A study on inventory control techniques in Narayana health corporate office, Bommasandra, Bangalore

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Introduction-

- Inventory" means physical stock of goods, which is kept in hands for smooth and efficient running of future affairs of an organization at the minimum cost of funds blocked in inventories (Analysis of Inventory Control Techniques; A, March 2013 Volume 3)

- Inventory control is vitally important to almost every type of business, whether product or service oriented. Inventory control touches almost every facet if operations. Inventory control is the activities that maintain stock keeping items at desired levels (INVENTORY MANAGEMENT PRACTICES IN PHARMACIES ACROSS TRINIDAD AND TOBAGO, May-June2012)

Material Management

- Material management is the planning and control, tracking, purchasing, storing, accounting, and disposal of materials in an optimum manner so as to provide a pre-decided service at minimum cost.

- **30 to 40% expenditure goes on materials.**

Classification of Inventory

Different inventory procedures have been developed to enhance inventory management in different purposes. With multiple product lines a firm has, inventory needs to be classified before making decision about inventory methods.

ABC Classification

- ABC analysis is one the most widely used tool for materials management. It is also known as Pareto`s Law or “80 – 20 Rule” (Coyle et al. 2003, 208). This classification has been conducted and developed by Vilfredo Pareto, an Italian philosopher and economist. He observed that a very large percentage of total national income and wealth was concentrated on a small percentage of population. This rule of thumb expresses that 80 % of total value is accounted by 20 % of items. This analysis is considered a universal principle. It is therefore widely used in many situations of businesses. (Inventory Management- A Case Study , 2014).

- Class A represents 10 % of materials in inventory and 70 % of the inventory value.
- Class B represents 20 % of materials in inventory and 20 % of the inventory value
- Class C represents 70 % of material in inventory and only 10 % of inventory value

Criteria	classes		
	A	B	C
Number of item	10%	20%	70%
Value of inventory	70%	20%	10%
Stock control	Strict	moderate	looses
Importanc e	High	moderate	low
Control effort	maximum	moderate	minimum
Fore cast	accurate	estimate	moderate

Advantage of ABC classification is that controlling small numbers of items amounting to 10-20 % will result in the control of 75-80 % of the monetary value of the inventory held.

VED ANALYSIS-

The VED criticality analysis of all the listed items was performed by classifying the items into vital (V), essential (E) and desirable (D) categories.

V- The items critically needed for the survival of the patients and those that must be available always were included in the V category.

E-The items with a lower criticality need and those that may be available in the hospital were included in the E group.

D-The remaining items with lowest criticality, the shortage of which would not be detrimental to the health of the patients, were included in the D group. (ABC and VED Analysis of the Pharmacy Store of a Tertiary Care Teaching, Research and Referral Healthcare Institute of India, 2013)

Research question-

- What are the different inventory management technique that can be implemented in the Narayana Health?

- What is the benefit and efficiency of each inventory management technique?

- Which is the most effective inventory management technique for the Narayana Health ?

Aim-

To find out the effective inventory management technique that can be implemented In the Narayana Health Bangalore

Objective-

- To analyse annual medicines expenditure and consumption using inventory control techniques in Narayana Health Bommasandra, Bangalore

- To find out Vital, Essential, and Desirable class of Drug for VED Analysis

- To find out how much percentage of inventory value each category of Drug constitutes

Methodology-

LOCATION:

From Narayan Health Corporate office Bommasandra, Bangalore.

Sample Size- 332 sample

SAMPLING TECHNIQUE : Non probability convenience sampling.

