

Internship Training

At

MALIK RADIX HEALTHCARE, NIRMAN VIHAR, NEW DELHI

**PROCUREMENT PLAN OF OPEX ITEMS FOR A HOSPITAL UPGRADING
FROM 50 TO 80 BED**

By

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PG/16/067

Under the guidance Dr. AK Khokhar

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Post Graduate Diploma in Hospital and Health Management

2016-18



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TO WHOMSOEVER IT MAY CONCERN

This is to certify that Lt Col Tushar Srivastava student of Post Graduate Diploma in Hospital and Health Management (PGDHM) from International Institute of Health Management Research, New Delhi has undergone internship training at Malik Radix Healthcare, Nirman Vihar, New Delhi from 01 Feb 18 to 30 Apr 18.

The Candidate has successfully carried out the study designated to him during internship training and his approach to the study has been sincere, scientific and analytical.

The Internship is in fulfilment of the course requirements.

I wish him all success in all his future endeavours.



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Certificate of Approval

The following dissertation titled "**Procurement Plan of OPEX(Operating Expenditure)**

Items for a Hospital Upgrading from 50 to 80 Bed " at "**Malik Radix Healthcare, Nirvan Vihar, New Delhi**" is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of **Post Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

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Certificate from Dissertation Advisory Committee

This is to certify that **Lt Col Tushar Srivastava**, a graduate student of the **Post- Graduate Diploma in Health and Hospital Management** has worked under our guidance and supervision. He is submitting this dissertation titled **“Procurement Plan of OPEX Items for a Hospital Upgrading from 50 to 80 Bed at “Malik Radix Healthcare, Nirvan Vihar, New Delhi”** in partial fulfillment of the requirements for the award of the **Post- Graduate Diploma in Health and Hospital Management**.

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.



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The Internship is in fulfillment of the course requirements. I wish him all success in all his future endeavors.



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FEEDBACK FORM

Name of the Student: Lt Col Tushar Srivastava

Dissertation Organisation: Malik Radix Healthcare Ltd

Area of Dissertation: Procurement Plan of OPEX Items
for a Hospital Upgrading from 50 to 80 Bed

Attendance: 87%

Objectives achieved: Yes.

Deliverables: Supervised the extension process of hospital.

Strengths: Inventory management & keen learning the latest technique and procurement of equipments.

Suggestions for Improvement:

To be more careful in dealing with vendors.

Suggestions for Institute: n/s! at present.

Signature of the Organisation Mentor (Dissertation)

Dr. T. P. S. Kaith
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Date: 25/5/2018

Place: Delhi

Deliverables:

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled **“Procurement Plan of OPEX Items for a Hospital Upgrading from 50 to 80 Bed ”** at **“Malik Radix Healthcare, Nirman Vihar, New Delhi”** and submitted by Lt Col Tushar Srivastava, Enrolment No. PG/16/067 under the supervision of **Dr A K Khokhar**, for the award of Postgraduate Diploma in Hospital and Health Management of the Institute carried out during the period from **01 February to 30 April 2018** embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.


(Lt Col Tushar Srivastava)
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TO WHOM SO EVER IT MAY CONCERN

The certificate is awarded to

Lt Col Tushar Srivastava

in recognition of having successfully completed his

Internship in the department of

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and has successfully completed his project on

Procurement plan of OPEX Items on

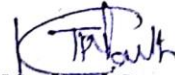
up gradation from 50 to 80 bedded hospital

on 1st May 2018 at

Malik Radix Health Care Pvt. Ltd.

He comes across as a committed sincere & diligent person who has
a strong drive & zeal for learning.

We wish him all the best for future endeavours.


Medical Supdt.
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Last but not the least; I am thankful to all the colleagues for their help and extended support.

Lt Col Tushar Srivastava

(PG/16/067)

PGDHHM

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LIST OF ABBREVIATIONS

AC Plant- Air-condition plant

ABC Analysis– (Always- Better-Control) (Tight-Less tightly-Simple) Control

AMC – Average Monthly Control

ASP- Application Service Provider

BMW – Biomedical Waste

CAPEX –Capital Expenditure

CSSD – Central Sterile Supply Department

CEO- Chief Executive Officer

EHC– Executive Health Check-up

GDP – Gross Domestic Product

GM- General Manager

ICU – Intensive Care Unit

IP – In Patient

NICU – Neo natal ICU

NABH- National Accreditation Board for Hospitals & Healthcare Providers

NABL- National Accreditation Board for Testing and Calibration Laboratories

OPD – Out Patient Department

OPEX – Operating Expenditure

PO – Purchase Order

Q.C – Quality Control

R&D – Research and Development

ROL – Re-order Level

SCM – Supply Chain Management

TPA – Third Party Administrator

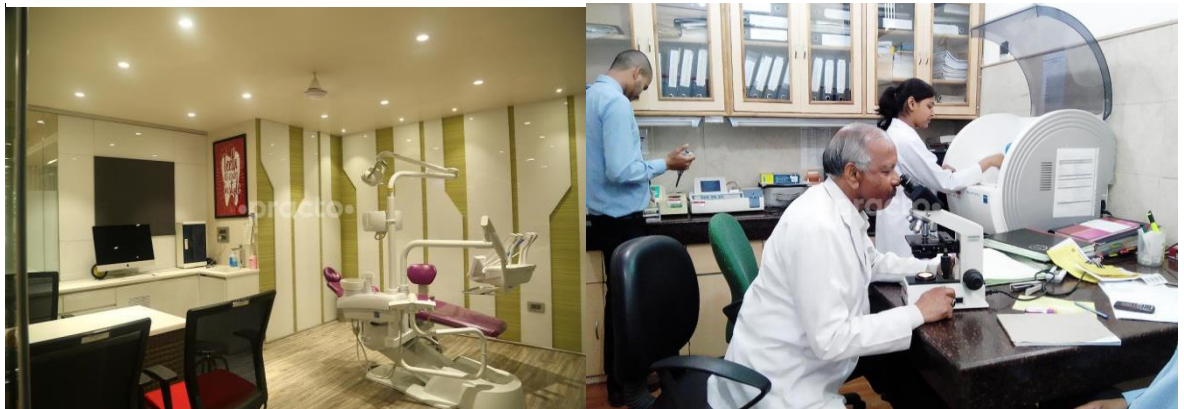
VED – Vital – Essential - Desirable

SECTION 1: INTERNSHIP REPORT





Malik Redix Healthcare, Nirman Vihar, New Delhi



SECTION 1: INTERNSHIP REPORT

(01 Feb - 30 Apr 2018)

OVERVIEW OF THE ORGANISATION

Malik Radix Healthcare is a premier & reliable healthcare state of the art hospital based in Delhi. The unit is a 50 bedded multi-speciality facility located in Nirman Vihar area of Delhi. Founded by a group of successful doctors & healthcare advocates of the country in the year 2003 mainly by Dr Ravi Malik, and Dr Renu Malik. The Radix Healthcare understands that healthcare is an intensely personal service. Keeping this in mind, the organisation focuses on end-to-end healthcare delivery structure. It comprises of about 175 employees and forty five consultants & doctors expert in their fields. It is known for giving quality care of international standards to its patients. Presently it is under up-gradation from 50 bed to 80 bedded hospital.

A key component of the organisation is 'PREVENTION' based community service, under which the hospital organises free medical camps & check-ups to promote community wellness & sensitisation of healthcare issues in the country.

As a mission to accomplish 'health for all', Radix Healthcare focuses on benevolent activities for the poor by grants for the below poverty line patients. Accredited with the prestigious NABH(National Accreditation Board for Hospitals & Healthcare Providers) & NABL(National Accreditation Board for Testing and Calibration Laboratories), Radix has become a name for quality & commitment in healthcare throughout the national capital region of India.

VISION

- To develop a strong patient and doctor relationship.
- To bring healthcare of international standards within the reach of every individuals.
- Constantly train and educate the staff, nurses, doctors by conducting training course and symposiums so that they can deliver quality care.
- Transparency and honesty in whatever healthcare we give.

MISSION

- Care with smile & An obsession for patient satisfaction.
- Friendly atmosphere for the consultant doctors so that they can give the best care to our patients.
- Patient friendly & compassionate atmosphere for fast healing.
- Affordable economics for different socio-economic strata.

CORE VALUES

- **COMMITMENT TO CARE**

Care is the most prominent principle of Radix Healthcare. At Radix, we care with smile and patient's satisfaction is our obsession. Of all values and principles, Radix is not just confined to the healing but also care for the patients by providing them patient-friendly atmosphere and affordable charges

- **COMMITMENT TO EXCELLENCE**

For Radix Healthcare, excellence is a way of life. Whether it be in the field of clinical services, patient care, customer relationship, social responsibility or any other medical aspect, all levels of the organisation are always striving to achieve continuous improvement. In the past years, we have always stuck to our commitment to excellence.

