



SANKARA
EYE CARE INSTITUTIONS INDIA
EYE CARE BEYOND COMPARE



A STUDY ON ANALYSING THE INVENTORY MANAGEMENT TECHNIQUES IN SANKARA EYE HOSPITAL, COIMBATORE

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INTRODUCTION

- Effective inventory management is a cornerstone of operational efficiency and patient care quality in healthcare facilities.
- The research investigates the application of inventory management techniques, including FIFO (First In First Out) and FSN (Fast Slow Non-moving), and highlights significant challenges that slows down hospital operations.
- To mitigate these issues, the dissertation proposes several strategies: implementing ABC-VEN analysis for prioritizing inventory items, employing the Economic Order Quantity (EOQ) model to optimize order sizes and reduce holding costs, and introducing an automated reordering system to ensure timely supply replenishment. Additionally, it recommends measures to reduce lead times and enhance staff training programs.

OBJECTIVES:

- i) To evaluate the existing inventory management techniques at Sankara Eye Hospital, Coimbatore.
 - ii) To propose the implementation of advanced inventory management strategies such as ABC-VEN analysis to prioritize inventory items based on their importance and criticality.
 - iii) To understand the potential causes of the Inventory variances using a Fish bone (Ishikawa) diagram.
 - iv) To analyze the Coimbatore Unit performance scores for the past 3 months from March to May 2024 and understand the areas of improvement.
- **Duration of the study:** 18th March to 19th June 2024

RESEARCH QUESTIONS



What is the existing inventory management techniques used at the pharmacy?



What are the current challenges faced in managing inventory at the Sankara Eye Hospital store in Coimbatore? (e.g., Inventory variances, expired medications, extended delivery timeline, etc.)



Will the combined use of ABC -VED analysis and an automated reordering system improve Inventory variances compared to the current inventory management technique?

METHODOLOGY

- An **ABC-VEN analysis** was done on the items belonging to Medicines category
- **Sample Size: 213 items**
- **Study type:** Quantitative descriptive study conducted on a retrospective basis, qualitative data obtained via interviews.
- **Inclusion Criteria:** Medicines
- **Exclusion Criteria:** All items excluding medicines
- **Data Analysis:** Microsoft Excel, Power BI
- **Data Collection Method:** Secondary data obtained from the **Stock summary, Purchase and Consumption Report** and **Scorecards**.