Study Design: Descriptive cross sectional study

SAMPLING CRITERIA:

Inclusion Criteria-

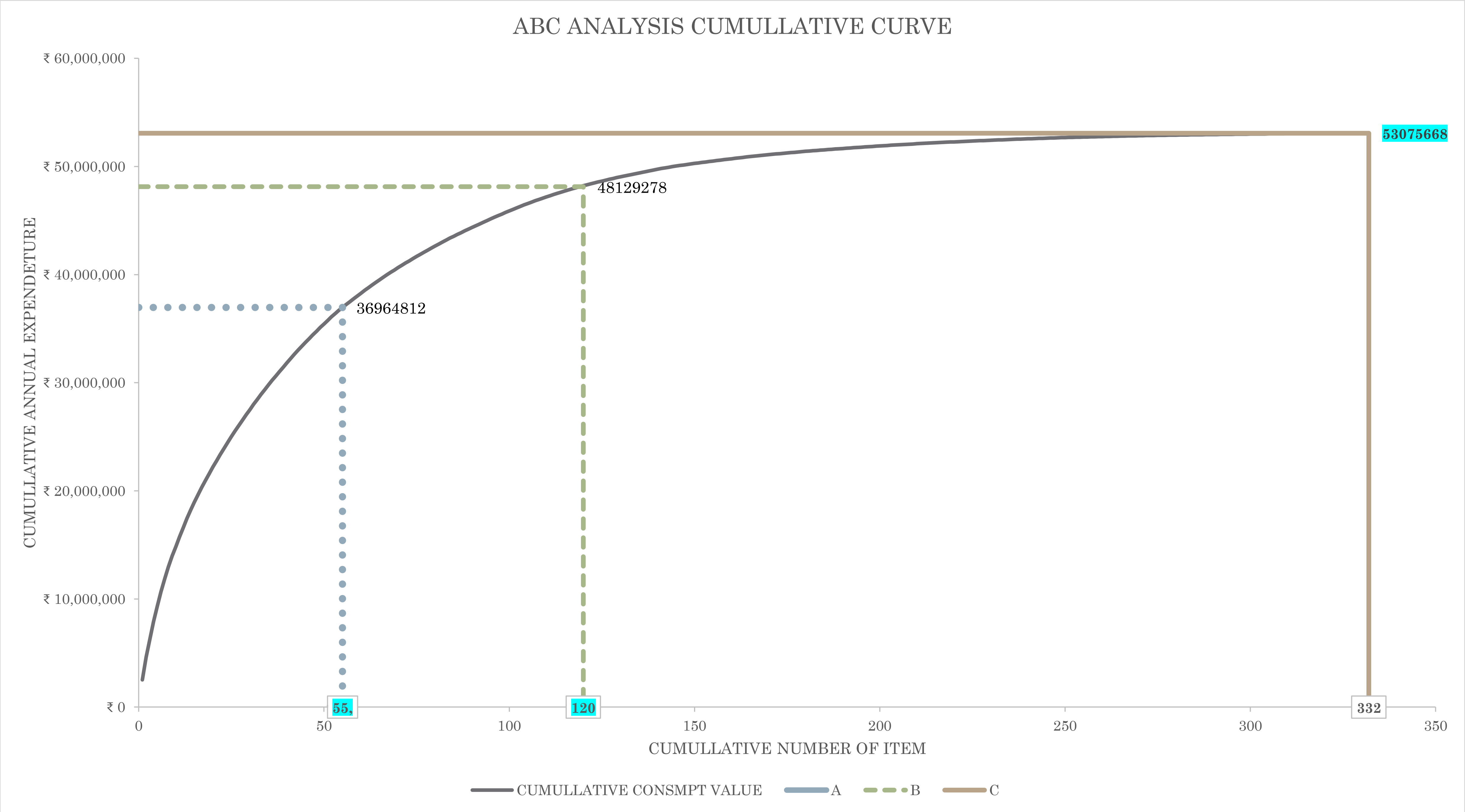
In this study, all medicines which is included in formulary

Exclusion criteria- All general material , equipment &, medicines which is not in formulary & other material

Method of Data collection: Secondary source of Data collection

Data was collected from the HIS of Narayana Health Bangalore.

