## Introduction:

Medical inventory management is crucial for the many operation of healthcare facilities. As the demand for healthcare services grows and becomes more complex, the need for optimizing medical inventory has never been more pressing. Medical inventory optimization involves the strategic management of medical supplies and pharmaceuticals to ensure that healthcare providers have the right products in the right quantities at the right time. The goal of medical inventory optimization is to balance the dual objectives of minimizing costs and maximizing patient care. On one hand, overstocking can lead to increased holding costs and waste, particularly for perishable items. On the other hand, understocking can result in stockouts, which may disrupt patient care and lead to missed opportunities for timely treatment. To achieve effective inventory optimization, healthcare facilities must employ a combination of advanced forecasting techniques, robust inventory tracking systems, and data-driven decision-making processes. By leveraging technologies such as real-time inventory tracking, predictive analytics, and automated reordering systems, organizations can enhance their ability to manage inventory levels efficiently.

## Business Problem:

Bounce rate is increasing significantly leading to patient dissatisfaction.

## Business Objective:

Minimize bounce rate

## Business Constraint:

Maximize inventory cost

## Statistical insights:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Mean | Median | Mode | Variance | Standard Deviation | Range |
| Quantity | 0.213 | 1.00 | 1 | 26.627 | 5.16 | 150 |
| ReturnQuantity | 125.427 | 0.00 | 0 | 0.734 | 0.86 | 20 |
| Final\_Cost | 236.435 | 53.828 | 49.352 | 218620.98 | 467.57 | 33138 |
| Final\_Sales | 25.46 | 87.096 | 0 | 455212.11 | 674.70 | 39490 |
| RtnMRP | 25.4 | 0.00 | 0 | 29622.48 | 29622.48 | 8014 |

|  |  |  |
| --- | --- | --- |
|  | Skewness | Kurtosis |
| Quantity | 11.287 | 181.237 |
| ReturnQuantity | 8.246 | 111.316 |
| Final\_Cost | 34.33 | 2006.022 |
| Final\_Sales | 20.945 | 943.894 |
| RtnMRP | 17.782 | 505.102 |

## Business insights:

* Here we can understand that around 30 plus percent of customer in the data set based on a situation where they returned medicine with a final\_sales value of zero this means that a significant portion of our customer did not get the medicine they needed which could lead to dissatisfaction of a customer so to improve business criteria we can increase our revenue and it’s important to reduce the bounce rate by ensuring customer service at is best.