CATEGORIES OF STORES IN SANKARA EYE HOSPITAL

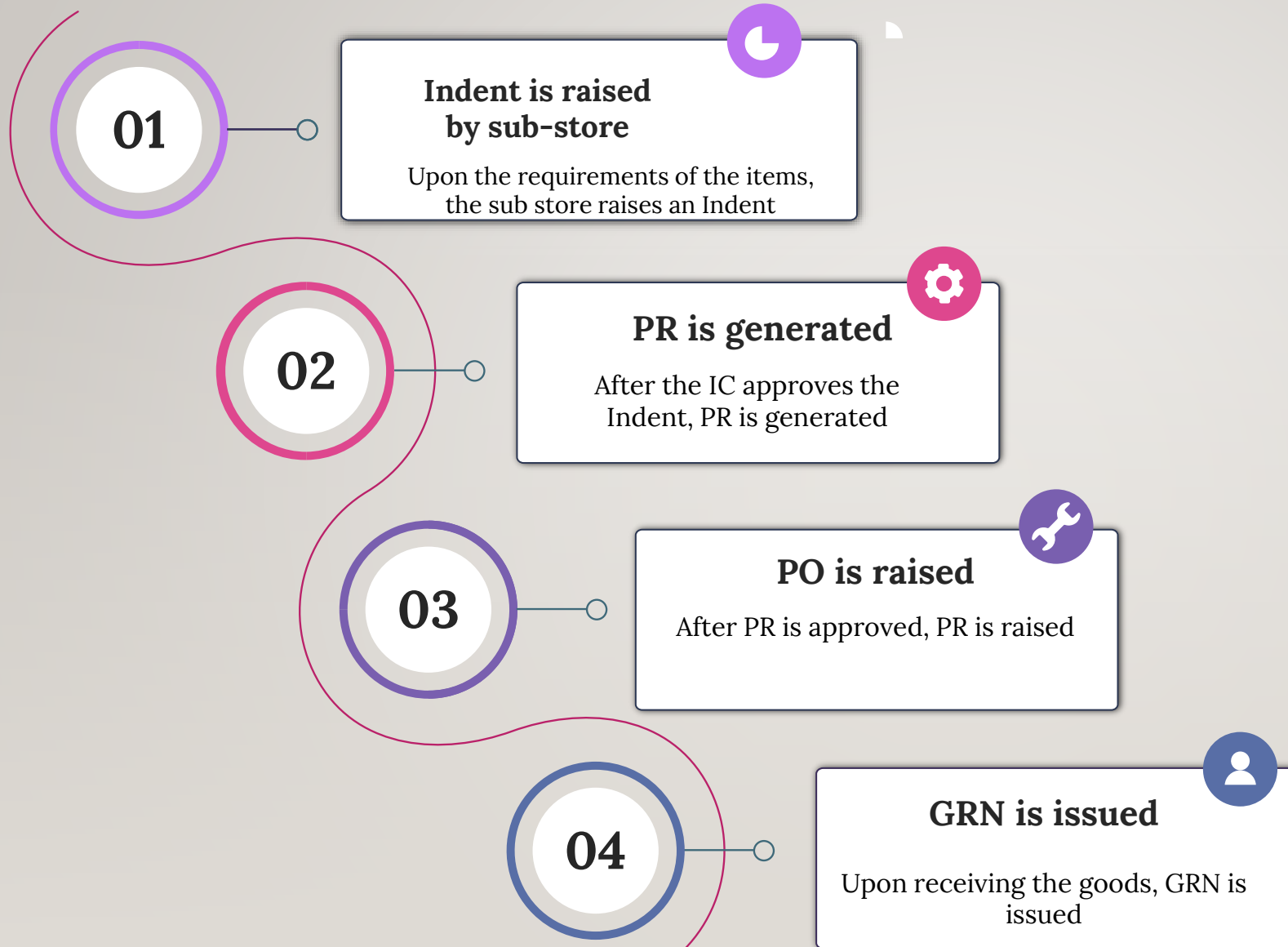
Central store Paying (catering to all the paying patients in the Paying Division)

