakings, its focus is the health status of members of society. This means that on this approach, although medicine must acknowledge the importance of the physician-patient encounter, it cannot consider this encounter to be the Maison d'être of medicine as a profession. Instead, the importance that it attaches to the physician-patient encounter will be derivative of the profession's mandate to advance the welfare of members of society in general. The physician-patient encounter becomes, so to speak, nothing more than the actualization or expression of the profession's social role.

On this approach, therefore, the physician is society's agent and, as such, has delegated authority in matters of healthcare delivery. That is why, in order to be able to exercise this socially derived office, society accords physicians certain privileges. For instance, it is physicians and physicians alone who may prescribe drugs, perform surgeries, or engage in the other health-oriented interventions that society prohibits to all other individuals – all on the assumption that unless physicians have this socially mandated service-provider monopoly, the welfare of society will be worse off. The physician-patient encounter, therefore, becomes merely the way in which the overall role that has been assigned by society to the profession of medicine expresses itself at the hands-on level. It is, so to speak, the operationalization of medicine as a kind of social service (Caelleigh 2001).

When medicine is considered from this social service perspective, allocation issues assume an entirely different nature. Although the physician-patient encounter retains an element of fiduciary duty, that element is limited by the constraints that are imposed by the embedding of medicine as a social service profession. Specifically, both on the micro- and the macro level – that is to say, on the level of individual and one-on-one competition between the patients of one and the same physician and between patients of different physicians, as well as on the level of competition between individual patients and groups of patients – it becomes appropriate to balance competing rights

claims. Moreover, in each case, the allocation issue has to be resolved in terms of an ethics that treats the rights of the individual not as something that belongs to the individual in isolation from her or his social embedding. Instead, it proceeds on the principle that something is a right if and only if it produces (or is likely to produce) the greatest good for the greatest number.

In other words, to use traditional terminology, the social service approach to the nature of medicine mandates a utilitarian interpretation of the notion of a right and a utilitarian approach to human resource allocation. It also means that cost-benefit and cost-effectiveness considerations acquire the legitimacy that they lack on the Hippocratic interpretation, and outcome measures that center in the aggregate good and that focus on the social impact of a given intervention become determining. The study used the social model to assess if the drug items procured by Nyeri County were necessary and beneficial to the members of the society.

2.5.3. THE BUSINESS MODEL

A third approach to medicine and one that also affects the nature of resource allocation may be called the business model. It construes medicine neither as the sort of fiduciary undertaking that is characterized by the Hippocratic approach nor as a health-oriented profession that operationalizes society's duty to do the best for its members. Instead, it becomes one among many other types of profit-making enterprises that are allowed by society in economic terms. In other words, it portrays physicians as entrepreneurs who have undergone the socially validated regimen of education and training that is necessary before receiving a license to practice – much the way that chartered accountants or airline pilots undergo education and training before being licensed – and who now have a sophisticated socially approved service for sale (Scalise, 2006). With this interpretation, the monopolistic position of medicine derives from the fact that society is eager to ensure that certain standards of service are met – just as in the case of accountants and airline pilots – and professional medical ethics becomes a species of business ethics. With this perspective, also, the patient becomes a service consumer or customer, and the physician-patient relationship is defined in purely contractual terms. Fiduciary considerations become relevant only within the limits set by the contract and therefore are subject to terms that find their basis in contract law, not in the traditional ethics of the profession.

The business model has its unique way of structuring resource allocation. The physician, as the licensed service provider, still retains a gatekeeping function – just as in the social service model. However, the gatekeeping determinants are not ethical in nature and do not involve a balancing of competing rights. Instead, the economics of the marketplace becomes the primary determinants, and

allocation decisions become a purely financial matter. Not to put too fine a point on it: A patient's right to healthcare resources becomes defined in terms of the patient's financial capacity.

In other words, with this approach, resource allocation does not arise as an ethical issue as soon as resources are limited and supply is exceeded by demand. Instead, it arises only within the context of financial arrangements, which is to say that the problem of healthcare resource allocation arises only when the healthcare consumer has entered into a contractual relationship with the physician and the physician is faced with limited resources. Outside of that contractual relationship, health resource allocation is simply not an issue because medicine is a business, and there is no objective and independent right to healthcare resources any more than there is a right to the services of a chartered accountant or of an airline pilot independently of the contractual arrangements that trigger the corresponding service obligations. However, once the contractual relationship has been confirmed and thereby a physician-patient relationship has been established, resource allocation does become a problem if demand exceeds supply – because access to the relevant resources then becomes a necessary condition in order for the physician to be able to fulfill that contract.

Moreover, when that situation occurs, resource allocation has to be settled not on the basis of competing for ethical rights but on the basis of contract law. Need and similar considerations become irrelevant except in so far as they figure as elements in the contract itself. In other words, a patient's need will trigger a rights claim only if the patient has a contract that stipulates such a right because such a right will exist only within the contractual domain (Kluge 2007). Trivially, this means that the resource claims of those who have contracts will always trump the claims of those who do not have contracts because only the former has a right. With this interpretation, therefore, the operant question for healthcare resource allocation becomes whether the consumer can afford (and has contracted for) the relevant services. Also, outcome measures, in general, and cost-benefit and cost-effectiveness considerations, in particular, become irrelevant as far as determining access and allocation are concerned. They enter the picture only insofar as they relate to the physician's market competitiveness and the consumer's ability to pay. Fiduciary obligations become contract-driven, and neither individual nor aggregate rights play any role in these calculations. The study used this model to assess whether the drug items were procured at the right price, the right quantities and delivered on time.

2.5.4 RESEARCH GAP

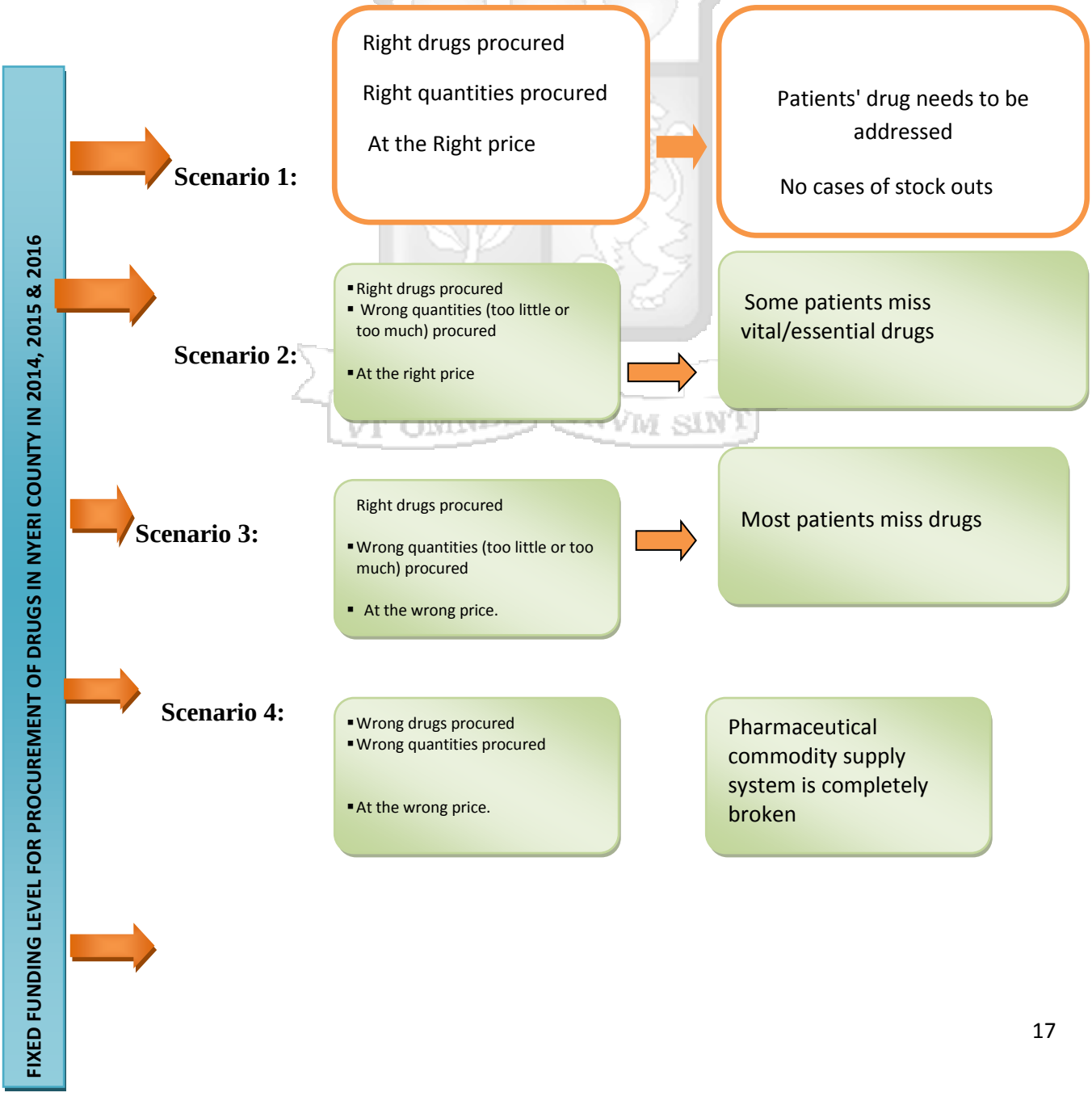
The analysis of past annual expenditures on medicines has identified inefficiencies in the pharmaceutical supply system hence there is need to explore the expenditure control interventions to reduce these inefficiencies in Nyeri County.

2.5.5 CONCEPTUAL FRAMEWORK

Figure 8 below represents the conceptual framework to be used in this study. The independent variable is the **fixed funding allocated each year for procurement of medicines.** The dependent variables are in two categories: a) procurement variable, and b) the outcomes (patient experience-related) variables. This framework will allow the following research questions (RQs) to be addressed:

- What was the total cost of medicines received by facilities in Nyeri County in 2014, 2015 and 2016? (RQ1)
- Were these funds enough to meet the medicines needs of the County? (RQ2)
- Were the right medicines, in the right quantities, procured at the right prices? (RQ3)

Figure 3: Conceptual framework for evaluating drug expenditures in Nyeri County



Scenario 1 is the ideal situation. System improvement interventions are gea geared towards achieving this Scenario.

Scenarios 2-4 are common. This study will focus on finding out which one of these prevails in Nyeri County

CHAPTER THREE: RESEARCH METHODOLOGY

3.1. RESEARCH LOCATION AND DESIGN

3.1.1: STUDY AREA: Nyeri County

3.1.2: STUDY FACILITIES: a) Nyeri Provincial General Hospital), Hospital, b) Karatina Sub-County Hospital, c) Othaya Sub-County Hospital, d), Mt.Kenya Sub-County Hospital e) Mukurwe-ini Sub-County Hospital

3.1.3: RESEARCH DESIGN:

This was a retrospective semi-quantitative study design where Total variable cost analysis was used to analyze operation costs of a hospital supply chain system. This analysis compiled the sum of the drug purchase cost, inventory holding costs, ordering costs, and shortage costs. According to Management Science for Health (2012) data is compiled and then reviewed to look for options to reduce the total cost and to perform what-if analysis-examining what happens to inventory holding cost if ordering costs are reduced and so forth.

The ABC analysis is a method of classifying items or activities according to their relative importance. It is based on Pareto principle which states that only a few factors are responsible for producing most of the results (positive or negative). Thus, the goal of any quality improvement effort such as control of drug expenditures is to focus on controlling the few items that result in the main effect. The analysis classifies the items into three categories: the first 10-15% of the items (category A) account for approximately 70% of cumulative value (cost), the next 20-25% are category B items that account for a further 20% of the cumulative value and the remaining 65-70% are category C items, accounting for a mere 10% of the total value (Devnani & Gupta, 2017).

This method was used to measure the degree to which actual consumption reflects public health needs and morbidity. It reduces inventory levels and costs by arranging for more frequent purchase or delivery of smaller quantities of category A items, seeks major cost reductions by finding lower prices for category A items where savings will be more noticeable and assign import and inventory control staff, to ensure that large orders of category A items are handled expeditiously. ABC analysis has application in the selection, procurement, distribution and use of drugs. Review of category A drugs may uncover high usage items for which lower cost alternatives are available in the marketplace.it also helps managers identify purchases made for items that are not on the formulary or essential drugs list or not approved for use in the supply system (Devnani & Gupta, 2017). Category C items can be targeted for periodic obsolesce review while category B items can

be monitored for evolution towards category A or category C items. The ABC analysis will be used in this study.

VEN analysis is based on critical values and shortage cost of the item. Based on their criticality, the items could be classified into three categories: Vital, Essential and Non-essential (VEN). There could be serious functional dislocation of patient care services in a hospital when vital drugs are not available even for a short period. If essential items are not available beyond a few days or a week, the functioning of the hospital can be adversely affected. The shortage of desirable items would not adversely affect patient care or hospital functioning even if the shortage is prolonged (Devnani & Gupta, 2017).

Sometimes there are insufficient funds to buy all the desired medicines. VEN analysis is a well-known method to help set up priorities for purchasing medicines and keeping stock. VEN analysis allows medicines of differing efficacy and usefulness to be compared. In Kenya, there are guidelines for classifying medicines according to the VEN classification method.VEN assigns each drug on the formulary or essential drugs list to one of the following three categories (Drug and Therapeutics Committee Guidelines, 2017).

- **Vital drugs (V)**: potentially life-saving or crucial to providing basic health services.
- **Essential drugs (E)**: effective against less severe but significant forms of the disease, but not absolutely vital to providing basic health care
- **Non-essential drugs (N)**: used for minor or self-limited illnesses; these may or may not be formulary items and efficacious, but they are the least important items stocked.

VEN is used to measure efficiency in the use of funds for purchasing medicines. Priority should be given to vital medicines in selection and use of funds. If a high percentage of funds are used for non-essential medicines it indicates inefficiency in the use of financial resources. Vital medicines should be monitored closely during procurement. Safety stocks for vital medicines should be higher while those for non-essential medicines should be kept low to minimize inventory holding costs. Stock levels of vital medicines should be monitored regularly by the procurement staff. The VEN analysis will be used in this study.

Since with ABC analysis, only the cost is considered in the management of inventory, coupling it with VEN analysis gives priority to both cost reduction and availability of vital medicines. Thus, this study will use both the ABC and VEN methods of analysis.

3.2. DATA COLLECTION AND ANALYSIS

The archival method was used to collect quantitative data. The documents that were examined to obtain data were administrative documents used in the pharmaceutical commodity supply chain process. Shortfall analysis, cost analysis based on the ABC method (category A medicines consuming 80% , category B consuming 15 % and category C consuming 5% of the allocated budget, respectively), the VEN method (classifying medicines as either Vital, Essential or Non-essential) and ABC-VEN matrix analysis were the study tools used. Microsoft Excel spreadsheet was used to perform the quantitative analysis. The methodology involved the utilization of frequency tables, percentiles, total percentages, and ratios to obtain the descriptive statistics through data analysis.

3.2.1 APPROACH TO ADDRESS RESEARCH QUESTION 1 &2 (RQ1 &2): USE OF SHORT-FALL ANALYSIS.

The researcher obtained the total medicine cost that was requested by each of the five hospitals for the years 2014, 2015 and 2016. The data on total medicine cost that was received for the three years for each of the five hospitals were also obtained from Nyeri County. The shortages were calculated using the following:

Shortages= Total amount requested- Total amount received

3.2.2. APPROACH TO ADDRESS RESEARCH QUESTION 3 (RQ3) A): USE OF ABC ANALYSIS

It is well established in drug procurement systems that while a few drug items consume the majority of the funds, many other dug items consume a small fraction of the drug budget. From this observation, drugs are divided into the following categories:

Category A: - Constitute 10-20% of the drug items but consume 70-80% of the drug budget. If major savings on drug expenditure are to be recommended, then focus should be on this category.

Category B: - These are items of intermediate usage and consume about 10-15 % of the drug Budget

Category C: - These form the bulk (60-80%) of the drug items but account for less than 5% of the total budget.

This classification is also known as the 80/20 rule (80% of the funds go to 20% of the items), the ABC Value Analysis or the Pareto Analysis.

The essential medicine list was evaluated from the records in the medical store of the hospital. The medicine list was then sorted descending with respect to the ones with the highest ADE to the ones with the least. The grand total cost value was then evaluated as a cumulative total taken to be 100% of the total hospital's pharmacy's ADE. The data obtained was then used to capture the cumulative cost of the items, and categorize them according to ABC categories.

3.2.3. APPROACH TO ADDRESS RESEARCH QUESTION 3 (RQ3) B): USE OF VEN ANALYSIS

For this analysis, Essential hospital medicine list was used for the research. The VEN condition of individual drugs was initially dictated by the hospital's medicine and therapeutic committee. The store records were used to calculate the ADE of each drug, after which the drugs were grouped respectively according to their VEN state. Eventually, the cumulative ADE of each group was evaluated and portrayed in tables.

3.2.4. APPROACH TO ADDRESS RESEARCH QUESTION 3 (RQ3) C): USE OF THE ABC-VEN MATRIX ANALYSIS

Nine categories were tabulated as a result of cross-referencing and tabulation. These categories were further regrouped into three. These categories had vital drugs grouped under A, category B included drugs that were not classified under A, whereas category C included the supplies that were either costly, very important or both and as such needed a more critical managerial control. The other category included cheap and less vital drugs that are not included in the other two categories (A and B).

3.3. INTERNAL AND EXTERNAL VALIDITY

Data triangulation was used to perform auditing to assess internal validity. Through cross-referencing multiple data sources, quantitative data was obtained and verified from different other documents that contained similar information. External relevance/validity was conducted on a real-time basis at the Nyeri County Level 5 referral hospital pharmacy department. Research outline was done to point out trends, results, and conclusions.

3.4. ETHICAL CONSIDERATIONS

Clearance to conduct the study was sought from the Strathmore university research ethical review board and permission was granted.

The researcher observed four universal ethical principles, including *respect for participants, beneficence, non-maleficence, and justice* (Rivera et al., 2011). In this regard, all participants gave

their consent after the consultants explained the purpose of the study, what was expected of them during the study and the fact that their participation should be voluntary. The Assessment participants were also informed about their right to withdraw consent of participation at any time without a penalty. In addition, the participants were assured that all information they would provide would be kept confidential.

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.1 INTRODUCTION

In this chapter, a budget shortfall analysis, ABC analysis, VEN analysis and ABC-VEN matrix analysis for Nyeri county referral Hospital, Karatina Sub- County Hospital, Othaya Sub-County Hospital, Mt.Kenya Sub-County Hospital and Mukurwe-ini Sub-County Hospital were performed and the findings discussed.

The annual drug expenditure (ADE) was calculated for the financial year by adding the expenditure incurred on each item. Then, ABC analysis of all the drugs in the inventory was done. For this, the annual expenditure of individual items was arranged in descending order. The cumulative cost of all the items was then calculated. The cumulative percentage of expenditure and the cumulative percentage of a number of items were calculated. This list was then subdivided into three categories: A, B, and C, based on the cumulative cost percentage of 70, 20 and 10%, respectively.

The classification of drugs into VEN was carried out keeping in mind the role and functions of a primary health center. The items critically needed for the survival, are part of national programmers and those that must be available all the times as their no availability can seriously affect the image of the health center were included in the V category. The items with a lower criticality need and those, whose shortage can be tolerated for a short period at the health center, were included in the E group. The remaining items with the lowest criticality, the shortage of which would not be detrimental to the health of the patients, were included in the N group.

4.2 BUDGET SHORTFALL ANALYSIS

NYERI PROVINCIAL GENERAL HOSPITAL(PGH)			
Year	Amount ordered	Amount received	Shortages
2014	35,748,463	19,495,113	16,253,350
2015	30,793,777	9,722,374	21,071,403
2016	28,714,302	18,177,649	10,536,653
Total	95,256,542	47,395,136	47,861,406

Table 1: Shortfall analysis Nyeri County Referral Hospital

The total amount of funds received for drugs to Nyeri County Referral Hospital for the three years was Ksh. 47,395,136. However, the amount requested was Ksh. 95,256,542. There was a shortfall of Ksh. 47,861,406.

KARATINA SUB COUNTY HOSPITAL			
Year	Amount ordered	Amount received	Shortages
2014	12,636,200	11,891,742	744,458
2015	12,800,768	8,397,177	4,403,591

2016	20,600,360	15,748,741	4,851,619
	46,037,328	36,037,660	9,999,668

Table 2: Shortfall analysis Karatina Sub-County Hospital

The total amount of funds received for drugs to Karatina Sub-County Hospital for the three years was Ksh. 36,037,660. However, the requested ordered was Ksh. 46,037,328. The budget shortage was Ksh. 9,999,668.

OTHAYA SUB-COUNTY HOSPITAL			
Year	Amount ordered	Amount received	Shortages
2014	6,758,600	4,514,463	2,244,137
2015	6,987,800	2,680,466	4,307,334
2016	8,326,380	7,629,692	696,688
	22,072,780	14,824,621	7,248,159

Table 3: Shortfall analysis Othaya Sub-County Hospital

The total amount of funds received for drugs to Othaya Sub-County Hospital for the three years was Ksh. 14,824,621. However, the amount requested was Ksh. 22,072,780. There was a shortage of Ksh. 7,248,159.

MT. KENYA SUB- COUNTY HOSPITAL			
Year	Amount ordered	Amount received	Shortages
2014	4,766,288	2,390,228	2,376,060
2015	4,926,200	2,243,892	2,682,308
2016	4,824,312	2,174,157	2,650,155
	14,516,800	6,808,277	7,708,523

Table 4: Shortfall analysis: Mt. Kenya Sub-District Hospital

The total amount of funds received for drugs to Mt. Kenya Sub-County Hospital for the three years was Ksh. 6,808,277. However, the amount requested was Ksh. 14,516,800. There was a shortage of Ksh. 7,708,523.

MUKURWEINI SUB-COUNTY HOSPITAL			
Year	Amount ordered	Amount received	Shortages
2014	13,666,200	11,891,742	1,774,458
2015	13,255,200	9,722,234	3,532,966
2016	13,266,300	9,722,374	3,543,926
	40,187,700	31,336,350	8,851,350

Table 5: Shortfall analysis Mukurwe-ini Sub-County Hospital

The total amount of funds received to Mukurwe-ini Sub-county Hospital for the three years was Ksh. 31,336,350. However, the amount requested was Ksh. 40,187,700. There was a shortage of Ksh. 8,851,350.

All the five hospitals reported insufficient budgetary allocation for medicines, with Nyeri County Referral Hospital having the highest budgetary shortfall (58.60%) while Mt.Kenya Sub-county Hospital had the lowest shortfall of (9.44%]). This suggested that the allocated budget did not meet the medicines needs of the County. Management Science for Health, (2012) lists four potential shortage costs as the excess cost of emergency purchases, loss of revenue when a client purchases outside the system, increased morbidity and mortality due to stock-outs and erosion of confidence in the system due to stock-outs. It is only the excess costs of emergency purchases and loss of revenue due to clients buying outside the system that can be realistically quantified for a pharmaceutical supply chain system. Of these two only excess costs of emergency, purchases could be calculated. Loss of revenue due to client buying outside the system could not be calculated because all the essential medicines are either given for free or on cost-sharing basis.

4.3 NYERI COUNTY REFERRAL HOSPITAL

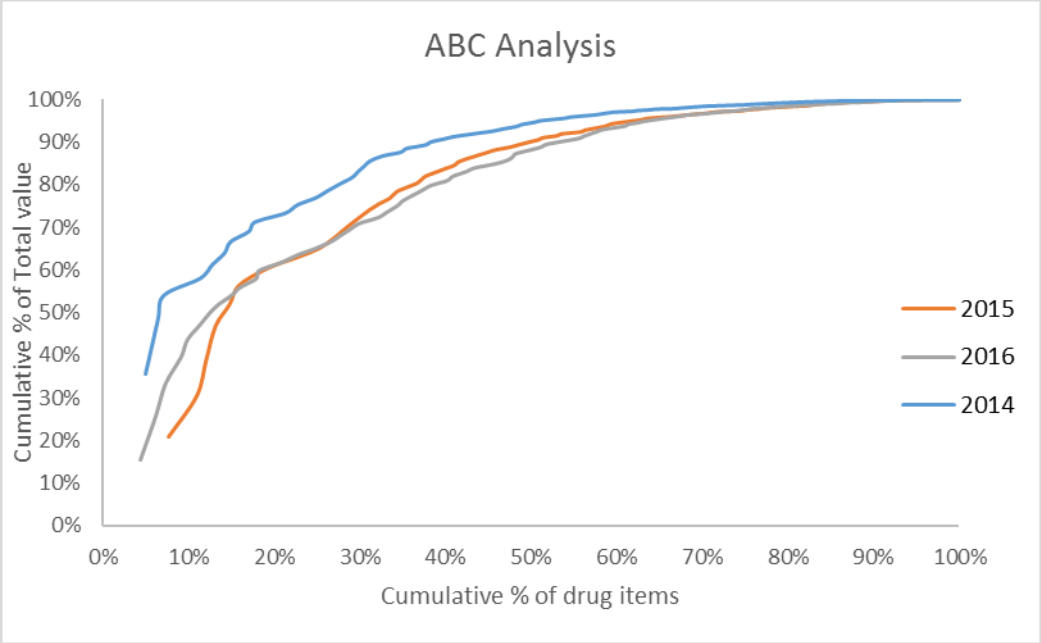
4.3.1 ABC ANALYSIS

For the year 2014, a total of 141 drug items were purchased by Nyeri County Referral Hospital amounting to a total expenditure of Ksh 19,495,113. On ABC analysis, 17.73% (*n*=25), 21.08% (*n*=29) and 61.7% (*n*=85) drugs were found to be A, B and C category items, respectively, amounting for 71.26% (Ksh. 13,892,218), 18.84% (Ksh. 3,672,879) and 9.9% (Ksh. 1,930,016) of ADE of the drug store.

For the year 2015, a total of 422 drug items were purchased by Nyeri County Referral Hospital amounting to a total expenditure of Ksh 36,187,229. In ABC analysis, 19.13% (*n*=6), 31.69% (*n*=27) and 50.27% (*n*=57) drugs were found to be A, B and C category items, respectively, amounting for 60.32% (Ksh. 5,864,536), 29.72% (Ksh. 2,889,490) and 9.96% (Ksh. 968,348) of ADE of the hospital drugstore as depicted in the figure 9 below and in the table in appendix 2.

For the year 2016, a total of 596 drug items were purchased by Nyeri County Referral Hospital amounting to a total expenditure of Ksh 63,338,608. From the ABC analysis, 18.25% (*n*=11), 35.3% (*n*=27) and 46.35% (*n*=63) drugs were found to be A, B and C category items, respectively, amounting for 59.94% (Ksh. 10,895,683), 30.96% (Ksh. 5,518,734) and 9.70% (Ksh. 1,763,232) of ADE of the drug store as depicted in the figure 9 below and in Appendix 3. If ABC analysis is considered alone for drug inventory, it would help effectively control the recommended 11 (18.25%) items in the A category, with 59.94% of ADE of the hospital drug store, but it would compromise on the availability of items of vital nature from B and C categories.

Figure 4: ABC analysis Nyeri County Referral Hospital



4.3.2 VEN ANALYSIS

On VEN analysis for the year 2014, 7.09% (*n*=3), 43.26% (*n*=28) and 49.65% (*n*=56) drugs were found to be V, E and N category items, respectively, amounting for 54.06% (Ksh. 10,539,294), 40.64% (Ksh. 7,922,769) and 5.79 % (Ksh. 1,128,950) of ADE of the drug store as summarized in table 6 and appendix 1.

On VEN analysis for the year 2015, 10.93% (*n*=2), 30.05% (*n*=31) and 60.11% (*n*=58) drugs were found to be V, E and N category items, respectively, amounting for 30.35% (Ksh. 2,950,444), 54.24% (Ksh. 5,273,689) and 15.41% (Ksh. 1,498,242) of ADE of the hospital as shown in the Appendix 2.

On VEN analysis for the year 2016, 9.12% (*n*=5), 39.78% (*n*=30) and 50.36% (*n*=67) drugs were found to be V, E and N category items, respectively, amounting for 43.67% (Ksh. 7,939,039), 40.94% (Ksh. 7,441,854) and 11.9% (Ksh. 2,163,156) of ADE of the drug store as shown appendix 3. If VEN analysis alone is considered, ideal control can be exercised on the identified vital and/or essential items, accounting for 81.61% of ADE of the hospital. However, category A also contains desirable items which cannot be ignored completely.

Year	Category	% Item	% ADE	No of items	Total Value (KSH)
2014	V	7.09%	54.06%	3	10539294
	E	43.26%	40.64%	28	7922769
	N	49.65%	5.79%	56	1128950
2015	V	30.35%	10.93%	2	2950444
	E	54.24%	30.05%	31	5273689

	N	15.41%	60.11%	58	1498242
2016	V	9.12%	43.67%	5	7939039
	E	39.78%	40.94%	30	7441854
	N	50.36%	11.90%	67	2163156

Table 6: VEN analysis Nyeri County Referral Hospital

4.3.3 ABC-VEN MATRIX ANALYSIS

From ABC-VEN matrix analysis for the year 2014 in table 7 and table 8 below, there were 9 (17.73%) items in category I consisting of AV and AE subgroups, 22(33.33%) items in category II consisting of BE and CE subgroups and 56 (49.65%) items in category III consisting of CN subgroup, amounting for 71.26% (Ksh 13,893,090), 23.44% (Ksh. 4,568,973) and 5.3% (Ksh. 1,033,050) of ADE of the drugs respectively.

On ABC-VEN matrix analysis for the year 2015, there were 7(19.19%) items in category I which consist AV and AE subgroups, 26(30.6%) items in category II which consist BE subgroup and 58 (50.27%) items in category III consisting of CN, amounting to 60.31% (Ksh 5,864,536), 29.72% (Ksh. 2,889,179) and 9.42% (Ksh. 915,530) of ADE of the drugs respectively.

From ABC-VEN matrix analysis for the year 2016, there were 12 (18.25%) items in category I which consist AV and AE subgroups, 27(37.23%) items in category II which consist BE subgroup and 44.53% (63) items in category III which consist CN subgroup, amounting for 59.94% (Ksh 10,895,186), 30.96% (Ksh. 5,6277,525) and 9.1% (Ksh. 1.654,938) of ADE of the drugs, respectively.

		A		B		C	
Year		Combined category	No of items	Combined category	No of items	Combined category	No of items
2014	V	AV	3	BV	0	CV	0
	E	AE	6	BE	15	CE	7
	N	AN	0	BN	0	CN	56
2015	V	AV	2	BV	0	CV	0
	E	AE	5	BE	26	CE	0
	N	AN	0	BN	0	CN	58
2016	V	AV	5	BV	0	CV	0
	E	AE	7	BE	23	CE	0
	N	AN	0	BN	4	CN	63

Table 7: ABC-VEN matrix

Year	Category	% Item	% ADE	No of items	Total Value (KSH)
2014	I	17.73%	71.26%	9	13893090

	II	33.33%	23.44%	22	4568973
	II	49.65%	5.30%	56	1033050
2015	I	19.13%	60.32%	7	5864536
	II	30.60%	29.72%	26	2889179
	III	50.27%	9.42%	58	915530
2016	I	18.25%	59.94%	12	10895186
	II	37.23%	30.96%	27	5627525
	III	44.53%	9.10%	63	1654938

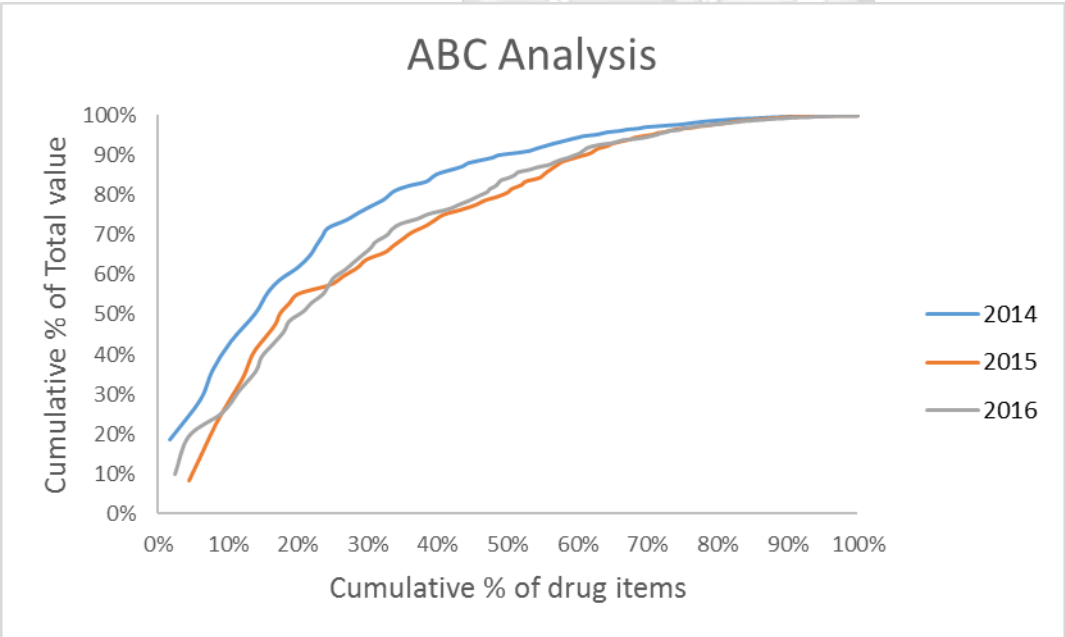
Table 8: ABC-VEN matrix analysis

In a combination of ABC and VEN analysis, the resultant matrix makes it possible to focus on 12(18.25%) items belonging to category I for strict managerial control as these items are either expensive or vital. The annual expenditure of these items was 59.94% of ADE of the pharmacy. Category II items (27, 37.23%) consumes 30.96% of the ADE. These items can be ordered once or twice a year, thereby saving on ordering cost and reducing management work at a moderate carrying cost and without blocking substantial capital. Category III items (63, 44.53%) consume 9.1% of the ADE. These items can also be ordered once or twice a year, thereby saving on ordering cost at a moderate carrying cost and without blocking substantial capital.