- **COMMITMENT TO SERVICE**

Despite being a unit of 50 bedded multi-speciality facility, Radix is much more than size which defines the organisation. We aim to provide the best service to its patients by highly experienced personnel, boasting doctors who are among.

- **COMMITMENT TO IMPROVEMENT**

Striving to achieve continuous improvement is one of the core values of Radix and it has demonstrated this since the time its journey began. By giving a chance to its nurses, managers and other staff to improve their skills and knowledge, it provides the best services to patients and remains the leading private healthcare provider.

SPECIALTIES

Key Specialties

1. Medicine
2. Surgery
3. Paediatrics & Neonatology
4. Gynaecology
5. Orthopaedics & Joint Replacement
6. ENT
7. Ophthalmology & Refractive Surgery
8. Plastic Surgery
9. Cosmo Dental
10. Dermatology & Cosmetic Surgery
11. Nephrology
12. Anaesthesiology & Pain Management
13. Intensive Care Unit (ICU)
14. Paediatric Endocrinology
15. General & Minimal Access Surgery
16. Paediatric Surgery
17. Hearing & Speech
18. Physiotherapy
19. Neurology
20. Physiotherapy & Rehabilitation
21. Preventive Health Check up
22. Pulmonology
23. Psychiatry
24. Radiology & Ultrasound
25. Dietician
26. Trauma & Emergency (24X7)
27. Radix Diagnostics

DEPARTMENTAL STACKING PLANNING

S. No.	FLOOR	DEPARTMENTS
1.	Fourth	Kitchen, AC Plant (Air-condition plant)/Autoclave Room, Suction Pump & Gen Set.
2.	Third	IPD Wards & Nursery (NICU)
3.	Second	ICU(Intensive Care Unit), OT, Pre Labour & Labour Room
4.	First	IP Rooms ie- Deluxe, Private, Semi Private
5.	Ground	Emergency, General Ward, Reception, Cafeteria
6.	Basement	Microbiology Room, Laboratory, Pharmacy, Radiology & USG Room, IP (In Patient)Billing, TPA & MRD

Patient Information

Patient Rights

- a) Be treated with regard, consideration, kindness, and dignity, in a secure and clean environment without any discrimination on the basis of age, sex, race, origin, religion, sexual orientation or disabilities.
- b) Full assurance of your protection, nobility, and privacy relating to your care discourses, examinations, and medications.
- c) A clear and reasonable explanation by your specialist around your diagnosis, as well as the benefits and dangers of each treatment, anticipated result and alter in medical condition.
- d) Security from physical man-handle and disregard.
- e) Get information from the hospital with respect to the anticipated cost of treatment and payment policies.
- f) Ask for a copy of your medical records as per convention.

Patient Responsibilities

- (a) Giving total and exact data, with your full name, address, phone number, date of birth, particulars of next-of-kin and insurance company/ TPA(Third Party Administrator)/ employer, past ailment, and medication elements wherever needed..
- (b) Keeping arrangements, being on time for appointments, and calling your specialist / hospital in case you cannot follow the arrangement timing.
- (c) Actively taking an interest in your treatment plan and keeping your specialists and medical attendants informed around the viability or recuperation of your treatment.
- (d) Ensuring security of your resources. (It is prudent to take off valuables at home and only bring essential items.)
- (e) Treating all hospital staff, other patients and guests with kindness and respect.
- (f) Obeying the hospital rules and security regulations.
- (g) Understanding all directions before signing the consent forms.

Hospital Facilities

- (a) **Rooms**: At Radix Healthcare there are these following room categories.
 - (i) **Deluxe**: A deluxe room at Redix Healthcare has an attendant bed, Wi-Fi Connectivity, a mini refrigerator, a television set, safe locker and a bed side locker, in room dining facility for the attendant and round the clock to look after the patient.
 - (ii) **Semi Private(2 beds)**: A Twin sharing room at Redix Healthcare has an attendant bed, Wi-Fi connectivity, a mini refrigerator, a television set, a bed side locker, and an in room dining facility for the attendant.
 - (iii) **Semi Private(3 beds)**: Rooms with three beds at Redix Healthcare has an attendant bed, a television set and a bed side locker to keep your essentials.
 - (iv) **General Ward**: A Multi bed room at Redix healthcare has attendant couch and a bed side locker to keep your essentials.
- (b) **Cafeteria**: The cafeteria at Redix Healthcare is open all day and night, with an assorted range of food and beverage options to choose from. It is located at the ground floor, and is open to employees and visitors.
- (c) **Laundry Services**: Out Sourced .
- (d) **Waiting for visitors**: It is located on the Ground floor & basement.
- (e) **Internet Access**: The entire facility is Wi-Fi enabled.
- (f) **Pharmacy**: Redix Healthcare has a 24x7 pharmacy located at the basement, and one can get medicines anytime one wants for IPD.
- (g) Baby feeding room.

SECTION 2: DISSERTATION

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RATIONALE

In decades or so it is observed that, the cost in providing healthcare has increased in many folds. It could be anything between 10-15 per cent of the Worlds GDP(Gross Domestic Product) and same will keep raising, as every day we are into new R&D (Research and Development) and with new innovation of automated technology coming onto way. As in most of the medical fields with faster pace improvement in technology are in progress. On the other hand Centre Government efforts in hiking allocation for its National Rural Health Mission has not been very successful since State government has kept his budget allocation less. In the tussle of both the head of state instead of keeping resource decentralised and using it judiciously even the priority programme are not run adequately. The situation is that persons overseeing the budget of these programme are not involved actively and on other side people running the health missions at root level are not at all consulted for the same. Hence not much target oriented result can be achieved. India has just 0.9 beds per 1000 population visa vies 2.9 beds global average which is one of the bottom of global records. Due to above disadvantages situation of health infrastructure Indian health care system is facing huge financial drain out in providing affordable quality care services. Good health care supply chain if applied wisely can reduce the increasing expenses and give a high quality improved care to patient. In view of this all hospitals private or government should go for supply chain management system for better function and achieves standard of international health care in very affordable cost.

The increase requirement on the health care sector requires new challenges. This shows how to manage the hospitals successfully in a profitable manner. The role of administrators increases many folds at first timely anticipating the demand and of all non-medical and medical items running into big inventories and procuring them so that items are never overstock or under stock in their stores. Finally to achieve this synchronise where both the product information and its timely delivery of product are done near simultaneously requires great control on a supply chain management which not only gives satisfaction to customers and also has better work flow and at the same time is cost effective. This gives advantage to both the sides by achieving satisfaction in medical industry.

The “Inventory Management” is very important for running a good successful pharmacy. An inventory management gives good control on a pharmacy for better relationship with customer and suppliers, keeps check on cash flow and gives predictive inventory. This type of future inventories of a pharmacy finally give good inputs for managing better quarterly or half yearly overall hospital budgets, since these types of medical or non-medical items take 30% to 35% of hospital budgets which is one of the major part of the budget. SCM (Supply Chain Management) is a big tool to keep check on all disruptions and patients demands which finally it increases efficiencies with lowering cost. To achieve this very complex robust and mature system is required by well trained staff and integrated web based information technology to challenge the complexity of supply chain management.

The hospitals can look for local vendors for timely supply by sharing your information, outsourcing demands, by utilising competitive factors, looking turnaround time which can reduce the cost of functioning.

The study was done at a leading small hospital and it was conducted as an organisational study. The study aims to understand the current role of a hospital administrator, where they require improvement and how to upgrade their skills so as to face the newer challenges in healthcare sector. A more effective job description was suggested which could cover their various activities. Supply chain management being the key role for cost containment helps bring down the Capex (Capital Expenditure)and Opex (Operating Expenditure).

Review of Literature

Management of inventory is one part of supply chain management. It not only supervise the operating stocks of the hospital it also have full control on generating demand and check flow of items from warehouse to suppliers and synchronies the demand and manufacturing of goods. The most important function of the inventory management is to keep detail records of manufactured, sale and returned items at the warehouse.

Manahas Anil K (2005); The study was undertaken to understand the stocking policy in a pharmacy according to their cost and vital values. Analysis of Inventory of Drug and Pharmacy Department of a Tertiary care Hospital has analyzed how to categories the drug inventory on the basis of cost and criticalness and guide the management how to function nominating doctors for its demand and utilization power by applying Principle of Management by Exception. All this ensures the availability of critical, vital and essential items are available all time at the hospital for satisfaction of patient. The open pharmacy for OPD patient should also be kept under checks since they also have the same financial implications.

Sukhbir Singh, Anil Kumar Gupta, Latika, Mahesh Devnan (2015); ABC (Always- Better- Control) (Tight-Less tightly-Simple) Control and VED (Vital – Essential - Desirable) Analysis of the Pharmacy Store of a Tertiary Care at Academic Institute of the Northern India was carried out where study suggested that how important to keep a regular check on the important drugs which are vital and critical specially in the country like India where critical drugs are not easily available off the shelf. Due huge population the resources in India are scare and it always requires strict management control for appropriate utilization of it.