PERIOD OF DATA COLLECTION : Three Months


ABC ANALYSIS CUMULLATIVE CURVE
CUMULLATIVE ANNUAL EXPENDETURE
₹ 60,000,000
₹ 50,000,000
₹ 40,000,000
₹ 30,000,000
₹ 20,000,000
₹ 10,000,000
₹ 0
53075668
48129278
36964812
55,
120
332
0
50
100
150
200
250
300
350
CUMULLATIVE NUMBER OF ITEM
CUMULLATIVE CONSMPT VALUE
A
B
C

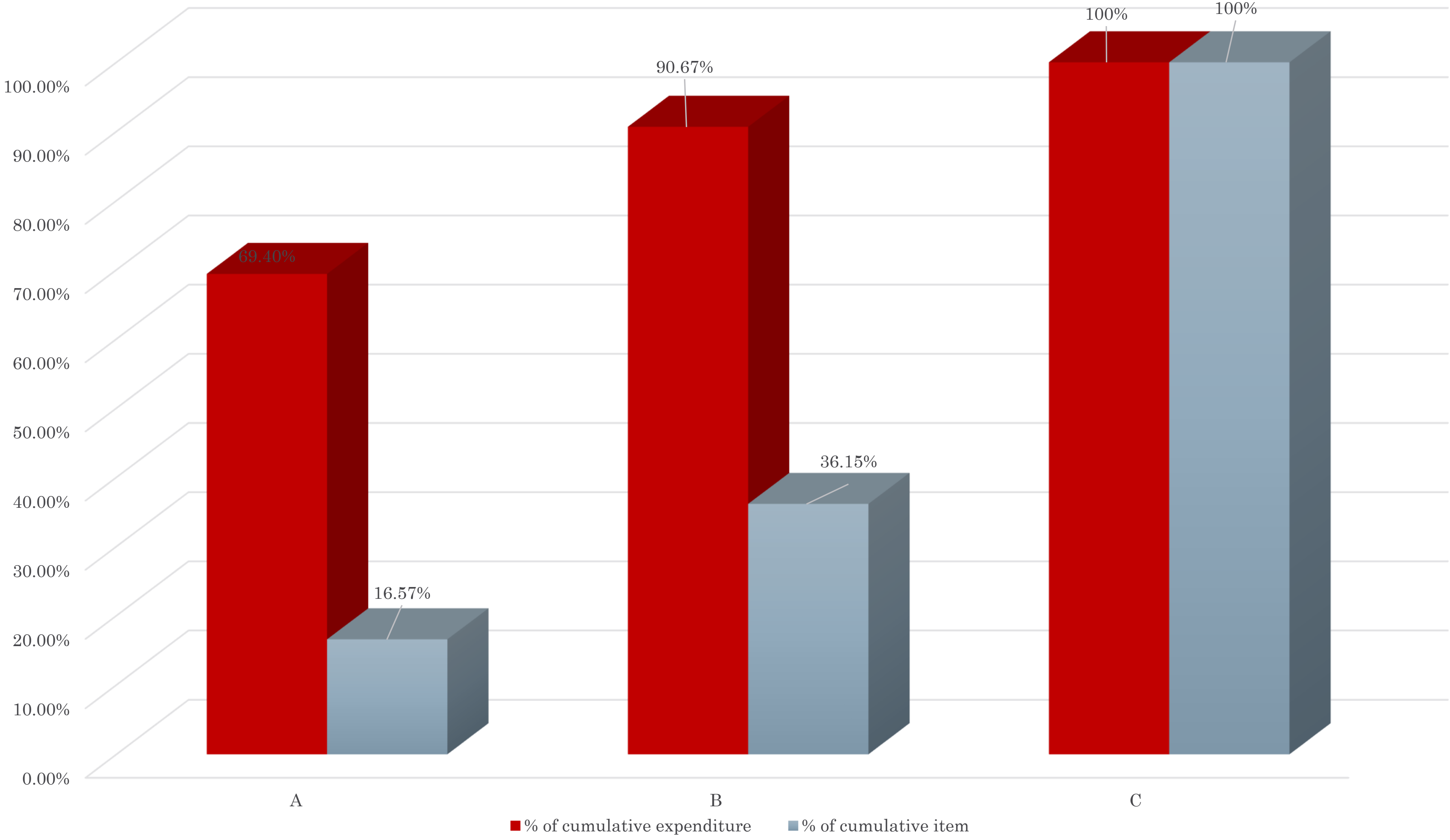
From ABC Analysis –

- 55 Number of item found to be A Class which constitute a value of worth ₹36964812 of total inventory