4.4 KARATINA SUB-COUNTY HOSPITAL

4.4.1 ABC ANALYSIS

Figure 5:ABC analysis Karatina Sub-County Hospital



For the year 2014, a total of 115 drug items were purchased by Karatina Sub-County Hospital amounting to a total expenditure of Ksh 11,891,742. On ABC analysis, 20% (*n*=7), 28.7% (*n*=20) and 51.3% (*n*=48) drugs were found to be A, B and C category items, respectively, amounting for

61.88% (Ksh. 7,358,610), 28.19% (Ksh. 3,352,282) and 9.3% (Ksh. 1,105,932) of ADE of the drug store as shown in figure 10 above and Appendix 4.

For the year 2015, a total of 154 drug items were purchased by Karatina Sub-County Hospital amounting to a total expenditure of Ksh 8,397,177. In ABC analysis, 18.83% (*n*=9), 42.86% (*n*=29) and 38.39% (*n*=46) drugs were found to be A, B and C category items, respectively, amounting for 52.78% (Ksh. 4,432,030), 37.66% (Ksh. 3,162,377) and 9.56% (Ksh. 802,770) of ADE of the drug store as depicted in figure 10 above.

For the year 2016, a total of 251 drug items were purchased by Karatina Sub-County Hospital amounting to a total expenditure of Ksh 15,748,741. In the ABC analysis, 20.72% (*n*=9), 39.44% (*n*=34) and 39.84% (*n*=58) drugs were found to be A, B and C category items, respectively, amounting for 50.88% (Ksh. 8,012,960), 39.59% (Ksh. 6,234,927) and 9.53% (Ksh. 1,500,855) of ADE of the drug store as depicted in figure 10 above and in Appendix 10. If ABC analysis is considered alone for drug inventory, it would help effectively control the recommended 6 (20.72%) items in the A category, with 50.88% of ADE of the hospital drug store, but it would compromise on the availability of items of vital nature from B and C categories.

4.4.2 VEN ANALYSIS

On VEN analysis for the year 2014, 9.43% (*n*=2), 31.14% (*n*=12) and 59.43% (*n*=42) drugs were found to be V, E and N category items, respectively, amounting for 23.93% (Ksh. 1,307,384), 47.49% (Ksh. 2,594,554) and 28.58% (Ksh. 156,143) of ADE of the drug store as shown in table 9 below.

On VEN analysis for the year 2015, 10.39% (*n*=4), 39.61% (*n*=23) and 50% (*n*=58) drugs were found to be V, E and N category items, respectively, amounting for 28.74% (Ksh. 2,413,085), 51.94% (Ksh. 4,361,701) and 19.32% (Ksh. 1,622,390) of ADE of the hospital as shown in table 9 and Appendix 5.

On VEN analysis for the year 2016, 11.55% (*n*=4), 38.65% (*n*=30) and 49.8% (*n*=68) drugs were found to be V, E and N category items, respectively, amounting for 31% (Ksh 4,882,777), 53.46% (Ksh. 8,419,897) and 15.53% (Ksh. 2,446,067) of ADE of the drug store as shown in table 9 below. If VEN analysis alone is considered, ideal control can be exercised on the identified vital and/or essential items, accounting for 84.46% of ADE of the hospital. However, category A also contains desirable items which cannot be ignored completely.

Year	Category	% Item	% ADE	No of items	Total Value (KSH)
2014	V	10.43%	43.30%	4	5149442
	E	40.87%	47.34%	25	5629790
	N	48.70%	9.36%	47	1112510
2015	V	10.39%	28.74%	4	2413085
	E	39.61%	51.94%	23	4361701
	N	50.00%	19.32%	58	1622390
2016	V	11.55%	31.00%	4	4882777
	E	38.65%	53.46%	30	8419897
	N	49.80%	15.53%	68	2446067

Table 9: VEN analysis Karatina Sub-County Hospital

4.4.3 ABC-VEN MATRIX ANALYSIS

From ABC-VEN matrix analysis for the year 2014 in table 10 and table 11 below, there were 6 (15.65%) items in category I consisting of AV and AE subgroups, 23(35.65%) items in category II consisting of BE and CE subgroups and 47 (48.7%) items in category III consisting of CN subgroup, amounting for 55.43% (Ksh 6,591,610), 35.21% (Ksh. 4,187,623) and 9.36% (Ksh. 1,112,510) of ADE of the drugs respectively.

From ABC-VEN matrix analysis for the year 2015 in table 10 and table 11 below, there were 11 (20.13%) items in category I consisting of AV and AE subgroups, 28(41.56%) items in category II consisting of BE and BN subgroups and 46 (37.66%) items in category III consisting of CN subgroup, amounting for 55.2% (Ksh 4,635,110), 35.25% (Ksh. 2,959,665 and 9.56% (Ksh. 802,403) of ADE of the drugs respectively.

From ABC-VEN matrix analysis for the year 2016, there were 21 (33.47%) items in category I which consist AV and AE subgroups, 23(26.69%) items in category II which consist BE and BN subgroups and 39.84% (58) items in category III which consist CN subgroup, amounting for 71.6% (Ksh 11,275,627), 18.87% (Ksh. 2,971,737) and 9.53% (Ksh. 1,501,378) of ADE of the drugs, respectively.

		A		B		C	
Year		Combined category	No of items	Combined category	No of items	Combined category	No of items
2014	V	AV	4	BV	0	CV	0
	E	AE	2	BE	22	CE	1
	N	AN	0	BN	0	CN	47
2015	V	AV	4	BV	0	CV	0

	E	AE	7	BE	16	CE	0
	N	AN	0	BN	12	CN	46
2016	V	AV	4	BV	0	CV	0
	E	AE	17	BE	13	CE	0
	N	AN	0	BN	10	CN	58

Table 10: ABC-VEN matrix Karatina Sub County Hospital

Year	Category	% Item	% ADE	No of items	Total Value (KSH)
2014	I	15.65%	55.43%	6	6591610
	II	35.65%	35.21%	23	4187623
	III	48.70%	9.36%	47	1112510
2015	I	20.13%	55.20%	11	4635110
	II	41.56%	35.25%	28	2959665
	III	37.66%	9.56%	46	802403
2016	I	33.47%	71.60%	21	11275627
	II	26.69%	18.87%	23	2971737
	III	39.84%	9.53%	58	1501378

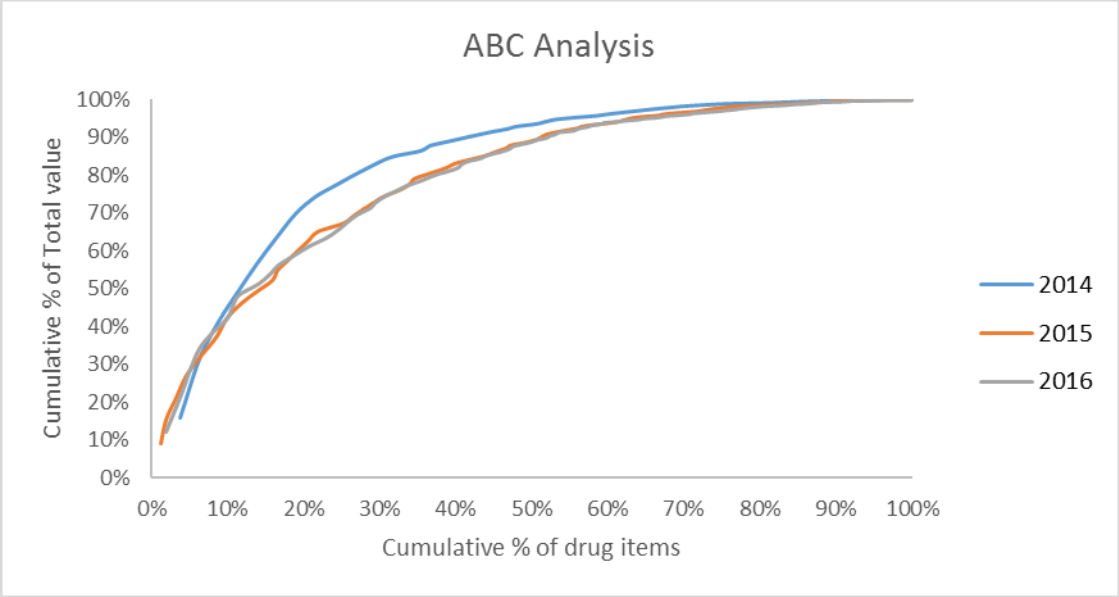
Table 11: ABC-VEN matrix analysis Karatina Sub-County Hospital

In a combination of ABC and VEN analysis, the resultant matrix makes it possible to focus on 21(33.47%) items belonging to category I for strict managerial control as these items are either expensive or vital. The annual expenditure of these items was 71.6% of ADE of the pharmacy. Category II items (23, 26.69%) consumes 18.87% of the ADE. These items can be ordered once or twice a year, thereby saving on ordering cost and reducing management work at a moderate carrying cost and without blocking substantial capital. Category III items (58, 39.84%) consume 9.53% of the ADE. These items can also be ordered once or twice a year, thereby saving on ordering cost at a moderate carrying cost and without blocking substantial capital.

4.5 OTHAYA SUB-COUNTY HOSPITAL

4.5.1 ABC ANALYSIS

Figure 6: ABC analysis Othaya Sub-County Hospital



For the year 2014, a total of 79 drug items were purchased by Othaya Sub-County Hospital amounting to a total expenditure of Ksh 4,514,463. On ABC analysis, 18.99% (*n*=6), 22.78% (*n*=9) and 58.23% (*n*=37) drugs were found to be A, B and C category items, respectively, amounting for 69.84% (Ksh. 3,152,901), 20.39% (Ksh. 938,557) and 9.77% (Ksh. 441,063) of ADE of the drug store as shown in the figure 11 and appendix 7.

For the year 2015, a total of 150 drug items were purchased by Othaya Sub-County Hospital amounting to a total expenditure of Ksh 2,680,466. In ABC analysis, 19.33% (*n*=12), 32% (*n*=21) and 48.67% (*n*=52) drugs were found to be A, B and C category items, respectively, amounting for 60.1% (Ksh. 1,610,960), 30.08% (Ksh. 806,284) and 9.82% (Ksh. 263,222) of ADE of the drug store as depicted in figure 11.

For the year 2016, a total of 250 drug items were purchased by Othaya Sub-County Hospital amounting to a total expenditure of Ksh 7,629,692. In the ABC analysis, 20.8% (*n*=12), 32.4% (*n*=27) and 43.6% (*n*=60) drugs were found to be A, B and C category items, respectively, amounting for 61.28% (Ksh. 4,675,475), 29.15% (Ksh. 2,224,055) and 9.57% (Ksh. 730,162) of ADE of the drug store as depicted in the figure 11 above and in Appendix 9. If ABC analysis is considered alone for drug inventory, it would help effectively control the recommended 12 (20.8%) items in the A category, with 61.28% of ADE of the hospital drug store, but it would compromise on the availability of items of vital nature from B and C categories.

4.5.2 VEN ANALYSIS

Year	Category	% Item	% ADE	No of items	Total Value (KSH)
2014	V	11.39%	49.16%	4	2219153
	E	39.24%	44.47%	16	2007366

	N	49.37%	6.38%	33	287945
2015	V	10.00%	42.22%	7	1131583
	E	40.67%	47.26%	26	1266892
	N	49.33%	10.52%	53	281991
2016	V	10.80%	45.61%	7	3480083
	E	39.20%	41.51%	31	3166814
	N	50.00%	10.06%	62	767525

Table 12:VEN analysis Othaya Sub-County Hospital

On VEN analysis for the year 2014, 11.39% (*n*=4), 39.24% (*n*=16) and 49.37% (*n*=33) drugs were found to be V, E and N category items, respectively, amounting for 49.16% (Ksh. 2,219,153), 44.47% (Ksh. 2,007,366) and 106.38% (Ksh. 287,945) of ADE of the drug store as shown in table 12.

On VEN analysis for the year 2015, 10% (*n*=7), 40.67% (*n*=26) and 49.33% (*n*=53) drugs were found to be V, E and N category items, respectively, amounting for 42.22% (Ksh. 1,131,583), 47.26% (Ksh. 1,266,892) and 10.52% (Ksh. 281,991) of ADE of the drug store as shown in table 12 and appendix 8.

On VEN analysis for the year 2016, 10.8% (*n*=7), 39.2% (*n*=31) and 50% (*n*=62) drugs were found to be V, E and N category items, respectively, amounting for 45.61% (Ksh. 3,480,083), 41.51% (Ksh. 3,166,815) and 10.06% (Ksh. 767,525) of ADE of the drug store as shown table 12. If VEN analysis alone is considered, ideal control can be exercised on the identified vital and/or essential items, accounting for 87.12% of ADE of the hospital. However, category A also contains desirable items which cannot be ignored completely.

4.5.3 ABC-VEN MATRIX ANALYSIS

From ABC-VEN matrix analysis for the year 2014 in table 13 and table 14 below, there were 7 (18.99%) items in category I consisting of AV and AE subgroups, 13(31.65%) items in category II consisting of BE and CE subgroups and 33 (49.37%) items in category III consisting of CN subgroup, amounting for 69.84% (Ksh 3,152,744), 23.79% (Ksh. 1,073,775) and 6.38% (Ksh. 287,945) of ADE of the drugs respectively.

From ABC-VEN matrix analysis for the year 2015 in table 13 and table 14 below, there were 17 (26.67%) items in category I consisting of AV and AE subgroups, 17(26.67%) items in category II consisting of BE and BN subgroups and 52 (48.67%) items in category III consisting of CN subgroup, amounting for 69.33 (Ksh 1,858,443), 20.84% (Ksh. 558,701) and 9.82% (Ksh. 263,321) of ADE of the drugs respectively.

From ABC-VEN matrix analysis for the year 2016 in table 13 and table 14, there were 12 (18.8%) items in category I which consist AV and AE subgroups, 28(33.6%) items in category II which consist BE and CE subgroups and 47.6% (47) items in category III which consist CN subgroup, amounting for 58.81% (Ksh 4,486,908), 31.32% (Ksh. 2,412,520) and 9.57% (Ksh. 730,265) of ADE of the drugs, respectively.

In a combination of ABC and VEN analysis, the resultant matrix makes it possible to focus on 12(18.8%) items belonging to category I for strict managerial control as these items are either expensive or vital. The annual expenditure of these items was 58.81% of ADE of the pharmacy. Category II items (28, 33.6%) consumes 31.62% of the ADE. These items can be ordered once or twice a year, thereby saving on ordering cost and reducing management work at a moderate carrying cost and without blocking substantial capital. Category III items (47, 47.6%) consume 9.57% of the ADE. These items can also be ordered once or twice a year, thereby saving on ordering cost at a moderate carrying cost and without blocking substantial capital

		A		B		C	
Year		Combined category	No of items	Combined category	No of items	Combined category	No of items
2014	V	AV	4	BV	0	CV	0
	E	AE	3	BE	9	CE	4
	N	AN	0	BN	0	CN	33
2015	V	AV	7	BV	0	CV	0
	E	AE	10	BE	16	CE	0
	N	AN	0	BN	1	CN	52
2016	V	AV	7	BV	0	CV	0
	E	AE	5	BE	26	CE	0
	N	AN	0	BN	2	CN	60

Table 13: ABC-VEN matrix Othaya Sub-County Hospital

Year	Category	% Item	% ADE	No of items	Total Value (KSH)
2014	I	18.99%	69.84%	7	3152744
	II	31.65%	23.79%	13	1073775
	III	49.37%	6.38%	33	287945
2015	I	26.67%	69.33%	17	1858443
	II	26.67%	20.84%	17	558701
	III	48.67%	9.82%	52	263321
2016	I	18.80%	58.81%	12	4486908
	II	33.60%	31.62%	28	2412520
	III	47.60%	9.57%	47	730265

Table 14: ABC-VEN matrix analysis Othaya Sub-County Hospital

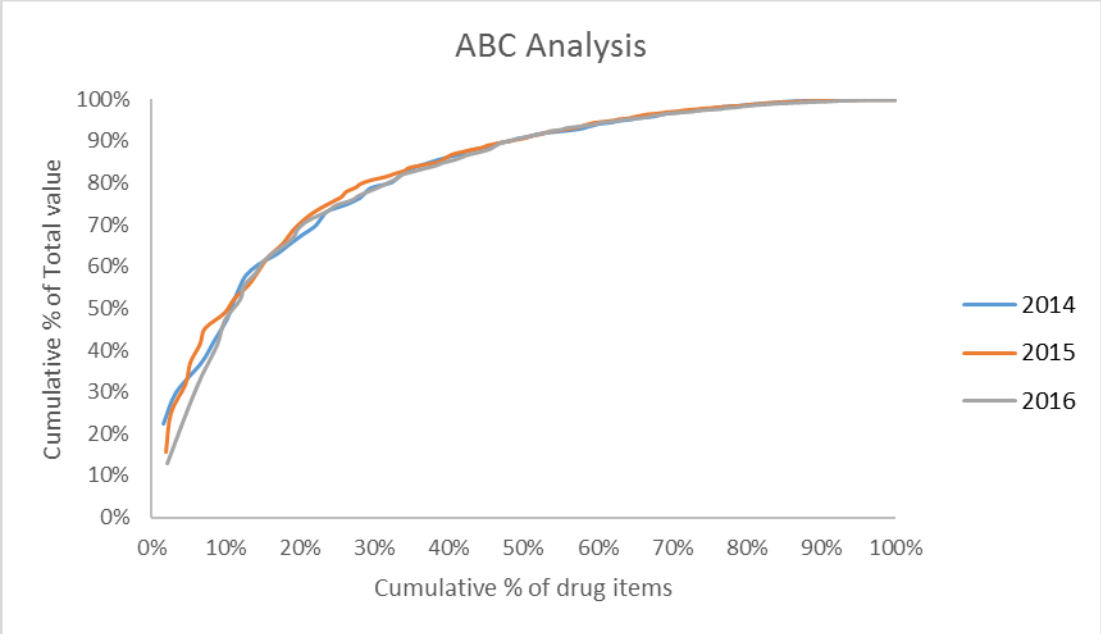
4.6. MT. KENYA SUB-COUNTY HOSPITAL

4.6.1 ABC ANALYSIS

For the year 2014, a total of 118 drug items were purchased by Mt.Kenya Sub-County Hospital amounting to a total expenditure of Ksh 2,390,288. On ABC analysis, 18.64% (*n*=10), 29.67% (*n*=21) and 51.69% (*n*=49) drugs were found to be A, B and C category items, respectively, amounting for 65.41% (Ksh. 1,563,448), 24.73% (Ksh. 591,103) and 9.86% (Ksh. 235,677) of ADE of the drug store as shown in figure 12 above and in Appendix 10.

For the year 2015, a total of 153 drug items were purchased by Mt.Kenya Sub-County Hospital amounting to a total expenditure of Ksh 2,243,892. In ABC analysis, 18.95% (*n*=12), 30.07% (*n*=25) and 50.98% (*n*=59) drugs were found to be A, B and C category items, respectively, amounting for 68.58% (Ksh. 1,538,861), 21.85% (Ksh. 490,290) and 9.77% (Ksh. 219,228) of ADE of the drug store as depicted in figure 12 below and in Appendix 11.

Figure 7:ABC analysis Mt Kenya Sub-County Hospital



For the year 2015, a total of 194 drug items were purchased by Mt.Kenya Sub-County Hospital amounting to a total expenditure of Ksh 2,174,157. In ABC analysis, 19.59% (*n*=12), 28.35% (*n*=24) and 52.06% (*n*=55) drugs were found to be A, B and C category items, respectively, amounting for 68.99% (Ksh. 1,499,951), 21.15% (Ksh. 317,240) and 9.86% (Ksh. 31,280) of ADE of the drug store as depicted in figure 12 above and in Appendix 12. If ABC analysis is considered alone for drug inventory, it would help effectively control the recommended 12 (19.59%) items in the A category, with 68.99% of ADE of the hospital drug store, but it would compromise on the availability of items of vital nature from B and C categories.

4.6.2 VEN ANALYSIS

On VEN analysis for the year 2014, 10.17% (*n*=5), 41.53% (*n*=30) and 48.31% (*n*=46) drugs were found to be V, E and N category items, respectively, amounting for 47.23% (Ksh. 1,128,818), 49.55% (Ksh. 1,184,424) and 8.33% (Ksh. 199,020) of ADE of the drug store as shown in table 15. On VEN analysis for the year 2015, 9.8% (*n*=7), 40.52% (*n*=32) and 49.67% (*n*=58) drugs were found to be V, E and N category items, respectively, amounting for 48.85% (Ksh. 1,096,197), 42.02% (Ksh. 942,914) and 9.13% (Ksh. 204,782) of ADE of the drug store as shown in table 15. On VEN analysis for the year 2016, 9.79% (*n*=5), 40.21% (*n*=34) and 50% (*n*=53) drugs were found to be V, E and N category items, respectively, amounting for 47.21% (Ksh. 1,026,407), 43.79% (Ksh. 952,094) and 9% (Ksh. 195,656) of ADE of the drug store as shown in table 15. If VEN analysis alone is considered, ideal control can be exercised on the identified vital and/or essential items, accounting for 91% of ADE of the hospital. However, category A also contains desirable items which cannot be ignored completely.

Year	Category	% Item	% ADE	No of items	Total Value (KSH)
2014	V	10.17%	47.23%	5	1128818
	E	41.53%	49.55%	30	1184424
	N	48.31%	8.33%	46	199020
2015	V	9.80%	48.85%	7	1096197
	E	40.52%	42.02%	32	942914
	N	49.67%	9.13%	58	204782
2016	V	9.79%	47.21%	5	1026407
	E	40.21%	43.79%	34	952094
	N	50.00%	9.00%	53	195656

Table 15:VEN analysis of Mt.Kenya Sub-County Hospital

4.6.3 ABC-VEN MATRIX ANALYSIS

From ABC-VEN matrix analysis for the year 2014 in table 16 and table 17, there were 13 (22.03%) items in category I which consist AV and AE subgroups, 22(29.66%) items in category II which consist BE and CE subgroups and 48.31% (45) items in category III which consist CN subgroup, amounting for 69.72% (Ksh 1,666,360), 21.96% (Ksh. 524,849) and 8.33% (Ksh. 199,020) of ADE of the drugs, respectively.

From ABC-VEN matrix analysis for the year 2015 in table 16 and table 17, there were 14 (20.26%) items in category I which consist AV and AE subgroups, 25(30.07%) items in category II which consist BE subgroup and 49.67% (58) items in category III which consist CN subgroup, amounting to 70.89% (Ksh 1,590,624), 19.99% (Ksh. 448,486) and 9.13% (Ksh. 204,782) of ADE of the drugs, respectively.

From ABC-VEN matrix analysis for the year 2015 in table 16 and table 17, there were 14 (20.62%) items in category I which consist AV and AE subgroups, 36(29.38%) items in category II which consist BE and CE subgroups and 50% (104) items in category III which consist CN subgroup, amounting for 70.68% (Ksh 1,536,693), 20.32% (Ksh. 441,808) and 9 % (Ksh. 195,656) of ADE of the drugs, respectively.

		A		B		C	
Year		Combined category	No of items	Combined category	No of items	Combined category	No of items
2014	V	AV	5	BV	0	CV	0
	E	AE	8	BE	19	CE	3
	N	AN	0	BN	0	CN	46
2015	V	AV	7	BV	0	CV	0
	E	AE	7	BE	25	CE	0
	N	AN	0	BN	0	CN	58
2016	V	AV	5	BV	0	CV	0
	E	AE	7	BE	33	CE	3
	N	AN	0	BN	0	CN	104

Table 16: ABC-VEN matrix analysis of Mt.Kenya Sub-County Hospital

Year	Category	% Item	% ADE	No of items	Total Value (KSH)
2014	I	22.03%	69.72%	13	1666360
	II	29.66%	21.96%	22	524849
	III	48.31%	8.33%	45	199020
2015	I	20.26%	70.89%	14	1590624
	II	30.07%	19.99%	25	448486
	III	49.67%	9.13%	58	204782
2016	I	20.62%	70.68%	14	1536693
	II	29.38%	20.32%	36	441808
	III	50.00%	9.00%	104	195656

Table 17: ABC-VEN matrix analysis of Mt.Kenya Sub-County Hospital

In a combination of ABC and VEN analysis, the resultant matrix makes it possible to focus on 14(20.62%) items belonging to category I for strict managerial control as these items are either expensive or vital. The annual expenditure of these items was 70.68% of ADE of the pharmacy. Category II items (36, 29.38%) consumes 20.32% of the ADE. These items can be ordered once or twice a year, thereby saving on ordering cost and reducing management work at a moderate carrying cost and without blocking substantial capital. Category III items (104, 50%) consume 9% of the ADE. These items can also be ordered once or twice a year.

4.7 MUKURWE-INI SUB-COUNTY HOSPITAL

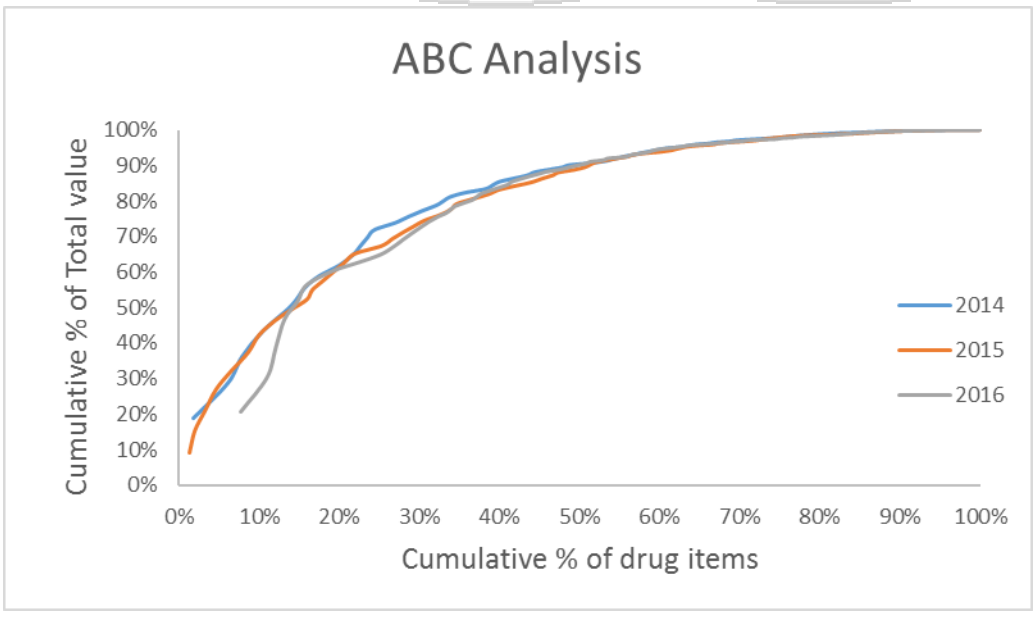
4.7.1 ABC ANALYSIS

For the year 2014, a total of 115 drug items were purchased by Mukurwe-ini Sub-county Hospital amounting to a total expenditure of Ksh 11,891,742. On ABC analysis, 20% (*n*=7), 28.7% (*n*=20) and 51.3% (*n*=48) drugs were found to be A, B and C category items, respectively, amounting for 61.88% (Ksh. 7,358,610), 28.19% (Ksh. 3,352,282) and 9.3% (Ksh. 1,105,932) of ADE of the drug store as shown in figure 13 and appendix 13.

For the year 2015, a total of 153 drug items were purchased by Mukurwe-ini Sub-County Hospital amounting to a total expenditure of Ksh 9,722,234. In ABC analysis, 19.33% (*n*=12), 32% (*n*=21) and 48.67% (*n*=52) drugs were found to be A, B and C category items, respectively, amounting for 60.1% (Ksh. 1,610,960), 30.08% (Ksh. 806,284) and 9.82% (Ksh. 263,222) of ADE of the drug store as depicted in figure 13 below and in Appendix 14.

For the year 2016, a total of 183 drug items were purchased by Mukurwe-ini Sub-County Hospital amounting to a total expenditure of Ksh 9,722,374. From the ABC analysis, 18.25% (*n*=11), 35.3% (*n*=27) and 46.35% (*n*=63) drugs were found to be A, B and C category items, respectively, amounting for 59.94% (Ksh. 10,895,683), 30.96% (Ksh. 5,518,734) and 9.70% (Ksh. 1,763,232) of ADE of the drug store as depicted figure 13 and appendix 15. If ABC analysis is considered alone for drug inventory, it would help effectively control the recommended 11 (18.25%) items in the A category, with 59.94% of ADE of the hospital drug store, but it would compromise on the availability of items of vital nature from B and C categories.

Figure 8: ABC analysis of Mukurwe-ini Sub-county Hospital



4.7.2 VEN ANALYSIS

Year	Category	% Item	% ADE	No of items	Total Value (KSH)
2014	V	10.43%	43.30%	4	5149442
	E	40.87%	47.34%	25	5629790
	N	48.70%	9.36%	47	1112510
2015	V	10.00%	42.22%	7	1131583
	E	40.67%	47.26%	26	1266892
	N	49.33%	10.52%	53	281991
2016	V	10.93%	30.35%	2	2950444
	E	39.89%	60.72%	33	5903506
	N	49.18%	8.93%	56	868425

Table 18: VEN analysis of Mukurwe-ini sub-county Hospital

On VEN analysis for the year 2014, 10.43% (*n*=4), 40.87% (*n*=2) and 48.7% (*n*=47) drugs were found to be V, E and N category items, respectively, amounting for 43.3% (Ksh. 5,149,422), 47.34% (Ksh. 5,626,790) and 5.87 % (Ksh. 1,112,510) of ADE of the drug store as shown in table 18 above. On VEN analysis for the year 2015, 10% (*n*=7), 40.67% (*n*=26) and 49.33% (*n*=53) drugs were found to be V, E and N category items, respectively, amounting for 42.22% (Ksh. 1,131,583), 47.26% (Ksh. 1,266,892) and 49.33% (Ksh. 281,991) of ADE of the drug store as shown in table 18. From VEN analysis for the year 2016, 10.93% (*n*=2), 39.89% (*n*=33) and 49.18% (*n*=56) drugs were found to be V, E and N category items, respectively, amounting for 30.35% (Ksh. 2,950,44), 60.72% (Ksh. 5,903,506) and 8.93% (Ksh. 868,425) of ADE of the drug store as shown in table 18 below. If VEN analysis alone is considered, ideal control can be exercised on the identified vital and/or essential items, accounting for 91.07% of ADE of the hospital. However, category A also contains desirable items which cannot be ignored completely.

