Drug Inventory Management with ABC & VED Analysis of IPD Pharmacy at a multi-speciality hospital in Jaipur

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INTRODUCTION

Efficient drug inventory management is crucial for hospitals to ensure uninterrupted patient care and minimize financial burden. This study investigates the effectiveness of ABC-VED analysis for optimizing inventory in a hospital's Inpatient Pharmacy.

IPDs within hospitals require a readily available stock of a diverse range of medications to treat patients with various conditions. Maintaining this inventory is crucial for patient care, but it can be a complex challenges:

- IPDs require a diverse range of medications to cater to patients with varying conditions.
- Stockouts of vital drugs can delay treatment and compromise patient care.
- Overstocking leads to wasted resources, unnecessary expenditure, straining hospital budgets. and drug expiry.
- Traditional methods often struggle to balance these competing priorities.

AIM

To establish a cost-effective inventory management system that minimizes stock-outs within the hospital.

OBJECTIVES

To establish a priority system by classifying inventory based on their ABC, VED, and ABC-VED matrix analysis.

To find out how much percentage of inventory value that each category of Drug constitutes and to calculate the expenditure of IPD pharmacy in a particular month.

MATERIALS AND METHODS:

Sample size: Total 1387 drug Items in Hospital IPD pharmacy

Sampling Technique: The non-probability convenience sampling method is used

Study Design: Analytical Study

Sampling Criteria:

Inclusive - In-patient medicines and consumables which is included on drug formulary (for one month)

Exclusive - out- patient medical items and all other general materials and medicines which is not in formulary.

Sampling Selection: secondary data was collected, directly from Management Information System from the Hospital.

Location of study: C.K Birla Hospital, Jaipur.

Duration of study: A study was conducted from 1st April to 1st July.

ABC Analysis Findings

Class	A	B	C	Total
ITEM COUNT	117	213	1057	1387
% OF ITEM COUNT	8.44%	15.36%	76.21%	100%
CONSUMPTION VALUE	5016460	1444221	717931.4	7178613
% OF CONSUMPTION VALUE	70%	20%	10%	100%

Category A

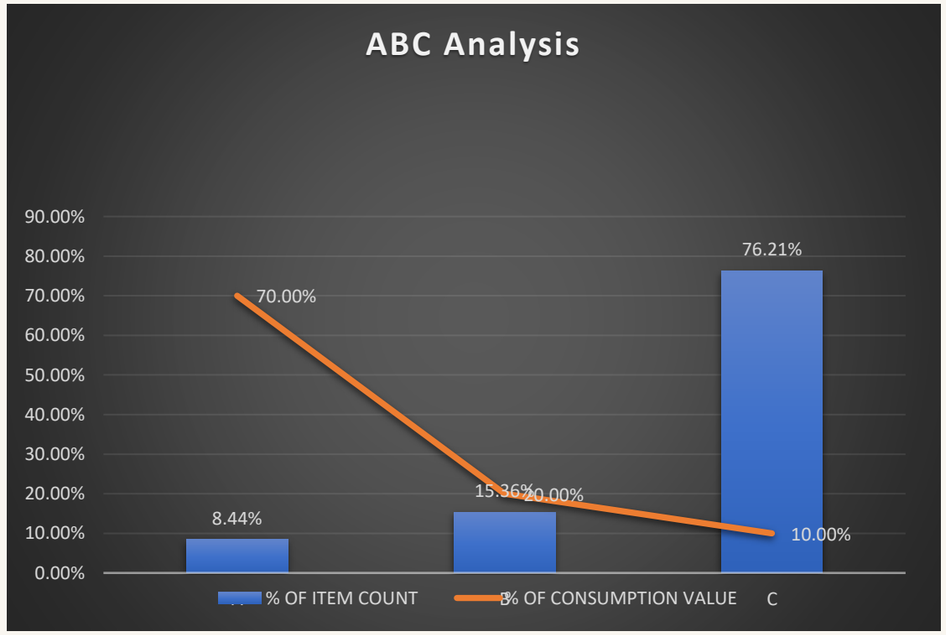
8.44% of drugs account for 70% of total expenditure. expenditure.

Category B

15.36% of drugs account for 20% of total expenditure. expenditure.

