

# PHARMACOECONOMIC ANALYSIS OF PARENTERAL THERAPY CONSUMPTION IN HOSPITAL PHARMACY AT CLINICAL HOSPITAL

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## Introduction

Improper management of drugs and medical devices is a complex problem at all health care levels. The use of available analysis and tools can make a great contribution in reducing the costs that is made in the procurement of medicines. One of the available tool is the ABC analysis or the theory of Pareto, this analysis refers to the inventory management technique used to identify drugs that constitute a significant part of the overall inventory value and categorized them into critical, important and moderately important. The basic premise of ABC analysis is that every single drug in an inventory does not have equal value and demand – some drugs cost much more than others. In contrast some drugs are used more frequently and the remaining are a mix of both. In this study we used ABC analysis to explain the parenteral therapy consumption in hospital pharmacy at Clinical Hospital Stip during the period of 3 years with the goal of showing if the used analysis are relevant in emergency conditions, such as a pandemic.

## Results and discussion

Drug Group	No of drugs	Total amount spent (MKD)		
		2019	2020	2021
Group A	25 (17%)	15.489.273,54 (59,3%)	14.021.777,61 (54,5%)	14.741.491,23 (37,6%)
Group B	21(14,2%)	2.247.729,77 (8,6%)	2.653.819,73 (10,3%)	8.260.797,25 (21,1%)
Group C	101(68,8%)	8.396.968,61 (32,1%)	9.075.061,95 (35,2%)	16.159.008,5 (41,3%)
Total	147(100%)	26.133.971,9	25.750.659,0	39.161.296,98

Due to the fact that the ABC analysis is a financial analysis and does not take into account the fact that some drugs, although economically cheaper and belong to group C, are vital for the hospitalized patients, we combined it with the VEN analysis according to their objective importance.

By using both analysis at the same time and combining them in a 3x3 matrix, we obtained a tabular order of drugs, with this the ABC analysis becomes even more important because it takes into account the importance of the drugs and allows us to note the low cost drugs. Lack of these drugs would cause greater damage than the cost of storing large quantities of inventory.

		A	B	C
Vital	39	6	1	32
Essential	50	10	13	27
Normal	174	9	7	158

## Materials and methods

The data used for the analysis were obtained via electronic reports from the hospital pharmacy at Clinical Hospital Stip, in the part of parenteral therapy consumption and its cost, for the period from January 2019 to December 2021. ABC analysis, VEN analysis, 3x3 matrix were applied to the obtained data. ABC analysis selects the drugs in three groups: Group A- expensive drugs (10-20% of the total number of drugs), which use 70-80% of the entire budget, Group B- Drugs with average price (10-20% of the total number of drugs) which use 15-20% of the budget, Group C - cheap drugs (60-80% of the total drugs), which use 5-10% of the budget value. VEN analysis was also used to determine the importance of drugs. In this analysis drugs were divided into: Group V - Vital drugs that are needed to save lives and which can have serious consequences for patients if the drug is not available for treatment., Group E - Essential drugs used for treatment of acute and most common diseases that do not directly endanger patients, Group N – Non-essential drugs used in less serious or non-life-threatening diseases. The 3x3 matrix was used to combine ABC and VEN analysis.

## Conclusion

Drug management and the preparation of the hospital drug list covers a large area that requires great attention for analysis and improvement. From this study we concluded that these analysis are not relevant in time of a pandemic and the drug lists made in that period needs to be in line its needs. We also concluded that the ABC analysis combined with VEN analysis is of great help in preparation of an optimal drug list with normal hospital functioning. With their use we can focus on a smaller number of more important medicines, controlling the rest of the medicines occasionally. By implementing simple rules, educating the staff that manages drugs and medical devices can significantly improve the image of proper procurement, and thus reduce the loss of funds that can be allocated to further improve health care.

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