4.7.3 ABC-VEN MATRIX ANALYSIS

From ABC-VEN matrix analysis for the year 2014 in table 19 and table 20 below, there were 12 (24.35%) items in category I consisting of AV and AE subgroups, 17(26.96%) items in category II consisting of BE and CE subgroups and 47 (48.7%) items in category III consisting of CN subgroup, amounting for 71.81 (Ksh 8,539,573), 18.83% (Ksh. 2,239,659) and 9.36% (Ksh. 1,112,510) of ADE of the drugs respectively

From ABC-VEN matrix analysis for the year 2015 in table 19 and table 20 below, there were 17 (26.67%) items in category I consisting of AV and AE subgroups, 18(25.33%) items in category II consisting of BE and BN subgroups and 51 (48%) items in category III consisting of CN subgroup, amounting for 69.33 (Ksh 1,858,443), 21.51% (Ksh. 576,701) and 9.15% (Ksh245, 321) of ADE of the drugs respectively.

From ABC-VEN matrix analysis for the year 2016 in table 19 and table 20 below, there were 12 (28.96%) items in category I consisting of AV and AE subgroups, 23(22.40%) items in category II consisting of BE and CE subgroups and 56 (48.63%) items in category III consisting of CN subgroup, amounting for 70.83 (Ksh 6,886,340), 20.24% (Ksh. 1,967,609) and 8.93% (Ksh. 868,425) of ADE of the drugs respectively.

		A		B		C	
Year		Combined category	No of items	Combined category	No of items	Combined category	No of items
2014	V	AV	4	BV	0	CV	0
	E	AE	8	BE	16	CE	1
	N	AN	0	BN	0	CN	47
2015	V	AV	7	BV	0	CV	0
	E	AE	10	BE	16	CE	0
	N	AN	0	BN	2	CN	51
2016	V	AV	2	BV	0	CV	0
	E	AE	10	BE	21	CE	2
	N	AN	0	BN	0	CN	56

Table 19: ABC-VEN matrix of Mukurwe-ini sub-county Hospital

Year	Category	% Item	% ADE	No of items	Total Value (KSH)
2014	I	24.35%	71.81%	12	8539573
	II	26.96%	18.83%	17	2239659
	III	48.70%	9.36%	47	1112510
2015	I	26.67%	69.33%	17	1858443
	II	25.33%	21.51%	18	576701
	III	48.00%	9.15%	51	245321
2016	I	28.96%	70.83%	12	6886340
	II	22.40%	20.24%	23	1967609
	III	48.63%	8.93%	56	868425

Table 20: ABC-VEN matrix analysis of Mukurwe-ini Sub-county Hospital

In a combination of ABC and VEN analysis, the resultant matrix makes it possible to focus on 12 (28.96%) items belonging to category I for strict managerial control as these items are either expensive or vital. The annual expenditure of these items was 70.83% of ADE of the pharmacy. Category II items (23, 22.4%) consumes 20.24% of the ADE. These items can be ordered once or twice a year, thereby saving on ordering cost and reducing management work at a moderate carrying

cost and without blocking substantial capital. Category III items (56, 48.63%) consume 8.93% of the ADE. These items can also be ordered once or twice a year.

CHAPTER FIVE

DISCUSSION CONCLUSIONS, AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter presents a summary of the research project findings, conclusions, and recommendations of the study.

5.2 BUDGET SHORTFALL ANALYSIS

All the five hospitals reported insufficient budgetary allocation for medicines, with Nyeri County Referral Hospital having the highest budgetary shortfall (58.60%) while Mt.Kenya Sub-county Hospital had the lowest shortfall of (9.44%]). This suggested that the allocated budget did not meet the medicines needs of the County. Management Science for Health, (2012) lists four potential shortage costs as the excess cost of emergency purchases, loss of revenue when a client purchases outside the system, increased morbidity and mortality due to stock-outs and erosion of confidence in the system due to stock-outs. It is only the excess costs of emergency purchases and loss of revenue due to clients buying outside the system that can be realistically quantified for a pharmaceutical supply chain system. Of these two only excess costs of emergency, purchases could be calculated. Loss of revenue due to client buying outside the system could not be calculated because all the essential medicines are either given for free or on a cost-sharing basis.

5.3 ABC ANALYSIS

From the ABC analysis of the five hospitals, class A items consisting of about 10% of the items consumed 70% of the ADE while class C consisting of 70% of the items consumed only 10% of the ADE. Class A medicines are the “important few” while class C items are the “trivial many”. Therefore, class A items should be actively managed while class C items should be passively managed if supply chain resources are to be used efficiently. Class B consisting of 18% of the number of items consumed 20% of the ADE; these should be managed by exception.

The analysis of medical expenditure at Muhimbili National Hospital in Tanzania by Tumaini (2013) produced similar results. In the study class, A items consisting 10.5% of the number of items consumed 69.5% ADE. Class B items consisting of 18% of the number of items consumed 20.7% of the ADE and class C items consisting of 71.3% of the items consumed 10% of the ADE. The study recommended that class A items being few and expensive require close day to day control, while class B and C need regular and infrequent reviews respectively. Devnani, Gupta, and Nigar also found similar results. In their ABC analysis classes, A, B, and C consisting of 14%, 22%, and 64% respectively consumed 70%, 20% and 10% of the ADE respectively. Abate (2012) in the analysis of

medicines inventory at Black Lion hospital in Ethiopia got different results. In his study Class, A items were found to only represent 1.3 % of the items but 79% of the budget.

ABC analysis helps us to use supply chain management resources efficiently. In this case, by controlling only 10% of the items one is able to effectively manage 70% of the budget. But one major limitation of ABC analysis is that it only gives importance to cost and demand attributes of the items during grouping. In a hospital setting, there may be low budget essential medicines that are either cheap in price or used rarely but are lifesaving. When using ABC analysis these items may fall in class B or C items hence they will not be effectively managed. Therefore, ABC analysis is not enough for medicines management in a hospital setting and there is a need for additional methods to be considered.

5.4 VEN ANALYSIS

In the VEN analysis study of the five hospitals, about 20% of the items in the essential medicines list were vital accounting for about 40% of the ADE. Essential items were about 40% and Non-essential items were about 40% of the items consuming about 40% and 20% of the ADE respectively. Comparisons with similar studies show high variation in the percentages of vital, essential and Non-essential items. Tumaini (2012) studies at Muhimbili National Hospital showed only 50% of items were Vital, while 62% and 3% were essential and Non-essential respectively. Devnani, Gupta, and Nigar (2010) in their study of a tertiary care teaching, research and referral institute in India showed only 12% of their medicines were Vital, 59% were essential and 29% were Non-essential. This is because the VEN classification is subjective and different institutions have different service profiles. The main purpose of VEN analysis is to make sure critical items are available at all times. The Vital items are an absolute necessity for the proper functioning of the institution. Therefore, they are prioritized in the pharmaceutical supply chain. In this study, if VEN analysis is considered alone it would effectively manage all vital items - 60% of the items accounting for 80% of the budget. This would be better in management in terms of criticality factor as it manages all vital items. But in the cost factor, it would effectively manage 80% of the budget compared to ABC analysis which would effectively manage 70% of the budget. Combinations of the two methods that take into account both criticality and the cost factor would be better.

5.5 ABC-VEN MATRIX ANALYSIS

In a combination with both ABC and VEN analysis, both cost and criticality factor are taken into account. In a combination of ABC and VEN analysis, the resultant matrix makes it possible to actively manage about 20% items belonging to category I because they are either expensive or vital. The annual expenditure of these items was 75% of ADE of the pharmacy.

AV, AE and BV subgroups of category I am expensive and they're being out of stock are unacceptable as they are either vital or essential. To prevent locking up of capital due to these items, low buffer stock needs to be maintained while keeping a strict vigil on the consumption level and the stock in hand. Low buffer stocks can be maintained by increasing frequency of ordering from the current quarterly to bimonthly or monthly but with consideration of the lead times. A two-bin method of ordering needs to be followed for these as this will reduce the risk of stock outs.

CV items are drugs of low cost but high criticality. Because this amount is small, these items can be procured once or twice a year as opposed to current quarterly procurement. This is because they have relatively low holding cost so they will not increase the inventory holding costs total.

Items of category I am both expensive and Non-essential. The item in AN subgroup should be considered for removal from the essential medicines list to save costs. If it is not removed, it should be carefully monitored for rational use to prevent wastage.

The items in category II can be ordered once or twice a year, thereby saving on purchasing costs. But since purchasing costs are mostly fixed cost, no saving will be done. The quarterly ordering method should be maintained.

Though the items in category III have low holding cost from the analysis the purchasing cost is fixed, so reducing the frequency of purchases will not reduce total pharmaceutical cost but increasing the frequency of ordering will reduce holding costs. For these items, the current quarterly ordering should be maintained.

Similar studies showed comparable results. In the Devnani, Gupta, and Nigar (2010) study category I consisted of 54.63% of items consuming 74.21% of the budget. Category II consisted 23.38% of items consuming 23.23% of the budget while category III consisted of 23.38% of the items consuming 3.56% of the budget.

5.6 CONCLUSIONS AND RECOMMENDATIONS

Analysis of drug expenditure should factor both the cost and criticality of the items. This should be done frequently due to the changing nature of the medical sector. The main aim of the study was to find opportunities for reducing costs and increasing efficiency. From the ABC analysis about 10% of the items consumed about 70% of the ADE of the hospitals. These items fall into Category I of the ABC-VEN matrix analysis.

They are very expensive and very vital hence there is a need for strict managerial control. Since they are essential or vital, it is unacceptable to have them out of stock. To prevent locking up of capital

due to these items, low buffer stock needs to be maintained while keeping a strict vigil on the consumption level and the stock in hand. A two-bin method of ordering needs to be followed for these as it will eliminate the risk of item shortage. The items that fall into Category I and II can be ordered once or twice a year, thereby saving ordering cost and reducing management work at a moderate carrying cost and without blocking substantial capital.

In the shortfall analysis, to curb these shortages, the government should promote economic growth. If the economy grows, the government will increase tax revenue, without raising taxes. The hospitals can also reduce the number of transactions or quantities of supplies in an effort to reduce the budget shortages.

Consumption can also be reduced by putting in control measures and ensuring that drugs are used rationally. This can be done by strict adherence to essential drug list when procuring drugs and also treatment guidelines when prescribing medications.

To reduce unit costs of medicines, generic alternatives that are effective can be sought for category A items. Also, competitive tendering where procurement is done from different institutions can be done. Currently, for public hospitals, procurement is mainly done from KEMSA and sometimes from MEDS.

In VEN analysis, non-essential items should be removed from the essential medicines list to help reduce the cost. If not removed they should be given the last priority when making purchases.

In ABC-VEN matrix analysis, class I (AV, AE, BV) items are both expensive and critical, therefore low buffer stock should be maintained by increasing frequency of purchases. Active monitoring of inventory and strict monitoring for rational use should also be considered. For class 1 (CV) items, they are both low cost and critical, therefore the frequency of purchases should be reduced and buffer stock increased. Class 1(AN) items are both expensive and less critical, therefore should be removed from the essential medicines list to save costs and strict monitoring for rational use should be done regularly. Class II (BE, CE, BN) items are moderate in cost and criticality, therefore should be managed by exception. Class III (CN) items have low cost and are less critical therefore should be managed passively and considered for removal from the essential medicines list.

5.7 LIMITATIONS OF THE STUDY

The accuracy of the study was dependent on the quality of the data used. The different public hospitals use both the manual and electronic systems of documentation putting into question the

accuracy of some of the data gathered using the manual system. There were also a few comparable studies to compare with especially on the shortage analysis.

The study was limited to extent data was available. In the study of total cost analysis, no proper data was available for the drug purchase cost, inventory holding costs, ordering costs, and shortage costs. So the analysis produced inconclusive results.

5.8 RECOMMENDATIONS FOR FURTHER RESEARCH

In line with the research objectives the researcher provides the following recommendations for the retrospective analysis of Nyeri County:

1. Therapeutic category analysis should be done to review the volume and use of various therapeutic categories. This will complement the ABC analysis and help in finding cheaper alternatives for class A items in ABC analysis.
2. Analysis of hidden costs that determine the costs due to poor supplier performance should be done to help make better procurement decisions.
3. Price comparison analysis should be conducted to help compare prices of medicines thus make informed purchasing decisions.
4. Further research should be done to determine if the right medicines, in the right quantities are procured at the right prices in Nyeri County.

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Appendix 1: Analysis of NYERI COUNTY REFERRAL HOSPITAL 2014

Product Name	Basic Unit	Total Value	% total value	% cumulative total value	ABC	VEN	ABC-VEN Matrix	ABC-VEN matrix analysis
SODIUM CHLORIDE /NORMAL SALINE SOLUTION - 0.9% WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	6940973	35.60 %	35.60%	A	V	AV	I
INSULIN BIPHASIC 30/70 - 100IU/ML	**VIAL**	2446621	12.55 %	48.15%	A	V	AV	I
HALOTHANE INHALATION	**250ML BOTTLE**	1151700	5.91%	54.06%	A	V	AV	I
SODIUM LACTATE SOLUTION WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	782856	4.02%	58.08%	A	E	AE	I
ALCOHOL BASED HAND RUB	**500ML BOTTLE**	626400	3.21%	61.29%	A	E	AE	I
HYOSCINE BUTYLBROMIDE TAB 10MG	**TIN OF 1000S**	528000	2.71%	64.00%	A	E	AE	I
ANTI-D (RH) INJECTION - 300MCG	**VIAL**	516648	2.65%	66.65%	A	E	AE	I
ACETYLSALICYLIC ACID TAB 75MG, ENTERIC COATED	**PACK OF 28S**	473892	2.43%	69.08%	A	E	AE	I
OXYTOCIN INJECTION - 5 IU/ML	**AMPOULE**	426000	2.19%	71.26%	A	E	AE	I
METRONIDAZOLE INJECTION - 5MG/ML	**VIAL**	410264	2.10%	73.37%	B	E	BE	II
SALBUTAMOL NEBULIZING SOLUTION - 5MG/ML 10ML	**10 ML VIAL**	376875	1.93%	75.30%	B	E	BE	II
POVIDONE-IODINE SOLUTION - 10%	**1L**	326250	1.67%	76.98%	B	E	BE	II
FLUCLOXACILLIN CAPSULES - 250MG	**TIN OF 1000S**	325423	1.67%	78.64%	B	E	BE	II
MORPHINE POWDER	**PKTS X 100GMS**	312200	1.60%	80.25%	B	E	BE	II
CARBAMAZEPINE TABLETS 200MG	**TIN OF 1000S**	291360	1.49%	81.74%	B	N	BN	II
WATER FOR	**10ML**	271228	1.39%	83.13%	B	N	BN	II

INJECTION	**VIAL**							
HEPARINE INJECTION - 5000UNITS/ML 5ML	**VIAL**	248626	1.28%	84.41%	B	N	BN	II
AMOXYCILLIN CAPSULES - 250MG	**TIN OF 1000S**	238705	1.22%	85.63%	B	N	BN	II
CEFTAZIDIME 1G INJ.	**VIAL**	224250	1.15%	86.78%	B	N	BN	II
NEOSTIGMINE INJECTION - 2.5MG/ML	**VIAL**	175982	0.90%	87.68%	B	N	BN	II
FLUPENTHIXOL DECANOATE - 20MG/ML	**AMPOULE**	174000	0.89%	88.58%	B	N	BN	II
SUXAMETHONIUM CHLORIDE INJECTION	**AMPOULE**	151864	0.78%	89.36%	B	N	BN	II
VALPROIC ACID(SODIUM VALPROATE) 200MG TABLETS	**PACK OF 100S**	144245	0.74%	90.10%	B	N	BN	II
PARACETAMOL TABLETS - 500MG	**TIN OF 1000S**	129800	0.67%	90.76%	B	N	BN	II
HYDROCORTISONE INJECTION - 100MG	**VIAL**	123168	0.63%	91.39%	C	N	CN	III
ENALAPRIL TABLETS - 5MG	**PACK OF 100S**	120579	0.62%	92.01%	C	N	CN	III
FERROUS SULP/FOLIC 200MG/400MCG ACID TAB	**TIN OF 1000S**	115707	0.59%	92.61%	C	N	CN	III
SILVER SULPHADIAZINE CREAM - 1%	**250GM JAR**	114175	0.59%	93.19%	C	N	CN	III
HYOSCINE BUTYL BROMIDE INJECTION 20MG/ML	**AMPOULE**	101375	0.52%	93.71%	C	N	CN	III
CHLORPROMAZINE TABLETS - 100MG	**TIN OF 1000S**	97000	0.50%	94.21%	C	N	CN	III
NIFEDIPINE TABLETS - 20MG	**TIN OF 1000S**	95900	0.49%	94.70%	C	N	CN	III
CEFIXIME TABLET 400MG	**PACK OF 10**	74740	0.38%	95.08%	C	N	CN	III
KETAMINE INJECTION - 50MG/ML	**VIAL**	56915	0.29%	95.38%	C	N	CN	III
GLUCOSE INJECTION 50% 50ML (DEXTROSE) WITH EURO CAP/	**50ML BOTTLE**	56000	0.29%	95.66%	C	N	CN	III

COLLAPSIBLE BAG								
HALOPERIDOL TABLETS - 5MG	**TIN OF 1000S**	53460	0.27%	95.94%	C	N	CN	III
CHLORHEXIDINE GLUCONATE - 5%	**5L**	53200	0.27%	96.21%	C	N	CN	III
ALBENDAZOLE TABLETS 400MG	**TIN OF 500S**	46240	0.24%	96.45%	C	N	CN	III
CEFUROXIME 250MG TABS	**PACK OF 10**	43178	0.22%	96.67%	C	N	CN	III
INSULIN SOLUBLE - 100IU/ML	**VIAL**	42432	0.22%	96.89%	C	N	CN	III
IBUPROFEN TABLETS - 200MG	**TIN OF 1000S**	39600	0.20%	97.09%	C	N	CN	III
CLOTRIMAZOLE PESSARIES 3S- 200MG	**PACK OF 3S**	37153	0.19%	97.28%	C	N	CN	III
AMLODIPINE TABLET 5MG	**PACK OF 100S**	36539	0.19%	97.47%	C	N	CN	III
PHENOBARBITONE TABLETS - 30MG	**TIN OF 100S**	32885	0.17%	97.64%	C	N	CN	III
FLUCLOXACILLIN INJECTION - 250MG	**VIAL**	28414	0.15%	97.78%	C	N	CN	III
DICLOFENAC SODIUM TABLETS - 50MG	**PACK OF 1000S**	27422	0.14%	97.92%	C	N	CN	III
CIPROFLOXACIN TABLETS - 250MG	**TIN OF 1000S**	25048	0.13%	98.05%	C	N	CN	III
GLIBENCLAMIDE TABLETS 5MG	**PACK OF 28S**	22855	0.12%	98.17%	C	N	CN	III
ERYTHROMYCIN SUSPENSION (PFR) - 125MG/5ML	**100 ML**	20348	0.10%	98.27%	C	N	CN	III
BUPIVACAINE HYD IN DEXTROSE INJ - 5MG	**AMPOULE**	20240	0.10%	98.38%	C	N	CN	III
VITAMIN B COMPLEX (B1, B6 AND B12)	**PACK OF 20S**	20000	0.10%	98.48%	C	N	CN	III
CLOTRIMAZOLE CREAM - 1%	**TUBE 20GM**	19944	0.10%	98.58%	C	N	CN	III
TINIDAZOLE TAB 500MG	**TIN OF 500S**	18483	0.09%	98.68%	C	N	CN	III
CALAMINE LOTION - 15%	**50ML BOTTLE**	18400	0.09%	98.77%	C	N	CN	III
CO-TRIMOXAZOLE TABLETS - 480MG	**TIN OF 1000S**	17600	0.09%	98.86%	C	N	CN	III
FLUOXETINE CAPSULES - 20MG	**PACK OF 100S**	15500	0.08%	98.94%	C	N	CN	III

HYDROCHLOROTHIAZIDE TABLETS - 50MG	**TIN OF 1000S**	15135	0.08%	99.02%	C	N	CN	III
WATER BASED LUBRICANT	**TUBE**	13130	0.07%	99.09%	C	N	CN	III
METRONIDOZOLE SUSPENSION - 200MG/5ML	**100 ML**	12661	0.06%	99.15%	C	N	CN	III
HYDROCORTISONE OINTMENT - 1%	**TUBE 15GM**	12625	0.06%	99.22%	C	N	CN	III
PHENOBARBITONE INJECTION - 200MG/ML	**AMPOULE**	11995	0.06%	99.28%	C	N	CN	III
FUROSEMIDE TABLETS - 40MG	**TIN OF 1000S**	11935	0.06%	99.34%	C	N	CN	III
ETHANOL (DENATURED) - 70%	**5L**	11900	0.06%	99.40%	C	N	CN	III
SALBUTAMOL INHALER - 100MCG/ACTUATION	**200 doses cartridge**	11110	0.06%	99.46%	C	N	CN	III
MAGNESIUM SULPHATE INJECTION - 50%	**AMPOULE**	10351	0.05%	99.51%	C	N	CN	III
METHYLATED SPIRIT/ETHANOL DENATURED (ALCOHOL CONTENT 94%-96%)	**5L**	9750	0.05%	99.56%	C	N	CN	III
SODIUM HYPOCHLORITE SOLUTION(TBCIDE) 5-5.6%W/V	**5L**	7540	0.04%	99.60%	C	N	CN	III
KETOCONAZOLE TABLETS - 200MG	**PACK OF 30S**	7436	0.04%	99.64%	C	N	CN	III
SALBUTAMOL SYRUP - 2MG/5ML	**100 ML**	7425	0.04%	99.67%	C	N	CN	III
TETRACYCLINE EYE OINTMENT -1%	**TUBE 3.5 GM**	7088	0.04%	99.71%	C	N	CN	III
ADRENALINE INJECTION - 1MG/ML	**AMPOULE**	6160	0.03%	99.74%	C	N	CN	III
CO-TRIMOXAZOLE SUSPENSION - 240MG/5ML	**50ML BOTTLE**	5671	0.03%	99.77%	C	N	CN	III
LEVOTHYROXINE SODIUM 100MCG TAB	**PACK OF 100S**	5268	0.03%	99.80%	C	N	CN	III
DEXAMETHASONE INJECTION - 4MG/ML	**AMPOULE**	5035	0.03%	99.82%	C	N	CN	III
CEFTRIAXONE INJECTION IM/ IV-	**VIAL**	4841	0.02%	99.85%	C	N	CN	III

250MG								
GENTAMYCIN SULPHATE SOLUTION (EYE / EAR DROPS) 0.3 % W/V	**5 ML BTL**	4781	0.02%	99.87%	C	N	CN	III
SALBUTAMOL TABLETS - 4MG	**TIN OF 1000S**	4449	0.02%	99.90%	C	N	CN	III
ACYCLOVIR TABLETS - 400MG	**PACK OF 100S**	3757	0.02%	99.92%	C	N	CN	III
BENZYLBENZOATE EMULSION - 25% APPLICATION	**50ML BOTTLE**	3468	0.02%	99.93%	C	N	CN	III
NYSTATIN SUSPENSION - 100 000IU/ML	**30ML**	3366	0.02%	99.95%	C	N	CN	III
FOLIC ACID TABLETS - 5MG	**TIN OF 1000S**	2100	0.01%	99.96%	C	N	CN	III
CHLORPHENIRAMINE TABLETS - 4MG	**TIN OF 1000S**	1980	0.01%	99.97%	C	N	CN	III
BISACODYL 5MG TABLETS	**PACK OF 100S**	1644	0.01%	99.98%	C	N	CN	III
AMINOPHYLLINE INJECTION 25MG/ML-10ML	**AMPOULE**	1319	0.01%	99.99%	C	N	CN	III
DIAZEPAM TAB 5MG	**PACK X 100S**	800	0.00%	99.99%	C	N	CN	III
LOPERAMIDE CAPSULES - 2MG	**PACK OF 100S**	792	0.00%	100.00%	C	N	CN	III
METOCLOPRAMIDE TABLETS - 10MG	**PACK OF 100S**	636	0.00%	100.00%	C	N	CN	III
AZITHROMYCIN 500MG	**PACK OF 3S**	308	0.00%	100.00%	C	N	CN	III
		19495113						

Appendix 2: Analysis of NYERI COUNTY REFERRAL HOSPITAL 2015

Product Name	Basic Unit	Total Value	% total value	% cumulative total value	ABC	VEN	ABC-VEN Matrix	ABC-VEN matrix analysis
SODIUM CHLORIDE /NORMAL SALINE SOLUTION - 0.9% WITH	**500ML**	2015455	20.73%	20.73%	A	V	AV	I

EURO CAP/ COLLAPSIBLE BAG								
INSULIN BIPHASIC 30/70 - 100IU/ML	**VIAL**	934989	9.62%	30.35%	A	V	AV	I
ANTI-D (RH) INJECTION - 300MCG	**VIAL**	813846	8.37%	38.72%	A	E	AE	I
AMOXYCILLIN CAPSULES - 250MG	**TIN OF 1000S**	779403	8.02%	46.73%	A	E	AE	I
FLUCLOXACILLIN CAPSULES - 250MG	**TIN OF 1000S**	494239	5.08%	51.82%	A	E	AE	I
AMOXICILLIN/CLAVULANIC ACID ORAL SUSPENSION 312.5MG/5ML	**100 ML**	435456	4.48%	56.30%	A	E	AE	I
SODIUM HYPOCHLORITE SOLUTION	**5L**	391357	4.03%	60.32%	A	E	AE	I
PARACETAMOL TABLETS - 500MG	**TIN OF 1000S**	236810	2.44%	62.76%	B	E	BE	II
SODIUM LACTATE SOLUTION WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	215700	2.22%	64.98%	B	E	BE	II
SALBUTAMOL NEBULIZING SOLUTION - 5MG/ML 10ML	**10 ML VIAL**	215605	2.22%	67.19%	B	E	BE	II
TINIDAZOLE TAB 500MG	**TIN OF 500S**	178980	1.84%	69.03%	B	E	BE	II
HALOTHANE INHALATION	**250ML BOTTLE**	174500	1.79%	70.83%	B	E	BE	II
METRONIDOZOLE SUSPENSION - 200MG/5ML	**100 ML**	164346	1.69%	72.52%	B	E	BE	II
GLUCOSE INJECTION 50% 50ML (DEXTROSE) WITH EURO CAP/ COLLAPSIBLE BAG	**50ML BOTTLE**	160000	1.65%	74.17%	B	E	BE	II
FLUPHENAZINE INJECTION - 25MG/ML	**AMPOULE**	133400	1.37%	75.54%	B	E	BE	II
ACETYLSALICYLIC ACID TAB 75MG, ENTERIC COATED	**PACK OF 28S**	110086	1.13%	76.67%	B	E	BE	II
HYDRALAZINE INJECTION - 20MG/ML	**AMPOULE**	92000	0.95%	77.62%	B	E	BE	II
POVIDONE-IODINE SOLUTION - 10%	**1L**	90000	0.93%	78.54%	B	E	BE	II
LEVOTHYROXINE SODIUM 100MCG TAB	**PACK OF 100S**	88200	0.91%	79.45%	B	E	BE	II

PHYTOMENADIONE INJECTION (VIT K1) PAEDIATRIC - 2MG/0.2ML AMPOULE,	**AMPOULE**	87000	0.89%	80.34%	B	E	BE	II
FLUCLOXACILLIN INJECTION - 250MG	**VIAL**	84000	0.86%	81.21%	B	E	BE	II
ATRACURIUM INJECTION-10MG/ML-2.5ML AMPUOLE	**AMPOULE**	83500	0.86%	82.07%	B	E	BE	II
CEFUROXIME 250MG TABS	**PACK OF 10**	82450	0.85%	82.92%	B	E	BE	II
CIPROFLOXACIN TABLETS - 250MG	**TIN OF 1000S**	81611	0.84%	83.75%	B	E	BE	II
WATER FOR INJECTION	**10ML VIAL**	81200	0.84%	84.59%	B	E	BE	II
OMEPRAZOLE CAPSULES - 20MG	**TIN OF 1000S**	80770	0.83%	85.42%	B	E	BE	II
ERYTHROMYCIN TABLETS - 250MG	**TIN OF 1000S**	77200	0.79%	86.21%	B	E	BE	II
METHYLDOPA TABLETS - 250MG	**TIN OF 1000S**	68948	0.71%	86.92%	B	E	BE	II
HALOPERIDOL TABLETS - 5MG	**TIN OF 1000S**	64800	0.67%	87.59%	B	E	BE	II
ATENOLOL TABLETS - 50MG	**TIN OF 1000S**	64566	0.66%	88.25%	B	E	BE	II
METRONIDAZOLE TABLETS - 200MG	**TIN OF 1000S**	59561	0.61%	88.87%	B	E	BE	II
HYOSCINE BUTYL BROMIDE INJECTION 20MG/ML	**AMPOULE**	58968	0.61%	89.47%	B	E	BE	II
VITAMIN B COMPLEX (B1, B6 AND B12)	**PACK OF 20S**	54978	0.57%	90.04%	B	E	BE	II
IBUPROFEN TABLETS - 200MG	**TIN OF 1000S**	52920	0.54%	90.58%	C	N	CN	III
METRONIDAZOLE INJECTION - 5MG/ML	**VIAL**	47105	0.48%	91.07%	C	N	CN	III
CEFIXIME TABLET 400MG	**PACK OF 10**	46201	0.48%	91.54%	C	N	CN	III
CEFTAZIDIME 1G INJ.	**VIAL**	43500	0.45%	91.99%	C	N	CN	III
ERYTHROMYCIN SUSPENSION (PFR) - 125MG/5ML	**100 ML**	42735	0.44%	92.43%	C	N	CN	III
ENALAPRIL TABLETS - 5MG	**PACK OF 100S**	42267	0.43%	92.86%	C	N	CN	III
HYDROCORTISONE INJECTION - 100MG	**VIAL**	41029	0.42%	93.29%	C	N	CN	III
VALPROIC	**PACK OF**	40528	0.42%	93.70%	C	N	CN	III

ACID(SODIUM VALPROATE) 200MG TABLETS	**100S**							
DARROWS HALF STRENGTH WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	36000	0.37%	94.07%	C	N	CN	III
CARBAMAZEPINE TABLETS 200MG	**TIN OF 1000S**	32143	0.33%	94.40%	C	N	CN	III
RANITIDINE INJECTION - 50MG/2ML	**AMPOULE**	30584	0.31%	94.72%	C	N	CN	III
AMLODIPINE TABLET 5MG	**PACK OF 100S**	29207	0.30%	95.02%	C	N	CN	III
FERROUS SULP/FOLIC 200MG/400MCG ACID TAB	**TIN OF 1000S**	26719	0.27%	95.29%	C	N	CN	III
GLUTARALDEHYDE 2% SOLUTION	**5LITRE**	25429	0.26%	95.56%	C	N	CN	III
INSULIN SOLUBLE - 100IU/ML	**VIAL**	23389	0.24%	95.80%	C	N	CN	III
NEOSTIGMINE INJECTION - 2.5MG/ML	**VIAL**	21602	0.22%	96.02%	C	N	CN	III
FERROUS SULPHATE TABLETS - 200MG	**TIN OF 1000S**	21502	0.22%	96.24%	C	N	CN	III
CEFTRIAXONE INJECTION IM/ IV-250MG	**VIAL**	20886	0.21%	96.45%	C	N	CN	III
PHENOBARBITONE TABLETS - 30MG	**TIN OF 100S**	20880	0.21%	96.67%	C	N	CN	III
FOLIC ACID TABLETS - 5MG	**TIN OF 1000S**	17550	0.18%	96.85%	C	N	CN	III
OXYTOCIN INJECTION - 10 IU/ML	**AMPOULE**	17544	0.18%	97.03%	C	N	CN	III
AZITHROMYCIN 500MG	**PACK OF 3S**	16297	0.17%	97.20%	C	N	CN	III
CO-TRIMOXAZOLE SUSPENSION - 240MG/5ML	**50ML BOTTLE**	16197	0.17%	97.36%	C	N	CN	III
CHLORAMPHENICAL INJECTION - 1GM	**VIAL**	16095	0.17%	97.53%	C	N	CN	III
FLUOXETINE CAPSULES - 20MG	**PACK OF 100S**	14582	0.15%	97.68%	C	N	CN	III
CLOTRIMAZOLE PESSARIES 3S- 200MG	**PACK OF 3S**	13900	0.14%	97.82%	C	N	CN	III
TETRACYCLINE EYE OINTMENT -1%	**TUBE 3.5 GM**	13449	0.14%	97.96%	C	N	CN	III
KETAMINE INJECTION - 50MG/ML	**VIAL**	12320	0.13%	98.09%	C	N	CN	III

