**BUSINESS INSIGHTS**

INTRODUCTION :

This document provides the analysis and insights of the pharmaceutical supply chain performance. And this document will provide the insights of sales trends, best-selling products, and inventory levels based on data extracted from hospital pharmacy.

METHODOLOGY :

Data was extracted using SQL queries and analyzed.

DATA OVERVIEW :

The dataset contains information about pharmaceutical transactions including details such as Bill Date, Quantity, Unit Cost Price (UCP) without GST, Purchase GST Percentage, MRP, Total Cost, Total Discount, Net Sales, Return MRP, Generic Name, Subcategory, Subcategory L3, Anonymized Bill Number, and Anonymized Specialisation.

INSIGHTS :

In sub category column mainly there are three products Injections, Tablets & Capsules, IV Fluids, Electrolytes and TPN. IN these the injection is the top sold product in yearly and monthly wise, Tablets & Capsules are second best sold product and IV Fluids, Electrolytes and TPN are third .

In Injections meropenem 1mg, Liposomal Amphotericin B 50 mg and Human Albumin 25 % has sold more. In IV Fluids, Electrolytes and TPN Human Albumin 25 %, Multiple Electrolytes 500ml IVF and Sodium Chloride 0.9 % has been sold more. In Tablets & Capsules Valganciclovir 450mg, Ursodeoxycholic acid 300mg and Voriconazole 200mg has been sold more.

Water for injection 10 ml solution, Ondansetron 2mg/ml and pipearacillin 4mg + tazobactum 5 mg are the top 3 product demanding in Injections. Sodium Chloride 0.9 %, Multiple Electrolytes 500ml IVF, Sodium Chloride IVF 100ml are the top 3 product demanding in IV Fluids, Electrolytes and TPN. Valganciclovir 450mg, Zinc Acetate and Pantoprazole 40mg are the top 3 product demanding in Tablets & Capsules.

IDENTIFY OUTLIERS AND MISSING VALUES :

After analysing it has been observed there is no missing values present in the given data. The average, Standard Deviation, Skewness and kurtosis values of each column has been identified. Abd the outliers has been identified and it was corrected by MIN MAX Scaling.

**Mean** **values :**

|  |  |
| --- | --- |
| TQty | 1.7148 |
| UCPwithoutGST | 301.5478 |
| PurGSTPer | 0.2037 |
| MRP | 617.9610 |
| TotalCost | 538.7173 |
| NetSales | 963.8603 |
| ReturnMRP | 116.0633 |

**Standard** **Deviation :**

|  |  |
| --- | --- |
| TQty | 3.2183361983815484 |
| UCPwithoutGST | 1061.0646548908219 |
| PurGSTPer | 1.6282333986728201 |
| MRP | 1779.881513600899 |
| TotalCost | 2128.736592648919 |
| NetSales | 3202.4343136616485 |
| ReturnMRP | 1100.8418920861443 |

**SKEWNESS:**

|  |  |
| --- | --- |
| TQty | -15.837146107544879 |
| UCPwithoutGST | 8.688854080429913 |
| PurGSTPer | 8.553829788126803 |
| MRP | 7.069591886335844 |
| TotalCost | 14.18124863820681 |
| NetSales | 8.98366995255872 |
| ReturnMRP | 48.25126037535947 |

**KURTOSIS :**

|  |  |
| --- | --- |
| TQty | 2357.49199217925 |
| UCPwithoutGST | 138.10168931765784 |
| PurGSTPer | 80.5838447255364 |
| MRP | 98.16307739216032 |
| TotalCost | 376.76461065920995 |
| NetSales | 145.64830617051908 |
| ReturnMRP | 5617.403034289755 |

**CONCLUSION :**

The data provides the elaborate view on the pharmaceutical supply chain in the hospital pharmacy and it was highlighting areas such as inventory levels, cost management, sales performance, and demands. Continuous monitoring and analysis of these can lead to a better inventory control, cost efficiency, and improved demand forecasting. And it is used to improve the overall performance of the pharmaceutical supply chain.