Category C

76.21% of drugs account for 10% of total expenditure.



VED Analysis Findings

1 **Vital (V)**

5% of drugs account for 12% of total expenditure.

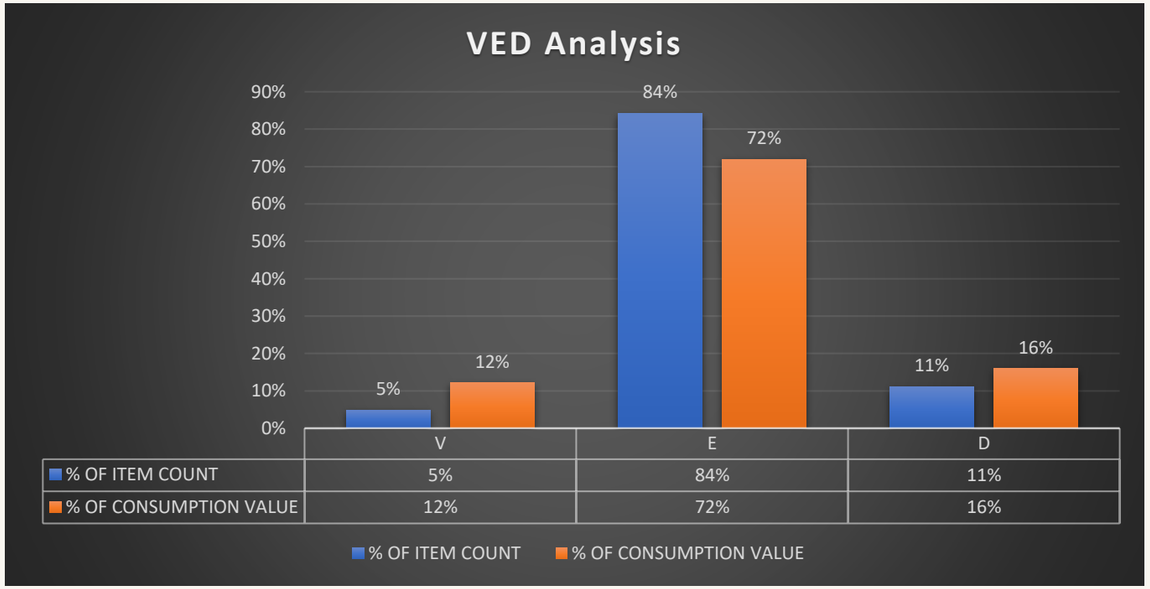
2 **Essential (E)**

84% of drugs account for 72% of total expenditure.

3 **Desirable (D)**

11% of drugs account for 16% of total expenditure.

Class	V	E	D	Total
ITEM COUNT	67	1167	153	1387
% OF ITEM COUNT	5%	84%	11%	100%
CONSUMPTION VALUE	869378.6	516543.9	114379.6	7178613
% OF CONSUMPTION VALUE	12%	72%	16%	100%