DOXYCYCLINE CAPSULES - 100MG	**TIN OF 1000S**	12080	0.12%	98.21%	C	N	CN	III
MULTIVITAMIN SYRUP	**5L**	12060	0.12%	98.34%	C	N	CN	III
NIFEDIPINE TABLETS - 20MG	**TIN OF 1000S**	11984	0.12%	98.46%	C	N	CN	III
FUROSEMIDE TABLETS - 40MG	**TIN OF 1000S**	11970	0.12%	98.58%	C	N	CN	III
CHLORPHENIRAMINE SYRUP - 2MG/5ML	**5L**	11919	0.12%	98.71%	C	N	CN	III
HYDROCORTISONE OINTMENT - 1%	**TUBE 15GM**	11143	0.11%	98.82%	C	N	CN	III
DILOXANIDE FUROATE TAB 500MG	**TIN OF 500S**	11000	0.11%	98.93%	C	N	CN	III
DEXAMETHASONE INJECTION - 4MG/ML	**AMPOULE**	10400	0.11%	99.04%	C	N	CN	III
ZINC SULPHATE TABLETS - 20MG	**PACK OF 100S**	9900	0.10%	99.14%	C	N	CN	III
SALBUTAMOL SYRUP - 2MG/5ML	**100 ML**	9450	0.10%	99.24%	C	N	CN	III
DIAZEPAM INJ 5MG/ML 2ML	**AMPOULE**	7860	0.08%	99.32%	C	N	CN	III
SUXAMETHONIUM CHLORIDE INJECTION	**AMPOULE**	7578	0.08%	99.40%	C	N	CN	III
CLOTRIMAZOLE CREAM - 1%	**TUBE 20GM**	6903	0.07%	99.47%	C	N	CN	III
KETOCONAZOLE TABLETS - 200MG	**PACK OF 30S**	6084	0.06%	99.53%	C	N	CN	III
COMPOUND MAGNESIUM TRISILICATE TABLETS	**TIN OF 1000S**	5970	0.06%	99.59%	C	N	CN	III
WATER BASED LUBRICANT	**TUBE**	5655	0.06%	99.65%	C	N	CN	III
PHENYTOIN SODIUM TABLETS - 50MG	**TIN OF 1000S**	5280	0.05%	99.71%	C	N	CN	III
SODIUM BICARBONATE INJECTION - 8.4%	**AMPOULE**	3963	0.04%	99.75%	C	N	CN	III
ALBENDAZOLE TABLETS 400MG	**TIN OF 500S**	3588	0.04%	99.78%	C	N	CN	III
CO-TRIMOXAZOLE TABLETS - 480MG	**TIN OF 1000S**	3200	0.03%	99.82%	C	N	CN	III
FOLIC ACID TABLETS - 5MG	**TIN OF 100S**	3132	0.03%	99.85%	C	N	CN	III
CALAMINE LOTION - 15%	**50ML BOTTLE**	2758	0.03%	99.88%	C	N	CN	III
CHLORPHENIRAMINE TABLETS - 4MG	**TIN OF 1000S**	2700	0.03%	99.90%	C	N	CN	III

ADRENALINE INJECTION - 1MG/ML	**AMPOULE**	2175	0.02%	99.93%	C	N	CN	III
PREDNISOLONE TABLETS - 5MG	**TIN OF 1000S**	1980	0.02%	99.95%	C	N	CN	III
BENZYLBENZOATE EMULSION - 25% APPLICATION	**50ML BOTTLE**	1949	0.02%	99.97%	C	N	CN	III
AMITRIPTYLINE TABLETS - 25MG	**TIN OF 1000S**	1650	0.02%	99.98%	C	N	CN	III
LOPERAMIDE CAPSULES - 2MG	**PACK OF 100S**	720	0.01%	99.99%	C	N	CN	III
SALBUTAMOL INHALER - 100MCG/ACTUATION	**200 doses cartridge**	600	0.01%	100.00%	C	N	CN	III
SALBUTAMOL TABLETS - 4MG	**TIN OF 1000S**	240	0.00%	100.00%	C	N	CN	III
		9722374						

Appendix 3: Analysis of NYERI COUNTY REFERRAL HSPITAL 2016

Product Name	Basic Unit	Total Value	% total value	% cumulative total value	ABC	VEN	ABC-VEN Matrix	ABC-VEN matrix analysis
SODIUM CHLORIDE /NORMAL SALINE SOLUTION - 0.9% WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	2822908	15.53%	15.53%	A	V	AV	I
AMOXYCILLIN CAPSULES - 250MG	**TIN OF 1000S**	1913143	10.52%	26.05%	A	V	AV	I
INSULIN BIPHASIC 30/70 - 100IU/ML	**VIAL**	1331520	7.33%	33.38%	A	V	AV	I
OXYTOCIN INJECTION - 5 IU/ML	**AMPOULE**	1139550	6.27%	39.65%	A	V	AV	I
ANTI-D (RH) INJECTION - 300MCG	**VIAL**	731918	4.03%	43.67%	A	V	AV	I

HYOSCINE BUTYLBROMIDE TAB 10MG	**TIN OF 1000S**	633600	3.49%	47.16%	A	E	AE	I
HYDRALAZINE INJECTION - 20MG/ML	**AMPOULE**	490667	2.70%	49.86%	A	E	AE	I
CEFTRIAXONE INJECTION IM/IV - 1G	**VIAL**	391620	2.15%	52.01%	A	E	AE	I
CO-TRIMOXAZOLE SUSPENSION - 240MG/5ML	**50ML BOTTLE**	365843	2.01%	54.03%	A	E	AE	I
CEFUROXIME 250MG TABS	**PACK OF 10**	364753	2.01%	56.03%	A	E	AE	I
FLUPHENAZINE INJECTION - 25MG/ML	**AMPOULE**	360664	1.98%	58.02%	A	E	AE	I
HALOTHANE INHALATION	**250ML BOTTLE**	349000	1.92%	59.94%	A	E	AE	I
POVIDONE-IODINE SOLUTION - 10%	**1L**	339557	1.87%	61.81%	B	E	BE	II
METRONIDAZOLE TABLETS - 200MG	**TIN OF 1000S**	311936	1.72%	63.52%	B	E	BE	II
SODIUM HYPOCHLORITE SOLUTION	**5L**	292332	1.61%	65.13%	B	E	BE	II
WATER FOR INJECTION	**10ML VIAL**	291450	1.60%	66.73%	B	E	BE	II
ACETYLSALICYLIC ACID TAB 75MG, ENTERIC COATED	**PACK OF 28S**	258533	1.42%	68.16%	B	E	BE	II
IBUPROFEN TABLETS - 200MG	**TIN OF 1000S**	256608	1.41%	69.57%	B	E	BE	II
HYDROCORTISONE INJECTION - 100MG	**VIAL**	256542	1.41%	70.98%	B	E	BE	II
PARACETAMOL TABLETS - 500MG	**TIN OF 1000S**	250237	1.38%	72.35%	B	E	BE	II
CO-TRIMOXAZOLE TABLETS - 480MG	**TIN OF 1000S**	247280	1.36%	73.72%	B	E	BE	II
PHYTOMENADIONE INJECTION (VIT K1) PAEDIATRIC - 2MG/0.2ML AMPOULE,	**AMPOULE**	240832	1.32%	75.04%	B	E	BE	II
FLUCLOXACILLIN INJECTION - 250MG	**VIAL**	235200	1.29%	76.33%	B	E	BE	II
SALBUTAMOL NEBULIZING SOLUTION - 5MG/ML 10ML	**10 ML VIAL**	218735	1.20%	77.54%	B	E	BE	II
BUPIVACAINE HYD IN DEXTROSE INJ -	**AMPOULE**	216828	1.19%	78.73%	B	E	BE	II

5MG(MARCAINE HEAVY)								
SODIUM LACTATE SOLUTION WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	215700	1.19%	79.92%	B	E	BE	II
METFORMINE TABLETS - 500MG	**TIN OF 1000S**	196909	1.08%	81.00%	B	E	BE	II
CEFTAZIDIME 1G INJ.	**VIAL**	192188	1.06%	82.06%	B	E	BE	II
ALBENDAZOLE TABLETS 400MG	**TIN OF 500S**	187058	1.03%	83.09%	B	E	BE	II
CHLORPROMAZINE TABLETS - 100MG	**TIN OF 1000S**	169343	0.93%	84.02%	B	E	BE	II
SILVER SULPHADIAZINE CREAM - 1%	**250GM JAR**	157780	0.87%	84.89%	B	E	BE	II
ATRACURIUM INJECTION-10MG/ML-2.5ML AMPUOLE	**AMPOULE**	150300	0.83%	85.71%	B	E	BE	II
ERYTHROMYCIN TABLETS - 250MG	**TIN OF 1000S**	148610	0.82%	86.53%	B	E	BE	II
CIPROFLOXACIN TABLETS - 250MG	**TIN OF 1000S**	145350	0.80%	87.33%	B	E	BE	II
METRONIDOZOLE SUSPENSION - 200MG/5ML	**100 ML**	140000	0.77%	88.10%	B	E	BE	II
METRONIDAZOLE INJECTION - 5MG/ML	**VIAL**	139330	0.77%	88.87%	B	N	BN	II
VALPROIC ACID(SODIUM VALPROATE) 200MG TABLETS	**PACK OF 100S**	127260	0.70%	89.57%	B	N	BN	II
DEXAMETHASONE INJECTION - 4MG/ML	**AMPOULE**	123500	0.68%	90.25%	B	N	BN	II
ENALAPRIL TABLETS - 5MG	**PACK OF 100S**	118127	0.65%	90.90%	B	N	BN	II
AMLODIPINE TABLET 5MG	**PACK OF 100S**	110606	0.61%	91.50%	C	N	CN	III
VITAMIN B COMPLEX (B1, B6 AND B12)	**PACK OF 20S**	94710	0.52%	92.03%	C	N	CN	III
SALBUTAMOL INHALER - 100MCG/ACTUATION	**200 doses cartridge**	91647	0.50%	92.53%	C	N	CN	III
OMEPRAZOLE CAPSULES - 20MG	**TIN OF 1000S**	91539	0.50%	93.03%	C	N	CN	III
PREDNISOLONE TABLETS - 5MG	**TIN OF 1000S**	78794	0.43%	93.47%	C	N	CN	III
TINIDAZOLE TAB	**TIN OF**	69920	0.38%	93.85%	C	N	CN	III

500MG	**500S**							
METHYLDOPA TABLETS - 250MG	**TIN OF 1000S**	69694	0.38%	94.23%	C	N	CN	III
NIFEDIPINE TABLETS - 20MG	**TIN OF 1000S**	69160	0.38%	94.61%	C	N	CN	III
AZITHROMYCIN 500MG	**PACK OF 3S**	62671	0.34%	94.96%	C	N	CN	III
ERYTHROMYCIN SUSPENSION (PFR) - 125MG/5ML	**100 ML**	56980	0.31%	95.27%	C	N	CN	III
CEFIXIME TABLET 400MG	**PACK OF 10**	56730	0.31%	95.59%	C	N	CN	III
DICLOFENAC SODIUM TABLETS - 50MG	**PACK OF 1000S**	53510	0.29%	95.88%	C	N	CN	III
FERROUS SULP/FOLIC 200MG/400MCG ACID TAB	**TIN OF 1000S**	39390	0.22%	96.10%	C	N	CN	III
HYOSCINE BUTYL BROMIDE INJECTION 20MG/ML	**AMPOULE**	38556	0.21%	96.31%	C	N	CN	III
GLIBENCLAMIDE TABLETS - 5MG	**TIN OF 1000S**	38280	0.21%	96.52%	C	N	CN	III
AMITRIPTYLINE TABLETS - 25MG	**TIN OF 1000S**	33000	0.18%	96.70%	C	N	CN	III
HYDROCHLOROTHIAZIDE TABLETS - 50MG	**TIN OF 1000S**	32277	0.18%	96.88%	C	N	CN	III
KETAMINE INJECTION - 50MG/ML	**VIAL**	32040	0.18%	97.05%	C	N	CN	III
BENZHEXOL TABLETS - 5MG	**PACK OF 1000S**	29190	0.16%	97.22%	C	N	CN	III
SALBUTAMOL SYRUP - 2MG/5ML	**100 ML**	28215	0.16%	97.37%	C	N	CN	III
BUPIVACAINE HYD IN DEXTROSE INJ - 5MG	**AMPOULE**	27900	0.15%	97.52%	C	N	CN	III
PHENOBARBITONE TABLETS - 30MG	**TIN OF 100S**	27092	0.15%	97.67%	C	N	CN	III
ALCOHOL BASED HAND RUB	**500ML BOTTLE**	27000	0.15%	97.82%	C	N	CN	III
HALOPERIDOL TABLETS - 5MG	**TIN OF 1000S**	25515	0.14%	97.96%	C	N	CN	III
CLOTRIMAZOLE PESSARIES 3S- 200MG	**PACK OF 3S**	24832	0.14%	98.10%	C	N	CN	III
GRISEOFULVIN TAB 125MG	**TIN OF 1000S**	24704	0.14%	98.23%	C	N	CN	III
GLUCOSE INJECTION 50% 50ML (DEXTROSE)	**50ML BOTTLE**	24000	0.13%	98.37%	C	N	CN	III

WITH EURO CAP/ COLLAPSIBLE BAG								
DIGOXIN TABLETS - 250MCG	**PACK OF 500S**	19640	0.11%	98.47%	C	N	CN	III
FLUOXETINE CAPSULES - 20MG	**PACK OF 100S**	18600	0.10%	98.58%	C	N	CN	III
MULTIVITAMIN SYRUP	**5L**	18425	0.10%	98.68%	C	N	CN	III
MAGNESIUM SULPHATE INJECTION - 50%	**AMPOULE**	17768	0.10%	98.78%	C	N	CN	III
RANITIDINE INJECTION - 50MG/2ML	**AMPOULE**	15251	0.08%	98.86%	C	N	CN	III
DIAZEPAM INJ 5MG/ML 2ML	**AMPOULE**	15029	0.08%	98.94%	C	N	CN	III
FERROUS SULPHATE TABLETS - 200MG	**TIN OF 1000S**	14774	0.08%	99.02%	C	N	CN	III
CLOTRIMAZOLE CREAM - 1%	**TUBE 20GM**	13150	0.07%	99.10%	C	N	CN	III
CHLORPHENIRAMINE SYRUP - 2MG/5ML	**5L**	13111	0.07%	99.17%	C	N	CN	III
METHYLATED SPIRIT/ETHANOL DENATURED (ALCOHOL CONTENT 94%-96%)	**5L**	13050	0.07%	99.24%	C	N	CN	III
PHENOBARBITONE INJECTION - 200MG/ML	**AMPOULE**	11995	0.07%	99.31%	C	N	CN	III
TETRACYCLINE EYE OINTMENT -1%	**TUBE 3.5 GM**	11716	0.06%	99.37%	C	N	CN	III
WATER BASED LUBRICANT	**TUBE**	11292	0.06%	99.43%	C	N	CN	III
PARACETAMOL SUPPOSITORIES 125MG	**PACK OF 10S**	11011	0.06%	99.49%	C	N	CN	III
NYSTATIN SUSPENSION - 100 000IU/ML	**30ML**	10332	0.06%	99.55%	C	N	CN	III
NEOSTIGMINE INJECTION - 2.5MG/ML	**VIAL**	9637	0.05%	99.60%	C	N	CN	III
CEFTRIAXONE INJECTION IM/ IV-250MG	**VIAL**	9027	0.05%	99.65%	C	N	CN	III
SALBUTAMOL TABLETS - 4MG	**TIN OF 1000S**	8760	0.05%	99.70%	C	N	CN	III
METOCLOPRAMIDE INJECTION - 5MG/ML	**AMPOULE**	7710	0.04%	99.74%	C	N	CN	III
ADRENALINE	**AMPOUL**	7350	0.04%	99.78%	C	N	CN	III

INJECTION - 1MG/ML	**E**							
INSULIN SOLUBLE - 100IU/ML	**VIAL**	6365	0.04%	99.82%	C	N	CN	III
CHLORAMPHENICAL INJECTION - 1GM	**VIAL**	4674	0.03%	99.84%	C	N	CN	III
DIAZEPAM TAB 5MG	**PACK X 100S**	4360	0.02%	99.87%	C	N	CN	III
FOLIC ACID TABLETS - 5MG	**TIN OF 1000S**	4290	0.02%	99.89%	C	N	CN	III
CHLORPHENIRAMINE TABLETS - 4MG	**TIN OF 1000S**	3960	0.02%	99.91%	C	N	CN	III
HYDROCORTISONE OINTMENT - 1%	**TUBE 15GM**	2525	0.01%	99.93%	C	N	CN	III
GENTAMYCIN SULPHATE SOLUTION (EYE / EAR DROPS) 0.3 % W/V	**5 ML BTL**	2391	0.01%	99.94%	C	N	CN	III
ACETYLSALICYLIC ACID TABLETS - 300MG	**TIN OF 1000S**	2080	0.01%	99.95%	C	N	CN	III
ACYCLOVIR TABLETS - 400MG	**PACK OF 100S**	1860	0.01%	99.96%	C	N	CN	III
CALAMINE LOTION - 15%	**50ML BOTTLE**	1840	0.01%	99.97%	C	N	CN	III
LOPERAMIDE CAPSULES - 2MG	**PACK OF 100S**	1822	0.01%	99.98%	C	N	CN	III
BENZYLBENZOATE EMULSION - 25% APPLICATION	**50ML BOTTLE**	867	0.00%	99.99%	C	N	CN	III
SODIUM BICARBONATE INJECTION - 8.4%	**AMPOULE**	852	0.00%	99.99%	C	N	CN	III
METOCLOPRAMIDE TABLETS - 10MG	**PACK OF 100S**	619	0.00%	100.00%	C	N	CN	III
CHLORPHENIRAMINE INJECTION - 10MG/ML	**AMPOULE**	450	0.00%	100.00%	C	N	CN	III
AMINOPHYLLINE INJECTION 25MG/ML-10ML	**AMPOULE**	405	0.00%	100.00%	C	N	CN	III
		18177649						

Appendix 4: Analysis of KARATINA SUB COUNTY HOSPITAL 2014

INSULIN BIPHASIC 30/70 - 100IU/ML	**VIAL**	Total Value	% total value	% cumulative total	**ABC**	**VEN**	**ABC-VEN Matr**	**ABC-VEN matri**

				value			ix	x analysis
SODIUM CHLORIDE /NORMAL SALINE SOLUTION - 0.9% WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	2224201	18.70%	18.70%	A	V	AV	I
HYOSCINE BUTYLBROMIDE TAB 10MG	**TIN OF 1000S**	1189881	10.01%	28.71%	A	V	AV	I
AMOXICILLIN/CLAVULANIC ACID ORAL SUSPENSION 312.5MG/5ML	**100 ML**	880000	7.40%	36.11%	A	V	AV	I
SODIUM HYPOCHLORITE SOLUTION(TBCIDE) 5-5.6%W/V	**5L**	855360	7.19%	43.30%	A	V	AV	I
FLUCLOXACILLIN CAPSULES - 250MG	**TIN OF 1000S**	832000	7.00%	50.30%	A	E	AE	I
HYDROCORTISONE INJECTION - 100MG	**VIAL**	610168	5.13%	55.43%	A	E	AE	I
METRONIDAZOLE INJECTION - 5MG/ML	**VIAL**	391899	3.30%	58.73%	B	E	BE	II
CEFIXIME TABLET 400MG	**PACK OF 10**	374712	3.15%	61.88%	B	E	BE	II
OXYTOCIN INJECTION - 5 IU/ML	**AMPOULE**	358752	3.02%	64.89%	B	E	BE	II
ACETYLSALICYLIC ACID TAB 75MG, ENTERIC COATED	**PACK OF 28S**	284000	2.39%	67.28%	B	E	BE	II
SALBUTAMOL NEBULIZING SOLUTION - 5MG/ML 10ML	**10 ML VIAL**	278760	2.34%	69.63%	B	E	BE	II
DILOXANIDE FUROATE TAB 500MG	**TIN OF 500S**	259840	2.19%	71.81%	B	E	BE	II
POVIDONE-IODINE SOLUTION - 10%	**1L**	236380	1.99%	73.80%	B	E	BE	II
CARBAMAZEPINE TABLETS 200MG	**TIN OF 1000S**	217500	1.83%	75.63%	B	E	BE	II
GLIBENCLAMIDE TABLETS 5MG	**PACK OF 28S**	194240	1.63%	77.26%	B	E	BE	II
HEPARINE INJECTION - 5000UNITS/ML 5ML	**VIAL**	182840	1.54%	78.80%	B	E	BE	II
ENALAPRIL TABLETS - 5MG	**PACK OF 100S**	149175	1.25%	80.05%	B	E	BE	II
WATER BASED LUBRICANT	**TUBE**	133976	1.13%	81.18%	B	E	BE	II
FERROUS SULP/FOLIC 200MG/400MCG ACID TAB	**TIN OF 1000S**	131300	1.10%	82.28%	B	E	BE	II
CEFUROXIME 250MG TABS	**PACK OF 10**	128964	1.08%	83.37%	B	E	BE	II
FLUPENTHIXOL DECANOATE - 20MG/ML	**AMPOULE**	124735	1.05%	84.42%	B	E	BE	II

OMEPRAZOLE CAPSULES 20MG	**PACK OF 30S**	116000	0.98 %	85.39%	B	E	BE	II
HALOPERIDOL TABLETS - 5MG	**TIN OF 1000S**	109563	0.92 %	86.31%	B	E	BE	II
CIPROFLOXACIN TABLETS - 250MG	**TIN OF 1000S**	106920	0.90 %	87.21%	B	E	BE	II
SILVER SULPHADIAZINE CREAM - 1%	**250GM JAR**	100192	0.84 %	88.06%	B	E	BE	II
GLUCOSE INJECTION 50% 50ML (DEXTROSE) WITH EURO CAP/ COLLAPSIBLE BAG	**50ML BOTTLE**	85631	0.72 %	88.78%	B	E	BE	II
PARACETAMOL TABLETS - 500MG	**TIN OF 1000S**	80000	0.67 %	89.45%	B	E	BE	II
CLOTRIMAZOLE PESSARIES 3S-200MG	**PACK OF 3S**	73750	0.62 %	90.07%	B	E	BE	II
SUXAMETHONIUM CHLORIDE INJECTION	**AMPOULE**	68492	0.58 %	90.64%	C	E	CE	II
HALOTHANE INHALATION	**250ML BOTTLE**	57853	0.49 %	91.13%	C	N	CN	III
WATER FOR INJECTION	**10ML VIAL**	57585	0.48 %	91.62%	C	N	CN	III
BENZHEXOL 5MG TABS	**PACK OF 100S**	54246	0.46 %	92.07%	C	N	CN	III
METRONIDOZOLE SUSPENSION - 200MG/5ML	**100 ML**	53955	0.45 %	92.53%	C	N	CN	III
HYDROCHLOROTHIAZIDE TABLETS - 50MG	**TIN OF 1000S**	50643	0.43 %	92.95%	C	N	CN	III
ALBENDAZOLE TABLETS 400MG	**TIN OF 500S**	46466	0.39 %	93.34%	C	N	CN	III
TINIDAZOLE TAB 500MG	**TIN OF 500S**	46240	0.39 %	93.73%	C	N	CN	III
SALBUTAMOL INHALER - 100MCG/ACTUATION	**200 doses cartridge**	45913	0.39 %	94.12%	C	N	CN	III
INSULIN SOLUBLE - 100IU/ML	**VIAL**	44440	0.37 %	94.49%	C	N	CN	III
CO-TRIMOXAZOLE TABLETS - 480MG	**TIN OF 1000S**	42432	0.36 %	94.85%	C	N	CN	III
NIFEDIPINE TABLETS - 20MG	**TIN OF 1000S**	42249	0.36 %	95.20%	C	N	CN	III
CHLORPROMAZINE TABLETS - 100MG	**TIN OF 1000S**	39390	0.33 %	95.53%	C	N	CN	III
CLOTRIMAZOLE CREAM - 1%	**TUBE 20GM**	38800	0.33 %	95.86%	C	N	CN	III
HYOSCINE BUTYL BROMIDE	**AMPO**	37395	0.31	96.17%	C	N	CN	III

INJECTION 20MG/ML	**ULE**		%					
ACYCLOVIR TABLETS - 400MG	**PACK OF 100S**	36360	0.31 %	96.48%	C	N	CN	III
FOLIC ACID TABLETS - 5MG	**TIN OF 100S**	35653	0.30 %	96.78%	C	N	CN	III
TETRACYCLINE EYE OINTMENT -1%	**TUBE 3.5 GM**	34680	0.29 %	97.07%	C	N	CN	III
CO-TRIMOXAZOLE SUSPENSION - 240MG/5ML	**50ML BOTTLE**	28712	0.24 %	97.31%	C	N	CN	III
NYSTATIN SUSPENSION - 100 000IU/ML	**30ML**	28353	0.24 %	97.55%	C	N	CN	III
HYDRALAZINE INJECTION - 20MG/ML	**AMPO ULE**	26928	0.23 %	97.78%	C	N	CN	III
AZITHROMYCIN 500MG	**PACK OF 3S**	25300	0.21 %	97.99%	C	N	CN	III
SILVER SULPHADIAZINE CREAM 1%, 100G	**100gm**	24637	0.21 %	98.20%	C	N	CN	III
VALPROIC ACID(SODIUM VALPROATE) 200MG TABLETS	**PACK OF 100S**	21918	0.18 %	98.38%	C	N	CN	III
KETAMINE INJECTION - 50MG/ML	**VIAL**	18031	0.15 %	98.53%	C	N	CN	III
CALAMINE LOTION - 15%	**50ML BOTTLE**	17247	0.15 %	98.68%	C	N	CN	III
METOCLOPRAMIDE TABLETS - 10MG	**PACK OF 100S**	14720	0.12 %	98.80%	C	N	CN	III
METFORMIN TABLETS 500MG	**PACK OF 30S**	12726	0.11 %	98.91%	C	N	CN	III
PHENOBARBITONE TABLETS - 30MG	**TIN OF 100S**	12697	0.11 %	99.02%	C	N	CN	III
ADRENALINE INJECTION - 1MG/ML	**AMPO ULE**	12474	0.10 %	99.12%	C	N	CN	III
AMINOPHYLLINE INJECTION 25MG/ML- 10ML	**AMPO ULE**	11880	0.10 %	99.22%	C	N	CN	III
NEOSTIGMINE INJECTION - 2.5MG/ML	**VIAL**	11873	0.10 %	99.32%	C	N	CN	III
BUPIVACAINE HYD IN DEXTROSE INJ - 5MG	**AMPO ULE**	10352	0.09 %	99.41%	C	N	CN	III
DICLOFENAC SODIUM TABLETS - 50MG	**PACK OF 1000S**	8433	0.07 %	99.48%	C	N	CN	III
CHLORHEXIDINE GLUCONATE - 5%	**5L**	8018	0.07 %	99.55%	C	N	CN	III
AMLODIPINE TABLET 5MG	**PACK OF**	7980	0.07 %	99.61%	C	N	CN	III

	100S							
DEXAMETHASONE INJECTION - 4MG/ML	**AMPOULE**	7308	0.06 %	99.68%	C	N	CN	III
BISACODYL 5MG TABLETS	**PACK OF 100S**	7193	0.06 %	99.74%	C	N	CN	III
ATROPINE INJECTION - 1MG/ML	**AMPOULE**	5481	0.05 %	99.78%	C	N	CN	III
VITAMIN B COMPLEX (B1, B6 AND B12)	**PACK OF 20S**	5074	0.04 %	99.82%	C	N	CN	III
BENZYLBENZOATE EMULSION - 25% APPLICATION	**50ML BOTTLE**	4000	0.03 %	99.86%	C	N	CN	III
MAGNESIUM SULPHATE INJECTION - 50%	**AMPOULE**	3468	0.03 %	99.89%	C	N	CN	III
LEVOTHYROXINE SODIUM 100MCG TAB	**PACK OF 100S**	3150	0.03 %	99.91%	C	N	CN	III
METHYLDOPA TABLETS - 250MG	**TIN OF 1000S**	2634	0.02 %	99.94%	C	N	CN	III
FERROUS SULPHATE TABLETS - 200MG	**TIN OF 1000S**	2595	0.02 %	99.96%	C	N	CN	III
CHLORPHENIRAMINE TABLETS - 4MG	**TIN OF 1000S**	2250	0.02 %	99.98%	C	N	CN	III
DIAZEPAM TAB 5MG	**PACK X 100S**	1980	0.02 %	99.99%	C	N	CN	III
		800	0.01 %	100.00 %	C	N	CN	III
		11891742						

Appendix 5: Analysis of KARATINA SUB COUNTY HOSPITAL 2015

Product Name	Basic Unit	Total Value	% total value	% cumulative total value	**ABC**	**VEN**	**ABC-VEN Matrix**	**ABC-VEN matrix analysis**
SODIUM CHLORIDE /NORMAL SALINE SOLUTION - 0.9% WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	696334	8.29 %	8.29%	A	V	AV	I
AMOXYCILLIN CAPSULES - 250MG	**TIN OF 1000S**	611180	7.28 %	15.57%	A	V	AV	I
INSULIN BIPHASIC 30/70 - 100IU/ML	**VIAL**	602021	7.17 %	22.74%	A	V	AV	I
ANTI-D (RH) INJECTION - 300MCG	**VIAL**	50355	6.00	28.74%	A	V	AV	I

		1	%					
AMOXICILLIN/CLAVULANIC ACID ORAL SUSPENSION 312.5MG/5ML	**100 ML**	483840	5.76 %	34.50%	A	E	AE	I
FLUCLOXACILLIN CAPSULES - 250MG	**TIN OF 1000S**	474310	5.65 %	40.15%	A	E	AE	I
SALBUTAMOL NEBULIZING SOLUTION - 5MG/ML 10ML	**10 ML VIAL**	375570	4.47 %	44.62%	A	E	AE	I
METHYLDOPA TABLETS - 250MG	**TIN OF 1000S**	252810	3.01 %	47.63%	A	E	AE	I
FLUCLOXACILLIN INJECTION - 250MG	**VIAL**	224000	2.67 %	50.30%	A	E	AE	I
CEFUROXIME 250MG TABS	**PACK OF 10**	208494	2.48 %	52.78%	A	E	AE	I
FLUPHENAZINE INJECTION - 25MG/ML	**AMPOULE**	203000	2.42 %	55.20%	A	E	AE	I
SODIUM HYPOCHLORITE SOLUTION	**5L**	193065	2.30 %	57.50%	B	E	BE	II
HYDROCORTISONE INJECTION - 100MG	**VIAL**	187027	2.23 %	59.72%	B	E	BE	II
CEFIXIME TABLET 400MG	**PACK OF 10**	173255	2.06 %	61.79%	B	E	BE	II
CIPROFLOXACIN TABLETS - 250MG	**TIN OF 1000S**	171052	2.04 %	63.83%	B	E	BE	II
IBUPROFEN TABLETS - 200MG	**TIN OF 1000S**	151200	1.80 %	65.63%	B	E	BE	II
HALOTHANE INHALATION	**250ML BOTTLE**	146580	1.75 %	67.37%	B	E	BE	II
ATENOLOL TABLETS - 50MG	**TIN OF 1000S**	139536	1.66 %	69.03%	B	E	BE	II
HYDRALAZINE INJECTION - 20MG/ML	**AMPOULE**	138000	1.64 %	70.68%	B	E	BE	II
METRONIDAZOLE INJECTION - 5MG/ML	**VIAL**	134118	1.60 %	72.27%	B	E	BE	II
PARACETAMOL TABLETS - 500MG	**TIN OF 1000S**	121975	1.45 %	73.73%	B	E	BE	II
ERYTHROMYCIN TABLETS - 250MG	**TIN OF 1000S**	115800	1.38 %	75.11%	B	E	BE	II
TINIDAZOLE TAB 500MG	**TIN OF 500S**	111150	1.32 %	76.43%	B	E	BE	II
ENALAPRIL TABLETS - 5MG	**PACK OF 100S**	95296	1.13 %	77.56%	B	E	BE	II
AZITHROMYCIN 500MG	**PACK OF 3S**	93623	1.11 %	78.68%	B	E	BE	II
WATER FOR INJECTION	**10ML VIAL**	87000	1.04 %	79.71%	B	E	BE	II
HALOPERIDOL TABLETS - 5MG	**TIN OF**	81000	0.96	80.68%	B	E	BE	II