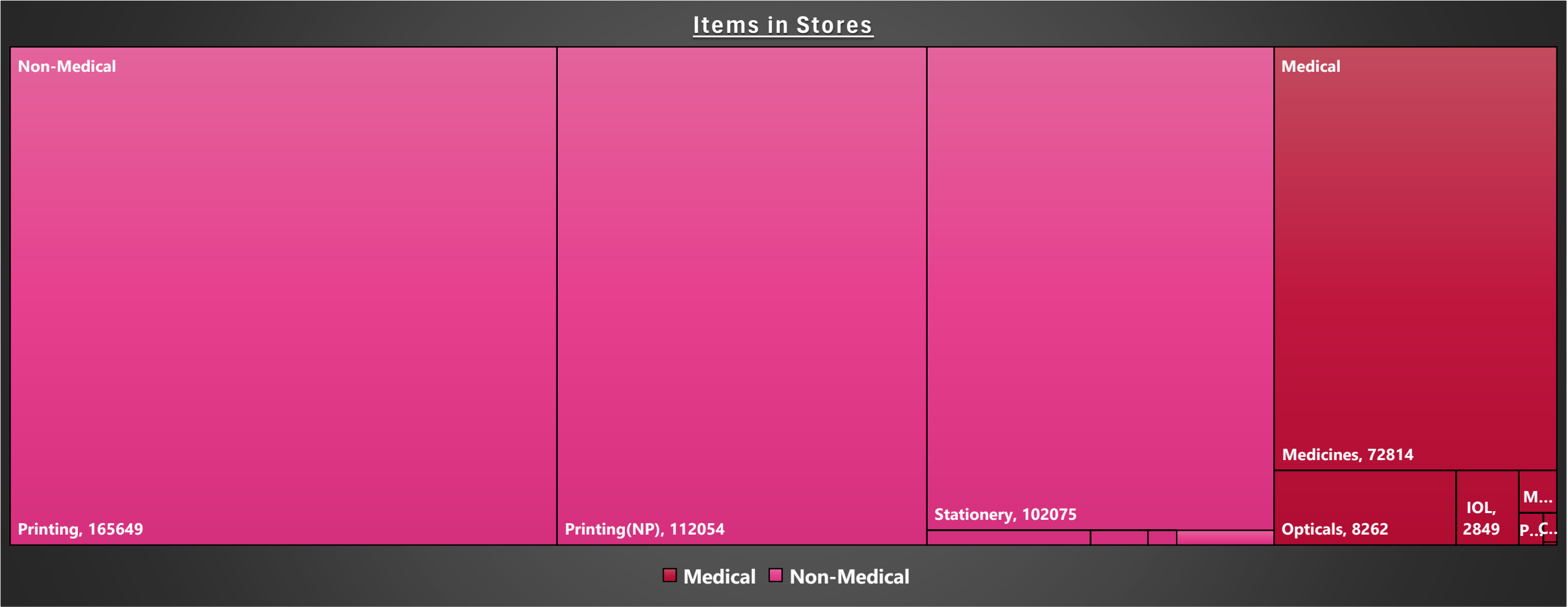
Central store Non-paying(catering to all the paying patients in the Non Paying Division)