- 65 number of item found to be B category which constitute a value of worth ₹11164466 of total inventory value

- 122 number of item are found to be C class item which constitute a value of worth₹4946390 of the total inventor value

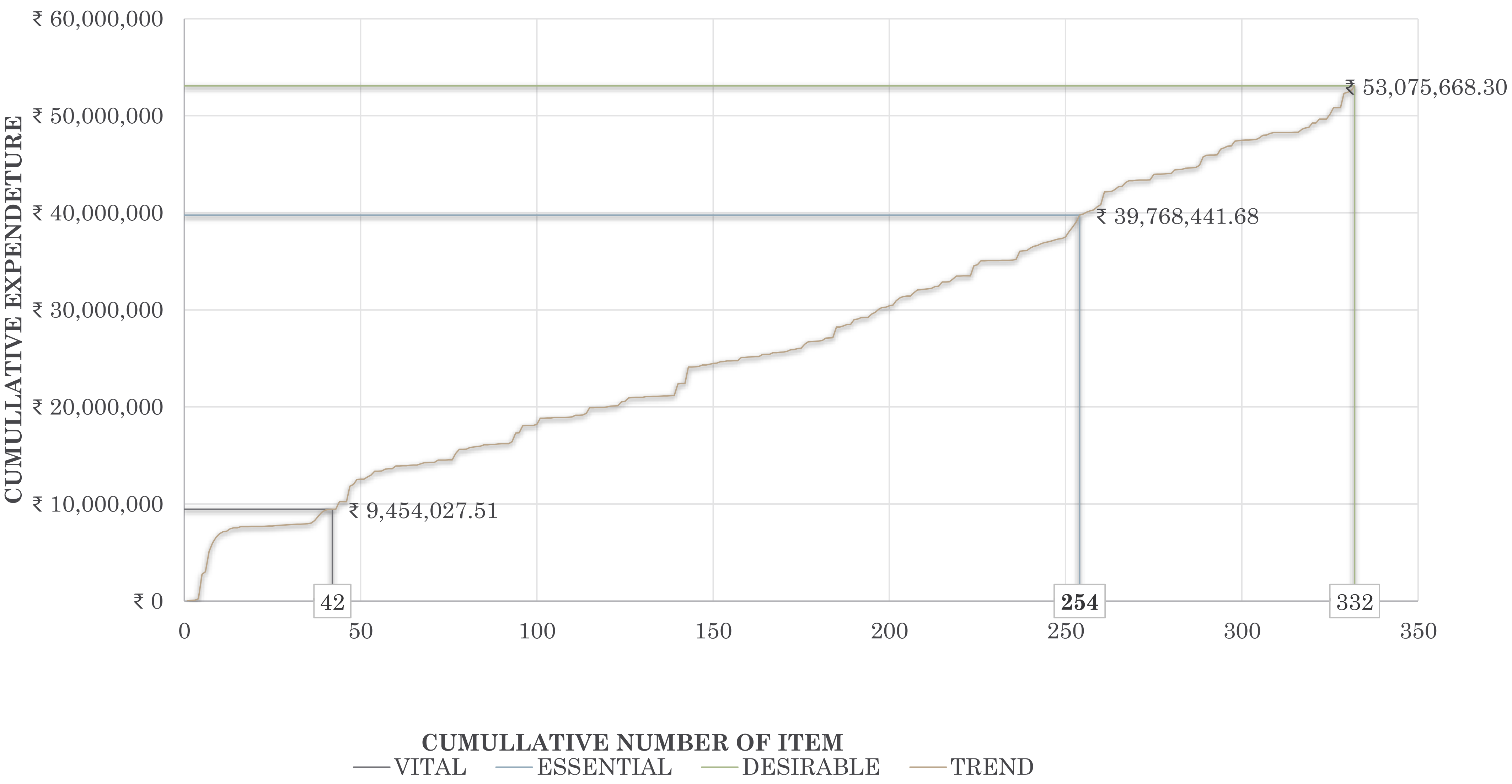