	1000S		%					
POVIDONE-IODINE SOLUTION - 10%	**1L**	78750	0.94 %	81.62%	B	N	BN	II
DILOXANIDE FUROATE TAB 500MG	**TIN OF 500S**	77000	0.92 %	82.53%	B	N	BN	II
VITAMIN B COMPLEX (B1, B6 AND B12)	**PACK OF 20S**	76340	0.91 %	83.44%	B	N	BN	II
METFORMINE TABLETS - 500MG	**TIN OF 1000S**	75637	0.90 %	84.34%	B	N	BN	II
CHLORPROMAZINE TABLETS - 100MG	**TIN OF 1000S**	74678	0.89 %	85.23%	B	N	BN	II
RANITIDINE INJECTION - 50MG/2ML	**AMPOULE**	72000	0.86 %	86.09%	B	N	BN	II
NIFEDIPINE TABLETS - 20MG	**TIN OF 1000S**	65913	0.78 %	86.88%	B	N	BN	II
CHLORAMPHENICAL INJECTION - 1GM	**VIAL**	64380	0.77 %	87.64%	B	N	BN	II
BUPIVACAINE HYD IN DEXTROSE INJ - 5MG(MARCAINE HEAVY)	**AMPOULE**	63773	0.76 %	88.40%	B	N	BN	II
GLUCOSE INJECTION 50% 50ML (DEXTROSE) WITH EURO CAP/ COLLAPSIBLE BAG	**50ML BOTTLE**	60000	0.71 %	89.12%	B	N	BN	II
SILVER SULPHADIAZINE CREAM - 1%	**250GM JAR**	56017	0.67 %	89.78%	B	N	BN	II
ERYTHROMYCIN SUSPENSION (PFR) - 125MG/5ML	**100 ML**	55500	0.66 %	90.44%	B	N	BN	II
SILVER SULPHADIAZINE 1% + CHLORHEXIDINE GLUCONATE 0.2% CREAM	**250GM JAR**	54672	0.65 %	91.10%	C	N	CN	III
CEFTAZIDIME 1G INJ.	**VIAL**	54375	0.65 %	91.74%	C	N	CN	III
CARBAMAZEPINE TABLETS 200MG	**TIN OF 1000S**	53571	0.64 %	92.38%	C	N	CN	III
PHENOBARBITONE INJECTION - 200MG/ML	**AMPOULE**	47711	0.57 %	92.95%	C	N	CN	III
OMEPRAZOLE CAPSULES - 20MG	**TIN OF 1000S**	47116	0.56 %	93.51%	C	N	CN	III
METRONIDOZOLE SUSPENSION - 200MG/5ML	**100 ML**	44590	0.53 %	94.04%	C	N	CN	III
OXYTOCIN INJECTION - 10 IU/ML	**AMPOULE**	36551	0.44 %	94.48%	C	N	CN	III
INSULIN SOLUBLE - 100IU/ML	**VIAL**	33135	0.39 %	94.87%	C	N	CN	III
PHENOBARBITONE TABLETS - 30MG	**TIN OF 100S**	31320	0.37 %	95.24%	C	N	CN	III
DICLOFENAC SODIUM TABLETS - 50MG	**PACK OF**	31050	0.37 %	95.61%	C	N	CN	III

	1000S							
ACETYLSALICYLIC ACID TAB 75MG, ENTERIC COATED	**PACK OF 28S**	30579	0.36 %	95.98%	C	N	CN	III
GRISEOFULVIN TAB 125MG	**TIN OF 1000S**	23840	0.28 %	96.26%	C	N	CN	III
METRONIDAZOLE TABLETS - 200MG	**TIN OF 1000S**	22908	0.27 %	96.53%	C	N	CN	III
PHENYTOIN SODIUM TABLETS - 50MG	**TIN OF 1000S**	21450	0.26 %	96.79%	C	N	CN	III
HYOSCINE BUTYL BROMIDE INJECTION 20MG/ML	**AMPOULE**	21156	0.25 %	97.04%	C	N	CN	III
ZINC SULPHATE TABLETS - 20MG	**PACK OF 100S**	19800	0.24 %	97.28%	C	N	CN	III
FUROSEMIDE TABLETS - 40MG	**TIN OF 1000S**	19000	0.23 %	97.50%	C	N	CN	III
HYDROCORTISONE OINTMENT - 1%	**TUBE 15GM**	18572	0.22 %	97.73%	C	N	CN	III
CLOTRIMAZOLE PESSARIES 3S-200MG	**PACK OF 3S**	18070	0.22 %	97.94%	C	N	CN	III
ALBENDAZOLE TABLETS 400MG	**TIN OF 500S**	17940	0.21 %	98.15%	C	N	CN	III
FLUOXETINE CAPSULES - 20MG	**PACK OF 100S**	14582	0.17 %	98.33%	C	N	CN	III
DIAZEPAM INJ 5MG/ML 2ML	**AMPOULE**	14203	0.17 %	98.50%	C	N	CN	III
DEXAMETHASONE INJECTION - 4MG/ML	**AMPOULE**	13000	0.15 %	98.65%	C	N	CN	III
NEOSTIGMINE INJECTION - 2.5MG/ML	**VIAL**	12038	0.14 %	98.80%	C	N	CN	III
KETAMINE INJECTION - 50MG/ML	**VIAL**	11819	0.14 %	98.94%	C	N	CN	III
PHYTOMENADIONE INJECTION (VIT K1) PAEDIATRIC - 2MG/0.2ML AMPOULE,	**AMPOULE**	8700	0.10 %	99.04%	C	N	CN	III
ACYCLOVIR TABLETS - 400MG	**PACK OF 100S**	8383	0.10 %	99.14%	C	N	CN	III
CO-TRIMOXAZOLE TABLETS - 480MG	**TIN OF 1000S**	8000	0.10 %	99.23%	C	N	CN	III
KETOCONAZOLE TABLETS - 200MG	**PACK OF 30S**	6760	0.08 %	99.32%	C	N	CN	III
TETRACYCLINE EYE OINTMENT -1%	**TUBE 3.5 GM**	6725	0.08 %	99.40%	C	N	CN	III
FERROUS SULP/FOLIC 200MG/400MCG ACID TAB	**TIN OF 1000S**	6400	0.08 %	99.47%	C	N	CN	III

WATER BASED LUBRICANT	**TUBE**	5655	0.07 %	99.54%	C	N	CN	III
AMLODIPINE TABLET 5MG	**PACK OF 100S**	4987	0.06 %	99.60%	C	N	CN	III
LEVOTHYROXINE SODIUM 100MCG TAB	**PACK OF 100S**	4900	0.06 %	99.66%	C	N	CN	III
METHYLATED SPIRIT/ETHANOL DENATURED (ALCOHOL CONTENT 94%-96%)	**5L**	4350	0.05 %	99.71%	C	N	CN	III
COMPOUND MAGNESIUM TRISILICATE TABLETS	**TIN OF 1000S**	3980	0.05 %	99.76%	C	N	CN	III
VALPROIC ACID(SODIUM VALPROATE) 200MG TABLETS	**PACK OF 100S**	3976	0.05 %	99.80%	C	N	CN	III
CO-TRIMOXAZOLE SUSPENSION - 240MG/5ML	**50ML BOTTLE**	3239	0.04 %	99.84%	C	N	CN	III
SALBUTAMOL SYRUP - 2MG/5ML	**100 ML**	2700	0.03 %	99.87%	C	N	CN	III
SALBUTAMOL TABLETS - 4MG	**TIN OF 1000S**	2400	0.03 %	99.90%	C	N	CN	III
CLOTRIMAZOLE CREAM - 1%	**TUBE 20GM**	2390	0.03 %	99.93%	C	N	CN	III
ADRENALINE INJECTION - 1MG/ML	**AMPOULE**	2175	0.03 %	99.96%	C	N	CN	III
SODIUM BICARBONATE INJECTION - 8.4%	**AMPOULE**	1704	0.02 %	99.98%	C	N	CN	III
SALBUTAMOL INHALER - 100MCG/ACTUATION	**200 doses cartridge**	1560	0.02 %	100.00 %	C	N	CN	III
DIAZEPAM TAB 5MG	**PACK X 100S**	200	0.00 %	100.00 %	C	N	CN	III
DOXYCYCLINE CAPSULES - 100MG	**TIN OF 1000S**	172	0.00 %	100.00 %	C	N	CN	III
		8397177						

Appendix 6: Analysis of KARATINA SUB COUNTY HOSPITAL 2016

Product Name	Basic Unit	Total Value	% total value	% cumulative total value	**ABC**	**VEN**	**ABC-VEN Matrix**	**ABC-VEN matrix analysis**

AMOXYCILLIN CAPSULES - 250MG	**TIN OF 1000S**	1587831	10.08%	10.08%	A	V	AV	I
INSULIN BIPHASIC 30/70 - 100IU/ML	**VIAL**	1509650	9.59%	19.67%	A	V	AV	I
SODIUM CHLORIDE /NORMAL SALINE SOLUTION - 0.9% WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	920840	5.85%	25.52%	A	V	AV	I
CEFTRIAXONE INJECTION IM/IV - 1G	**VIAL**	864457	5.49%	31.00%	A	V	AV	I
CEFUROXIME 250MG TABS	**PACK OF 10**	769160	4.88%	35.89%	A	E	AE	I
ANTI-D (RH) INJECTION - 300MCG	**VIAL**	559702	3.55%	39.44%	A	E	AE	I
FLUCLOXACILLIN INJECTION - 250MG	**VIAL**	499800	3.17%	42.62%	A	E	AE	I
AMOXICILLIN/CLAVULANIC ACID ORAL SUSPENSION 312.5MG/5ML	**100 ML**	498960	3.17%	45.78%	A	E	AE	I
OXYTOCIN INJECTION - 5 IU/ML	**AMPOULE**	426000	2.70%	48.49%	A	E	AE	I
SODIUM HYPOCHLORITE SOLUTION	**5L**	376310	2.39%	50.88%	A	E	AE	I
CEFIXIME TABLET 400MG	**PACK OF 10**	340380	2.16%	53.04%	A	E	AE	I
ACETYLSALICYLIC ACID TAB 75MG, ENTERIC COATED	**PACK OF 28S**	336701	2.14%	55.18%	A	E	AE	I
SALBUTAMOL NEBULIZING SOLUTION - 5MG/ML 10ML	**10 ML VIAL**	333840	2.12%	57.30%	A	E	AE	I
CO-TRIMOXAZOLE TABLETS - 480MG	**TIN OF 1000S**	328240	2.08%	59.38%	A	E	AE	I
HYDROCORTISONE INJECTION - 100MG	**VIAL**	305762	1.94%	61.32%	A	E	AE	I
ENALAPRIL TABLETS - 5MG	**PACK OF 100S**	283968	1.80%	63.13%	A	E	AE	I
HYOSCINE BUTYLBROMIDE TAB 10MG	**TIN OF 1000S**	281600	1.79%	64.91%	A	E	AE	I
VITAMIN B COMPLEX (B1, B6 AND B12)	**PACK OF 20S**	273552	1.74%	66.65%	A	E	AE	I

ERYTHROMYCIN TABLETS - 250MG	**TIN OF 1000S**	265375	1.69%	68.34%	A	E	AE	I
FLUPHENAZINE INJECTION - 25MG/ML	**AMPOULE**	261000	1.66%	69.99%	A	E	AE	I
CEFTAZIDIME 1G INJ.	**VIAL**	252500	1.60%	71.60%	A	E	AE	I
PARACETAMOL TABLETS - 500MG	**TIN OF 1000S**	200761	1.27%	72.87%	B	E	BE	II
METRONIDAZOLE INJECTION - 5MG/ML	**VIAL**	197477	1.25%	74.13%	B	E	BE	II
POVIDONE-IODINE SOLUTION - 10%	**1L**	189000	1.20%	75.33%	B	E	BE	II
ERYTHROMYCIN SUSPENSION (PFR) - 125MG/5ML	**100 ML**	188360	1.20%	76.52%	B	E	BE	II
IBUPROFEN TABLETS - 200MG	**TIN OF 1000S**	183744	1.17%	77.69%	B	E	BE	II
CO-TRIMOXAZOLE SUSPENSION - 240MG/5ML	**50ML BOTTLE**	178065	1.13%	78.82%	B	E	BE	II
METFORMINE TABLETS - 500MG	**TIN OF 1000S**	164884	1.05%	79.87%	B	E	BE	II
METRONIDAZOLE TABLETS - 200MG	**TIN OF 1000S**	153021	0.97%	80.84%	B	E	BE	II
PHENOBARBITONE INJECTION - 200MG/ML	**AMPOULE**	119952	0.76%	81.60%	B	E	BE	II
METHYLDOPA TABLETS - 250MG	**TIN OF 1000S**	116156	0.74%	82.34%	B	E	BE	II
HALOTHANE INHALATION	**250ML BOTTLE**	115170	0.73%	83.07%	B	E	BE	II
HEPARINE INJECTION - 5000UNITS/ML 5ML	**VIAL**	111908	0.71%	83.78%	B	E	BE	II
ATRACURIUM INJECTION-10MG/ML-2.5ML AMPUOLE	**AMPOULE**	108550	0.69%	84.47%	B	E	BE	II
SODIUM LACTATE SOLUTION WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	107850	0.68%	85.15%	B	N	BN	II
METHYLATED SPIRIT/ETHANOL DENATURED (ALCOHOL CONTENT 94%-96%)	**5L**	99180	0.63%	85.78%	B	N	BN	II

SILVER SULPHADIAZINE CREAM - 1%	**250GM JAR**	98402	0.62%	86.41%	B	N	BN	II
PREDNISOLONE TABLETS - 5MG	**TIN OF 1000S**	97123	0.62%	87.02%	B	N	BN	II
GLUCOSE INJECTION 50% 50ML (DEXTROSE) WITH EURO CAP/ COLLAPSIBLE BAG	**50ML BOTTLE**	95000	0.60%	87.63%	B	N	BN	II
ALBENDAZOLE TABLETS 400MG	**TIN OF 500S**	94342	0.60%	88.23%	B	N	BN	II
CHLORPROMAZINE TABLETS - 100MG	**TIN OF 1000S**	93347	0.59%	88.82%	B	N	BN	II
DICLOFENAC SODIUM TABLETS - 50MG	**PACK OF 1000S**	88803	0.56%	89.38%	B	N	BN	II
TINIDAZOLE TAB 500MG	**TIN OF 500S**	88578	0.56%	89.95%	B	N	BN	II
NIFEDIPINE TABLETS - 20MG	**TIN OF 1000S**	82063	0.52%	90.47%	B	N	BN	II
CIPROFLOXACIN TABLETS - 250MG	**TIN OF 1000S**	77440	0.49%	90.96%	C	N	CN	III
BUPIVACAINE HYD IN DEXTROSE INJ - 5MG(MARCAINE HEAVY)	**AMPOULE**	76527	0.49%	91.44%	C	N	CN	III
HYOSCINE BUTYL BROMIDE INJECTION 20MG/ML	**AMPOULE**	73440	0.47%	91.91%	C	N	CN	III
METRONIDOZOLE SUSPENSION - 200MG/5ML	**100 ML**	67200	0.43%	92.34%	C	N	CN	III
KETAMINE INJECTION - 50MG/ML	**VIAL**	64080	0.41%	92.74%	C	N	CN	III
ATENOLOL TABLETS - 50MG	**TIN OF 1000S**	60588	0.38%	93.13%	C	N	CN	III
PHYTOMENADIONE INJECTION (VIT K1) PAEDIATRIC - 2MG/0.2ML AMPOULE,	**AMPOULE**	60352	0.38%	93.51%	C	N	CN	III
OMEPRAZOLE CAPSULES - 20MG	**TIN OF 1000S**	56615	0.36%	93.87%	C	N	CN	III
AMITRIPTYLINE TABLETS - 25MG	**TIN OF 1000S**	55440	0.35%	94.22%	C	N	CN	III
WATER BASED	**TUBE**	53045	0.34%	94.56%	C	N	CN	III

LUBRICANT								
INSULIN SOLUBLE - 100IU/ML	**VIAL**	52780	0.34%	94.90%	C	N	CN	III
BENZHEXOL TABLETS - 5MG	**PACK OF 1000S**	50040	0.32%	95.21%	C	N	CN	III
SALBUTAMOL INHALER - 100MCG/ACTUATION	**200 doses cartridge**	48878	0.31%	95.52%	C	N	CN	III
HYDROCHLOROTHIAZIDE TABLETS - 50MG	**TIN OF 1000S**	48177	0.31%	95.83%	C	N	CN	III
GRISEOFULVIN TAB 125MG	**TIN OF 1000S**	46320	0.29%	96.12%	C	N	CN	III
MULTIVITAMIN SYRUP	**5L**	45895	0.29%	96.42%	C	N	CN	III
KETOCONAZOLE TABLETS - 200MG	**PACK OF 30S**	44616	0.28%	96.70%	C	N	CN	III
FOLIC ACID TABLETS - 5MG	**TIN OF 100S**	34340	0.22%	96.92%	C	N	CN	III
SALBUTAMOL SYRUP - 2MG/5ML	**100 ML**	34155	0.22%	97.13%	C	N	CN	III
GLIBENCLAMIDE TABLETS - 5MG	**TIN OF 1000S**	31900	0.20%	97.34%	C	N	CN	III
LOPERAMIDE CAPSULES - 2MG	**PACK OF 100S**	25344	0.16%	97.50%	C	N	CN	III
FERROUS SULPHATE TABLETS - 200MG	**TIN OF 1000S**	22866	0.15%	97.64%	C	N	CN	III
CHLORPHENIRAMINE SYRUP - 2MG/5ML	**5L**	21362	0.14%	97.78%	C	N	CN	III
FUROSEMIDE TABLETS - 40MG	**TIN OF 1000S**	20482	0.13%	97.91%	C	N	CN	III
FERROUS SULP/FOLIC 200MG/400MCG ACID TAB	**TIN OF 1000S**	20200	0.13%	98.04%	C	N	CN	III
VALPROIC ACID(SODIUM VALPROATE) 200MG TABLETS	**PACK OF 100S**	19884	0.13%	98.16%	C	N	CN	III
DIGOXIN TABLETS - 250MCG	**PACK OF 500S**	19640	0.12%	98.29%	C	N	CN	III
FLUOXETINE CAPSULES - 20MG	**PACK OF 100S**	18600	0.12%	98.41%	C	N	CN	III
HALOPERIDOL TABLETS - 5MG	**TIN OF 1000S**	17820	0.11%	98.52%	C	N	CN	III
METOCLOPRAMIDE INJECTION - 5MG/ML	**AMPOULE**	17793	0.11%	98.63%	C	N	CN	III

GENTAMYCIN SULPHATE SOLUTION (EYE / EAR DROPS) 0.3 % W/V	**5 ML BTL**	16336	0.10%	98.74%	C	N	CN	III
CLOTRIMAZOLE PESSARIES 3S- 200MG	**PACK OF 3S**	16320	0.10%	98.84%	C	N	CN	III
SALBUTAMOL TABLETS - 4MG	**TIN OF 1000S**	15840	0.10%	98.94%	C	N	CN	III
CLOTRIMAZOLE CREAM - 1%	**TUBE 20GM**	13150	0.08%	99.02%	C	N	CN	III
HYDROCORTISONE OINTMENT - 1%	**TUBE 15GM**	12625	0.08%	99.10%	C	N	CN	III
TETRACYCLINE EYE OINTMENT -1%	**TUBE 3.5 GM**	11716	0.07%	99.18%	C	N	CN	III
ACYCLOVIR TABLETS - 400MG	**PACK OF 100S**	11272	0.07%	99.25%	C	N	CN	III
CHLORPHENIRAMINE TABLETS - 4MG	**TIN OF 1000S**	10692	0.07%	99.32%	C	N	CN	III
NYSTATIN SUSPENSION - 100 000IU/ML	**30ML**	9999	0.06%	99.38%	C	N	CN	III
BUPIVACAINE HYD IN DEXTROSE INJ - 5MG	**AMPOULE**	9300	0.06%	99.44%	C	N	CN	III
BENZYLBENZOATE EMULSION - 25% APPLICATION	**50ML BOTTLE**	8670	0.06%	99.49%	C	N	CN	III
DIAZEPAM INJ 5MG/ML 2ML	**AMPOULE**	8159	0.05%	99.55%	C	N	CN	III
MAGNESIUM SULPHATE INJECTION - 50%	**AMPOULE**	7989	0.05%	99.60%	C	N	CN	III
PARACETAMOL SUPPOSITORIES 125MG	**PACK OF 10S**	7931	0.05%	99.65%	C	N	CN	III
ACETYLSALICYLIC ACID TABLETS - 300MG	**TIN OF 1000S**	7800	0.05%	99.70%	C	N	CN	III
FOLIC ACID TABLETS - 5MG	**TIN OF 1000S**	7605	0.05%	99.75%	C	N	CN	III
AMLODIPINE TABLET 5MG	**PACK OF 100S**	7374	0.05%	99.79%	C	N	CN	III
METOCLOPRAMIDE TABLETS - 10MG	**PACK OF 100S**	6615	0.04%	99.83%	C	N	CN	III
PHENOBARBITONE TABLETS - 30MG	**TIN OF 100S**	6212	0.04%	99.87%	C	N	CN	III
WATER FOR	**10ML**	4350	0.03%	99.90%	C	N	CN	III

INJECTION	**VIAL**							
ALCOHOL BASED HAND RUB	**500ML BOTTLE**	4050	0.03%	99.93%	C	N	CN	III
ADRENALINE INJECTION - 1MG/ML	**AMPOULE**	3981	0.03%	99.95%	C	N	CN	III
LEVOTHYROXINE SODIUM 100MCG TAB	**PACK OF 100S**	2450	0.02%	99.97%	C	N	CN	III
AMINOPHYLLINE INJECTION 25MG/ML-10ML	**AMPOULE**	1538	0.01%	99.98%	C	N	CN	III
DIAZEPAM TAB 5MG	**PACK X 100S**	1360	0.01%	99.99%	C	N	CN	III
SODIUM BICARBONATE INJECTION - 8.4%	**AMPOULE**	937	0.01%	99.99%	C	N	CN	III
CHLORAMPHENICAL INJECTION - 1GM	**VIAL**	701	0.00%	100.00%	C	N	CN	III
CHLORPHENIRAMINE INJECTION - 10MG/ML	**AMPOULE**	585	0.00%	100.00%	C	N	CN	III
		15748741						

Appendix 7: Analysis of OTHAYA SUB-COUNTY HOSPITAL 2014

Product Name	Basic Unit	Total Value	% total value	% cumulative total value	**ABC**	**VEN**	**ABC-VEN Matrix**	**ABC-VEN matrix analysis**
FLUCLOXACILLIN CAPSULES - 250MG	**TIN OF 1000S**	710841	15.75%	15.75%	A	V	AV	I
HYOSCINE BUTYLBROMIDE TAB 10MG	**TIN OF 1000S**	704000	15.59%	31.34%	A	V	AV	I
CEFIXIME TABLET 400MG	**PACK OF 10**	448440	9.93%	41.27%	A	V	AV	I
INSULIN BIPHASIC 30/70 - 100IU/ML	**VIAL**	355872	7.88%	49.16%	A	V	AV	I
AMOXYCILLIN CAPSULES - 250MG	**TIN OF 1000S**	339431	7.52%	56.68%	A	E	AE	I
ALCOHOL BASED HAND RUB	**500ML BOTTLE**	306310	6.79%	63.46%	A	E	AE	I
CEFUROXIME	**PACK**	28785	6.38%	69.84%	A	E	AE	I

250MG TABS	**OF 10**	0						
AMOXICILLIN/CLAVULANIC ACID ORAL SUSPENSION 312.5MG/5ML	**100 ML**	198848	4.40%	74.24%	B	E	BE	II
ACETYLSALICYLIC ACID TAB 75MG, ENTERIC COATED	**PACK OF 28S**	131946	2.92%	77.16%	B	E	BE	II
OXYTOCIN INJECTION - 5 IU/ML	**AMPOULE**	127800	2.83%	79.99%	B	E	BE	II
SODIUM CHLORIDE /NORMAL SALINE SOLUTION - 0.9% WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	118988	2.64%	82.63%	B	E	BE	II
SODIUM HYPOCHLORITE SOLUTION(TBCIDE) 5-5.6%W/V	**5L**	102000	2.26%	84.89%	B	E	BE	II
CARBAMAZEPINE TABLETS 200MG	**TIN OF 1000S**	72840	1.61%	86.50%	B	E	BE	II
NIFEDIPINE TABLETS - 20MG	**TIN OF 1000S**	62216	1.38%	87.88%	B	E	BE	II
ENALAPRIL TABLETS - 5MG	**PACK OF 100S**	53055	1.18%	89.06%	B	E	BE	II
SALBUTAMOL NEBULIZING SOLUTION - 5MG/ML 10ML	**10 ML VIAL**	52763	1.17%	90.23%	B	E	BE	II
CIPROFLOXACIN TABLETS - 250MG	**TIN OF 1000S**	50096	1.11%	91.34%	C	E	CE	II
WATER FOR INJECTION	**10ML VIAL**	43396	0.96%	92.30%	C	E	CE	II
HYDROCHLOROTHIAZIDE TABLETS - 50MG	**TIN OF 1000S**	30270	0.67%	92.97%	C	E	CE	II
INSULIN SOLUBLE - 100IU/ML	**VIAL**	29557	0.65%	93.62%	C	E	CE	II
HYOSCINE BUTYL BROMIDE INJECTION 20MG/ML	**AMPOULE**	27899	0.62%	94.24%	C	N	CN	III
HYDRALAZINE INJECTION - 20MG/ML	**AMPOULE**	25300	0.56%	94.80%	C	N	CN	III
DICLOFENAC SODIUM TABLETS - 50MG	**PACK OF 1000S**	23284	0.52%	95.32%	C	N	CN	III

SODIUM LACTATE SOLUTION WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	18639	0.41%	95.73%	C	N	CN	III
KETOCONAZOLE TABLETS - 200MG	**PACK OF 30S**	14872	0.33%	96.06%	C	N	CN	III
SILVER SULPHADIAZINE CREAM - 1%	**250GM JAR**	14272	0.32%	96.37%	C	N	CN	III
METRONIDAZOLE INJECTION - 5MG/ML	**VIAL**	13403	0.30%	96.67%	C	N	CN	III
METRONIDOZOLE SUSPENSION - 200MG/5ML	**100 ML**	12995	0.29%	96.96%	C	N	CN	III
AZITHROMYCIN 500MG	**PACK OF 3S**	12318	0.27%	97.23%	C	N	CN	III
CHLORPROMAZINE TABLETS - 100MG	**TIN OF 1000S**	12253	0.27%	97.50%	C	N	CN	III
DILOXANIDE FUROATE TAB 500MG	**TIN OF 500S**	11191	0.25%	97.75%	C	N	CN	III
SALBUTAMOL INHALER - 100MCG/ACTUATION	**200 doses cartridge**	11110	0.25%	98.00%	C	N	CN	III
VALPROIC ACID(SODIUM VALPROATE) 200MG TABLETS	**PACK OF 100S**	10818	0.24%	98.24%	C	N	CN	III
ERYTHROMYCIN TABLETS - 250MG	**TIN OF 1000S**	9469	0.21%	98.45%	C	N	CN	III
NYSTATIN SUSPENSION - 100 000IU/ML	**30ML**	6732	0.15%	98.60%	C	N	CN	III
GLUCOSE INJECTION 50% 50ML (DEXTROSE) WITH EURO CAP/ COLLAPSIBLE BAG	**50ML BOTTLE**	6000	0.13%	98.73%	C	N	CN	III
CO-TRIMOXAZOLE SUSPENSION - 240MG/5ML	**50ML BOTTLE**	5671	0.13%	98.85%	C	N	CN	III
LEVOTHYROXINE SODIUM 100MCG TAB	**PACK OF 100S**	5268	0.12%	98.97%	C	N	CN	III
PHENOBARBITONE TABLETS - 30MG	**TIN OF 100S**	4933	0.11%	99.08%	C	N	CN	III
AMINOPHYLLINE INJECTION 25MG/ML-	**AMPOULE**	4617	0.10%	99.18%	C	N	CN	III

10ML								
TINIDAZOLE TAB 500MG	**TIN OF 500S**	4591	0.10%	99.28%	C	N	CN	III
HYDROCORTISONE INJECTION - 100MG	**VIAL**	4465	0.10%	99.38%	C	N	CN	III
HALOPERIDOL TABLETS - 5MG	**TIN OF 1000S**	4455	0.10%	99.48%	C	N	CN	III
AMLODIPINE TABLET 5MG	**PACK OF 100S**	3654	0.08%	99.56%	C	N	CN	III
DEXAMETHASONE INJECTION - 4MG/ML	**AMPOULE**	3552	0.08%	99.64%	C	N	CN	III
BENZHEXOL 5MG TABS	**PACK OF 100S**	3237	0.07%	99.71%	C	N	CN	III
TETRACYCLINE EYE OINTMENT -1%	**TUBE 3.5 GM**	2907	0.06%	99.78%	C	N	CN	III
DIAZEPAM TAB 5MG	**PACK X 100S**	2615	0.06%	99.84%	C	N	CN	III
FUROSEMIDE TABLETS - 40MG	**TIN OF 1000S**	2387	0.05%	99.89%	C	N	CN	III
FERROUS SULPHATE TABLETS - 200MG	**TIN OF 1000S**	2250	0.05%	99.94%	C	N	CN	III
BENZYLBENZOATE EMULSION - 25% APPLICATION	**50ML BOTTLE**	1734	0.04%	99.98%	C	N	CN	III
METHYLDOPA TABLETS - 250MG	**TIN OF 1000S**	778	0.02%	99.99%	C	N	CN	III
BISACODYL 5MG TABLETS	**PACK OF 100S**	274	0.01%	100.00%	C	N	CN	III
		4514463						

Appendix 8: Analysis of OTHAYA SUB-COUNTY HOSPITAL 2015

Product Name	Basic Unit	Total Value	% total value	% cumulative total value	**ABC**	**VEN**	**ABC-VEN Matrix**	**ABC-VEN matrix analysis**
FLUCLOXACILLIN CAPSULES - 250MG	**TIN OF 1000S**	243134	9.07%	9.07%	A	V	AV	I
ACYCLOVIR TABLETS - 400MG	**PACK OF 100S**	167662	6.25%	15.33%	A	V	AV	I
FLUPHENAZINE INJECTION - 25MG/ML	**AMPOULE**	156600	5.84%	21.17%	A	V	AV	I

AMOXICILLIN/CLAVULANIC ACID ORAL SUSPENSION 312.5MG/5ML	**100 ML**	156492	5.84%	27.01%	A	V	AV	I
INSULIN BIPHASIC 30/70 - 100IU/ML	**VIAL**	145650	5.43%	32.44%	A	V	AV	I
SALBUTAMOL NEBULIZING SOLUTION - 5MG/ML 10ML	**10 ML VIAL**	132145	4.93%	37.37%	A	V	AV	I
AMOXYCILLIN CAPSULES - 250MG	**TIN OF 1000S**	129901	4.85%	42.22%	A	V	AV	I
SODIUM CHLORIDE /NORMAL SALINE SOLUTION - 0.9% WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	109737	4.09%	46.31%	A	E	AE	I
ANTI-D (RH) INJECTION - 300MCG	**VIAL**	81343	3.03%	49.34%	A	E	AE	I
PHYTOMENADIONE INJECTION (VIT K1) PAEDIATRIC - 2MG/0.2ML AMPOULE,	**AMPOULE**	78300	2.92%	52.27%	A	E	AE	I
AMLODIPINE TABLET 5MG	**PACK OF 100S**	71236	2.66%	54.92%	A	E	AE	I
TINIDAZOLE TAB 500MG	**TIN OF 500S**	69540	2.59%	57.52%	A	E	AE	I
PARACETAMOL TABLETS - 500MG	**TIN OF 1000S**	69318	2.59%	60.10%	A	E	AE	I
ENALAPRIL TABLETS - 5MG	**PACK OF 100S**	67689	2.53%	62.63%	A	E	AE	I
OMEPRAZOLE CAPSULES - 20MG	**TIN OF 1000S**	67308	2.51%	65.14%	A	E	AE	I
METRONIDOZOLE SUSPENSION - 200MG/5ML	**100 ML**	59368	2.21%	67.35%	A	E	AE	I
SODIUM HYPOCHLORITE SOLUTION	**5L**	53021	1.98%	69.33%	A	E	AE	I
HYDROCORTISONE INJECTION - 100MG	**VIAL**	49235	1.84%	71.17%	B	E	BE	II
NIFEDIPINE TABLETS - 20MG	**TIN OF 1000S**	44941	1.68%	72.85%	B	E	BE	II
SODIUM LACTATE SOLUTION WITH EURO CAP/	**500ML**	43859	1.64%	74.48%	B	E	BE	II