Pharmacy- for sale of drugs, certain consumables and contact lenses directly to patients)

General (for stationery and other general items including plumbing, electricity etc.)

Purchase Process at Sankara Eye Hospital

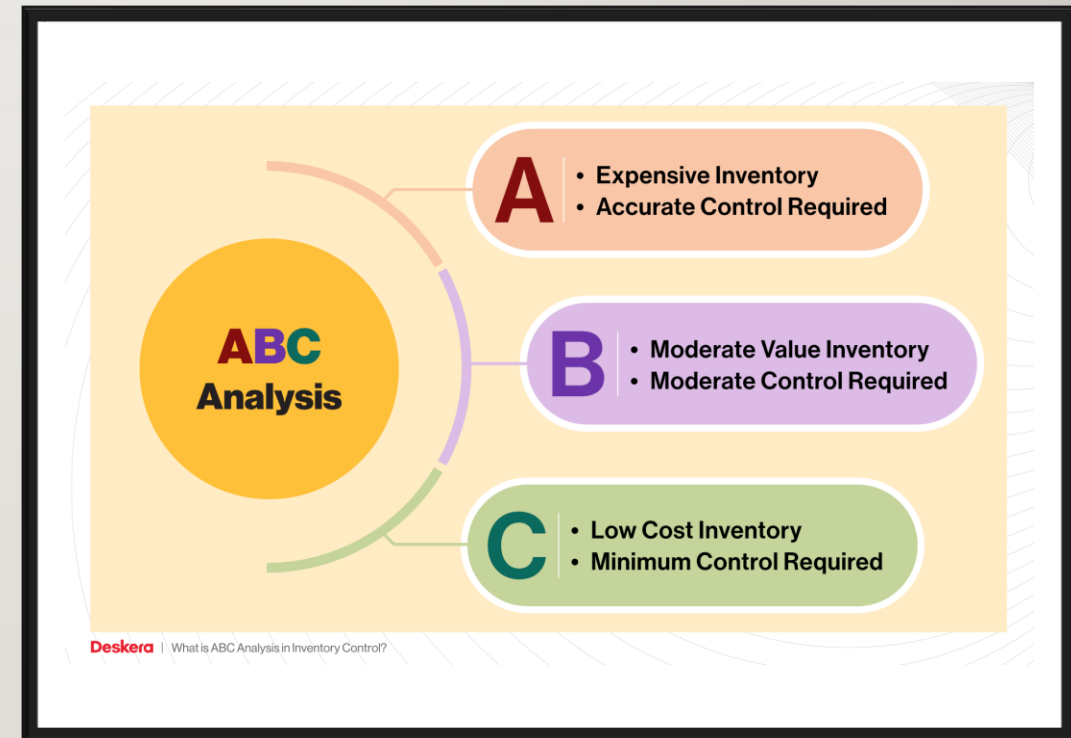




Treemap of Items in Stores

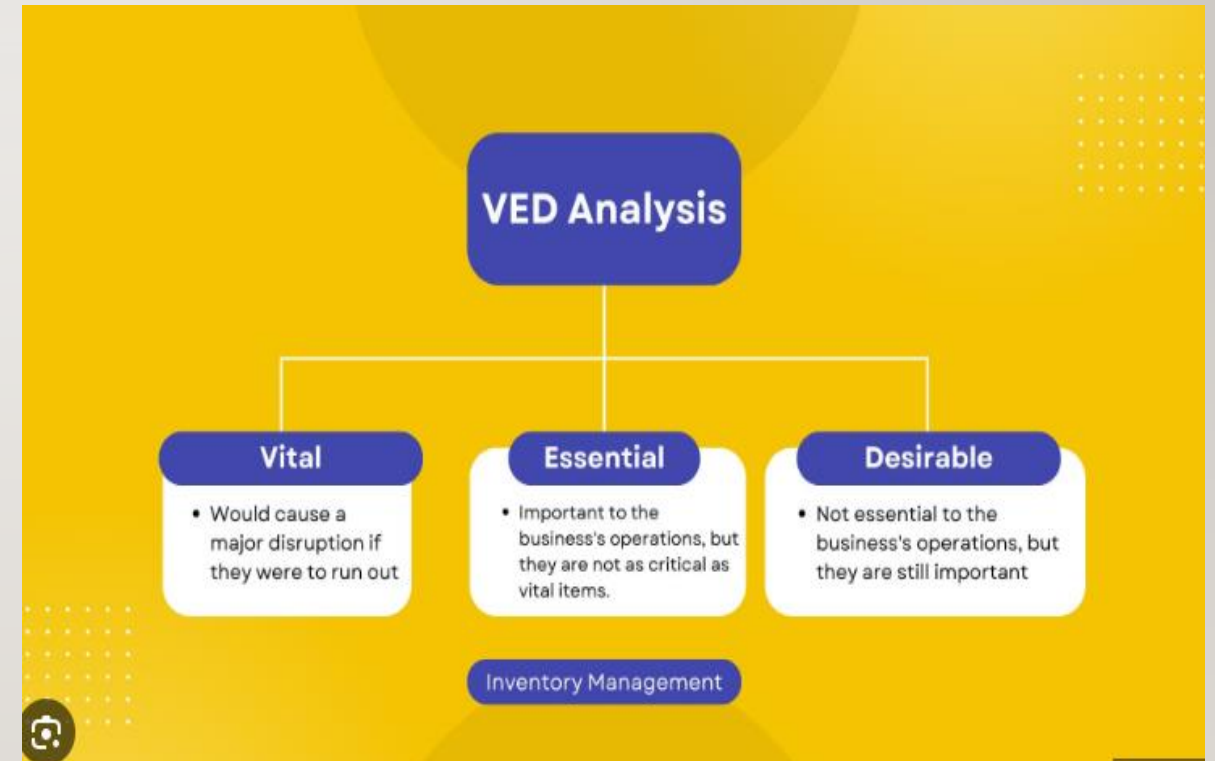
RESULTS AND DISCUSSION

- According to the Pareto Principle, most results come from 20% of efforts in a system. Based on this rule, ABC analysis identifies the 20% of goods that deliver 80% of the value.
- Most businesses have a small number of Class A items with high profitability. These are the most important items in the organization, with high annual consumption values.
- Class B items are interclass items, with consumption values that are lower than Class A items but higher than Class C items.
- Class C items have the lowest consumption value, with a high proportion of lines and low consumption values.



VEN ANALYSIS

- VEN analysis is a method that helps to prioritize for purchasing medicines and keeping stock. The medicines are categorized according to their health impact, into vital, essential, and non-essential.
- Vital medicines (V) are potentially lifesaving drug and regular supply is mandatory
- Essential medicines (E) are effective against less severe illness
- Non-essential medicines (N) are used for minor or self-limited illness, are questionable efficacy.