CUMULATIVE CURVE FOR ABC ANALYSIS



- **from the above Graph, it was found that**

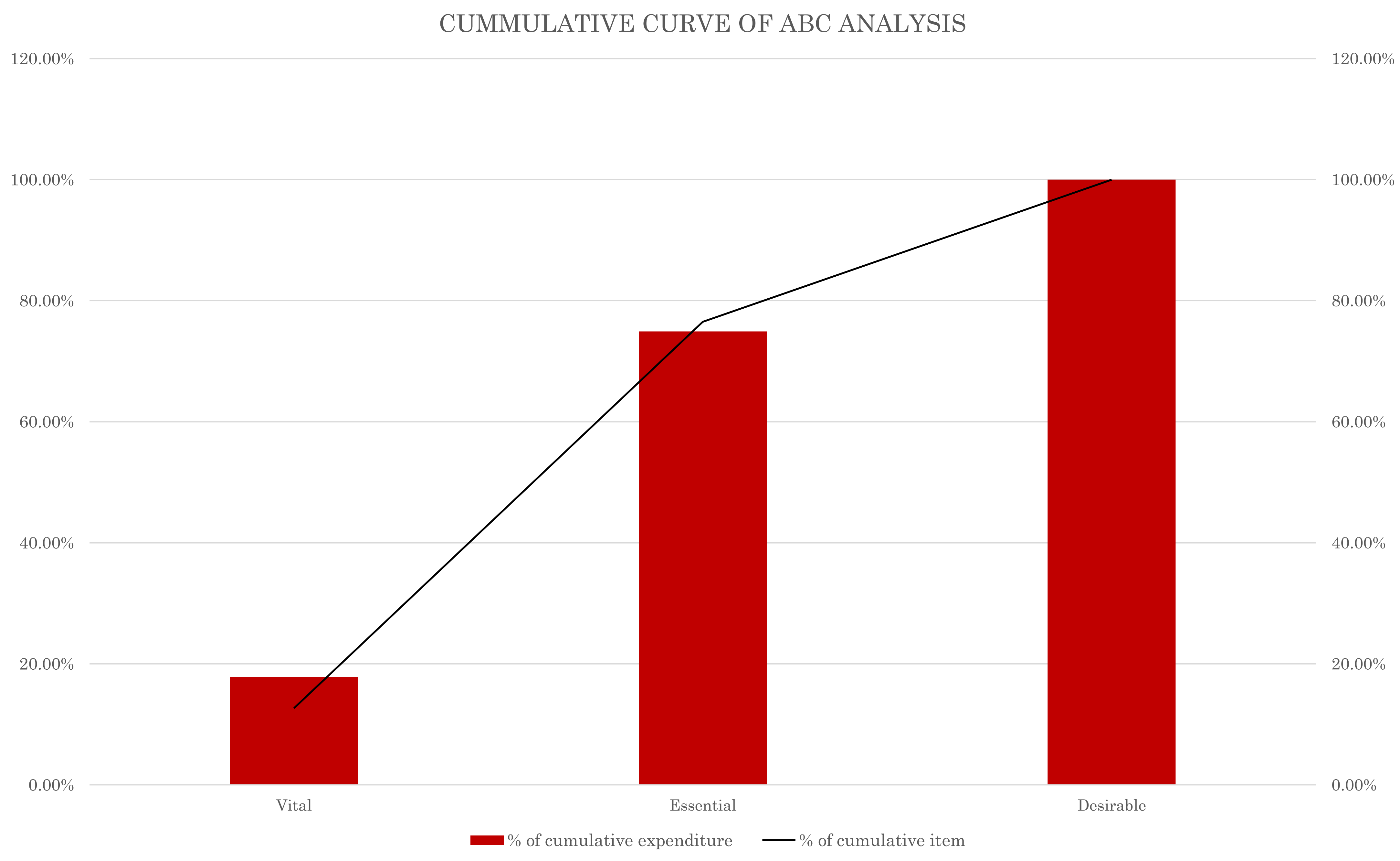
- 16.57% of item constitute 69.40% of the inventory (A)
- 19.58%of item constitutes 21.27% of inventory (B)
- And 63.85% of item constitute 9.33% of item (C)