COLLAPSIBLE BAG								
WATER FOR INJECTION	**10ML VIAL**	43500	1.62%	76.11%	B	E	BE	II
CEFIXIME TABLET 400MG	**PACK OF 10**	42033	1.57%	77.67%	B	E	BE	II
PHYTOMENADIONE INJECTION (VIT K1) - 10MG/ML(ADULTS) 1ML AMPUOLE	**AMPOULE**	39148	1.46%	79.13%	B	E	BE	II
METFORMINE TABLETS - 500MG	**TIN OF 1000S**	37819	1.41%	80.54%	B	E	BE	II
GLUCOSE INJECTION 50% 50ML (DEXTROSE) WITH EURO CAP/ COLLAPSIBLE BAG	**50ML BOTTLE**	36000	1.34%	81.89%	B	E	BE	II
CIPROFLOXACIN TABLETS - 250MG	**TIN OF 1000S**	34210	1.28%	83.16%	B	E	BE	II
ATENOLOL TABLETS - 50MG	**TIN OF 1000S**	28142	1.05%	84.21%	B	E	BE	II
IBUPROFEN TABLETS - 200MG	**TIN OF 1000S**	27528	1.03%	85.24%	B	E	BE	II
METRONIDAZOLE TABLETS - 200MG	**TIN OF 1000S**	27490	1.03%	86.27%	B	E	BE	II
CEFUROXIME 250MG TABS	**PACK OF 10**	24640	0.92%	87.19%	B	E	BE	II
OXYTOCIN INJECTION - 5 IU/ML	**AMPOULE**	21300	0.79%	87.98%	B	E	BE	II
HYOSCINE BUTYL BROMIDE INJECTION 20MG/ML	**AMPOULE**	20561	0.77%	88.75%	B	E	BE	II
METRONIDAZOLE INJECTION - 5MG/ML	**VIAL**	19627	0.73%	89.48%	B	E	BE	II
CHLORPROMAZINE TABLETS - 100MG	**TIN OF 1000S**	18669	0.70%	90.18%	B	N	BN	II
POVIDONE-IODINE SOLUTION - 10%	**1L**	18000	0.67%	90.85%	C	N	CN	III
CARBAMAZEPINE TABLETS 200MG	**TIN OF 1000S**	16372	0.61%	91.46%	C	N	CN	III
AZITHROMYCIN 500MG	**PACK OF 3S**	13870	0.52%	91.98%	C	N	CN	III
DEXAMETHASONE INJECTION - 4MG/ML	**AMPOULE**	13000	0.48%	92.46%	C	N	CN	III
GLIBENCLAMIDE TABLETS - 5MG	**TIN OF 1000S**	12760	0.48%	92.94%	C	N	CN	III
ERYTHROMYCIN SUSPENSION (PFR) -	**100 ML**	11655	0.43%	93.37%	C	N	CN	III

125MG/5ML								
CO-TRIMOXAZOLE SUSPENSION - 240MG/5ML	**50ML BOTTLE**	11338	0.42%	93.79%	C	N	CN	III
GLUTARALDEHYDE 2% SOLUTION	**5LITRE**	10400	0.39%	94.18%	C	N	CN	III
ERYTHROMYCIN TABLETS - 250MG	**TIN OF 1000S**	9650	0.36%	94.54%	C	N	CN	III
PHENOBARBITONE INJECTION - 200MG/ML	**AMPOULE**	9542	0.36%	94.90%	C	N	CN	III
FERROUS SULP/FOLIC 200MG/400MCG ACID TAB	**TIN OF 1000S**	8675	0.32%	95.22%	C	N	CN	III
DARROWS HALF STRENGTH WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	8600	0.32%	95.54%	C	N	CN	III
SALBUTAMOL SYRUP - 2MG/5ML	**100 ML**	8370	0.31%	95.86%	C	N	CN	III
FUROSEMIDE TABLETS - 40MG	**TIN OF 1000S**	8360	0.31%	96.17%	C	N	CN	III
CLOTRIMAZOLE PESSARIES 3S- 200MG	**PACK OF 3S**	8340	0.31%	96.48%	C	N	CN	III
FERROUS SULPHATE TABLETS - 200MG	**TIN OF 1000S**	7815	0.29%	96.77%	C	N	CN	III
AMITRIPTYLINE TABLETS - 25MG	**TIN OF 1000S**	6600	0.25%	97.02%	C	N	CN	III
SILVER SULPHADIAZINE CREAM - 1%	**250GM JAR**	5602	0.21%	97.23%	C	N	CN	III
FLUCLOXACILLIN INJECTION - 250MG	**VIAL**	5600	0.21%	97.43%	C	N	CN	III
CEFTRIAXONE INJECTION IM/ IV- 250MG	**VIAL**	5310	0.20%	97.63%	C	N	CN	III
RANITIDINE INJECTION - 50MG/2ML	**AMPOULE**	4500	0.17%	97.80%	C	N	CN	III
TETRACYCLINE EYE OINTMENT -1%	**TUBE 3.5 GM**	4035	0.15%	97.95%	C	N	CN	III
CO-TRIMOXAZOLE TABLETS - 480MG	**TIN OF 1000S**	4000	0.15%	98.10%	C	N	CN	III
INSULIN SOLUBLE - 100IU/ML	**VIAL**	3898	0.15%	98.25%	C	N	CN	III

CALAMINE LOTION - 15%	**50ML BOTTLE**	3679	0.14%	98.38%	C	N	CN	III
ACETYLSALICYLIC ACID TAB 75MG, ENTERIC COATED	**PACK OF 28S**	3262	0.12%	98.50%	C	N	CN	III
WATER BASED LUBRICANT	**TUBE**	3110	0.12%	98.62%	C	N	CN	III
SALBUTAMOL TABLETS - 4MG	**TIN OF 1000S**	2640	0.10%	98.72%	C	N	CN	III
CLOTRIMAZOLE CREAM - 1%	**TUBE 20GM**	2630	0.10%	98.82%	C	N	CN	III
CHLORPHENIRAMINE TABLETS - 4MG	**TIN OF 1000S**	2475	0.09%	98.91%	C	N	CN	III
HALOPERIDOL TABLETS - 5MG	**TIN OF 1000S**	2430	0.09%	99.00%	C	N	CN	III
CHLORPHENIRAMINE SYRUP - 2MG/5ML	**5L**	2384	0.09%	99.09%	C	N	CN	III
VITAMIN B COMPLEX (B1, B6 AND B12)	**PACK OF 20S**	2290	0.09%	99.17%	C	N	CN	III
ADRENALINE INJECTION - 1MG/ML	**AMPOULE**	2175	0.08%	99.26%	C	N	CN	III
DICLOFENAC SODIUM TABLETS - 50MG	**PACK OF 1000S**	2070	0.08%	99.33%	C	N	CN	III
KETOCONAZOLE TABLETS - 200MG	**PACK OF 30S**	2028	0.08%	99.41%	C	N	CN	III
ZINC SULPHATE TABLETS - 20MG	**PACK OF 100S**	1980	0.07%	99.48%	C	N	CN	III
PREDNISOLONE TABLETS - 5MG	**TIN OF 1000S**	1980	0.07%	99.56%	C	N	CN	III
DIAZEPAM INJ 5MG/ML 2ML	**AMPOULE**	1724	0.06%	99.62%	C	N	CN	III
PHENOBARBITONE TABLETS - 30MG	**TIN OF 100S**	1566	0.06%	99.68%	C	N	CN	III
OXYTOCIN INJECTION - 10 IU/ML	**AMPOULE**	1462	0.05%	99.73%	C	N	CN	III
CHLORPHENIRAMINE INJECTION - 10MG/ML	**AMPOULE**	1350	0.05%	99.78%	C	N	CN	III
FOLIC ACID TABLETS - 5MG	**TIN OF 100S**	1253	0.05%	99.83%	C	N	CN	III
PHENYTOIN SODIUM TABLETS - 50MG	**TIN OF 1000S**	990	0.04%	99.87%	C	N	CN	III
BENZYLBENZOATE EMULSION - 25%	**50ML BOTTLE**	974	0.04%	99.90%	C	N	CN	III

APPLICATION								
VALPROIC ACID(SODIUM VALPROATE) 200MG TABLETS	**PACK OF 100S**	795	0.03%	99.93%	C	N	CN	III
MAGNESIUM SULPHATE INJECTION - 50%	**AMPOULE**	630	0.02%	99.96%	C	N	CN	III
LOPERAMIDE CAPSULES - 2MG	**PACK OF 100S**	432	0.02%	99.97%	C	N	CN	III
SODIUM BICARBONATE INJECTION - 8.4%	**AMPOULE**	426	0.02%	99.99%	C	N	CN	III
DIAZEPAM TAB 5MG	**PACK X 100S**	120	0.00%	99.99%	C	N	CN	III
DOXYCYCLINE CAPSULES - 100MG	**TIN OF 1000S**	115	0.00%	100.00%	C	N	CN	III
SALBUTAMOL INHALER - 100MCG/ACTUATION	**200 doses cartridge**	60	0.00%	100.00%	C	N	CN	III
		2680466						

Appendix 9: Analysis of OTHAYA SUB-COUNTY HOSPITAL 2016

Product Name	Basic Unit	Total Value	% total value	% cumulative total value	**ABC**	**VEN**	**ABC-VEN Matrix**	**ABC-VEN matrix analysis**
AMOXYCILLIN CAPSULES - 250MG	**TIN OF 1000S**	929070	12.18%	12.18%	A	V	AV	I
HYOSCINE BUTYLBROMIDE TAB 10MG	**TIN OF 1000S**	756800	9.92%	22.10%	A	V	AV	I
AMOXICILLIN/CLAVULANIC ACID ORAL SUSPENSION 312.5MG/5ML	**100 ML**	513216	6.73%	28.82%	A	V	AV	I
CEFIXIME TABLET 400MG	**PACK OF 10**	416020	5.45%	34.28%	A	V	AV	I
INSULIN BIPHASIC 30/70 - 100IU/ML	**VIAL**	301398	3.95%	38.23%	A	V	AV	I

CEFUROXIME 250MG TABS	**PACK OF 10**	295179	3.87%	42.09%	A	V	AV	I
CO-TRIMOXAZOLE TABLETS - 480MG	**TIN OF 1000S**	268400	3.52%	45.61%	A	V	AV	I
ANTI-D (RH) INJECTION - 300MCG	**VIAL**	215270	2.82%	48.43%	A	E	AE	I
SODIUM CHLORIDE /NORMAL SALINE SOLUTION - 0.9% WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	204970	2.69%	51.12%	A	E	AE	I
FLUPHENAZINE INJECTION - 25MG/ML	**AMPOULE**	203751	2.67%	53.79%	A	E	AE	I
METFORMINE TABLETS - 500MG	**TIN OF 1000S**	193149	2.53%	56.32%	A	E	AE	I
IBUPROFEN TABLETS - 200MG	**TIN OF 1000S**	189684	2.49%	58.81%	A	E	AE	I
CEFTRIAXONE INJECTION IM/IV - 1G	**VIAL**	188231	2.47%	61.28%	B	E	BE	II
SODIUM HYPOCHLORITE SOLUTION	**5L**	179917	2.36%	63.63%	B	E	BE	II
PARACETAMOL TABLETS - 500MG	**TIN OF 1000S**	172295	2.26%	65.89%	B	E	BE	II
NIFEDIPINE TABLETS - 20MG	**TIN OF 1000S**	158080	2.07%	67.96%	B	E	BE	II
PHYTOMENADIONE INJECTION (VIT K1) PAEDIATRIC - 2MG/0.2ML AMPOULE,	**AMPOULE**	131588	1.72%	69.69%	B	E	BE	II
ACETYLSALICYLIC ACID TAB 75MG, ENTERIC COATED	**PACK OF 28S**	124492	1.63%	71.32%	B	E	BE	II
CIPROFLOXACIN TABLETS - 250MG	**TIN OF 1000S**	123442	1.62%	72.94%	B	E	BE	II
ENALAPRIL TABLETS - 5MG	**PACK OF 100S**	122730	1.61%	74.55%	B	E	BE	II
METRONIDAZOLE TABLETS - 200MG	**TIN OF 1000S**	116298	1.52%	76.07%	B	E	BE	II
TINIDAZOLE TAB 500MG	**TIN OF 500S**	89984	1.18%	77.25%	B	E	BE	II
ERYTHROMYCIN SUSPENSION (PFR) - 125MG/5ML	**100 ML**	85470	1.12%	78.37%	B	E	BE	II
FLUCLOXACILLIN	**VIAL**	74667	0.98%	79.35%	B	E	BE	II

INJECTION - 250MG								
DICLOFENAC SODIUM TABLETS - 50MG	**PACK OF 1000S**	70815	0.93%	80.28%	B	E	BE	II
HYDROCORTISONE INJECTION - 100MG	**VIAL**	69179	0.91%	81.18%	B	E	BE	II
OMEPRAZOLE CAPSULES - 20MG	**TIN OF 1000S**	66411	0.87%	82.05%	B	E	BE	II
ERYTHROMYCIN TABLETS - 250MG	**TIN OF 1000S**	63690	0.83%	82.89%	B	E	BE	II
ALBENDAZOLE TABLETS 400MG	**TIN OF 500S**	60184	0.79%	83.68%	B	E	BE	II
PREDNISOLONE TABLETS - 5MG	**TIN OF 1000S**	58572	0.77%	84.45%	B	E	BE	II
METRONIDOZOLE SUSPENSION - 200MG/5ML	**100 ML**	56000	0.73%	85.18%	B	E	BE	II
HYDROCHLOROTHIAZIDE TABLETS - 50MG	**TIN OF 1000S**	51558	0.68%	85.86%	B	E	BE	II
DEXAMETHASONE INJECTION - 4MG/ML	**AMPOULE**	48750	0.64%	86.49%	B	E	BE	II
METHYLDOPA TABLETS - 250MG	**TIN OF 1000S**	46463	0.61%	87.10%	B	E	BE	II
VITAMIN B COMPLEX (B1, B6 AND B12)	**PACK OF 20S**	45852	0.60%	87.70%	B	E	BE	II
CHLORPROMAZINE TABLETS - 100MG	**TIN OF 1000S**	44564	0.58%	88.29%	B	E	BE	II
ATENOLOL TABLETS - 50MG	**TIN OF 1000S**	43758	0.57%	88.86%	B	E	BE	II
GLIBENCLAMIDE TABLETS - 5MG	**TIN OF 1000S**	41470	0.54%	89.41%	B	E	BE	II
POVIDONE-IODINE SOLUTION - 10%	**1L**	40800	0.53%	89.94%	B	N	BN	II
ALCOHOL BASED HAND RUB	**500ML BOTTLE**	37260	0.49%	90.43%	B	N	BN	II
HYOSCINE BUTYL BROMIDE INJECTION 20MG/ML	**AMPOULE**	36720	0.48%	90.91%	C	N	CN	III
OXYTOCIN INJECTION - 5 IU/ML	**AMPOULE**	35500	0.47%	91.38%	C	N	CN	III
SILVER SULPHADIAZINE CREAM - 1%	**250GM JAR**	34917	0.46%	91.83%	C	N	CN	III
SALBUTAMOL NEBULIZING	**10 ML VIAL**	34775	0.46%	92.29%	C	N	CN	III

SOLUTION - 5MG/ML 10ML								
HYDRALAZINE INJECTION - 20MG/ML	**AMPOULE**	26565	0.35%	92.64%	C	N	CN	III
TETRACYCLINE EYE OINTMENT -1%	**TUBE 3.5 GM**	26361	0.35%	92.98%	C	N	CN	III
METHYLATED SPIRIT/ETHANOL DENATURED (ALCOHOL CONTENT 94%-96%)	**5L**	24360	0.32%	93.30%	C	N	CN	III
CHLORPHENIRAMINE SYRUP - 2MG/5ML	**5L**	23787	0.31%	93.61%	C	N	CN	III
GRISEOFULVIN TAB 125MG	**TIN OF 1000S**	23160	0.30%	93.92%	C	N	CN	III
GENTAMYCIN SULPHATE SOLUTION (EYE / EAR DROPS) 0.3 % W/V	**5 ML BTL**	21914	0.29%	94.20%	C	N	CN	III
SALBUTAMOL TABLETS - 4MG	**TIN OF 1000S**	21240	0.28%	94.48%	C	N	CN	III
GLUCOSE INJECTION 50% 50ML (DEXTROSE) WITH EURO CAP/ COLLAPSIBLE BAG	**50ML BOTTLE**	21000	0.28%	94.76%	C	N	CN	III
HYDROCORTISONE OINTMENT - 1%	**TUBE 15GM**	20200	0.26%	95.02%	C	N	CN	III
MULTIVITAMIN SYRUP	**5L**	19095	0.25%	95.27%	C	N	CN	III
KETOCONAZOLE TABLETS - 200MG	**PACK OF 30S**	18590	0.24%	95.52%	C	N	CN	III
SODIUM LACTATE SOLUTION WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	18119	0.24%	95.75%	C	N	CN	III
CHLORPHENIRAMINE TABLETS - 4MG	**TIN OF 1000S**	17424	0.23%	95.98%	C	N	CN	III
SALBUTAMOL SYRUP - 2MG/5ML	**100 ML**	16335	0.21%	96.20%	C	N	CN	III
CO-TRIMOXAZOLE SUSPENSION - 240MG/5ML	**50ML BOTTLE**	16160	0.21%	96.41%	C	N	CN	III
SALBUTAMOL INHALER - 100MCG/ACTUATION	**200 doses cartridg**	15885	0.21%	96.62%	C	N	CN	III

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CLOTRIMAZOLE PESSARIES 3S- 200MG	**PACK OF 3S**	15520	0.20%	96.82%	C	N	CN	III
FERROUS SULPHATE TABLETS - 200MG	**TIN OF 1000S**	15435	0.20%	97.02%	C	N	CN	III
FERROUS SULP/FOLIC 200MG/400MCG ACID TAB	**TIN OF 1000S**	15150	0.20%	97.22%	C	N	CN	III
CEFTRIAXONE INJECTION IM/ IV- 250MG	**VIAL**	15033	0.20%	97.42%	C	N	CN	III
AZITHROMYCIN 500MG	**PACK OF 3S**	14746	0.19%	97.61%	C	N	CN	III
PHENOBARBITONE TABLETS - 30MG	**TIN OF 100S**	13050	0.17%	97.78%	C	N	CN	III
HALOPERIDOL TABLETS - 5MG	**TIN OF 1000S**	12758	0.17%	97.95%	C	N	CN	III
ACETYLSALICYLIC ACID TABLETS - 300MG	**TIN OF 1000S**	11440	0.15%	98.10%	C	N	CN	III
WATER FOR INJECTION	**10ML VIAL**	11165	0.15%	98.25%	C	N	CN	III
WATER BASED LUBRICANT	**TUBE**	10176	0.13%	98.38%	C	N	CN	III
CLOTRIMAZOLE CREAM - 1%	**TUBE 20GM**	9863	0.13%	98.51%	C	N	CN	III
BISACODYL 5MG TABLETS	**PACK OF 100S**	8039	0.11%	98.61%	C	N	CN	III
PHENOBARBITONE INJECTION - 200MG/ML	**AMPOULE**	7997	0.10%	98.72%	C	N	CN	III
AMLODIPINE TABLET 5MG	**PACK OF 100S**	7890	0.10%	98.82%	C	N	CN	III
ADRENALINE INJECTION - 1MG/ML	**AMPOULE**	7408	0.10%	98.92%	C	N	CN	III
AMITRIPTYLINE TABLETS - 25MG	**TIN OF 1000S**	6600	0.09%	99.01%	C	N	CN	III
INSULIN SOLUBLE - 100IU/ML	**VIAL**	6302	0.08%	99.09%	C	N	CN	III
FUROSEMIDE TABLETS - 40MG	**TIN OF 1000S**	6270	0.08%	99.17%	C	N	CN	III
HEPARINE INJECTION - 5000UNITS/ML 5ML	**VIAL**	5595	0.07%	99.24%	C	N	CN	III
CALAMINE LOTION	**50ML**	5520	0.07%	99.32%	C	N	CN	III

- 15%	**BOTTLE**							
FOLIC ACID TABLETS - 5MG	**TIN OF 1000S**	5070	0.07%	99.38%	C	N	CN	III
METOCLOPRAMIDE INJECTION - 5MG/ML	**AMPOULE**	4745	0.06%	99.44%	C	N	CN	III
METOCLOPRAMIDE TABLETS - 10MG	**PACK OF 100S**	4532	0.06%	99.50%	C	N	CN	III
BENZHEXOL TABLETS - 5MG	**PACK OF 1000S**	4170	0.05%	99.56%	C	N	CN	III
VALPROIC ACID(SODIUM VALPROATE) 200MG TABLETS	**PACK OF 100S**	3978	0.05%	99.61%	C	N	CN	III
DIGOXIN TABLETS - 250MCG	**PACK OF 500S**	3928	0.05%	99.66%	C	N	CN	III
FOLIC ACID TABLETS - 5MG	**TIN OF 100S**	3434	0.05%	99.71%	C	N	CN	III
NYSTATIN SUSPENSION - 100 000IU/ML	**30ML**	3333	0.04%	99.75%	C	N	CN	III
CHLORPHENIRAMINE INJECTION - 10MG/ML	**AMPOULE**	3309	0.04%	99.79%	C	N	CN	III
AMINOPHYLLINE INJECTION 25MG/ML-10ML	**AMPOULE**	3157	0.04%	99.84%	C	N	CN	III
DIAZEPAM INJ 5MG/ML 2ML	**AMPOULE**	2147	0.03%	99.86%	C	N	CN	III
BENZYLBENZOATE EMULSION - 25% APPLICATION	**50ML BOTTLE**	1734	0.02%	99.89%	C	N	CN	III
MAGNESIUM SULPHATE INJECTION - 50%	**AMPOULE**	1575	0.02%	99.91%	C	N	CN	III
LEVOTHYROXINE SODIUM 100MCG TAB	**PACK OF 100S**	1470	0.02%	99.93%	C	N	CN	III
DIAZEPAM TAB 5MG	**PACK X 100S**	1240	0.02%	99.94%	C	N	CN	III
LOPERAMIDE CAPSULES - 2MG	**PACK OF 100S**	1188	0.02%	99.96%	C	N	CN	III
CHLORAMPHENICAL INJECTION - 1GM	**VIAL**	1168	0.02%	99.97%	C	N	CN	III
PARACETAMOL SUPPOSITORIES 125MG	**PACK OF 10S**	1078	0.01%	99.99%	C	N	CN	III
METRONIDAZOLE	**VIAL**	519	0.01%	99.99%	C	N	CN	III

INJECTION - 5MG/ML								
SODIUM BICARBONATE INJECTION - 8.4%	**AMPOULE**	426	0.01%	100.00%	C	N	CN	III
		7629692						

Appendix 10: Analysis of MT. KENYA SUB- COUNTY HOSPITAL 2014

Product Name	Basic Unit	Total Value	% total value	% cumulative total value	**ABC**	**VEN**	**ABC-VEN Matrix**	**ABC-VEN matrix analysis**
INSULIN BIPHASIC 30/70 - 100IU/ML	**VIAL**	533808	22.33%	22.33%	A	V	AV	I
CEFIXIME TABLET 400MG	**PACK OF 10**	179376	7.50%	29.84%	A	V	AV	I
OXYTOCIN INJECTION - 5 IU/ML	**AMPOULE**	170400	7.13%	36.97%	A	V	AV	I
HYOSCINE BUTYLBROMIDE TAB 10MG	**TIN OF 1000S**	123200	5.15%	42.12%	A	V	AV	I
FLUCLOXACILLIN CAPSULES - 250MG	**TIN OF 1000S**	122034	5.11%	47.23%	A	V	AV	I
CEFUROXIME 250MG TABS	**PACK OF 10**	95950	4.01%	51.24%	A	E	AE	I
ANTI-D (RH) INJECTION - 300MCG	**VIAL**	86108	3.60%	54.84%	A	E	AE	I
AMOXICILLIN/CLAVULANIC ACID ORAL SUSPENSION 312.5MG/5ML	**100 ML**	71280	2.98%	57.83%	A	E	AE	I
AMOXYCILLIN CAPSULES - 250MG	**TIN OF 1000S**	63643	2.66%	60.49%	A	E	AE	I
PARACETAMOL TABLETS - 500MG	**TIN OF 1000S**	61950	2.59%	63.08%	A	E	AE	I
ACETYLSALICYLIC ACID TAB 75MG, ENTERIC COATED	**PACK OF 28S**	55752	2.33%	65.41%	A	E	AE	I
SALBUTAMOL NEBULIZING SOLUTION - 5MG/ML 10ML	**10 ML VIAL**	52763	2.21%	67.62%	A	E	AE	I
CIPROFLOXACIN TABLETS - 250MG	**TIN OF 1000S**	50096	2.10%	69.72%	A	E	AE	I

HALOTHANE INHALATION	**250ML BOTTLE**	46068	1.93%	71.64%	B	E	BE	II
SODIUM CHLORIDE /NORMAL SALINE SOLUTION - 0.9% WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	39663	1.66%	73.30%	B	E	BE	II
NIFEDIPINE TABLETS - 20MG	**TIN OF 1000S**	38703	1.62%	74.92%	B	E	BE	II
POVIDONE-IODINE SOLUTION - 10%	**1L**	34800	1.46%	76.38%	B	E	BE	II
ACYCLOVIR TABLETS - 400MG	**PACK OF 100S**	33734	1.41%	77.79%	B	E	BE	II
PARACETAMOL SYRUP 120MG/5ML	**60ML BOTTLE**	28154	1.18%	78.97%	B	E	BE	II
MAGNESIUM SULPHATE INJECTION - 50%	**AMPOULE**	27474	1.15%	80.12%	B	E	BE	II
OMEPRAZOLE CAPSULES 20MG	**PACK OF 30S**	27391	1.15%	81.26%	B	E	BE	II
METRONIDOZOLE SUSPENSION - 200MG/5ML	**100 ML**	25990	1.09%	82.35%	B	E	BE	II
METFORMIN TABLETS 500MG	**PACK OF 30S**	25394	1.06%	83.41%	B	E	BE	II
GLUCOSE INJECTION 50% 50ML (DEXTROSE) WITH EURO CAP/ COLLAPSIBLE BAG	**50ML BOTTLE**	24000	1.00%	84.42%	B	E	BE	II
HYOSCINE BUTYL BROMIDE INJECTION 20MG/ML	**AMPOULE**	23040	0.96%	85.38%	B	E	BE	II
NEOSTIGMINE INJECTION - 2.5MG/ML	**VIAL**	20704	0.87%	86.25%	B	E	BE	II
IBUPROFEN TABLETS - 200MG	**TIN OF 1000S**	16881	0.71%	86.95%	B	E	BE	II
ENALAPRIL TABLETS - 5MG	**PACK OF 100S**	16747	0.70%	87.65%	B	E	BE	II
METRONIDAZOLE INJECTION - 5MG/ML	**VIAL**	16046	0.67%	88.32%	B	E	BE	II
HYDROCORTISONE OINTMENT - 1%	**TUBE 15GM**	15015	0.63%	88.95%	B	E	BE	II
METHYLATED SPIRIT/ETHANOL DENATURED	**5L**	15000	0.63%	89.58%	B	E	BE	II

(ALCOHOL CONTENT 94%-96%)								
NYSTATIN SUSPENSION - 100 000IU/ML	**30ML**	13464	0.56%	90.14%	B	E	BE	II
HEPARINE INJECTION - 5000UNITS/ML 5ML	**VIAL**	12431	0.52%	90.66%	C	E	CE	II
HYDROCHLOROTHIAZIDE TABLETS - 50MG	**TIN OF 1000S**	12250	0.51%	91.18%	C	E	CE	II
ETHANOL (DENATURED) - 70%	**5L**	11900	0.50%	91.67%	C	E	CE	II
HYDROCORTISONE INJECTION - 100MG	**VIAL**	11197	0.47%	92.14%	C	N	CN	III
DICLOFENAC SODIUM TABLETS - 50MG	**PACK OF 1000S**	10969	0.46%	92.60%	C	N	CN	III
CLOTRIMAZOLE CREAM - 1%	**TUBE 20GM**	9972	0.42%	93.02%	C	N	CN	III
CEFTAZIDIME 1G INJ.	**VIAL**	9800	0.41%	93.43%	C	N	CN	III
ERYTHROMYCIN TABLETS - 250MG	**TIN OF 1000S**	9469	0.40%	93.82%	C	N	CN	III
SODIUM LACTATE SOLUTION WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	9320	0.39%	94.21%	C	N	CN	III
ATENOLOL TABLETS - 50MG	**TIN OF 1000S**	8752	0.37%	94.58%	C	N	CN	III
ERYTHROMYCIN SUSPENSION (PFR) - 125MG/5ML	**100 ML**	8139	0.34%	94.92%	C	N	CN	III
BUPIVACAINE HYD IN DEXTROSE INJ - 5MG	**AMPOULE**	8096	0.34%	95.26%	C	N	CN	III
SUXAMETHONIUM CHLORIDE INJECTION	**AMPOULE**	7232	0.30%	95.56%	C	N	CN	III
DIAZEPAM TAB 5MG	**PACK X 100S**	7191	0.30%	95.86%	C	N	CN	III
CO-TRIMOXAZOLE SUSPENSION - 240MG/5ML	**50ML BOTTLE**	7088	0.30%	96.16%	C	N	CN	III
SODIUM HYPOCHLORITE SOLUTION(TBCIDE) 5-5.6%W/V	**5L**	7020	0.29%	96.45%	C	N	CN	III

AMLODIPINE TABLET 5MG	**PACK OF 100S**	6749	0.28%	96.74%	C	N	CN	III
TINIDAZOLE TAB 500MG	**TIN OF 500S**	6469	0.27%	97.01%	C	N	CN	III
AZITHROMYCIN 500MG	**PACK OF 3S**	6159	0.26%	97.26%	C	N	CN	III
TETRACYCLINE EYE OINTMENT -1%	**TUBE 3.5 GM**	5742	0.24%	97.50%	C	N	CN	III
FLUCLOXACILLIN INJECTION - 250MG	**VIAL**	5683	0.24%	97.74%	C	N	CN	III
LEVOTHYROXINE SODIUM 100MCG TAB	**PACK OF 100S**	5268	0.22%	97.96%	C	N	CN	III
HYDRALAZINE INJECTION - 20MG/ML	**AMPOULE**	5060	0.21%	98.17%	C	N	CN	III
ZINC SULPHATE TABLETS - 20MG	**PACK OF 100S**	4950	0.21%	98.38%	C	N	CN	III
DEXAMETHASONE INJECTION - 4MG/ML	**AMPOULE**	4289	0.18%	98.56%	C	N	CN	III
KETOCONAZOLE TABLETS - 200MG	**PACK OF 30S**	3718	0.16%	98.72%	C	N	CN	III
CARBAMAZEPINE TABLETS 200MG	**TIN OF 1000S**	3642	0.15%	98.87%	C	N	CN	III
VALPROIC ACID(SODIUM VALPROATE) 200MG TABLETS	**PACK OF 100S**	3606	0.15%	99.02%	C	N	CN	III
CLOTRIMAZOLE PESSARIES 3S- 200MG	**PACK OF 3S**	3044	0.13%	99.15%	C	N	CN	III
CHLORPROMAZINE TABLETS - 100MG	**TIN OF 1000S**	2910	0.12%	99.27%	C	N	CN	III
WATER FOR INJECTION	**10ML VIAL**	2712	0.11%	99.38%	C	N	CN	III
FUROSEMIDE TABLETS - 40MG	**TIN OF 1000S**	2387	0.10%	99.48%	C	N	CN	III
ADRENALINE INJECTION - 1MG/ML	**AMPOULE**	2200	0.09%	99.57%	C	N	CN	III
RANITIDINE INJECTION - 50MG/2ML	**AMPOULE**	1582	0.07%	99.64%	C	N	CN	III
WATER BASED LUBRICANT	**TUBE**	1313	0.05%	99.69%	C	N	CN	III
DILOXANIDE FUROATE TAB 500MG	**TIN OF 500S**	1119	0.05%	99.74%	C	N	CN	III
ATROPINE INJECTION - 1MG/ML	**AMPOULE**	1015	0.04%	99.78%	C	N	CN	III
FLUOXETINE	**PACK**	930	0.04%	99.82%	C	N	CN	III