ABC ANALYSIS ON MEDICINES

VEN ANALYSIS ON MEDICINES

A (19 items)	B (30 items)	C (164 items)	Total= 213 items
71.65	19.45	8.9	100%

Category A consisted of **19** items and contributed **71.65%** (~ 70 %) of the total purchase.

Category B consisted of **30** items and contributed **19.45%** (~20%) of the total purchase.

Category C consisted of **164** items and contributed **8.9%** (~10%) of the total purchase.

VEN Analysis on Medicine items:

Vital (34 items)	Essential (62 items)	Non-essential/Desirable (117 items)	Total = 213 items
16%	29%	55%	100%

Category V contained **34** items and contributed **16%** of the total medicines.

Category E contained **62** items and contributed **29 %** of the total medicines.

Category D contained **117** items and contributed **55 %** of the total medicines.

ABC-VED MATRIX

		VED Analysis					
		V		E		D	
		No	% of Drugs	No	% of Drugs	No	% of Drugs
ABC Analysis	A	AV (0)	0	AE (14)	6.57	AD (5)	2.3
	B	BV (2)	0.93	BE (9)	4.22	BD (19)	8.9
	C	CV (32)	15	CE (39)	18.3	CD (93)	43



Category I (AV,AE,AD, BV, and CV) contains 24.88% (53) drugs

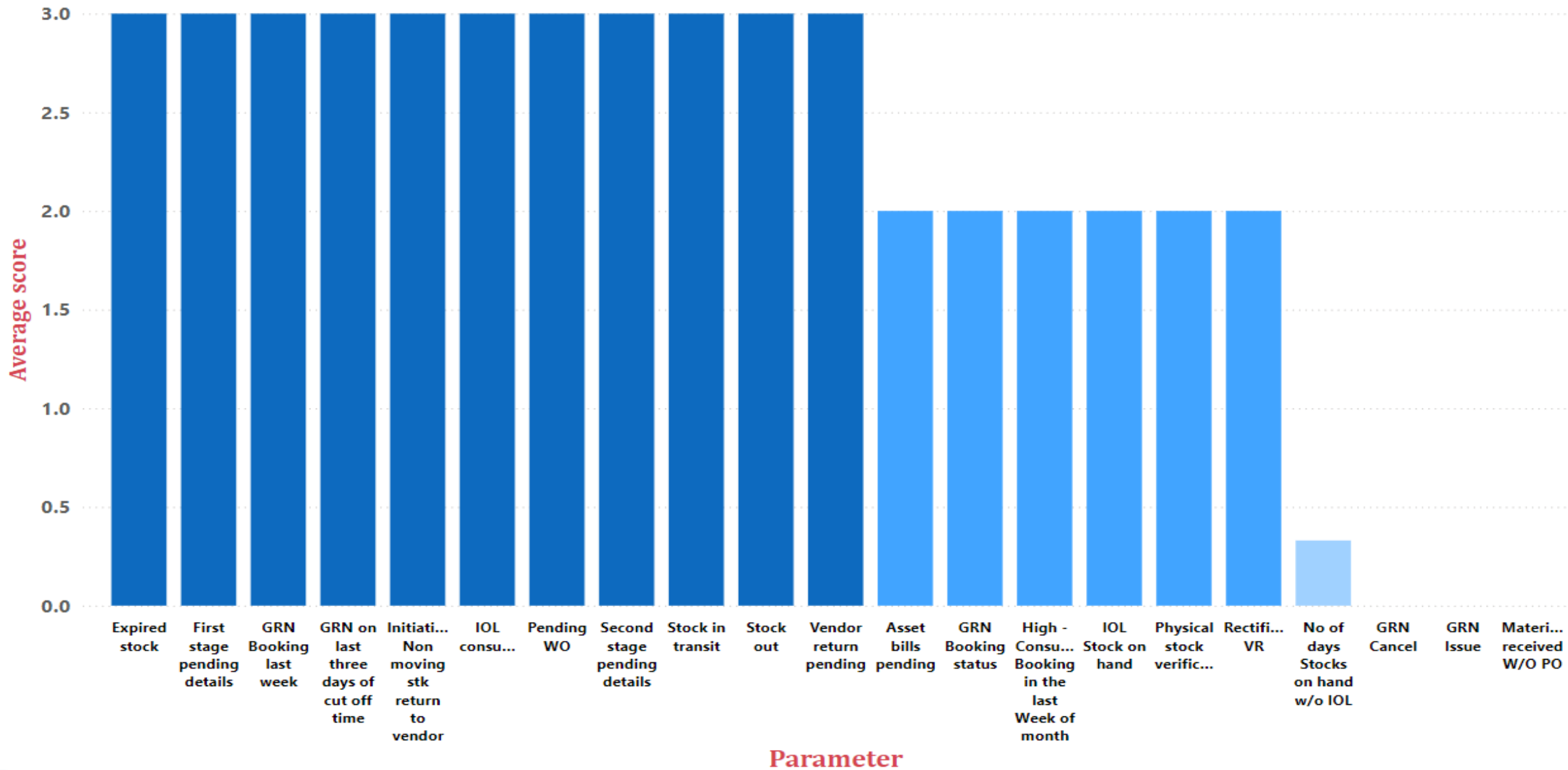


Category II (BE, CE, BD) contains 31.45% (67) of drugs

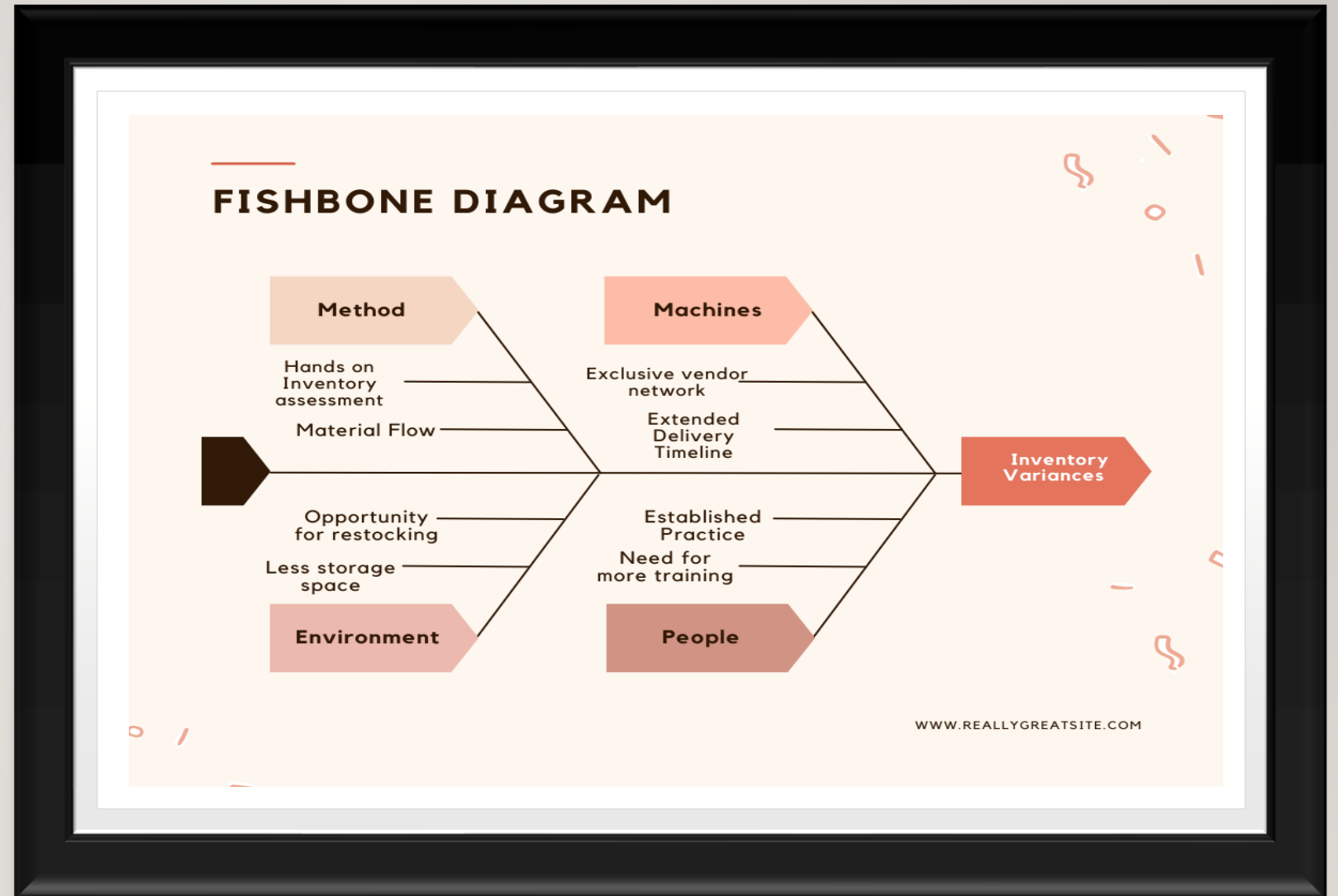


Category III (CD) contains 43.66% (93) of the total drugs.

Coimbatore Unit Performance Score of March, April and May



FISH BONE ANALYSIS- FOR INVENTORY VARIANCES

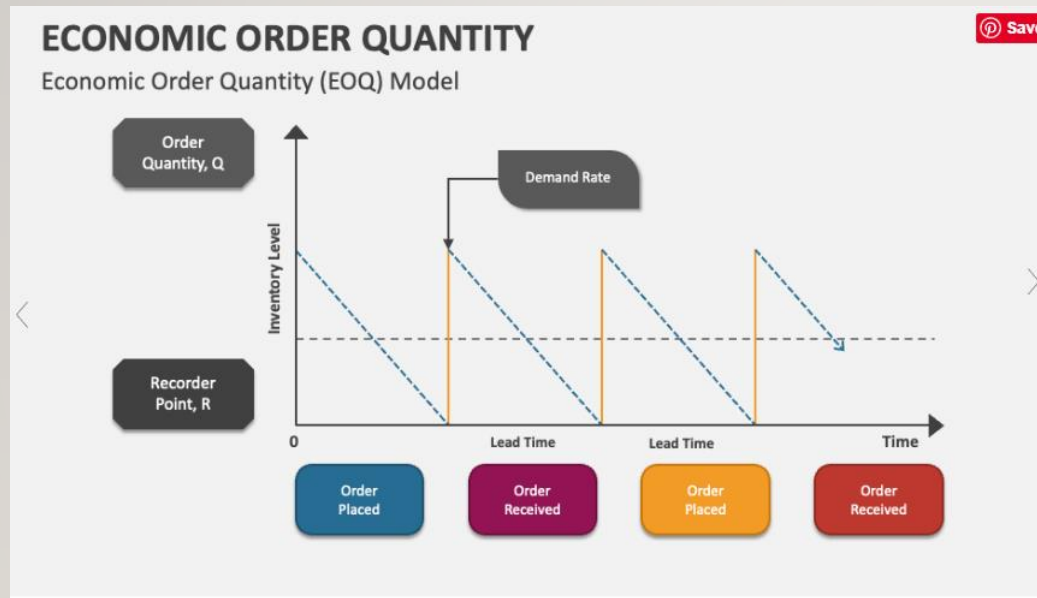


RECOMMENDATIONS(1/3)

- Applying ABC-VED matrix will help identify drugs that require stringent control and those that can be managed more flexibly.
- Implementing an Inventory management software that automatically triggers reorders based on predefined criteria will alert the team about the stock levels when the reorder level is reached.
- Implementation of **5S(Sort, Set In Order, Shine, Standardize, Sustain)** training will improve further efficiency. Additionally, cost can be saved by reducing waste and optimizing resource use.



RECOMMENDATIONS(2/3)



- Implementing the Economic Order Quantity (EOQ) model in inventory management would optimize order size, minimizing total costs associated with ordering and holding inventory. This approach ensures a balance between ordering costs and carrying costs, leading to reduced inventory variances and overstock situations, ultimately improving cash flow and operational efficiency.

RECOMMENDATIONS(3/3)

- **RFID technology** can be considered one of the options for fast analysis of scanning.
- RFID reduces time and the overall workload.
- One main advantage of RFID is its ability to scan a large no of items at any given moment and if applied, it will streamline the overall inventory management process.



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THANK YOU!