The inventory management teaches us the correct practices of drug utilization and doctors at all level should get into the habit of improved drug management practice so that maximum level of patient can be treated. Managerial ship of drug management is to keep the budget of the hospital at such a stake that minimum revenue is utilized to yield maximum advantage out of it. It is said generally 33% of hospital budget is occupied only for these type items. Where as in minimum inventory how a good manager provides all the satisfaction to the customers and at the same time patient care is not compromised. At many places it is ABC and VED technic is applied to weight the importance of each item to rule out shortage of any item.

Anonymous (2012) ; Has shown how vital is to maintain the drug inventory at all level in the category of criticality and cost of items and how to make management understand the importance of so that availability of all critical and essential items in the hospital which are in need of standard patient care for which any administrator or customer is looking forward of it. Strict control of inventory is required for costly drugs which have higher financial implications. So analyzing of inventory is one of the most important aspects of inventory management.

Seema Ahkawat (2016); Shown in a study that while applying the supply chain management in hospital only with ABC metrics one have to be very careful in ensuring all vital or lifesaving drugs are included and none are left behind specially which are not very costly or doesn't falls under A category of items as there importance can't be overlooked. Where as study has clearly come out with the suggestion that if only one parameter is applied then one have to be careful in calculating for the entire inventory.

V. R. Thawani, A. V. Turankar(2003); There study shows that the periodic drug expenditure to be recorded so that the mixed ABC-VED matrix can give better analysis and this model give nearly correct requirement to increase or decrease annual budget.

Hacer GünerGören¹, Özge Dağdeviren¹Asst. Prof(2017); This was one of the very interesting study which simply shows how Excel-Based management of inventory of a Pharmacy can be done so easily which can be monitored by ABC-VED matrix. A case study has proved to be very beneficial that how monitoring of annual consumption pattern can be found out with the excel based inventory control system.

T. ANAND, G. K. INGLE, J. KISHORE AND R. KUMAR (2013); The study on mixed analysis of ABC and VED was done on 129 items of an inventory of community medical college. it was noticed that routine practice of mixed formula of ABC and VED are required to control the system of inventory management affectively with all types of stores specially the pharmacy. It not only showed result in improvement of patient care but also conducted smooth running of affective administration.

Geetha Mani, Kalaivani Annadurai, Raja Danasekaran; The study comes out with the finding that even at Primary health care service in one of rural area that drugs are required to be categorises as per cost and critically of drug to patient and managers should keep tight control as it is suggested that with this process most of persons gets most satisfactory health care.

Joseph Mathew, Joshin John and Dr. Sushil Kumar(2005);The study recommends healthcare suppliers are beneath enormous weight due to expanding competition, government directions, rising costs, request for the higher quality of benefit. The most recent advancements in RFID technology, Supply Utilization administration & essentially centralized Supply chain management hold the key to the longer term. The particular benefits that RFID labels offer over barcodes present a completely new way of working within the competitive commerce environment.

Bialas Christos, Manthou Vicky, J. Constantinos, Alexander TEI of Thessaloniki(2014); Examined supply chain administration within the healthcare sector: This gives the writing survey of the effect of supply chain administration on the healthcare organizations and proposes a inquire about the plan for supply chain administration within the private and open directed healthcare divisions. an arrangement of related variables, such as regulation, globalization, and health insurance legislation is of the utmost importance for the healthcare sector.

Janice L. Buerger (1991); In planning a budget for the Small Hospital or developing a monetary budget may be a process that ought to utilize group work to arrange and implement. The budget sets edges for administration through the year. Supervisors reporting fluctuations and giving direction so that fluctuations are kept under control where possible. By utilizing department managers within the arranging handle of the budget, the chairman is able to create successful arrangement. Since all divisions contribute within the objectives, this eliminates numerous issues related to the budget and recognizes zones that require improvement.

GENERAL OBJECTIVE:

To ascertain the volume of non-medical items to be procured for upgrading of all departments from a 50 to 80 bedded Hospital.

SPECIFIC OBJECTIVE:

1. Quantification of the non-medical items required for all department.
2. Budgeting the entire requirement of non-medical items for all.
3. Phasing Plan for procuring the budgeted and planned items.
4. Understanding and implementing the concept of ABC, VED and ABC VED Matrix.

RESEARCH METHODOLOGY:

Study Design: Cross-Sectional Study

Study Area: Malik Radix Healthcare, Nirman Vihar, East Delhi

Study Population: Hospital staff, Officials of Finance & Purchase Department and Vendors

Data Collection tools and techniques:

Tools: Quotations by vendors

List of items required for the initial phase is provided by the end users

Techniques: Requisition forms, ABC - VED Analysis & Matrix

INTRODUCTION

It is seen in today's time that health care is one of the fastest growing industries and manufacturers are changing their pattern of manufacturing to negotiate between the cost of the product and the high quality of the product they produce. The same also applies to medical equipment and supplies, pharmaceuticals, biotechnology, alternative medicine or any health services. The pressure to reduce the cost of each and every item is very high. High quality comes with higher prices which finally be the burden on the patient. Continued efforts to reduce the cost are also made by focusing primarily on eliminating waste in clinical operations. Supply chain management (SCM) is the development of materials, data, and accounts between providers to the producer to distributor to the retailer and to the customer. Supply chain management is the timely flow between these entities. The success of any SCM is governed by two major decisions. Firstly, production only as much as required and avoiding overstocking of raw material and finished product and Secondly is common inventory or reduced inventory. An effective supply chain management is a frame work computer program globally with Web interfacing of requirement on demand and supply are to be materialised as there many companies who are based with R&D (Research and Development)in a developed country and manufacturing in other country where labour and material are cheap. They are competing with Web-based application service providers (ASP).

Supply chain management is divided into following three major parts:-

- Product Management
- Information Management
- Financial Management

The product management entails movement of items from manufactures to suppliers to customers or some time direct from manufacture to customer or visa versa. The information management which is the most important link - for manufacture what customer wants and for customer to know the flow of order and delivery status. Finally the timely financial management to maintain the cordial balance between three agencies to grow and maintain the cycle. However SCM is also broadly govern by three main stake holders

- Government Policies
- Insurance Companies
- Regulatory Agencies

Since answers to SCM in the present day is web based the two integrated software; planning applications and execution applications are utilised to process the planning of demand and placing order (which also includes the time required for manufacture and shipment) and also watch the movement of shipment all times so that place for stocking are available. At the same time it upkeeps the payments details of all parties.

The SCM are based on cloud data based system with open data module like in warehouse from one end the suppliers the manufactures are connected and on the other end the various types of customers like hospitals, clinics, pharmacies, nursing homes, physicians from various locations and cities. They share the data of demand and supply there are several different sites and companies.

These warehouses are so effective in sharing the data that the upstream and downstream demands are mobilised in faster pace and have capability to reduced time to market and to

customer, decrease costs, and permit all parties within the supply chain to understand the future demand pattern in quality and time space

Even the government are taking steps in the e-procurement and regularly putting there demands on online . Number of manufactures and suppliers are doing same.

1. Quantification of the Non-medical items required for all departments.

Quantification is a process that involves estimating the quantities of a specific item required to be procured for a specific period of time. Quantification involves the financial requirements needed to purchase the items, human resource capacity, storage capacity, and the capacity of the system to deliver services. The purpose of quantification is to ensure an uninterrupted supply of materials by supplying and re-stocking, while at the same time avoiding wastages due to overstocking.

The order quantity is the amount of items that are required to be utilized in one supply period, and it depends on the length of time between orders (i.e. recurrence of ordering) and normal month to month utilization.: For example on consumption pattern if one places the order after every 3 months, the quantity of demand should be so much that stock are available till the fresh supplies are in the stock. To calculate this quantity or how much one need during the supply period is taken out with this formula:-

$$\text{Order quantity} = \text{Time between orders} \times \text{Average monthly consumption}$$

The maximum stock level is the maximum sum of anything you ought to have in stock at any given time. One will have max stock in the store on receiving the stock. The regular checking of bin cards helps you to maintain any over ordering. However this level can change after some time. To calculate the maximum stock level, utilize the equation:-

$$\text{Maximum level} = \text{Reserve stock level} + \text{Order quantity for one supply period}$$

The minimum stock level (also called the re-order level) is the time one ought to put an arrangement to maintain a distance from any short supply. The stock can alter over a period of time. One has to be keep the accounting system and the physical stock cards always upgraded. To calculate the least level, utilize the equation:-

$$\text{Minimum stock level} = \text{Reserve stock} + \text{Stock used during lead time}$$

Average monthly consumption (AMC) refers to the average amount of an item that's issued each month over a period of months. It takes account of regular variations in the request and is calculated utilizing the taking after equation:

$$\text{Average monthly consumption} = \frac{\text{Total quantities issued in the time period}}{\text{Number of months in the time period}}$$

Based on the consumption of the items by the user department, the items are quantified. The consumption of the user department is calculated based on the requisition raised for that material by the department. On a particular format **ref appendix table no 1.1**

All User Departments has given their quantities for all the materials based on their consumption pattern, based on the consumption pattern quantities are procured. Once the hospital go live, consumption pattern for the materials is captured for the three months and then projected for the required number of days.

