

Synopsis

Title: Approach to Resource Utilization and Cost Control through the Application of ABC and VED Analysis in Hospital Pharmacy Inventory Management

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1. Introduction

Hospital pharmacies in India face persistent challenges due to unstructured inventory practices, leading to financial inefficiencies and compromised patient care. Strategic tools like ABC and VED analysis offer a systematic approach to classify pharmaceutical stock based on financial value and clinical importance. This synopsis presents the practical application of these tools at Apex Hospital, Jaipur, with the goal of improving resource utilization and ensuring the availability of essential medicines.

2. Statement of the Problem

Despite vast procurement data, many hospitals lack structured inventory systems, causing overstocking of low-priority items and stock-outs of critical medicines. There is a pressing need to adopt a dual-classification model that bridges financial cost and therapeutic relevance to optimize hospital pharmacy performance.

3. Objectives of the Study

- To classify hospital drugs using ABC analysis based on expenditure.
- To evaluate the clinical importance of drugs through VED classification.
- To integrate both methods into an ABC-VED matrix for priority-based inventory control.
- To utilize tools like Excel and Power BI for digital visualization and tracking.
- To suggest improvements in procurement planning based on the matrix findings.

4. Methodology Overview

The research was conducted at Apex Hospital, Jaipur, using a descriptive quantitative approach. Procurement data for 4,399 drug items from January to April 2025 was analyzed using Microsoft Excel and Power BI. Drugs were categorized using ABC (cost) and VED (clinical relevance) methods and merged into a 3x3 ABC-VED matrix.

5. Key Results

- Category A drugs (14.8%) accounted for over 75% of total drug expenditure.
- Essential drugs (63.5%) formed the bulk of the inventory.
- AV category (high-cost, vital drugs) made up only 1.39% of items but consumed 6.23% of the budget.
- AE and AD together contributed over 68% of total costs.

6. Visual Insights

- Pie Chart: Showed ABC distribution with Category A dominating.
- Bar Chart: Highlighted Essential (E) drugs as the most used.
- Heatmap: Showed AV drug usage concentrated in critical departments like ICU and Oncology.
- Trend Analysis: Spikes in AV drugs noted in February indicating seasonal demand.

7. Conclusion

The ABC-VED matrix provides a robust strategy for rational inventory planning in hospitals. At Apex Hospital, its application highlighted high-impact drugs needing closer oversight. Combined with visualization tools, the model promotes better procurement practices, cost control, and patient care. This approach can be scaled and customized for similar healthcare settings across India.