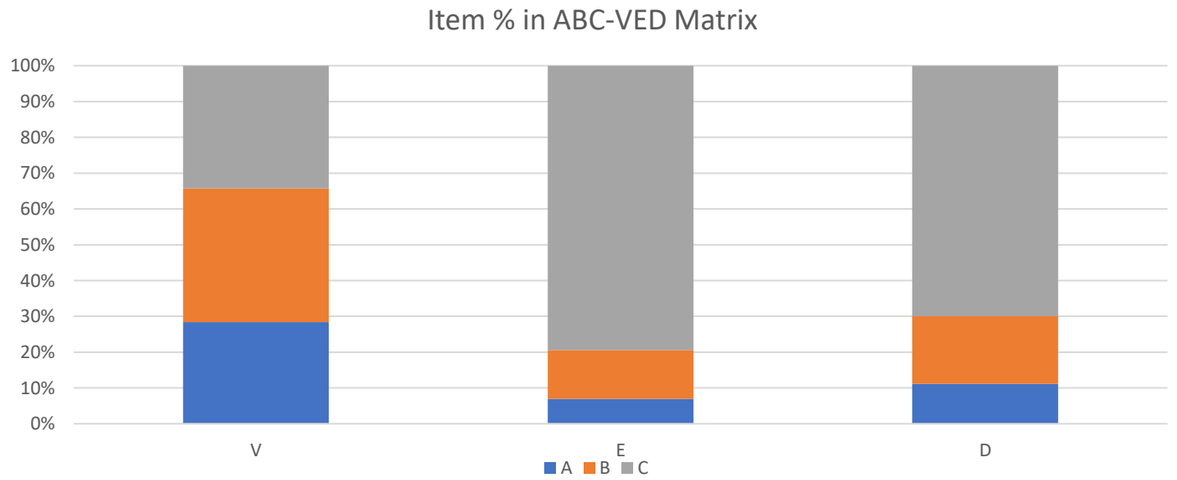


ABC-VED Matrix

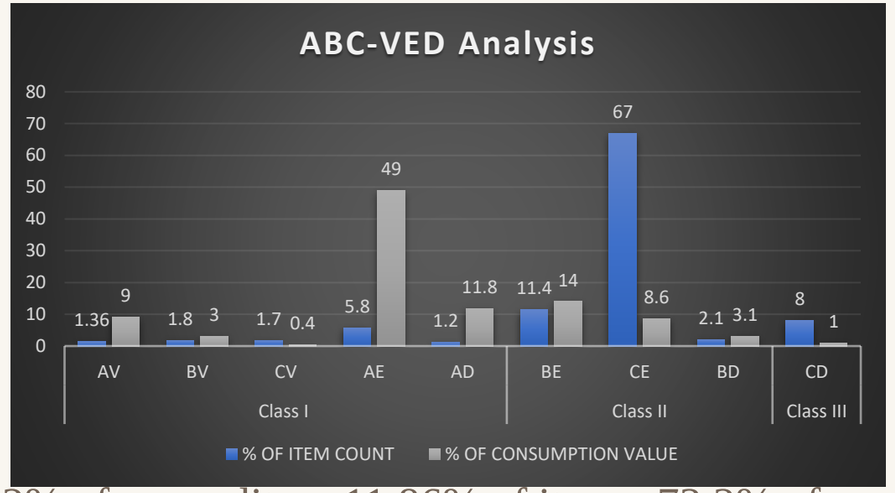
Class	Class I					Class II			Class III
Combined Categories	AV	BV	CV	AE	AD	BE	CE	BD	CD
Item Count	19	25	23	81	17	159	927	29	107
Consumption Value	648398.995	192027.715	28951.9226	351745.49	85060.75	103200.3.451	615977.7848	22019.09	73001.7248
% OF ITEM COUNT	1.36	1.8	1.7	5.8	1.2	11.4	67	2.1	8
% OF CONSUMPTION VALUE	9	3	0.4	49	11.8	14	8.6	3.1	1

Class	V	E	D
A	AV 19	AE 81	AD 17
B	BV 25	BE 159	BD 29
C	CV 23	CE 927	CD 107

Class	V	E	D	Total
A	1%	6%	1%	8%
B	2%	11%	2%	15%
C	2%	67%	8%	76%



Inventory Classification



Category I

High value, high criticality items (AV, AE, AD, BV, CV). 11.86% of items, 73.2% of expenditure.11.86% of items, 73.2% of expenditure.

Total Item Count = (19+25+23+81+17) = 165

Category II

Medium value, medium criticality items (BE, CE, BD). Total Item Count =159+927+29=1115

80.5% of items, 25.7% of expenditure. 80.5% of items, 25.7% of expenditure.

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Category III

Low value, low criticality items (CD). 8% of items, 1% of expenditure8% of items, 1% of expenditure. CD = 107

Inventory Control Strategies

Improve Forecasting

Enhance accuracy for better planning.

Optimal Ordering

Determine what, when, and how much to order.

Strategic Stocking

Set appropriate min-max levels for each category.

Inventory Policies

Establish guidelines for managing item categories.

Conclusion

Finally, we will evaluate the impact of ABC & VED analysis on reducing stockouts and overstocking of medications within the IPD. This will help us assess the effectiveness of this approach in optimizing inventory management.

1 **Optimized Inventory**

ABC-VED analysis ensures efficient resource allocation.

2 **Cost Savings**

Reduces capital tied up in inventory, lowers expenses.

3 **Improved Patient Care**

Ensures availability of critical medications.

Thanks!