VED ANALYSIS CUMULLATIVE CURVE



From VED analysis it was found that

- 42 Number of item are Vital which constitute value of worth ₹94,54,027 of the total expenditure
- 212 Number of item are Essential which constitute value of worth ₹30314414 of the total expenditure
- 78 Number of item are Desirable which constitute value of worth₹13307227 of the total expenditure


CUMMULATIVE CURVE OF ABC ANALYSIS
120.00%
100.00%
80.00%
60.00%
40.00%
20.00%
0.00%
Vital
Essential
Desirable
% of cumulative expenditure
% of cumulative item

- 12.65% of item is found to be vital which constitute 17.81% of the total expenditure of the inventory

- 63.68%of item is found to be Essential which constitute 57.12%of the total expenditure of the inventory

- 23.41%of item is found to be Desirable which constitute 25.07% of the total expenditure of the inventory

ABC & VED Matrix

ABC-VED MATRIX	V		E		D		TOTAL NO. OF ITEMS	PERCENTAGE OF ITEMS
	COMBINED CATEGORY	NO. OF ITEMS	COMBINED CATEGORY	NO. OF ITEMS	COMBINED CATEGORY	NO. OF ITEMS		
A	AV	17	AE	54	AD	14	85	26%
B	BV	35	BE	27	BD	49	111	33%
C	CV	56	CE	38	CD	42	136	41%
Total		108		119		105	332	100%

Category	No. of items	%of items
I (AV+AE+AD+BV+CV)	176	26%
II (BE+CE+BD)	114	33%
III(CD)	42	41%
Total	332	100%

Suggestion

- In this study, out of these two-inventory control technique ABC analysis is more efficient for the Narayana Health Bangalore as in this technique if focus will be made on 16.5% of item that is 55 number of item out of 332 item 70% of the inventory having value 36964812 out of total 53075668

- Where as in VED analysis E Category of item which is 63.68% that is 212 number of item out of 332 item constitute only 57%of the value that is 9454027 out of 53075668 total value of inventory

- So, ABC inventory management technique is more efficient as it requires less financial source and workforce for controlling large portion of inventory value

- The above project was based on the two different inventory control technique so as a result , the management of class A & VITAL material requires top managerial control and these materials must be constantly keep in stock for uninterrupted health care services, class B & essential materials should be under middle management and class C & desirable materials should be in lower managerial control.
- ABC & VED analysis identifies the drugs requiring stringent control for optimal use of funds and avoid out of stock situations in Narayana Health.
- The items that are from A category should be strictly scrutinized because they constitute maximum value of total inventory. Storage of A category items should be carefully done with maximum safety measures and movement of A category items should be strictly supervised and timely studied.

Conclusion

Medical inventory control and materials management in Narayana institute of cardiac science hospital is very essential. Because hospital resources are limited, effective and efficient management of the existing resources. The above study was based on two different inventory control technique ,in ABC inventory control technique was categories according to price of the drug as high, medium, low price. In VED analysis inventory technique was classified according to necessity or important of drug that is high important ,medium and low.

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