2. Budgeting the entire requirement of Non-medical items.

The process for the budgeting is as follows:

Quantity Determination – Once the quantity of the items that has to be procured for the given time period is carried out based on the consumption method for that items, the next step is the budgeting.

Budget preparation – Budget is prepared after estimating the demand of the item for the user department and base price (unit price) which the vendor quotes for the material. On a particular format **ref appendix table no 1.2**

On receiving the quantities for materials from all user departments, then quantities are multiplied with the unit price to get the total cost of the materials. After adding the tax and other components into the total price, the amount which comes out is equivalent to the budget for the procurement of material.

Approval of the budget – Once the budget is prepared, it is to be approved by the GM (General Manager) of purchase department, then GM Finance and in the last it is to be approved and signed by the CEO (Chief Executive Officer) of the organization

3. Phasing Plan for procuring the budgeted and planned items & Understanding and implementing the concept of ABC, VED and ABC VED Matrix.

Once the budget is prepared for the materials, then vendors are identified that have the product of desired specification and quotations of the material along with technical and financial quotations is received and then they are compared with the specifications provided by the other vendor.

Vendor Hunting – Vendor specific for the specific items are then identified which has the material of user need.

Quotations – Rate list of the same material is to be invited for the specified material from the different three vendors.

Selection of Vendor – Based on the comparison of the sample material received from the different three vendors only one vendor is selected who fulfills the criteria of price, quality, delivery terms, guarantee & warranty, reputation and reliability.

Time of Delivery

- Legal issues as often as possible emerge in association with questions of delivery time. The Buyer may be able to avoid a few or most conveyance issues by indicating the composed agreement or buy order the delivery dates required. A few companies use a particular arrangement within the purchase arrange allowing cancellation or refusal of shipment if the conveyance isn't made as specified.
- It is evident that if no time is given within the understanding, the vender is required to convey within a “reasonable” time. “Reasonable time” depends on all of the relevant circumstances of the exchange, counting the seller’s information of the Buyer’s delivery prerequisites, also earlier dealings and practices between the Buyer and seller.

Assessment of Quality of Supplies

- ❖ Adherence to fresh lot i.e. not in six months of the expiry date
- ❖ Storage and transit conditions
- ❖ Compliance to goods return terms maintenance
- ❖ Form of product
- ❖ Accurate labelling

Raising PO(Purchase Order) – Once the vendor is selected then purchase order is raised to the vendor for the delivery of material.

Receipt of Material:

Entry of invoice /delivery Challan /inward gate pass at security counter is mandatory for every incoming material at hospital for set up & initiating the operations for set up & initiating the operations.

1. Purchase order copy is required at receiving counter along with invoice/delivery-Challan.
2. Stores/Receiving team receives goods with inward gate pass.
3. After goods are brought to the Receiving Counter at the stores /receiving team, verification is carried out for quantity and quality if required. Specifications must conform to criteria in the Purchase Order.
4. If the goods are not accepted then returned /rejected items sent with return form back to supplier & copy to purchase team & finance team. Store manager has to maintain register for return stock.

If the goods are accepted then stores team prepares duly certified GRN along with invoice either certified by Q.C(Quality Control(if required) or project manager/ COO delegated site lead.

5. Stores team will update the inventory once the stock GRN is received
6. Purchase Manager updates the record & receives GRN/CC, invoice from site lead/project manager.
7. Purchase Manager forwards a copy of P.O, GRN/CC & invoice to finance department.
8. Finance team has to update the purchase journal & the ledger.

9. Finance Manager Makes the payment based on payment terms, checks calculate & match's approved P.O, invoice, GRN/CC and updates the payment record.

ABC Analysis- It is an inventory categorization technique majorly used where large inventory exists and items are quite often used in a random manner. Even the cost of items and importance varies vastly. To keep the inventory under check a "Selective Inventory Control. " Policies based on ABC analysis is utilized under following conditions:-

- A Items: very tight control and accurate records
- B Items: less tightly controlled and good records
- C Items: simplest controls possible and minimal records

This is a tool where one can keep a check on total cost of inventory and also categories into different categories to have control by different stages of management. It also guides us that total inventors does not have equal importance. Hence total inventory is divided into three parts according to their importance under A,B,C as mention above

A items are the most important items to the organisation. Due to its very high value and it requires frequent analysis and organisation has to make an order how frequently the item is required and how much of ready stock is required to be kept in stock so one do not get stuck with large amount of revenue on hold or run out of stock due to less stocking.

B items are little less important than A items but it also plays a major role in inventory because most of the items come in this category as it is an intermediate group but yet more important than C items.

C items are all other items which do not come under A & B group. These items are marginally important.

Quantity is calculated out for the **Phase one** has been suggested initially for the OPD/ ICUs commissioning and then **Phase two quantities** for Hospital when fully operational.

PHASE 1

S.no.	Items	UNIT RATE	Phase - I Quantity	Total cost	ABC Analysis	VED ANALYSIS
1	R - 82 Disinfectant	4200	50	210000.00	A	Vital
3	Laptop	37500	5	187500.00	A	Vital
2	Colour TV With Digital Connection	25000	7	175000.00	A	Essential
4	Industrial Roll	1250	60	75000.00	A	Essential
5	Blanket	900	75	67500.00	A	Vital
7	Patient Rights & Responsibilities Signage	1500	15	22500.00	A	Vital
6	Chemicals	5000	10	50000.00	A	Vital
8	Tie Pin	300	150	45000.00	A	Desirable
9	File/Folder of Hospital Branding	50	700	35000.00	A	Vital
10	Key Chains with Logo	200	75	15000.00	A	Desirable
11	Bin Trolley 1100 Litre	20000	2	40000.00	A	Vital
12	Nursing/ Technician Scrub	1400	20	28000.00	A	Vital
13	Breathing Apparatus	78000	2	156000.00	A	Vital
14	Flask 1.2 Litre	1200	20	24000.00	A	Essential
15	Surgeon Gown	650	50	32500.00	A	Vital
16	Baby Swaddle Sheet	700	75	52500.00	A	Vital
17	Foam Soap	675	25	16875.00	A	Desirable
18	Pillow Protector	300	90	27000.00	A	Essential
19	Traffic Cones	3000	6	18000.00	A	Vital
20	Temperature Recorder For Domestic	8700	4	34800.00	A	Vital
21	Refrigerator	7000	8	56000.00	A	Essential
22	Moisturizer	1000	35	35000.00	A	Essential
23	Pillow Firm	400	40	16000.00	A	Vital
24	Files/ Holders	285	50	14250.00	A	Essential
25	Tissue Packet 50 Pull	399	45	17955.00	A	Essential
26	Slipper	600	35	21000.00	B	Vital
27	EHC Dress Male	600	20	12000.00	B	Vital
28	Mothers Gown	1180	15	17700.00	B	Vital
29	SS Dustbins 15 Ltr With Dome	550	25	13750.00	B	Vital

30	Nursing Uniform Female	1550	10	15500.00	B	Vital
31	Baby Blanket	800	35	28000.00	B	Vital
32	Navy Blue Blazer	1350	15	20250.00	B	Desirable
33	Nehru Coat Sleeveless	780	30	23400.00	B	Desirable
34	Sweater Cardigan (Grey)	1100	10	11000.00	B	Vital
35	Printer	4500	4	18000.00	B	Vital
36	Bath Towel	750	20	15000.00	B	Essential
37	Sweater Cardigan (Blue)	1000	30	30000.00	B	Essential
39	Safari Suit Grey	5500	4	22000.00	B	Desirable
40	Sweater Pullover (Blue)	650	40	26000.00	B	Vital
41	EHC Dress Female	1250	45	56250.00	B	Desirable
42	Wall Clock Brown Frame	250	7	1750.00	B	Desirable
43	Wall Clock Silver Frame	800	5	4000.00	B	Vital
44	Bin Trolley 660 Litre	600	3	1800.00	B	Desirable
45	Sweater Pullover (Grey)	2350	5	11750.00	B	Vital
46	Queue Managers	450	18	8100.00	B	Vital
47	Baby Onesie	550	30	16500.00	B	Vital
48	Navy Blue Trouser	1210	15	18150.00	B	Vital
49	Patient Dress	650	30	19500.00	B	Desirable
53	Tissue Paper Holder	2400	7	16800.00	B	Vital
50	Digital Room Temperature Recorder	500	9	4500.00	B	Essential
51	Pillow Compressed Poly fill	500	40	20000.00	B	Vital
52	Dustbin White 15Lt Nayasa	500	15	7500.00	B	Vital
54	Sky Blue Shirt (Chinese Collar)	1100	15	16500.00	B	Vital
55	Doctors Scrub	450	20	9000.00	B	Vital
56	Sky Blue Shirt	750	15	11250.00	B	Vital
57	Outsource Scrub	550	15	8250.00	B	Vital
58	Nursing Shoes (Female)	550	15	8250.00	B	Vital
59	Anti-Skid Mats Bathroom	550	12	6600.00	B	Vital
60	Nursing Uniform Male	1690	7	11830.00	B	Vital