CAPSULES - 20MG	**OF 100S**							
BENZYLBENZOATE EMULSION - 25% APPLICATION	**50ML BOTTLE**	867	0.04%	99.86%	C	N	CN	III
GENTAMYCIN SULPHATE SOLUTION (EYE / EAR DROPS) 0.3 % W/V	**5 ML BTL**	797	0.03%	99.89%	C	N	CN	III
CHLORPHENIRAMINE TABLETS - 4MG	**TIN OF 1000S**	693	0.03%	99.92%	C	N	CN	III
PHENOBARBITONE TABLETS - 30MG	**TIN OF 100S**	406	0.02%	99.94%	C	N	CN	III
FERROUS SULP/FOLIC 200MG/400MCG ACID TAB	**TIN OF 1000S**	390	0.02%	99.95%	C	N	CN	III
FOLIC ACID TABLETS - 5MG	**TIN OF 1000S**	315	0.01%	99.97%	C	N	CN	III
BISACODYL 5MG TABLETS	**PACK OF 100S**	274	0.01%	99.98%	C	N	CN	III
CHLORPHENIRAMINE INJECTION - 10MG/ML	**AMPOULE**	228	0.01%	99.99%	C	N	CN	III
METOCLOPRAMIDE TABLETS - 10MG	**PACK OF 100S**	127	0.01%	99.99%	C	N	CN	III
LOPERAMIDE CAPSULES - 2MG	**PACK OF 100S**	79	0.00%	100.00%	C	N	CN	III
METHYLDOPA TABLETS - 250MG	**TIN OF 1000S**	52	0.00%	100.00%	C	N	CN	III
		2390228						

Appendix 11: Analysis of MT. KENYA SUB- COUNTY HOSPITAL 2015

Product Name	Basic Unit	Total Value	% total value	% cumulative total value	**ABC**	**VEN**	**ABC-VEN Matrix**	**ABC-VEN matrix analysis**
ANTI-D (RH) INJECTION - 300MCG	**VIAL**	348612	15.54 %	15.54%	A	V	AV	I
SODIUM STIBOGLUCONATE - 100MG/ML	**VIAL**	208400	9.29%	24.82%	A	V	AV	I
INSULIN BIPHASIC 30/70 - 100IU/ML	**VIAL**	156303	6.97%	31.79%	A	V	AV	I

AMOXICILLIN/CLAVULANIC ACID ORAL SUSPENSION 312.5MG/5ML	**100 ML**	116640	5.20%	36.99%	A	V	AV	I
CEFUROXIME 250MG TABS	**PACK OF 10**	99509	4.43%	41.42%	A	V	AV	I
HALOTHANE INHALATION	**250ML BOTTLE**	83760	3.73%	45.15%	A	V	AV	I
SODIUM CHLORIDE /NORMAL SALINE SOLUTION - 0.9% WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	82973	3.70%	48.85%	A	V	AV	I
CEFTAZIDIME 1G INJ.	**VIAL**	76125	3.39%	52.25%	A	E	AE	I
FLUCLOXACILLIN CAPSULES - 250MG	**TIN OF 1000S**	75730	3.37%	55.62%	A	E	AE	I
CEFIXIME TABLET 400MG	**PACK OF 10**	75659	3.37%	58.99%	A	E	AE	I
HYDRALAZINE INJECTION - 20MG/ML	**AMPOULE**	73600	3.28%	62.27%	A	E	AE	I
SALBUTAMOL NEBULIZING SOLUTION - 5MG/ML 10ML	**10 ML VIAL**	73028	3.25%	65.53%	A	E	AE	I
SODIUM HYPOCHLORITE SOLUTION	**5L**	68486	3.05%	68.58%	A	E	AE	I
ERYTHROMYCIN SUSPENSION (PFR) - 125MG/5ML	**100 ML**	51800	2.31%	70.89%	A	E	AE	I
MULTIVITAMIN SYRUP	**5L**	41205	1.84%	72.72%	B	E	BE	II
CO-TRIMOXAZOLE SUSPENSION - 240MG/5ML	**50ML BOTTLE**	32394	1.44%	74.17%	B	E	BE	II
AMOXYCILLIN CAPSULES - 250MG	**TIN OF 1000S**	28239	1.26%	75.43%	B	E	BE	II
METRONIDOZOLE SUSPENSION - 200MG/5ML	**100 ML**	28028	1.25%	76.67%	B	E	BE	II
FLUCLOXACILLIN INJECTION - 250MG	**VIAL**	28000	1.25%	77.92%	B	E	BE	II
DARROWS HALF STRENGTH WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	24000	1.07%	78.99%	B	E	BE	II
ENALAPRIL TABLETS - 5MG	**PACK OF 100S**	19248	0.86%	79.85%	B	E	BE	II
CARBAMAZEPINE	**TIN OF**	18555	0.83%	80.68%	B	E	BE	II

TABLETS 200MG	**1000S**							
METHYLDOPA TABLETS - 250MG	**TIN OF 1000S**	18320	0.82%	81.49%	B	E	BE	II
IBUPROFEN TABLETS - 200MG	**TIN OF 1000S**	17388	0.77%	82.27%	B	E	BE	II
AZITHROMYCIN 500MG	**PACK OF 3S**	16297	0.73%	82.99%	B	E	BE	II
HYOSCINE BUTYL BROMIDE INJECTION 20MG/ML	**AMPOULE**	15967	0.71%	83.71%	B	E	BE	II
METFORMINE TABLETS - 500MG	**TIN OF 1000S**	15425	0.69%	84.39%	B	E	BE	II
DILOXANIDE FUROATE TAB 500MG	**TIN OF 500S**	15400	0.69%	85.08%	B	E	BE	II
VITAMIN B COMPLEX (B1, B6 AND B12)	**PACK OF 20S**	15268	0.68%	85.76%	B	E	BE	II
AMLODIPINE TABLET 5MG	**PACK OF 100S**	14247	0.63%	86.39%	B	E	BE	II
CO-TRIMOXAZOLE TABLETS - 480MG	**TIN OF 1000S**	12800	0.57%	86.97%	B	E	BE	II
GLUTARALDEHYDE 2% SOLUTION	**5LITRE**	12711	0.57%	87.53%	B	E	BE	II
WATER FOR INJECTION	**10ML VIAL**	11615	0.52%	88.05%	B	E	BE	II
CHLORAMPHENICAL INJECTION - 1GM	**VIAL**	11138	0.50%	88.55%	B	E	BE	II
POVIDONE-IODINE SOLUTION - 10%	**1L**	10800	0.48%	89.03%	B	E	BE	II
PARACETAMOL TABLETS - 500MG	**TIN OF 1000S**	10675	0.48%	89.50%	B	E	BE	II
PHYTOMENADIONE INJECTION (VIT K1) PAEDIATRIC - 2MG/0.2ML AMPOULE,	**AMPOULE**	10440	0.47%	89.97%	B	E	BE	II
KETAMINE INJECTION - 50MG/ML	**VIAL**	10266	0.46%	90.43%	B	E	BE	II
ACYCLOVIR TABLETS - 400MG	**PACK OF 100S**	10060	0.45%	90.87%	B	E	BE	II
GLUCOSE INJECTION 50% 50ML (DEXTROSE) WITH EURO CAP/ COLLAPSIBLE BAG	**50ML BOTTLE**	10000	0.45%	91.32%	C	N	CN	III
SALBUTAMOL SYRUP - 2MG/5ML	**100 ML**	9450	0.42%	91.74%	C	N	CN	III
QUININE SULPHATE TABLETS - 300MG	**TIN OF 1000S**	8888	0.40%	92.14%	C	N	CN	III
SODIUM LACTATE	**500ML**	8844	0.39%	92.53%	C	N	CN	III

SOLUTION WITH EURO CAP/ COLLAPSIBLE BAG								
DOXYCYCLINE CAPSULES - 100MG	**TIN OF 1000S**	8456	0.38%	92.91%	C	N	CN	III
ATENOLOL TABLETS - 50MG	**TIN OF 1000S**	7390	0.33%	93.24%	C	N	CN	III
BUPIVACAINE HYD IN DEXTROSE INJ - 5MG	**AMPOULE**	7246	0.32%	93.56%	C	N	CN	III
ALBENDAZOLE TABLETS 400MG	**TIN OF 500S**	7176	0.32%	93.88%	C	N	CN	III
DIAZEPAM INJ 5MG/ML 2ML	**AMPOULE**	6895	0.31%	94.19%	C	N	CN	III
OXYTOCIN INJECTION - 10 IU/ML	**AMPOULE**	6579	0.29%	94.48%	C	N	CN	III
HALOPERIDOL TABLETS - 5MG	**TIN OF 1000S**	6480	0.29%	94.77%	C	N	CN	III
CLOTRIMAZOLE CREAM - 1%	**TUBE 20GM**	6275	0.28%	95.05%	C	N	CN	III
ZINC SULPHATE TABLETS - 20MG	**PACK OF 100S**	5940	0.26%	95.31%	C	N	CN	III
LEVOTHYROXINE SODIUM 100MCG TAB	**PACK OF 100S**	5880	0.26%	95.58%	C	N	CN	III
TINIDAZOLE TAB 500MG	**TIN OF 500S**	5700	0.25%	95.83%	C	N	CN	III
BENZYLBENZOATE EMULSION - 25% APPLICATION	**50ML BOTTLE**	5516	0.25%	96.08%	C	N	CN	III
FOLIC ACID TABLETS - 5MG	**TIN OF 100S**	5011	0.22%	96.30%	C	N	CN	III
PRAZIQUANTEL TABLETS - 600MG	**PACK OF 100S**	4750	0.21%	96.51%	C	N	CN	III
AMITRIPTYLINE TABLETS - 25MG	**TIN OF 1000S**	4620	0.21%	96.72%	C	N	CN	III
ERYTHROMYCIN TABLETS - 250MG	**TIN OF 1000S**	3860	0.17%	96.89%	C	N	CN	III
PARACETAMOL SUPPOSITORIES 125MG	**PACK OF 10S**	3850	0.17%	97.06%	C	N	CN	III
METOCLOPRAMIDE TABLETS - 10MG	**PACK OF 100S**	3831	0.17%	97.23%	C	N	CN	III
HYDROCORTISONE OINTMENT - 1%	**TUBE 15GM**	3714	0.17%	97.40%	C	N	CN	III
CALAMINE LOTION - 15%	**50ML BOTTLE**	3677	0.16%	97.56%	C	N	CN	III
DEXAMETHASONE INJECTION - 4MG/ML	**AMPOULE**	3575	0.16%	97.72%	C	N	CN	III
CIPROFLOXACIN TABLETS - 250MG	**TIN OF 1000S**	3574	0.16%	97.88%	C	N	CN	III

PHENYTOIN SODIUM TABLETS - 50MG	**TIN OF 1000S**	3300	0.15%	98.03%	C	N	CN	III
ACETYLSALICYLIC ACID TAB 75MG, ENTERIC COATED	**PACK OF 28S**	3262	0.15%	98.17%	C	N	CN	III
CHLORPHENIRAMINE SYRUP - 2MG/5ML	**5L**	3218	0.14%	98.31%	C	N	CN	III
SILVER SULPHADIAZINE CREAM - 1%	**250GM JAR**	2801	0.12%	98.44%	C	N	CN	III
COMPOUND MAGNESIUM TRISILICATE TABLETS	**TIN OF 1000S**	2786	0.12%	98.56%	C	N	CN	III
CLOTRIMAZOLE PESSARIES 3S- 200MG	**PACK OF 3S**	2784	0.12%	98.69%	C	N	CN	III
BUPIVACAINE HYD IN DEXTROSE INJ - 5MG(MARCAINE HEAVY)	**AMPOULE**	2551	0.11%	98.80%	C	N	CN	III
HYDROCORTISONE INJECTION - 100MG	**VIAL**	2545	0.11%	98.91%	C	N	CN	III
WATER BASED LUBRICANT	**TUBE**	2262	0.10%	99.02%	C	N	CN	III
FERROUS SULPHATE TABLETS - 200MG	**TIN OF 1000S**	2147	0.10%	99.11%	C	N	CN	III
FERROUS SULP/FOLIC 200MG/400MCG ACID TAB	**TIN OF 1000S**	2080	0.09%	99.20%	C	N	CN	III
PREDNISOLONE TABLETS - 5MG	**TIN OF 1000S**	1980	0.09%	99.29%	C	N	CN	III
CHLORPROMAZINE TABLETS - 100MG	**TIN OF 1000S**	1867	0.08%	99.38%	C	N	CN	III
PHENOBARBITONE TABLETS - 30MG	**TIN OF 100S**	1670	0.07%	99.45%	C	N	CN	III
ATRACURIUM INJECTION-10MG/ML-2.5ML AMPUOLE	**AMPOULE**	1670	0.07%	99.52%	C	N	CN	III
NEOSTIGMINE INJECTION - 2.5MG/ML	**VIAL**	1655	0.07%	99.60%	C	N	CN	III
SODIUM BICARBONATE INJECTION - 8.4%	**AMPOULE**	1181	0.05%	99.65%	C	N	CN	III
FLUPHENAZINE INJECTION - 25MG/ML	**AMPOULE**	1160	0.05%	99.70%	C	N	CN	III
GLIBENCLAMIDE TABLETS - 5MG	**TIN OF 1000S**	1160	0.05%	99.75%	C	N	CN	III
METRONIDAZOLE TABLETS - 200MG	**TIN OF 1000S**	916	0.04%	99.79%	C	N	CN	III

NIFEDIPINE TABLETS - 20MG	**TIN OF 1000S**	899	0.04%	99.83%	C	N	CN	III
VALPROIC ACID(SODIUM VALPROATE) 200MG TABLETS	**PACK OF 100S**	795	0.04%	99.87%	C	N	CN	III
SALBUTAMOL INHALER - 100MCG/ACTUATION	**200 doses cartridge**	600	0.03%	99.90%	C	N	CN	III
FLUOXETINE CAPSULES - 20MG	**PACK OF 100S**	583	0.03%	99.92%	C	N	CN	III
ACETYLSALICYLIC ACID TABLETS - 300MG	**TIN OF 1000S**	468	0.02%	99.94%	C	N	CN	III
BISACODYL 5MG TABLETS	**PACK OF 100S**	365	0.02%	99.96%	C	N	CN	III
SALBUTAMOL TABLETS - 4MG	**TIN OF 1000S**	240	0.01%	99.97%	C	N	CN	III
ADRENALINE INJECTION - 1MG/ML	**AMPOULE**	218	0.01%	99.98%	C	N	CN	III
KETOCONAZOLE TABLETS - 200MG	**PACK OF 30S**	203	0.01%	99.99%	C	N	CN	III
CHLORPHENIRAMINE TABLETS - 4MG	**TIN OF 1000S**	90	0.00%	99.99%	C	N	CN	III
DIAZEPAM TAB 5MG	**PACK X 100S**	80	0.00%	100.00%	C	N	CN	III
TETRACYCLINE EYE OINTMENT -1%	**TUBE 3.5 GM**	67	0.00%	100.00%	C	N	CN	III
		2243892						

Appendix 12: Analysis of MT. KENYA SUB- COUNTY HOSPITAL 2016

Product Name	Basic Unit	Total Value	% total value	% cumulative total value	**ABC**	**VEN**	**ABC-VEN Matrix**	**ABC-VEN matrix analysis**
INSULIN BIPHASIC 30/70 - 100IU/ML	**VIAL**	279870	12.87%	12.87%	A	V	AV	I
ALBENDAZOLE TABLETS 400MG	**TIN OF 500S**	264322	12.16%	25.03%	A	V	AV	I
HYOSCINE BUTYLBROMIDE TAB 10MG	**TIN OF 1000S**	193600	8.90%	33.93%	A	V	AV	I
SODIUM HYPOCHLORITE SOLUTION	**5L**	159454	7.33%	41.27%	A	V	AV	I
ANTI-D (RH)	**VIAL**	129162	5.94%	47.21%	A	V	AV	I

INJECTION - 300MCG								
AMOXYCILLIN CAPSULES - 250MG	**TIN OF 1000S**	107552	4.95%	52.16%	A	E	AE	I
AMOXICILLIN/CLAVULANIC ACID ORAL SUSPENSION 312.5MG/5ML	**100 ML**	71280	3.28%	55.43%	A	E	AE	I
CEFIXIME TABLET 400MG	**PACK OF 10**	66185	3.04%	58.48%	A	E	AE	I
CEFUROXIME 250MG TABS	**PACK OF 10**	60648	2.79%	61.27%	A	E	AE	I
CIPROFLOXACIN TABLETS - 250MG	**TIN OF 1000S**	50616	2.33%	63.60%	A	E	AE	I
ACETYLSALICYLIC ACID TAB 75MG, ENTERIC COATED	**PACK OF 28S**	40519	1.86%	65.46%	A	E	AE	I
CEFTAZIDIME 1G INJ.	**VIAL**	38438	1.77%	67.23%	A	E	AE	I
HALOTHANE INHALATION	**250ML BOTTLE**	38390	1.77%	68.99%	A	E	AE	I
SALBUTAMOL INHALER - 100MCG/ACTUATION	**200 doses cartridge**	36659	1.69%	70.68%	A	E	AE	I
METFORMINE TABLETS - 500MG	**TIN OF 1000S**	30621	1.41%	72.09%	B	E	BE	II
SODIUM CHLORIDE /NORMAL SALINE SOLUTION - 0.9% WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	29014	1.33%	73.42%	B	E	BE	II
METRONIDOZOLE SUSPENSION - 200MG/5ML	**100 ML**	28000	1.29%	74.71%	B	E	BE	II
PARACETAMOL TABLETS - 500MG	**TIN OF 1000S**	25620	1.18%	75.89%	B	E	BE	II
METHYLDOPA TABLETS - 250MG	**TIN OF 1000S**	25554	1.18%	77.06%	B	E	BE	II
ERYTHROMYCIN TABLETS - 250MG	**TIN OF 1000S**	25476	1.17%	78.24%	B	E	BE	II
ATRACURIUM INJECTION-10MG/ML-2.5ML AMPUOLE	**AMPOULE**	25050	1.15%	79.39%	B	E	BE	II
ERYTHROMYCIN SUSPENSION (PFR) - 125MG/5ML	**100 ML**	20350	0.94%	80.32%	B	E	BE	II
AMLODIPINE TABLET 5MG	**PACK OF 100S**	18434	0.85%	81.17%	B	E	BE	II
CEFTRIAXONE	**VIAL**	18300	0.84%	82.01%	B	E	BE	II

INJECTION IM/IV - 1G								
POVIDONE-IODINE SOLUTION - 10%	**1L**	16800	0.77%	82.79%	B	E	BE	II
PHYTOMENADIONE INJECTION (VIT K1) PAEDIATRIC - 2MG/0.2ML AMPOULE,	**AMPOULE**	15791	0.73%	83.51%	B	E	BE	II
METRONIDAZOLE TABLETS - 200MG	**TIN OF 1000S**	15457	0.71%	84.22%	B	E	BE	II
GRISEOFULVIN TAB 125MG	**TIN OF 1000S**	15440	0.71%	84.93%	B	E	BE	II
PREDNISOLONE TABLETS - 5MG	**TIN OF 1000S**	15176	0.70%	85.63%	B	E	BE	II
ACYCLOVIR TABLETS - 400MG	**PACK OF 100S**	14954	0.69%	86.32%	B	E	BE	II
SALBUTAMOL NEBULIZING SOLUTION - 5MG/ML 10ML	**10 ML VIAL**	13910	0.64%	86.96%	B	E	BE	II
ATENOLOL TABLETS - 50MG	**TIN OF 1000S**	13464	0.62%	87.58%	B	E	BE	II
FLUCLOXACILLIN INJECTION - 250MG	**VIAL**	12320	0.57%	88.15%	B	E	BE	II
HEPARINE INJECTION - 5000UNITS/ML 5ML	**VIAL**	11191	0.51%	88.66%	B	E	BE	II
AZITHROMYCIN 500MG	**PACK OF 3S**	11060	0.51%	89.17%	B	E	BE	II
OXYTOCIN INJECTION - 5 IU/ML	**AMPOULE**	10650	0.49%	89.66%	B	E	BE	II
SODIUM LACTATE SOLUTION WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	10354	0.48%	90.14%	B	E	BE	II
NIFEDIPINE TABLETS - 20MG	**TIN OF 1000S**	9848	0.45%	90.59%	C	E	CE	II
OMEPRAZOLE CAPSULES - 20MG	**TIN OF 1000S**	8976	0.41%	91.00%	C	E	CE	II
INSULIN SOLUBLE - 100IU/ML	**VIAL**	8445	0.39%	91.39%	C	N	CN	III
FUROSEMIDE TABLETS - 40MG	**TIN OF 1000S**	8360	0.38%	91.77%	C	N	CN	III
GLUCOSE INJECTION 50% 50ML (DEXTROSE) WITH EURO CAP/ COLLAPSIBLE BAG	**50ML BOTTLE**	8000	0.37%	92.14%	C	N	CN	III
PHENOBARBITONE INJECTION - 200MG/ML	**AMPOULE**	7997	0.37%	92.51%	C	N	CN	III
IBUPROFEN TABLETS - 200MG	**TIN OF 1000S**	7920	0.36%	92.87%	C	N	CN	III

HYDRALAZINE INJECTION - 20MG/ML	**AMPOULE**	7590	0.35%	93.22%	C	N	CN	III
HYDROCHLOROTHIAZIDE TABLETS - 50MG	**TIN OF 1000S**	7412	0.34%	93.56%	C	N	CN	III
METRONIDAZOLE INJECTION - 5MG/ML	**VIAL**	7110	0.33%	93.89%	C	N	CN	III
DICLOFENAC SODIUM TABLETS - 50MG	**PACK OF 1000S**	6831	0.31%	94.21%	C	N	CN	III
GLIBENCLAMIDE TABLETS - 5MG	**TIN OF 1000S**	6380	0.29%	94.50%	C	N	CN	III
LEVOTHYROXINE SODIUM 100MCG TAB	**PACK OF 100S**	6370	0.29%	94.79%	C	N	CN	III
HYDROCORTISONE INJECTION - 100MG	**VIAL**	6237	0.29%	95.08%	C	N	CN	III
FLUPHENAZINE INJECTION - 25MG/ML	**AMPOULE**	5800	0.27%	95.35%	C	N	CN	III
CHLORPROMAZINE TABLETS - 100MG	**TIN OF 1000S**	5348	0.25%	95.59%	C	N	CN	III
CO-TRIMOXAZOLE TABLETS - 480MG	**TIN OF 1000S**	5280	0.24%	95.83%	C	N	CN	III
BUPIVACAINE HYD IN DEXTROSE INJ - 5MG(MARCAINE HEAVY)	**AMPOULE**	5102	0.23%	96.07%	C	N	CN	III
NYSTATIN SUSPENSION - 100 000IU/ML	**30ML**	5000	0.23%	96.30%	C	N	CN	III
ZINC SULPHATE TABLETS - 20MG	**PACK OF 100S**	4950	0.23%	96.53%	C	N	CN	III
VALPROIC ACID(SODIUM VALPROATE) 200MG TABLETS	**PACK OF 100S**	4772	0.22%	96.75%	C	N	CN	III
CLOTRIMAZOLE PESSARIES 3S- 200MG	**PACK OF 3S**	4656	0.21%	96.96%	C	N	CN	III
BUPIVACAINE HYD IN DEXTROSE INJ - 5MG	**AMPOULE**	4650	0.21%	97.17%	C	N	CN	III
SALBUTAMOL SYRUP - 2MG/5ML	**100 ML**	4455	0.20%	97.38%	C	N	CN	III
CLOTRIMAZOLE CREAM - 1%	**TUBE 20GM**	4208	0.19%	97.57%	C	N	CN	III
AMITRIPTYLINE TABLETS - 25MG	**TIN OF 1000S**	3960	0.18%	97.75%	C	N	CN	III
SILVER SULPHADIAZINE CREAM - 1%	**250GM JAR**	3734	0.17%	97.93%	C	N	CN	III
HYOSCINE BUTYL BROMIDE INJECTION	**AMPOULE**	3672	0.17%	98.10%	C	N	CN	III

20MG/ML								
HALOPERIDOL TABLETS - 5MG	**TIN OF 1000S**	3564	0.16%	98.26%	C	N	CN	III
CO-TRIMOXAZOLE SUSPENSION - 240MG/5ML	**50ML BOTTLE**	3232	0.15%	98.41%	C	N	CN	III
TETRACYCLINE EYE OINTMENT -1%	**TUBE 3.5 GM**	2929	0.13%	98.54%	C	N	CN	III
WATER FOR INJECTION	**10ML VIAL**	2900	0.13%	98.68%	C	N	CN	III
ADRENALINE INJECTION - 1MG/ML	**AMPOULE**	2640	0.12%	98.80%	C	N	CN	III
HYDROCORTISONE OINTMENT - 1%	**TUBE 15GM**	2525	0.12%	98.91%	C	N	CN	III
TINIDAZOLE TAB 500MG	**TIN OF 500S**	2508	0.12%	99.03%	C	N	CN	III
METOCLOPRAMIDE TABLETS - 10MG	**PACK OF 100S**	2266	0.10%	99.13%	C	N	CN	III
KETOCONAZOLE TABLETS - 200MG	**PACK OF 30S**	2231	0.10%	99.24%	C	N	CN	III
FLUOXETINE CAPSULES - 20MG	**PACK OF 100S**	1860	0.09%	99.32%	C	N	CN	III
CHLORPHENIRAMINE SYRUP - 2MG/5ML	**5L**	1677	0.08%	99.40%	C	N	CN	III
LOPERAMIDE CAPSULES - 2MG	**PACK OF 100S**	1584	0.07%	99.47%	C	N	CN	III
DEXAMETHASONE INJECTION - 4MG/ML	**AMPOULE**	1560	0.07%	99.54%	C	N	CN	III
DIAZEPAM INJ 5MG/ML 2ML	**AMPOULE**	1431	0.07%	99.61%	C	N	CN	III
WATER BASED LUBRICANT	**TUBE**	1313	0.06%	99.67%	C	N	CN	III
FERROUS SULP/FOLIC 200MG/400MCG ACID TAB	**TIN OF 1000S**	1300	0.06%	99.73%	C	N	CN	III
BISACODYL 5MG TABLETS	**PACK OF 100S**	1096	0.05%	99.78%	C	N	CN	III
PHENOBARBITONE TABLETS - 30MG	**TIN OF 100S**	1044	0.05%	99.83%	C	N	CN	III
GENTAMYCIN SULPHATE SOLUTION (EYE / EAR DROPS) 0.3 % W/V	**5 ML BTL**	797	0.04%	99.86%	C	N	CN	III
ENALAPRIL TABLETS - 5MG	**PACK OF 100S**	724	0.03%	99.90%	C	N	CN	III
SALBUTAMOL TABLETS - 4MG	**TIN OF 1000S**	600	0.03%	99.92%	C	N	CN	III

METOCLOPRAMIDE INJECTION - 5MG/ML	**AMPOULE**	593	0.03%	99.95%	C	N	CN	III
FOLIC ACID TABLETS - 5MG	**TIN OF 1000S**	525	0.02%	99.98%	C	N	CN	III
CHLORPHENIRAMINE INJECTION - 10MG/ML	**AMPOULE**	202	0.01%	99.99%	C	N	CN	III
VITAMIN B COMPLEX (B1, B6 AND B12)	**PACK OF 20S**	178	0.01%	99.99%	C	N	CN	III
CHLORPHENIRAMINE TABLETS - 4MG	**TIN OF 1000S**	99	0.00%	100.00%	C	N	CN	III
DIAZEPAM TAB 5MG	**PACK X 100S**	40	0.00%	100.00%	C	N	CN	III
		2174157						

Appendix 13: Analysis of MUKURWE-INI SUB COUNTY HOSPITAL 2014

Product Name	Basic Unit	Total Value	% total value	% cumulative total value	**ABC**	**VEN**	**ABC-VEN Matrix**	**ABC-VEN matrix analysis**
INSULIN BIPHASIC 30/70 - 100IU/ML	**VIAL**	2224201	18.70%	18.70%	A	V	AV	I
SODIUM CHLORIDE /NORMAL SALINE SOLUTION - 0.9% WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	1189881	10.01%	28.71%	A	V	AV	I
HYOSCINE BUTYLBROMIDE TAB 10MG	**TIN OF 1000S**	880000	7.40%	36.11%	A	V	AV	I
AMOXICILLIN/CLAVULANIC ACID ORAL SUSPENSION 312.5MG/5ML	**100 ML**	855360	7.19%	43.30%	A	V	AV	I
SODIUM HYPOCHLORITE SOLUTION(TBCIDE) 5-5.6%W/V	**5L**	832000	7.00%	50.30%	A	E	AE	I
FLUCLOXACILLIN CAPSULES - 250MG	**TIN OF 1000S**	610168	5.13%	55.43%	A	E	AE	I
HYDROCORTISONE INJECTION - 100MG	**VIAL**	391899	3.30%	58.73%	A	E	AE	I
METRONIDAZOLE INJECTION - 5MG/ML	**VIAL**	374712	3.15%	61.88%	A	E	AE	I
CEFIXIME TABLET 400MG	**PACK OF 10**	358752	3.02%	64.89%	A	E	AE	I

OXYTOCIN INJECTION - 5 IU/ML	**AMPOULE**	284000	2.39%	67.28%	A	E	AE	I
ACETYLSALICYLIC ACID TAB 75MG, ENTERIC COATED	**PACK OF 28S**	278760	2.34%	69.63%	A	E	AE	I
SALBUTAMOL NEBULIZING SOLUTION - 5MG/ML 10ML	**10 ML VIAL**	259840	2.19%	71.81%	A	E	AE	I
DILOXANIDE FUROATE TAB 500MG	**TIN OF 500S**	236380	1.99%	73.80%	B	E	BE	II
POVIDONE-IODINE SOLUTION - 10%	**1L**	217500	1.83%	75.63%	B	E	BE	II
CARBAMAZEPINE TABLETS 200MG	**TIN OF 1000S**	194240	1.63%	77.26%	B	E	BE	II
GLIBENCLAMIDE TABLETS 5MG	**PACK OF 28S**	182840	1.54%	78.80%	B	E	BE	II
HEPARINE INJECTION - 5000UNITS/ML 5ML	**VIAL**	149175	1.25%	80.05%	B	E	BE	II
ENALAPRIL TABLETS - 5MG	**PACK OF 100S**	133976	1.13%	81.18%	B	E	BE	II
WATER BASED LUBRICANT	**TUBE**	131300	1.10%	82.28%	B	E	BE	II
FERROUS SULP/FOLIC 200MG/400MCG ACID TAB	**TIN OF 1000S**	128964	1.08%	83.37%	B	E	BE	II
CEFUROXIME 250MG TABS	**PACK OF 10**	124735	1.05%	84.42%	B	E	BE	II
FLUPENTHIXOL DECANOATE - 20MG/ML	**AMPOULE**	116000	0.98%	85.39%	B	E	BE	II
OMEPRAZOLE CAPSULES 20MG	**PACK OF 30S**	109563	0.92%	86.31%	B	E	BE	II
HALOPERIDOL TABLETS - 5MG	**TIN OF 1000S**	106920	0.90%	87.21%	B	E	BE	II
CIPROFLOXACIN TABLETS - 250MG	**TIN OF 1000S**	100192	0.84%	88.06%	B	E	BE	II
SILVER SULPHADIAZINE CREAM - 1%	**250GM JAR**	85631	0.72%	88.78%	B	E	BE	II
GLUCOSE INJECTION 50% 50ML (DEXTROSE) WITH EURO CAP/ COLLAPSIBLE BAG	**50ML BOTTLE**	80000	0.67%	89.45%	B	E	BE	II