61	Nursing Shoes (Male)	650	15	9750.00	C	Vital
62	Crocs	2700	2	5400.00	C	Essential
63	Vegetable Crates Multipurpose 22 litres	450	7	3150.00	C	Essential
64	Environ Refill	450	12	5400.00	C	Vital
65	Microwave Oven (22 Litre)	12220	1	12220.00	C	Essential
66	Kitchen Roll	400	10	4000.00	C	Essential
67	Baby Bed sheet	600	25	15000.00	C	Vital
68	Bill Folder	395	15	5925.00	C	Vital
69	Doctors Coat Male	765	7	5355.00	C	Vital
70	Shaving Kit	350	20	7000.00	C	Vital
71	Doctors Coat Female	845	10	8450.00	C	Vital
72	Bread Box	200	10	2000.00	C	Essential
73	Shampoo / Shower Gel	350	7	2450.00	C	Essential
74	Name Plate of Doctor	850	7	5950.00	C	Vital
75	Dustbins 120 Litre	200	6	1200.00	C	Essential
76	Sponge Towel	450	10	4500.00	C	Desirable
78	Blue Cardboard	400	7	2800.00	C	Vital
79	File Cabinet	3990	2	7980.00	C	Vital
77	Casio Label Printer With 18Mm Cartridges	1400	4	5600.00	C	Essential
83	Bucket	300	3	900.00	C	Vital
81	Trolley	1500	5	7500.00	C	Essential
80	Glass Holder	250	10	2500.00	C	Vital
82	Hand Towel	250	25	6250.00	C	Essential
84	Bathroom Stool	550	10	5500.00	C	Vital
88	Patient Handbook	375	7	2625.00	C	Desirable
85	Double Foot Rest	550	4	2200.00	C	Vital
86	Paediatric Dress	400	15	6000.00	C	Vital
87	Patient Gown	350	15	5250.00	C	Vital
94	Disposable Glasses	4	300	1200.00	C	Vital
91	SS Tray	400	5	2000.00	C	Essential
89	Baby Cap	225	10	2250.00	C	Desirable
90	Plastic Hangers	40	20	800.00	C	Vital
92	Tie	250	15	3750.00	C	Vital
93	Green Cloth (90")	250	15m	3750.00	C	Essential
95	Saree	450	15	6750.00	C	Essential

96	White Board	3875.00	1	3875.00	C	Vital
97	Hospital Letter Head	450	15	6750.00	C	Essential
98	Traffic Jacket	1250	2	2500.00	C	Essential
99	Coaster	200	25	5000.00	C	Vital
100	Green Cloth (60")	185	25m	4625.00	C	Vital
101	Flite Slipper	200	15	3000.00	C	Essential
102	Blouse	350	10	3500.00	C	Vital
103	Torch Rechargeable	1550	3	4650.50	C	Vital
104	Envelope (Large/Medium/Small)	2.5	300	750.00	C	Vital
105	Pharmacy Envelope (Medium/Large/Small)	6	200	1200.00	C	Vital
106	Megaphone	3500	1	3500.00	C	Desirable
107	Heater	4500	1	22500.00	C	Vital
108	Pharmacy Crates	1290	3	11450.00	C	Vital
109	Dental Kit	175	12	2100.00	C	Vital
110	Soap	55	35	1925.00	C	Vital
111	Sharp Container	45	15	675.00	C	Vital
114	Ice Box	3850	2	7700.00	C	Essential
112	Cake Knife	120	3	360.00	C	Vital
113	Mortuary Sheet (In Mtrs)	175	50m	8750.00	C	Vital
115	Traffic Batons	650	2	1300.00	C	Essential
116	Petticoat	400	15	6000.00	C	Desirable
117	Rain Coat	900	3	2700.00	C	Essential
118	Glass Base SS Top Mini Chaffing Dish	900	4	3600.00	C	Vital
119	Notice Board	850	5	4250.00	C	Essential
122	Soft Board Pin	3500	1	3500.00	C	Vital
120	Bread Display with ACR Cover	2500	2	5000.00	C	Vital
121	Wheel Barrow	750	1	750.00	C	Vital
124	Search Light Rechargeable	1500	2	3000.00	C	Vital
123	Envelope (Large/Small)	12.50	75	937.50	C	Vital
127	Paper Rim	450	8	3600.00	C	Essential
128	Bakery Moulds	750	2	1500.00	C	Vital
126	Labelling Machine	1000	3	3000.00	C	Essential

125	Pop Up Toaster	450	4	1800.00	C	Vital
129	Pharmacy Manual Bill Book	350	4	1400.00	C	Essential
131	Cutlery Stand	250	7	1750.00	C	Essential
130	Door Mats	990	6	5940.00	C	Essential
132	Cake Pick	275	2	550.00	C	Vital
133	Emergency Light-Portable	975	7	6825.00	C	Desirable
135	Comb	120	15	1800.00	C	Essential
138	Fruit Baskets	550	7	3850.00	C	Vital
134	Heavy Duty Laser Thermometer	829	3	2487	C	Vital
136	Hydraulic Freelance Flask (1.5 Lit)	1550	3	4650.00	C	Vital
137	Caution Tape	135	30m	4050.00	C	Desirable
139	Wooden Hanger	155	20	2100.00	C	Vital
140	Plastic Drug Container Medium	850	6	5100.00	C	Desirable
141	Coat Hanger – Stand	1650	3	4950.00	C	Vital
142	BMW (Biomedical Waste) Garbage Bag	7	500	3500.00	C	Vital
143	Ironing Board	1250	3	3750.00	C	Vital
144	Pamphlet Rack for FAQ	750	3	2250.00	C	Vital
145	Dry Iron	950	3	2850.00	C	Desirable
146	Key Rack	1850	4	7400.00	C	Essential
147	Cake Stand	450	1	450.00	C	Vital
148	Water Dispenser	350	4	1400.00	C	Vital
149	Steel Tray	450	5	2250.00	C	Desirable
150	Pen Stand	200	6	1200.00	C	Vital
151	Blood Bank Stamp	65	2	130.00	C	Vital
152	Biohazard Stamp	65	3	195.00	C	Desirable
				2334149.00		

Table 2.1

ABC ANALYSIS ITEM WISE PHASE 1

Category	No. of items	% of items	Value	% Value
A	25	16.44	1451380	62.18
B	35	23.02	651927	27.94
C	92	60.52	230842	9.88

Table 2.2

ABC ANALYSIS VALUE WISE PHASE 1

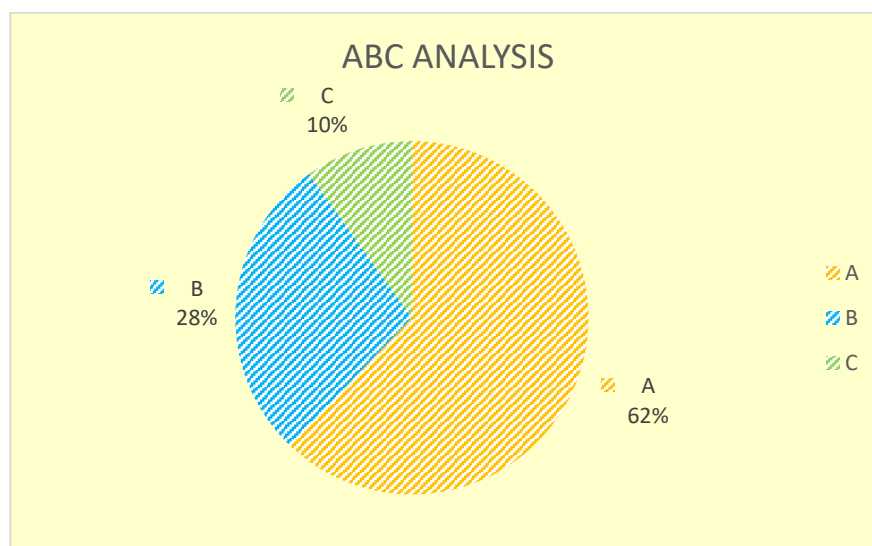


Figure 2.3

VED Analysis attempts to classify the items used into three broad categories, namely Vital, Essential, and Desirable. The analysis classifies items on the basis of their criticality requirement for the Hospital.

- **Vital:** Vital category items are those items without which the production activities or any other activity of the company, would come to a halt, or at least be drastically affected.
- **Essential:** Essential items are those items whose stock – out cost is very high
- **Desirable:** Desirable items are those items whose stock-out or shortage causes only a minor disruption for a short duration in the production schedule. The cost incurred is very nominal.

VED ANALYSIS ITEM WISE FOR PHASE 1

Category	No. of items	% of items	Value	% Value
V	94	61.8	1465614	62.97
E	36	23.68	553125	23.69
D	22	14.47	315410	13.34

Table.2.4

VED ANALYSIS VALUE WISE PHASE 1

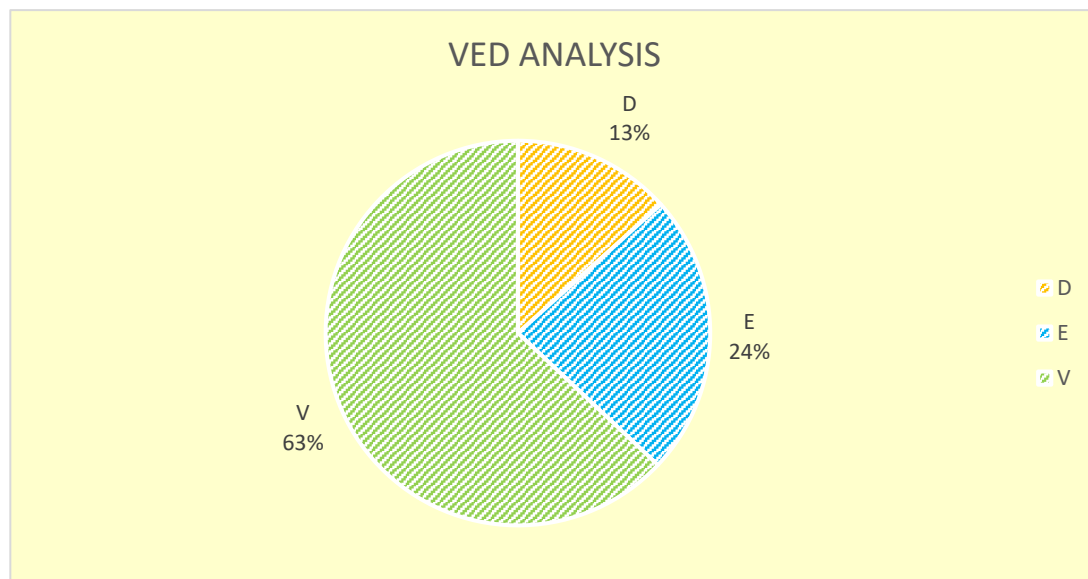


Figure 2.5

PHASE 2

S.no.	Items	UNIT RATE	Phase - I Quantity	Total cost	ABC Analysis	VED ANALYSIS
1	R - 82 Disinfectant	4200	110	462000.00	A	Vital
3	Laptop	37500	8	300000.00	A	Vital
2	Colour TV With Digital Connection	25000	8	200000.00	A	Essential
4	Industrial Roll	1232	215	264880.00	A	Essential
5	Blanket	900	90	81000.00	A	Vital
7	Patient Rights & Responsibilities Signage	1500	20	30000.00	A	Vital
6	Chemicals	5000	35	175000.00	A	Vital
8	Tie Pin	300	150	45000.00	A	Desirable
9	File/Folder of Hospital Branding	50	2100	105000.00	A	Vital
10	Key Chains with Logo	200	225	45000.00	A	Desirable
11	Bin Trolley 1100 Ltr	20000	5	40000.00	A	Vital
12	Nursing/ Technician Scrub	1400	275	385000.00	A	Vital
13	Breathing Apparatus	78000	4	312000.00	A	Vital
14	Flask 1.2 Ltr	1200	35	42000.00	A	Essential
15	Surgeon Gown	650	110	71500.00	A	Vital
16	Baby Swaddle Sheet	700	135	94500.00	A	Vital
17	Foam Soap	675	150	101250.00	A	Desirable
18	Pillow Protector	300	210	63000.00	A	Essential
19	Traffic Cones	3000	6	18000.00	A	Vital
20	Temperature Recorder For Domestic	8700	5	43500.00	A	Vital
21	Refrigerator	7000	12	84000.00	A	Essential
22	Moisturizer	1000	45	45000.00	A	Essential
23	Pillow Firm	400	110	44000.00	A	Vital
24	Files/ Holders	285	140	39900.00	A	Essential
25	Tissue Packet 50 Pull	399	90	35910.00	A	Essential
26	Slipper	600	45	27000.00	B	Vital
27	EHC Dress Male	600	60	36000.00	B	Vital
28	Mothers Gown	1180	25	29500.00	B	Vital
29	SS Dustbins 15 Ltr With Dome	550	50	27500.00	B	Vital

30	Nursing Uniform Female	1550	50	77500.00	B	Vital
31	Baby Blanket	800	45	36000.00	B	Vital
32	Navy Blue Blazer	1350	45	60750.00	B	Desirable
33	Nehru Coat Sleeveless	780	40	23400.00	B	Desirable
34	Sweater Cardigan (Grey)	1100	35	31200.00	B	Vital
35	Printer	4500	5	22500.00	B	Vital
36	Bath Towel	750	40	30000.00	B	Essential
37	Sweater Cardigan (Blue)	1000	60	60000.00	B	Essential
38	Air Freshener Automatic	668	110	73480.00	B	Desirable
39	Safari Suit Grey	5500	12	66000.00	B	Desirable
40	Sweater Pullover (Blue)	650	25	16250.00	B	Vital
41	EHC Dress Female	1250	55	68750.00	B	Desirable
42	Wall Clock Brown Frame	250	14	3500.00	B	Desirable
43	Wall Clock Silver Frame	800	6	4800.00	B	Vital
44	Bin Trolley 60 Ltr	600	5	3000.00	B	Desirable
45	Sweater Pullover (Grey)	2350	8	18800.00	B	Vital
46	Queue Managers	450	22	9900.00	B	Vital
47	Baby Onesie	550	70	38500.00	B	Vital
48	Navy Blue Trouser	1210	35	42350.00	B	Vital
49	Patient Dress	650	170	110500.00	B	Desirable
50	Tissue Paper Holder	2400	12	28800.00	B	Vital
51	Digital Room Temperature Recorder	500	15	7500.00	B	Essential
52	Pillow Compressed Poly fill	500	100	50000.00	B	Vital
53	Dustbin White 15Lt Nayasa	500	60	30000.00	B	Vital
54	Sky Blue Shirt (Chinese Collar)	1100	45	49500.00	B	Vital
55	Doctors Scrub	450	40	18000.00	B	Vital
56	Sky Blue Shirt	750	60	45000.00	B	Vital
57	Outsource Scrub	550	30	16500.00	B	Vital
58	Nursing Shoes (Female)	550	35	19250.00	B	Vital
59	Anti-Skid Mats Bathroom	550	15	8250.00	B	Vital

60	Nursing Uniform Male	1690	15	25350.00	B	Vital
61	Nursing Shoes (Male)	650	15	9750.00	C	Vital
62	Crocs	2700	6	16200.00	C	Essential
64	Environ Refill	450	25	11250.00	C	Vital
65	Microwave Oven (22 Ltr)	12220	3	36660.00	C	Essential
66	Kitchen Roll	400	20	8000.00	C	Essential
67	Baby Bed sheet	600	50	30000.00	C	Vital
68	Bill Folder	395	35	13825.00	C	Vital
69	Doctors Coat Male	765	10	7650.00	C	Vital
70	Shaving Kit	350	30	10500.00	C	Vital
71	Doctors Coat Female	845	6	5070.00	C	Vital
72	Bread Box	200	35	7000.00	C	Essential
73	Shampoo / Shower Gel	350	25	8750.00	C	Essential
74	Name Plate of Doctor	850	12	10200.00	C	Vital
75	Dustbins 120 Ltr	200	8	1600.00	C	Essential
76	Sponge Towel	450	40	18000.00	C	Desirable
77	Blue Cardboard	400	15	6000.00	C	Vital
78	File Cabinet	3990	5	19500.00	C	Vital
79	Casio Label Printer With 18Mm Cartridges	1400	5	7000.00	C	Essential
80	Bucket	300	15	4500.00	C	Vital
81	Trolley	1500	8	12000.00	C	Essential
82	Glass Holder	250	22	5500.00	C	Vital
82	Hand Towel	250	50	12500.00	C	Essential
83	Bathroom Stool	550	15	8250.00	C	Vital
84	Patient Handbook	375	12	4500.00	C	Desirable
85	Double Foot Rest	550	15	8250.00	C	Vital
86	Paediatric Dress	400	45	18000.00	C	Vital
87	Patient Gown	350	45	15750.00	C	Vital
88	Disposable Glasses	4	700	2800.00	C	Vital
89	SS Tray	400	8	3200.00	C	Essential
90	Baby Cap	225	30	6750.00	C	Desirable
91	Plastic Hangers	40	50	2000.00	C	Vital
92	Tie	250	45	11250.00	C	Vital
93	Green Cloth (90")	250	35m	3750.00	C	Essential
95	Saree	450	25	8750.00	C	Essential
96	White Board	3875.00	3	11625.00	C	Vital