PARACETAMOL TABLETS - 500MG	**TIN OF 1000S**	73750	0.62%	90.07%	B	E	BE	II
CLOTRIMAZOLE PESSARIES 3S- 200MG	**PACK OF 3S**	68492	0.58%	90.64%	C	E	CE	II
SUXAMETHONIUM CHLORIDE INJECTION	**AMPOULE**	57853	0.49%	91.13%	C	N	CN	III
HALOTHANE INHALATION	**250ML BOTTLE**	57585	0.48%	91.62%	C	N	CN	III
WATER FOR INJECTION	**10ML VIAL**	54246	0.46%	92.07%	C	N	CN	III
BENZHEXOL 5MG TABS	**PACK OF 100S**	53955	0.45%	92.53%	C	N	CN	III
METRONIDOZOLE SUSPENSION - 200MG/5ML	**100 ML**	50643	0.43%	92.95%	C	N	CN	III
HYDROCHLOROTHIAZIDE TABLETS - 50MG	**TIN OF 1000S**	46466	0.39%	93.34%	C	N	CN	III
ALBENDAZOLE TABLETS 400MG	**TIN OF 500S**	46240	0.39%	93.73%	C	N	CN	III
TINIDAZOLE TAB 500MG	**TIN OF 500S**	45913	0.39%	94.12%	C	N	CN	III
SALBUTAMOL INHALER - 100MCG/ACTUATION	**200 doses cartridge**	44440	0.37%	94.49%	C	N	CN	III
INSULIN SOLUBLE - 100IU/ML	**VIAL**	42432	0.36%	94.85%	C	N	CN	III
CO-TRIMOXAZOLE TABLETS - 480MG	**TIN OF 1000S**	42249	0.36%	95.20%	C	N	CN	III
NIFEDIPINE TABLETS - 20MG	**TIN OF 1000S**	39390	0.33%	95.53%	C	N	CN	III
CHLORPROMAZINE TABLETS - 100MG	**TIN OF 1000S**	38800	0.33%	95.86%	C	N	CN	III
CLOTRIMAZOLE CREAM - 1%	**TUBE 20GM**	37395	0.31%	96.17%	C	N	CN	III
HYOSCINE BUTYL BROMIDE INJECTION 20MG/ML	**AMPOULE**	36360	0.31%	96.48%	C	N	CN	III
ACYCLOVIR TABLETS - 400MG	**PACK OF 100S**	35653	0.30%	96.78%	C	N	CN	III
FOLIC ACID TABLETS - 5MG	**TIN OF 100S**	34680	0.29%	97.07%	C	N	CN	III
TETRACYCLINE EYE OINTMENT -1%	**TUBE 3.5 GM**	28712	0.24%	97.31%	C	N	CN	III
CO-TRIMOXAZOLE SUSPENSION - 240MG/5ML	**50ML BOTTLE**	28353	0.24%	97.55%	C	N	CN	III

NYSTATIN SUSPENSION - 100 000IU/ML	**30ML**	26928	0.23%	97.78%	C	N	CN	III
HYDRALAZINE INJECTION - 20MG/ML	**AMPOULE**	25300	0.21%	97.99%	C	N	CN	III
AZITHROMYCIN 500MG	**PACK OF 3S**	24637	0.21%	98.20%	C	N	CN	III
SILVER SULPHADIAZINE CREAM 1%, 100G	**100gm**	21918	0.18%	98.38%	C	N	CN	III
VALPROIC ACID(SODIUM VALPROATE) 200MG TABLETS	**PACK OF 100S**	18031	0.15%	98.53%	C	N	CN	III
KETAMINE INJECTION - 50MG/ML	**VIAL**	17247	0.15%	98.68%	C	N	CN	III
CALAMINE LOTION - 15%	**50ML BOTTLE**	14720	0.12%	98.80%	C	N	CN	III
METOCLOPRAMIDE TABLETS - 10MG	**PACK OF 100S**	12726	0.11%	98.91%	C	N	CN	III
METFORMIN TABLETS 500MG	**PACK OF 30S**	12697	0.11%	99.02%	C	N	CN	III
PHENOBARBITONE TABLETS - 30MG	**TIN OF 100S**	12474	0.10%	99.12%	C	N	CN	III
ADRENALINE INJECTION - 1MG/ML	**AMPOULE**	11880	0.10%	99.22%	C	N	CN	III
AMINOPHYLLINE INJECTION 25MG/ML-10ML	**AMPOULE**	11873	0.10%	99.32%	C	N	CN	III
NEOSTIGMINE INJECTION - 2.5MG/ML	**VIAL**	10352	0.09%	99.41%	C	N	CN	III
BUPIVACAINE HYD IN DEXTROSE INJ - 5MG	**AMPOULE**	8433	0.07%	99.48%	C	N	CN	III
DICLOFENAC SODIUM TABLETS - 50MG	**PACK OF 1000S**	8018	0.07%	99.55%	C	N	CN	III
CHLORHEXIDINE GLUCONATE - 5%	**5L**	7980	0.07%	99.61%	C	N	CN	III
AMLODIPINE TABLET 5MG	**PACK OF 100S**	7308	0.06%	99.68%	C	N	CN	III
DEXAMETHASONE INJECTION - 4MG/ML	**AMPOULE**	7193	0.06%	99.74%	C	N	CN	III
BISACODYL 5MG TABLETS	**PACK OF 100S**	5481	0.05%	99.78%	C	N	CN	III

ATROPINE INJECTION - 1MG/ML	**AMPOULE**	5074	0.04%	99.82%	C	N	CN	III
VITAMIN B COMPLEX (B1, B6 AND B12)	**PACK OF 20S**	4000	0.03%	99.86%	C	N	CN	III
BENZYLBENZOATE EMULSION - 25% APPLICATION	**50ML BOTTLE**	3468	0.03%	99.89%	C	N	CN	III
MAGNESIUM SULPHATE INJECTION - 50%	**AMPOULE**	3150	0.03%	99.91%	C	N	CN	III
LEVOTHYROXINE SODIUM 100MCG TAB	**PACK OF 100S**	2634	0.02%	99.94%	C	N	CN	III
METHYLDOPA TABLETS - 250MG	**TIN OF 1000S**	2595	0.02%	99.96%	C	N	CN	III
FERROUS SULPHATE TABLETS - 200MG	**TIN OF 1000S**	2250	0.02%	99.98%	C	N	CN	III
CHLORPHENIRAMINE TABLETS - 4MG	**TIN OF 1000S**	1980	0.02%	99.99%	C	N	CN	III
DIAZEPAM TAB 5MG	**PACK X 100S**	800	0.01%	100.00%	C	N	CN	III
		11891742						

Appendix 14: Analysis of MUKURWE-INI SUB COUNTY HOSPITAL 2015

Product Name	Basic Unit	Total Value	% total value	% cumulative total value	**ABC**	**VEN**	**ABC-VEN Matrix**	**ABC-VEN matrix analysis**
FLUCLOXACILLIN CAPSULES - 250MG	**TIN OF 1000S**	243134	9.07%	9.07%	A	V	AV	I
ACYCLOVIR TABLETS - 400MG	**PACK OF 100S**	167662	6.25%	15.33%	A	V	AV	I
FLUPHENAZINE INJECTION - 25MG/ML	**AMPOULE**	156600	5.84%	21.17%	A	V	AV	I
AMOXICILLIN/CLAVULANIC ACID ORAL SUSPENSION 312.5MG/5ML	**100 ML**	156492	5.84%	27.01%	A	V	AV	I
INSULIN BIPHASIC	**VIAL**	145650	5.43%	32.44%	A	V	AV	I

30/70 - 100IU/ML								
SALBUTAMOL NEBULIZING SOLUTION - 5MG/ML 10ML	**10 ML VIAL**	132145	4.93%	37.37%	A	V	AV	I
AMOXYCILLIN CAPSULES - 250MG	**TIN OF 1000S**	129901	4.85%	42.22%	A	V	AV	I
SODIUM CHLORIDE /NORMAL SALINE SOLUTION - 0.9% WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	109737	4.09%	46.31%	A	E	AE	I
ANTI-D (RH) INJECTION - 300MCG	**VIAL**	81343	3.03%	49.34%	A	E	AE	I
PHYTOMENADIONE INJECTION (VIT K1) PAEDIATRIC - 2MG/0.2ML AMPOULE,	**AMPOULE**	78300	2.92%	52.27%	A	E	AE	I
AMLODIPINE TABLET 5MG	**PACK OF 100S**	71236	2.66%	54.92%	A	E	AE	I
TINIDAZOLE TAB 500MG	**TIN OF 500S**	69540	2.59%	57.52%	A	E	AE	I
PARACETAMOL TABLETS - 500MG	**TIN OF 1000S**	69318	2.59%	60.10%	A	E	AE	I
ENALAPRIL TABLETS - 5MG	**PACK OF 100S**	67689	2.53%	62.63%	A	E	AE	I
OMEPRAZOLE CAPSULES - 20MG	**TIN OF 1000S**	67308	2.51%	65.14%	A	E	AE	I
METRONIDOZOLE SUSPENSION - 200MG/5ML	**100 ML**	59368	2.21%	67.35%	A	E	AE	I
SODIUM HYPOCHLORITE SOLUTION	**5L**	53021	1.98%	69.33%	A	E	AE	I
HYDROCORTISONE INJECTION - 100MG	**VIAL**	49235	1.84%	71.17%	B	E	BE	II
NIFEDIPINE TABLETS - 20MG	**TIN OF 1000S**	44941	1.68%	72.85%	B	E	BE	II
SODIUM LACTATE SOLUTION WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	43859	1.64%	74.48%	B	E	BE	II
WATER FOR INJECTION	**10ML VIAL**	43500	1.62%	76.11%	B	E	BE	II
CEFIXIME TABLET 400MG	**PACK OF 10**	42033	1.57%	77.67%	B	E	BE	II
PHYTOMENADIONE	**AMPOU**	39148	1.46%	79.13%	B	E	BE	II

INJECTION (VIT K1) - 10MG/ML(ADULTS) 1ML AMPUOLE	**LE**							
METFORMINE TABLETS - 500MG	**TIN OF 1000S**	37819	1.41%	80.54%	B	E	BE	II
GLUCOSE INJECTION 50% 50ML (DEXTROSE) WITH EURO CAP/ COLLAPSIBLE BAG	**50ML BOTTLE**	36000	1.34%	81.89%	B	E	BE	II
CIPROFLOXACIN TABLETS - 250MG	**TIN OF 1000S**	34210	1.28%	83.16%	B	E	BE	II
ATENOLOL TABLETS - 50MG	**TIN OF 1000S**	28142	1.05%	84.21%	B	E	BE	II
IBUPROFEN TABLETS - 200MG	**TIN OF 1000S**	27528	1.03%	85.24%	B	E	BE	II
METRONIDAZOLE TABLETS - 200MG	**TIN OF 1000S**	27490	1.03%	86.27%	B	E	BE	II
CEFUROXIME 250MG TABS	**PACK OF 10**	24640	0.92%	87.19%	B	E	BE	II
OXYTOCIN INJECTION - 5 IU/ML	**AMPOU LE**	21300	0.79%	87.98%	B	E	BE	II
HYOSCINE BUTYL BROMIDE INJECTION 20MG/ML	**AMPOU LE**	20561	0.77%	88.75%	B	E	BE	II
METRONIDAZOLE INJECTION - 5MG/ML	**VIAL**	19627	0.73%	89.48%	B	E	BE	II
CHLORPROMAZINE TABLETS - 100MG	**TIN OF 1000S**	18669	0.70%	90.18%	B	N	BN	II
POVIDONE-IODINE SOLUTION - 10%	**1L**	18000	0.67%	90.85%	B	N	BN	II
CARBAMAZEPINE TABLETS 200MG	**TIN OF 1000S**	16372	0.61%	91.46%	C	N	CN	III
AZITHROMYCIN 500MG	**PACK OF 3S**	13870	0.52%	91.98%	C	N	CN	III
DEXAMETHASONE INJECTION - 4MG/ML	**AMPOU LE**	13000	0.48%	92.46%	C	N	CN	III
GLIBENCLAMIDE TABLETS - 5MG	**TIN OF 1000S**	12760	0.48%	92.94%	C	N	CN	III
ERYTHROMYCIN SUSPENSION (PFR) - 125MG/5ML	**100 ML**	11655	0.43%	93.37%	C	N	CN	III
CO-TRIMOXAZOLE SUSPENSION - 240MG/5ML	**50ML BOTTLE**	11338	0.42%	93.79%	C	N	CN	III
GLUTARALDEHYDE 2% SOLUTION	**5LITRE**	10400	0.39%	94.18%	C	N	CN	III

ERYTHROMYCIN TABLETS - 250MG	**TIN OF 1000S**	9650	0.36%	94.54%	C	N	CN	III
PHENOBARBITONE INJECTION - 200MG/ML	**AMPOULE**	9542	0.36%	94.90%	C	N	CN	III
FERROUS SULP/FOLIC 200MG/400MCG ACID TAB	**TIN OF 1000S**	8675	0.32%	95.22%	C	N	CN	III
DARROWS HALF STRENGTH WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	8600	0.32%	95.54%	C	N	CN	III
SALBUTAMOL SYRUP - 2MG/5ML	**100 ML**	8370	0.31%	95.86%	C	N	CN	III
FUROSEMIDE TABLETS - 40MG	**TIN OF 1000S**	8360	0.31%	96.17%	C	N	CN	III
CLOTRIMAZOLE PESSARIES 3S- 200MG	**PACK OF 3S**	8340	0.31%	96.48%	C	N	CN	III
FERROUS SULPHATE TABLETS - 200MG	**TIN OF 1000S**	7815	0.29%	96.77%	C	N	CN	III
AMITRIPTYLINE TABLETS - 25MG	**TIN OF 1000S**	6600	0.25%	97.02%	C	N	CN	III
SILVER SULPHADIAZINE CREAM - 1%	**250GM JAR**	5602	0.21%	97.23%	C	N	CN	III
FLUCLOXACILLIN INJECTION - 250MG	**VIAL**	5600	0.21%	97.43%	C	N	CN	III
CEFTRIAXONE INJECTION IM/ IV- 250MG	**VIAL**	5310	0.20%	97.63%	C	N	CN	III
RANITIDINE INJECTION - 50MG/2ML	**AMPOULE**	4500	0.17%	97.80%	C	N	CN	III
TETRACYCLINE EYE OINTMENT -1%	**TUBE 3.5 GM**	4035	0.15%	97.95%	C	N	CN	III
CO-TRIMOXAZOLE TABLETS - 480MG	**TIN OF 1000S**	4000	0.15%	98.10%	C	N	CN	III
INSULIN SOLUBLE - 100IU/ML	**VIAL**	3898	0.15%	98.25%	C	N	CN	III
CALAMINE LOTION - 15%	**50ML BOTTLE**	3679	0.14%	98.38%	C	N	CN	III
ACETYLSALICYLIC ACID TAB 75MG, ENTERIC COATED	**PACK OF 28S**	3262	0.12%	98.50%	C	N	CN	III
WATER BASED LUBRICANT	**TUBE**	3110	0.12%	98.62%	C	N	CN	III

SALBUTAMOL TABLETS - 4MG	**TIN OF 1000S**	2640	0.10%	98.72%	C	N	CN	III
CLOTRIMAZOLE CREAM - 1%	**TUBE 20GM**	2630	0.10%	98.82%	C	N	CN	III
CHLORPHENIRAMINE TABLETS - 4MG	**TIN OF 1000S**	2475	0.09%	98.91%	C	N	CN	III
HALOPERIDOL TABLETS - 5MG	**TIN OF 1000S**	2430	0.09%	99.00%	C	N	CN	III
CHLORPHENIRAMINE SYRUP - 2MG/5ML	**5L**	2384	0.09%	99.09%	C	N	CN	III
VITAMIN B COMPLEX (B1, B6 AND B12)	**PACK OF 20S**	2290	0.09%	99.17%	C	N	CN	III
ADRENALINE INJECTION - 1MG/ML	**AMPOULE**	2175	0.08%	99.26%	C	N	CN	III
DICLOFENAC SODIUM TABLETS - 50MG	**PACK OF 1000S**	2070	0.08%	99.33%	C	N	CN	III
KETOCONAZOLE TABLETS - 200MG	**PACK OF 30S**	2028	0.08%	99.41%	C	N	CN	III
ZINC SULPHATE TABLETS - 20MG	**PACK OF 100S**	1980	0.07%	99.48%	C	N	CN	III
PREDNISOLONE TABLETS - 5MG	**TIN OF 1000S**	1980	0.07%	99.56%	C	N	CN	III
DIAZEPAM INJ 5MG/ML 2ML	**AMPOULE**	1724	0.06%	99.62%	C	N	CN	III
PHENOBARBITONE TABLETS - 30MG	**TIN OF 100S**	1566	0.06%	99.68%	C	N	CN	III
OXYTOCIN INJECTION - 10 IU/ML	**AMPOULE**	1462	0.05%	99.73%	C	N	CN	III
CHLORPHENIRAMINE INJECTION - 10MG/ML	**AMPOULE**	1350	0.05%	99.78%	C	N	CN	III
FOLIC ACID TABLETS - 5MG	**TIN OF 100S**	1253	0.05%	99.83%	C	N	CN	III
PHENYTOIN SODIUM TABLETS - 50MG	**TIN OF 1000S**	990	0.04%	99.87%	C	N	CN	III
BENZYLBENZOATE EMULSION - 25% APPLICATION	**50ML BOTTLE**	974	0.04%	99.90%	C	N	CN	III
VALPROIC ACID(SODIUM VALPROATE) 200MG TABLETS	**PACK OF 100S**	795	0.03%	99.93%	C	N	CN	III
MAGNESIUM SULPHATE INJECTION -	**AMPOULE**	630	0.02%	99.96%	C	N	CN	III

50%								
LOPERAMIDE CAPSULES - 2MG	**PACK OF 100S**	432	0.02%	99.97%	C	N	CN	III
SODIUM BICARBONATE INJECTION - 8.4%	**AMPOULE**	426	0.02%	99.99%	C	N	CN	III
DIAZEPAM TAB 5MG	**PACK X 100S**	120	0.00%	99.99%	C	N	CN	III
DOXYCYCLINE CAPSULES - 100MG	**TIN OF 1000S**	115	0.00%	100.00%	C	N	CN	III
SALBUTAMOL INHALER - 100MCG/ACTUATION	**200 doses cartridge**	60	0.00%	100.00%	C	N	CN	III
		2680466						

Appendix 15: Analysis of MUKURWE-INI SUB COUNTY HOSPITAL 2016

Product Name	Basic Unit	Total Value	% total value	% cumulative total value	**ABC**	**VEN**	**ABC-VEN Matrix**	**ABC-VEN matrix analysis**
SODIUM CHLORIDE /NORMAL SALINE SOLUTION - 0.9% WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	2015455	20.73%	20.73%	A	V	AV	I
INSULIN BIPHASIC 30/70 - 100IU/ML	**VIAL**	934989	9.62%	30.35%	A	V	AV	I
ANTI-D (RH) INJECTION - 300MCG	**VIAL**	813846	8.37%	38.72%	A	E	AE	I
AMOXYCILLIN CAPSULES - 250MG	**TIN OF 1000S**	779403	8.02%	46.73%	A	E	AE	I
FLUCLOXACILLIN CAPSULES - 250MG	**TIN OF 1000S**	494239	5.08%	51.82%	A	E	AE	I
AMOXICILLIN/CLAVULANIC ACID ORAL SUSPENSION 312.5MG/5ML	**100 ML**	435456	4.48%	56.30%	A	E	AE	I
SODIUM HYPOCHLORITE SOLUTION	**5L**	391357	4.03%	60.32%	A	E	AE	I
PARACETAMOL TABLETS - 500MG	**TIN OF 1000S**	236810	2.44%	62.76%	A	E	AE	I
SODIUM LACTATE	**500ML**	215700	2.22%	64.98%	A	E	AE	I

SOLUTION WITH EURO CAP/ COLLAPSIBLE BAG								
SALBUTAMOL NEBULIZING SOLUTION - 5MG/ML 10ML	**10 ML VIAL**	215605	2.22%	67.19%	A	E	AE	I
TINIDAZOLE TAB 500MG	**TIN OF 500S**	178980	1.84%	69.03%	A	E	AE	I
HALOTHANE INHALATION	**250ML BOTTLE**	174500	1.79%	70.83%	A	E	AE	I
METRONIDOZOLE SUSPENSION - 200MG/5ML	**100 ML**	164346	1.69%	72.52%	B	E	BE	II
GLUCOSE INJECTION 50% 50ML (DEXTROSE) WITH EURO CAP/ COLLAPSIBLE BAG	**50ML BOTTLE**	160000	1.65%	74.17%	B	E	BE	II
FLUPHENAZINE INJECTION - 25MG/ML	**AMPOULE**	133400	1.37%	75.54%	B	E	BE	II
ACETYLSALICYLIC ACID TAB 75MG, ENTERIC COATED	**PACK OF 28S**	110086	1.13%	76.67%	B	E	BE	II
HYDRALAZINE INJECTION - 20MG/ML	**AMPOULE**	92000	0.95%	77.62%	B	E	BE	II
POVIDONE-IODINE SOLUTION - 10%	**1L**	90000	0.93%	78.54%	B	E	BE	II
LEVOTHYROXINE SODIUM 100MCG TAB	**PACK OF 100S**	88200	0.91%	79.45%	B	E	BE	II
PHYTOMENADIONE INJECTION (VIT K1) PAEDIATRIC - 2MG/0.2ML AMPOULE,	**AMPOULE**	87000	0.89%	80.34%	B	E	BE	II
FLUCLOXACILLIN INJECTION - 250MG	**VIAL**	84000	0.86%	81.21%	B	E	BE	II
ATRACURIUM INJECTION-10MG/ML-2.5ML AMPUOLE	**AMPOULE**	83500	0.86%	82.07%	B	E	BE	II
CEFUROXIME 250MG TABS	**PACK OF 10**	82450	0.85%	82.92%	B	E	BE	II
CIPROFLOXACIN TABLETS - 250MG	**TIN OF 1000S**	81611	0.84%	83.75%	B	E	BE	II
WATER FOR INJECTION	**10ML VIAL**	81200	0.84%	84.59%	B	E	BE	II
OMEPRAZOLE CAPSULES - 20MG	**TIN OF 1000S**	80770	0.83%	85.42%	B	E	BE	II

ERYTHROMYCIN TABLETS - 250MG	**TIN OF 1000S**	77200	0.79%	86.21%	B	E	BE	II
METHYLDOPA TABLETS - 250MG	**TIN OF 1000S**	68948	0.71%	86.92%	B	E	BE	II
HALOPERIDOL TABLETS - 5MG	**TIN OF 1000S**	64800	0.67%	87.59%	B	E	BE	II
ATENOLOL TABLETS - 50MG	**TIN OF 1000S**	64566	0.66%	88.25%	B	E	BE	II
METRONIDAZOLE TABLETS - 200MG	**TIN OF 1000S**	59561	0.61%	88.87%	B	E	BE	II
HYOSCINE BUTYL BROMIDE INJECTION 20MG/ML	**AMPOULE**	58968	0.61%	89.47%	B	E	BE	II
VITAMIN B COMPLEX (B1, B6 AND B12)	**PACK OF 20S**	54978	0.57%	90.04%	B	E	BE	II
IBUPROFEN TABLETS - 200MG	**TIN OF 1000S**	52920	0.54%	90.58%	C	E	CE	II
METRONIDAZOLE INJECTION - 5MG/ML	**VIAL**	47105	0.48%	91.07%	C	E	CE	II
CEFIXIME TABLET 400MG	**PACK OF 10**	46201	0.48%	91.54%	C	N	CN	III
CEFTAZIDIME 1G INJ.	**VIAL**	43500	0.45%	91.99%	C	N	CN	III
ERYTHROMYCIN SUSPENSION (PFR) - 125MG/5ML	**100 ML**	42735	0.44%	92.43%	C	N	CN	III
ENALAPRIL TABLETS - 5MG	**PACK OF 100S**	42267	0.43%	92.86%	C	N	CN	III
HYDROCORTISONE INJECTION - 100MG	**VIAL**	41029	0.42%	93.29%	C	N	CN	III
VALPROIC ACID(SODIUM VALPROATE) 200MG TABLETS	**PACK OF 100S**	40528	0.42%	93.70%	C	N	CN	III
DARROWS HALF STRENGTH WITH EURO CAP/ COLLAPSIBLE BAG	**500ML**	36000	0.37%	94.07%	C	N	CN	III
CARBAMAZEPINE TABLETS 200MG	**TIN OF 1000S**	32143	0.33%	94.40%	C	N	CN	III
RANITIDINE INJECTION - 50MG/2ML	**AMPOULE**	30584	0.31%	94.72%	C	N	CN	III
AMLODIPINE TABLET 5MG	**PACK OF 100S**	29207	0.30%	95.02%	C	N	CN	III
FERROUS	**TIN OF**	26719	0.27%	95.29%	C	N	CN	III

SULP/FOLIC 200MG/400MCG ACID TAB	**1000S**							
GLUTARALDEHYDE 2% SOLUTION	**5LITRE**	25429	0.26%	95.56%	C	N	CN	III
INSULIN SOLUBLE - 100IU/ML	**VIAL**	23389	0.24%	95.80%	C	N	CN	III
NEOSTIGMINE INJECTION - 2.5MG/ML	**VIAL**	21602	0.22%	96.02%	C	N	CN	III
FERROUS SULPHATE TABLETS - 200MG	**TIN OF 1000S**	21502	0.22%	96.24%	C	N	CN	III
CEFTRIAXONE INJECTION IM/ IV-250MG	**VIAL**	20886	0.21%	96.45%	C	N	CN	III
PHENOBARBITONE TABLETS - 30MG	**TIN OF 100S**	20880	0.21%	96.67%	C	N	CN	III
FOLIC ACID TABLETS - 5MG	**TIN OF 1000S**	17550	0.18%	96.85%	C	N	CN	III
OXYTOCIN INJECTION - 10 IU/ML	**AMPOULE**	17544	0.18%	97.03%	C	N	CN	III
AZITHROMYCIN 500MG	**PACK OF 3S**	16297	0.17%	97.20%	C	N	CN	III
CO-TRIMOXAZOLE SUSPENSION - 240MG/5ML	**50ML BOTTLE**	16197	0.17%	97.36%	C	N	CN	III
CHLORAMPHENICAL INJECTION - 1GM	**VIAL**	16095	0.17%	97.53%	C	N	CN	III
FLUOXETINE CAPSULES - 20MG	**PACK OF 100S**	14582	0.15%	97.68%	C	N	CN	III
CLOTRIMAZOLE PESSARIES 3S- 200MG	**PACK OF 3S**	13900	0.14%	97.82%	C	N	CN	III
TETRACYCLINE EYE OINTMENT -1%	**TUBE 3.5 GM**	13449	0.14%	97.96%	C	N	CN	III
KETAMINE INJECTION - 50MG/ML	**VIAL**	12320	0.13%	98.09%	C	N	CN	III
DOXYCYCLINE CAPSULES - 100MG	**TIN OF 1000S**	12080	0.12%	98.21%	C	N	CN	III
MULTIVITAMIN SYRUP	**5L**	12060	0.12%	98.34%	C	N	CN	III
NIFEDIPINE TABLETS - 20MG	**TIN OF 1000S**	11984	0.12%	98.46%	C	N	CN	III
FUROSEMIDE TABLETS - 40MG	**TIN OF 1000S**	11970	0.12%	98.58%	C	N	CN	III
CHLORPHENIRAMINE SYRUP - 2MG/5ML	**5L**	11919	0.12%	98.71%	C	N	CN	III
HYDROCORTISONE	**TUBE**	11143	0.11%	98.82%	C	N	CN	III

OINTMENT - 1%	**15GM**							
DILOXANIDE FUROATE TAB 500MG	**TIN OF 500S**	11000	0.11%	98.93%	C	N	CN	III
DEXAMETHASONE INJECTION - 4MG/ML	**AMPOULE**	10400	0.11%	99.04%	C	N	CN	III
ZINC SULPHATE TABLETS - 20MG	**PACK OF 100S**	9900	0.10%	99.14%	C	N	CN	III
SALBUTAMOL SYRUP - 2MG/5ML	**100 ML**	9450	0.10%	99.24%	C	N	CN	III
DIAZEPAM INJ 5MG/ML 2ML	**AMPOULE**	7860	0.08%	99.32%	C	N	CN	III
SUXAMETHONIUM CHLORIDE INJECTION	**AMPOULE**	7578	0.08%	99.40%	C	N	CN	III
CLOTRIMAZOLE CREAM - 1%	**TUBE 20GM**	6903	0.07%	99.47%	C	N	CN	III
KETOCONAZOLE TABLETS - 200MG	**PACK OF 30S**	6084	0.06%	99.53%	C	N	CN	III
COMPOUND MAGNESIUM TRISILICATE TABLETS	**TIN OF 1000S**	5970	0.06%	99.59%	C	N	CN	III
WATER BASED LUBRICANT	**TUBE**	5655	0.06%	99.65%	C	N	CN	III
PHENYTOIN SODIUM TABLETS - 50MG	**TIN OF 1000S**	5280	0.05%	99.71%	C	N	CN	III
SODIUM BICARBONATE INJECTION - 8.4%	**AMPOULE**	3963	0.04%	99.75%	C	N	CN	III
ALBENDAZOLE TABLETS 400MG	**TIN OF 500S**	3588	0.04%	99.78%	C	N	CN	III
CO-TRIMOXAZOLE TABLETS - 480MG	**TIN OF 1000S**	3200	0.03%	99.82%	C	N	CN	III
FOLIC ACID TABLETS - 5MG	**TIN OF 100S**	3132	0.03%	99.85%	C	N	CN	III
CALAMINE LOTION - 15%	**50ML BOTTLE**	2758	0.03%	99.88%	C	N	CN	III
CHLORPHENIRAMINE TABLETS - 4MG	**TIN OF 1000S**	2700	0.03%	99.90%	C	N	CN	III
ADRENALINE INJECTION - 1MG/ML	**AMPOULE**	2175	0.02%	99.93%	C	N	CN	III
PREDNISOLONE TABLETS - 5MG	**TIN OF 1000S**	1980	0.02%	99.95%	C	N	CN	III
BENZYLBENZOATE EMULSION - 25% APPLICATION	**50ML BOTTLE**	1949	0.02%	99.97%	C	N	CN	III
AMITRIPTYLINE TABLETS - 25MG	**TIN OF 1000S**	1650	0.02%	99.98%	C	N	CN	III

LOPERAMIDE CAPSULES - 2MG	**PACK OF 100S**	720	0.01%	99.99%	C	N	CN	III
SALBUTAMOL INHALER - 100MCG/ACTUATION	**200 doses cartridge**	600	0.01%	100.00%	C	N	CN	III
SALBUTAMOL TABLETS - 4MG	**TIN OF 1000S**	240	0.00%	100.00%	C	N	CN	III
		9722374						

Appendix 16: Ethical review

Strathmore UNIVERSITY

SU-IRB 0168/18

23rd February 2018

Dr Beatrice Wangui Murigi

Email: murigibeatrice@gmail.com

Dear Dr Murigi,

REF **Student ID:** MBA-HCM/90701/16 **Protocol ID:** SU-IRB 0168/18
EXPENDITURE ON MEDICINES IN NYERI COUNTY BETWEEN 2014 AND 2017: A RETROSPECTIVE ANALYSIS USING THE ABC AND VEN CLASSIFICATIONS OF MEDICINES

We acknowledge receipt of your application documents to the Strathmore University Institutional Ethics Review Committee (SU-IERC) which includes:

1. Research Proposal dated 15th February 2018
2. Study Budget
3. CV

The committee has reviewed your application, and your study *"Expenditure on Medicines in Nyeri County Between 2014 And 2017: A Retrospective Analysis Using the ABC and VEN Classifications of Medicines."* has been granted **approval**.

This approval is valid for one year beginning **23rd February 2018** until **22nd February 2019.**

In case the study extends beyond one year, you are required to seek an extension of the Ethics approval prior to its expiry. You are required to submit any proposed changes to this proposal to SU-IERC for review and approval prior to implementation of any change.

SU-IERC should be notified when your study is complete.

Thank you

Sincerely,

Amina Salim
Regulatory Affairs Fellow

STRATHMORE UNIVERSITY INSTITUTIONAL REVIEW BOARD APPROVED