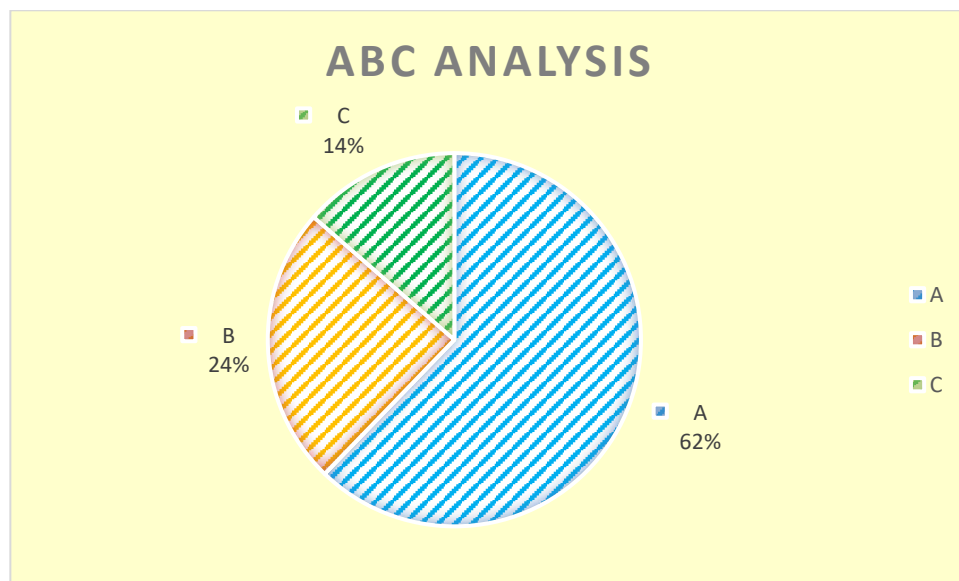
97	Hospital Letter Head	450	25	11250.00	C	Essential
98	Traffic Jacket	1250	4	5000.00	C	Essential
99	Coaster	200	20	4000.00	C	Vital
100	Green Cloth (60")	185	45m	8325.00	C	Vital
101	Flute Slipper	200	45	9000.00	C	Essential
102	Blouse	350	25	8750.00	C	Vital
103	Torch Rechargeable	1550	5	7750.50	C	Vital
104	Envelope (Large/Medium/Small)	2.5	500	1250.00	C	Vital
105	Pharmacy Envelope (Medium/Large/Small)	6	500	3000.00	C	Vital
106	Megaphone	3500	1	3500.00	C	Desirable
107	Heater	4500	3	13500.00	C	Vital
108	Pharmacy Crates	1290	5	6450.00	C	Vital
109	Dental Kit	175	45	7875.00	C	Vital
110	Soap	55	75	4125.00	C	Vital
111	Sharp Container	45	45	2025.00	C	Vital
112	Ice Box	3850	4	15400.00	C	Essential
113	Cake Knife	120	4	480.00	C	Vital
114	Mortuary Sheet (In Mtrs)	175	50m	8750.00	C	Vital
115	Traffic Batons	650	4	2600.00	C	Essential
116	Petticoat	400	25	10000.00	C	Desirable
117	Rain Coat	900	4	3600.00	C	Essential
118	Glass Base SS Top Mini Chaffing Dish	900	6	5400.00	C	Vital
119	Notice Board	850	8	6800.00	C	Essential
120	Soft Board Pin	3500	3	10500.00	C	Vital
121	Board Display with Glass Cover	2500	5	12500.00	C	Vital
122	Wheel Barrow	750	2	1500.00	C	Vital
123	Search Light Rechargeable	1500	5	7500.00	C	Vital
124	Envelope (Large/Small)	12.50	150	1875.00	C	Vital
125	Paper Rim	450	15	6750.00	C	Essential
126	Bakery Moulds	750	6	4500.00	C	Vital
127	Labelling Machine	1000	4	4000.00	C	Essential
128	Pharmacy Manual Bill Book	350	5	1750.00	C	Essential

129	Pop Up Toaster	450	5	2250.00	C	Vital
130	Cutlery Stand	250	15	3750.00	C	Essential
131	Door Mats	990	8	7920.00	C	Essential
132	Cake Pick	275	4	1100.00	C	Vital
133	Emergency Light-Portable	975	12	11700.00	C	Desirable
134	Comb	120	25	3000.00	C	Essential
135	Fruit Baskets	550	9	4950.00	C	Vital
136	Heavy Duty Laser Thermometer	829	5	4145.00	C	Vital
137	Hydraulic Freelance Flask (1.5 Litre)	1550	8	12400.00	C	Vital
138	Caution Tape	135	40m	5400.00	C	Desirable
139	Wooden Hanger	155	24	3720.00	C	Vital
140	Plastic Drug Container Medium	850	12	10200.00	C	Desirable
141	Coat Hanger – Stand	1650	5	8250.00	C	Vital
142	BMW Garbage Bag	7	700	4900.00	C	Vital
143	Ironing Board	1250	2	2500.00	C	Vital
144	Pamphlet Rack for FAQ	750	4	3000.00	C	Vital
145	Dry Iron	950	2	1900.00	C	Desirable
146	Key Rack	1850	5	9250.00	C	Essential
147	Cake Stand	450	1	450.00	C	Vital
148	Water Dispenser	350	5	1750.00	C	Vital
149	Steel Tray	450	8	3600.00	C	Desirable
150	Pen Stand	200	10	2000.00	C	Vital
151	Blood Bank Stamp	65	2	130.00	C	Vital
152	Biohazard Stamp	65	3	195.00	C	Desirable
				5025365.00		

Table. 3.1

ABC ANALYSIS ITEM WISE

Category	No. of items	% of items	Value	% Value
A	25	16.44	3127440	62.23
B	35	23.02	1215330	24.18
C	92	60.52	682595	13.59

Table. 3.2**ABC ANALYSIS VALUE WISE****Figure 3.3**

VED ITEM WISE ANALYSIS

Category	No. of items	% of items	Value	% Value
V	92	60.52	35853889	64.73
E	38	25.00	15097634	21.82
D	22	14.47	6909303	13.45

Table.3.4

VED ANALYSIS VALUE WISE

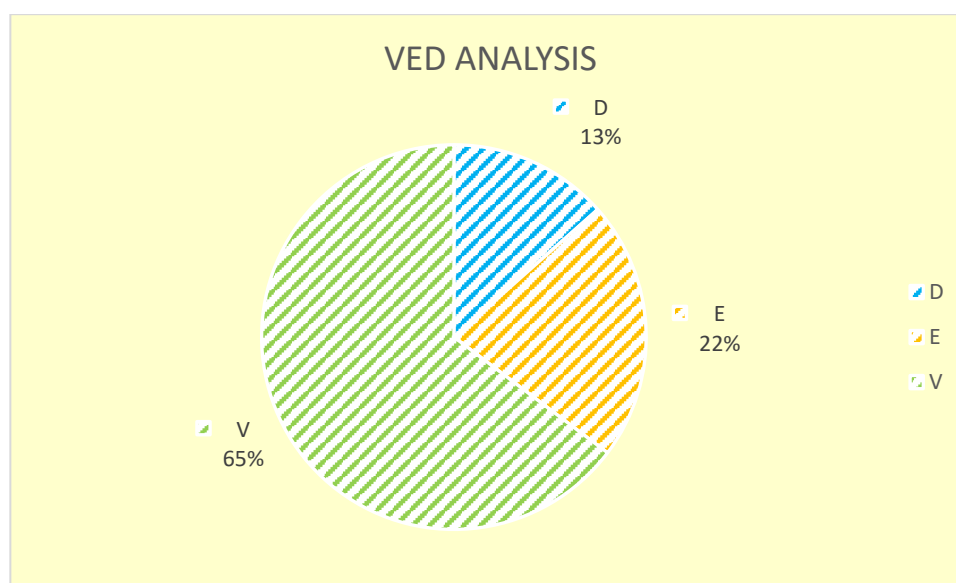


Figure 3.5

ABC VED MATRIX

ABC-VED matrix: The ABC-VED matrix was formulated by cross tabulating the ABC and VED analysis. From the resultant combination three categories were classified (categories I, II and III). Category I was constituted by drugs belonging to AV, AE, AD, BV and CV sub-

categories. The BE, CE and BD sub-categories constituted the category II and the remaining drugs in the CD sub category constituted the category III. In the above sub-categories, the first alphabet denotes its place in the ABC analysis while, the second alphabet stands for its place in the VED analysis.

PHASE 1

Cat	V				E				D			
	No. of items	% of items	Value	% Value	No. of items	% of items	Value	% Value	No. of items	% of items	Value	% Value
A	14	9.21	950300	40.47	8	5.26	424205	18.17	3	1.97	76875	3.29
B	22	14.47	404037	17.30	3	1.97	49500	2.12	8	5.26	198390	8.49
C	56	36.84	75337	3.22	27	17.76	115360	4.94	11	7.24	40145	1.71

Table 4.1

PHASE 2

Cat	V				E				D			
	No. of items	% of items	Value	% Value	No. of items	% of items	Value	% Value	No. of items	% of items	Value	% Value
A	14	9.21	2161500	43.01	8	5.26	774690	15.41	3	1.97	3773875	3.80
B	23	15.13	708450	14.09	3	1.97	97500	1.94	8	5.26	2768750	8.14
C	55	36.18	383270	7.62	27	17.76	223580	4.44	11	7.24	366678	1.51

Table 4.2

RESULTS

In order to get best financial returns, the most powerful tool in management is the inventory control with minimum level of investment in purchase of OPEX materials. The ABC – VED analysis blends the factors so well in finding most suitable sequence at the level of criticality in functioning of hospital and cost criteria. In consideration of 152 items as above the analysis of ABC-VED matrix is as below.

ABC Analysis: Out of the 152 items listed around 16.44% of the materials were found to account for 70.90% of the total cost (25 items) and were classified as A category. Another 22.36% of the materials (34 items) consumed 19.55% of total budget is B category of items, while the remaining 61.18% of the materials (93 items) accounted for only 9.57% of the total cost (C category). It is seen very clearly that just 16% of items bears 71% of cost whereas 60% of items bears just 9% of total budget. With the tight control of A category of items on inventory will give maximum economical results.

VED Analysis: 92 items (60.50%) were classified as vital items. Around 38 items (25%) of items were considered as essential, while 22 items (14.50%) were classified as desirable. Similarly since 60% of items are vital which have to be maintained at all-time whereas this being bigger percentage difficult to monitor and do we have to keep little surplus of these items all the time being vital in nature which may lead to huge financial burden or difficult administrative control. But at the same time we have to maintain minimum level of vital items, thus 92 items requires further categorization for better control and to get maximum economical results.

There can be genuine functional problem in patient care when crucial items are not accessible indeed for a brief period. Hence, crucial things ought to continuously be supplied in an adequate amount to guarantee their steady accessibility. This group of things must be

50controlled and checked with most prominent care. The deficiency of fundamental can be endured for a brief period. If these essential things are not available for a couple of days or a week, working of the hospital can be unfavorably influenced. These things ought to too be controlled and observed carefully. The deficiency of desirable items would not unfavorably influence the quiet care or hospital working indeed in case deficiency is delayed.

ABC-VED Matrix: On blend of both the factors ie criticality and cost ,the result of ABC – VED data on Y & X axis in a common matrix is formed which further segregates the items in different sub category of AV, AE, AD, BV, BE, BD, CV, CE, CD. Each sub category denotes special importance in inventory control. By mixing both the data 152 items are now further divided in a more detail manner in differentiating them for better understanding and control by administrator. The distribution of items in various categories of the matrix is as follows

	V	E	D
A	14(40.47%)	8(21.03%)	3(6.54%)
B	22(17.30%)	3(1.78%)	8(4.80%)
C	56(3.22%)	27(3.34%)	11(0.64%)

Table 4.3

	Category I
	Category II
	Category III

Strict management control is required

Moderate management control

Low management control

AV	Comparatively higher inventory, High safety stock and Inventories needs to be monitored on daily basis
AE	High inventory, Low safety stock and inventory can to be monitored periodically (twice/ thrice a week)
AD	Low inventory, no safety stock, inventory can be monitored twice a month
BV	Higher inventory, high safety stock and Inventories needs to be monitored on daily basis
BE	High inventory, Low safety stock and inventory can to be monitored periodically (twice or once a week)
BD	Low inventory, no safety stock, alternative SKU's can be used, inventory can be monitored once a month
CV	Highest inventory, high safety stock and Inventories needs to be monitored on alternate days/ twice a week
CE	Higher inventory, low safety stock and Inventories needs to be monitored on weekly basis
CD	Low inventory, no safety stock, alternative SKU's can be used, inventory can be monitored once a month or once in two months

ABC – VED MATRIS CATEGORY WISE

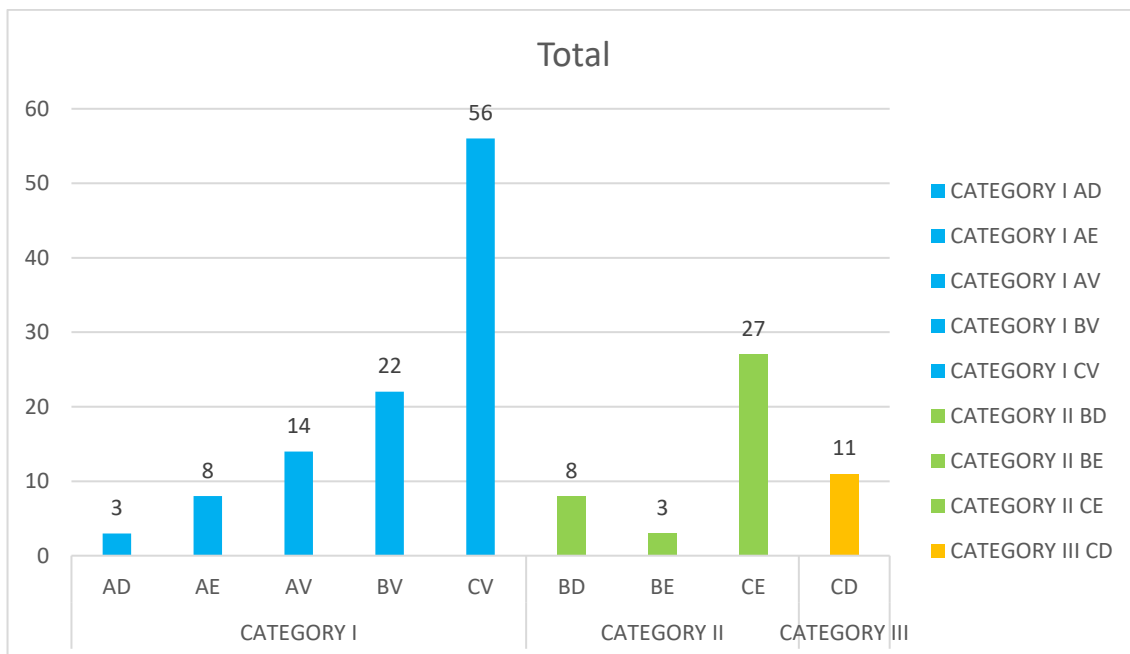


Figure 4.4

The above result of mixed matrix shows very clearly that only AV and BV ie total of 36 items out of 152 items requires monitoring on daily basis. It requires tight control and also to be made readily available as on required basis, being most costly and vital, it possess to be most important items whose correct level stocking will effect on maximum economical results. Hence these items are required to be maintain on daily expenditure basis Similarly AE and BE requires monitoring twice/thrice a week which are 11 items and 24% of total budget. In a similar way if each sub category is analyzed clubbed with supply chain management then administrator can have most effective inventory control with least possible expenditure and stock level.

DISCUSSION

An increase expenditure on OPEX items always gives great concern to hospital in finding out the balance between the quality care to patient and with higher profit margin. Though expenditure on OPEX items will always give better satisfaction to patient as they getting timely treatment in a HAI free, neat clean hygienic environment.

At the same time this is govern by health insurance companies as they are putting caps on various expenditure/bill raised by hospital. As most of the time the paying agency is insurance company. In keeping their product high on sale they try to keep the rates in hospital low so that in the same premium maximum benefits can be to the client so more clients gets attracted to their policy. In this bargain hospital tries to keep expenditure on OPEX items low as invariable 33% to 35% of budget is expended here. Hence to maintain the strike balance it is of utter importance that inventory control is carried out in routine.

In a larger extent in accordance to prevailing rates in the environment each hospital has to juggle out expenditure and income ratio which is a very dynamic procedure by putting various mix of matrix on inventory management only by fine practice some can finally achieve increasingly revenue year by year.

CONCLUSION

The use of inventory control techniques in the up gradation to 80 bedded hospital could help in bringing about substantial improvement not only in patient care but also in form of optimal use of resources. We can conclude, with the right implementation of key inventory management principles Holding cost, ordering cost, Inventory cost can be brought down to a minimum. This enables organizations with much more liquidity and hence up scaling their business, growth and expansion potential.

Supply chain management is not only a whistle blower for departments incurring high expenses but also acts as a gate keeper and safeguards the capital of organization. Cost containment is an important vertical of supply chain management and shall be given its due importance.

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Format for Requisition of Material by the Department.

Item code	Item Name	Item Description	Manufacturer	Quantity	Date

Figure 1.1**Format of Budget Preparation on Vendor Quotes**

<u>Item</u>	<u>Unit price</u>	<u>No. of units</u>	<u>Price</u>
			<u>Total price</u>

Figure 2.1

