Business Overview – MedX Pharma

MedX Pharma is a leading pharmaceutical sales and distribution company with operations across multiple U.S. states. The company partners with hospitals, clinics, retail pharmacies, and healthcare distributors to ensure the efficient delivery of high-quality pharmaceutical products.

With a broad product portfolio, strategically located warehouses, and a network of sales representatives and third-party distributors, MedX drives market reach and operational excellence. Its integrated supply chain and data-driven approach position it as a trusted provider of timely and accessible healthcare solutions.

Problem Statement

MedX Pharma has historically relied on flat Excel files to manage sales, customer, and distribution data, lacking a structured and centralized system for analysis and reporting. As the company's product portfolio expands, customer base grows, and operations become more complex, this manual approach has become increasingly inefficient.

Management faces challenges in accurately tracking performance metrics, identifying high-performing products, sales representatives, and regions, and responding swiftly to emerging trends. The absence of an integrated reporting solution significantly hinders timely, data-driven decision-making, impacting strategic planning and operational agility.

Project Aim

To transform MedX Pharma's flat-file data into a fully normalized and structured data model using **Power BI**, enabling efficient analysis and reporting. This initiative aims to:

❑ Develop interactive dashboards to visualize product sales, customer behaviour, and sales trends.

❑ Enhance operational visibility and performance tracking across sales and distribution channels.

❑ Empower leadership with timely, data-driven insights to support strategic and tactical decision-making.

Data Dictionary

Order ID: A unique identifier for each transaction or order placed by a customer.

Order Date: The date when the order was initially placed.

Customer ID: A unique identifier assigned to each customer in the dataset.

Customer Name: The full name of the customer placing the order.

Customer State: The city in which the customer resides or operates.

Customer Type: Whether clinic, hospital etc.

Distributor ID: A unique identifier for the pharmaceutical distributor responsible for delivering the product.

Distributor Name: The name of the distributor company or agent.

Sales Rep ID: A unique identifier for the sales representative who facilitated the sale.

Sales Rep Name: The full name of the sales representative handling the transaction.

Data Dictionary (Cntd.)

Product ID: A unique code assigned to each pharmaceutical product.

Product Name: The commercial name of the medicine or pharmaceutical product sold.

Product Category: The therapeutic category or classification of the product (e.g., Antibiotics, Pain Relief).

Batch Number: Batch Number for product

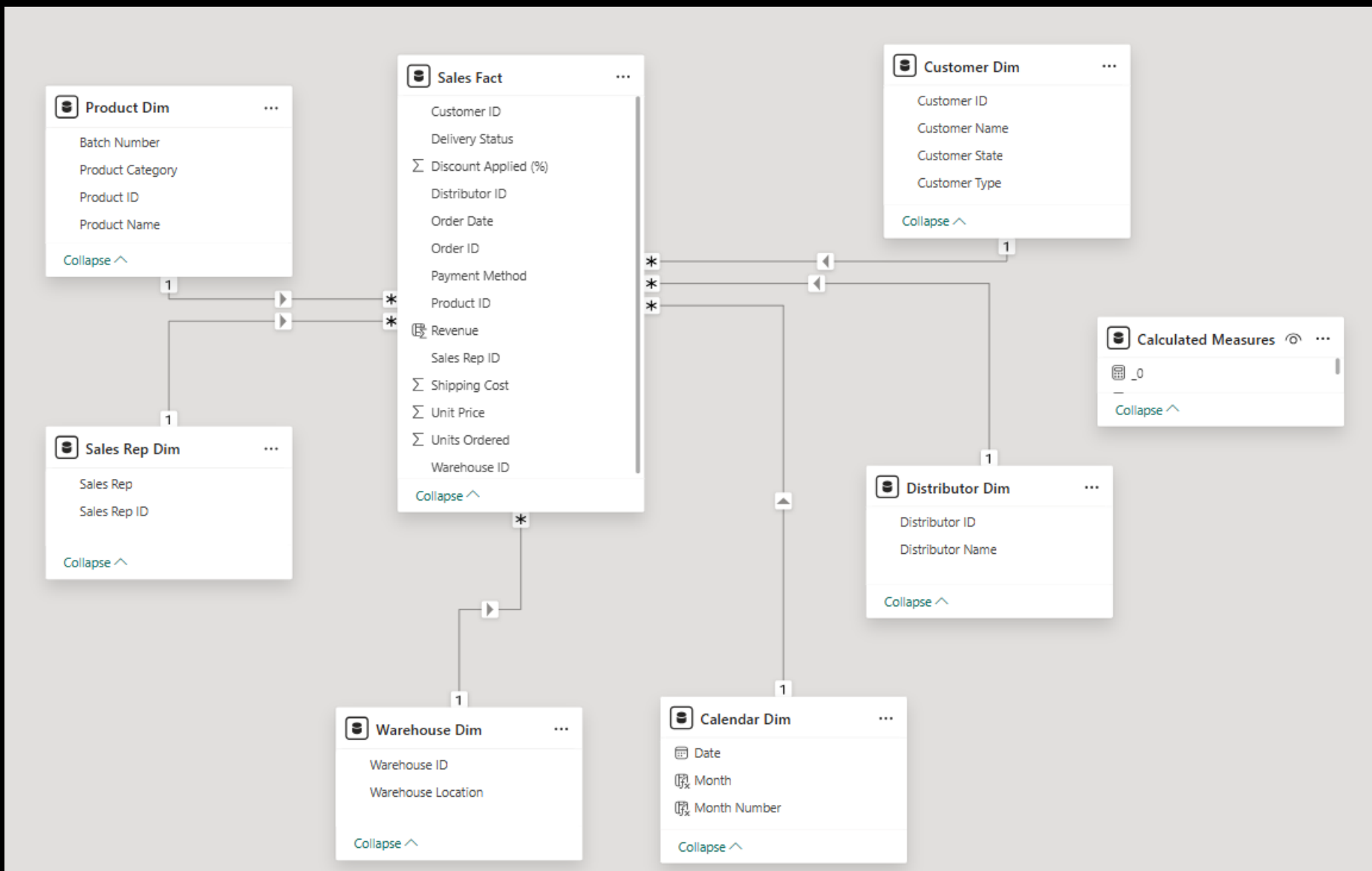Unit Price: The price per unit at which the product was sold.

Quantity Sold: The number of product units purchased in the transaction.

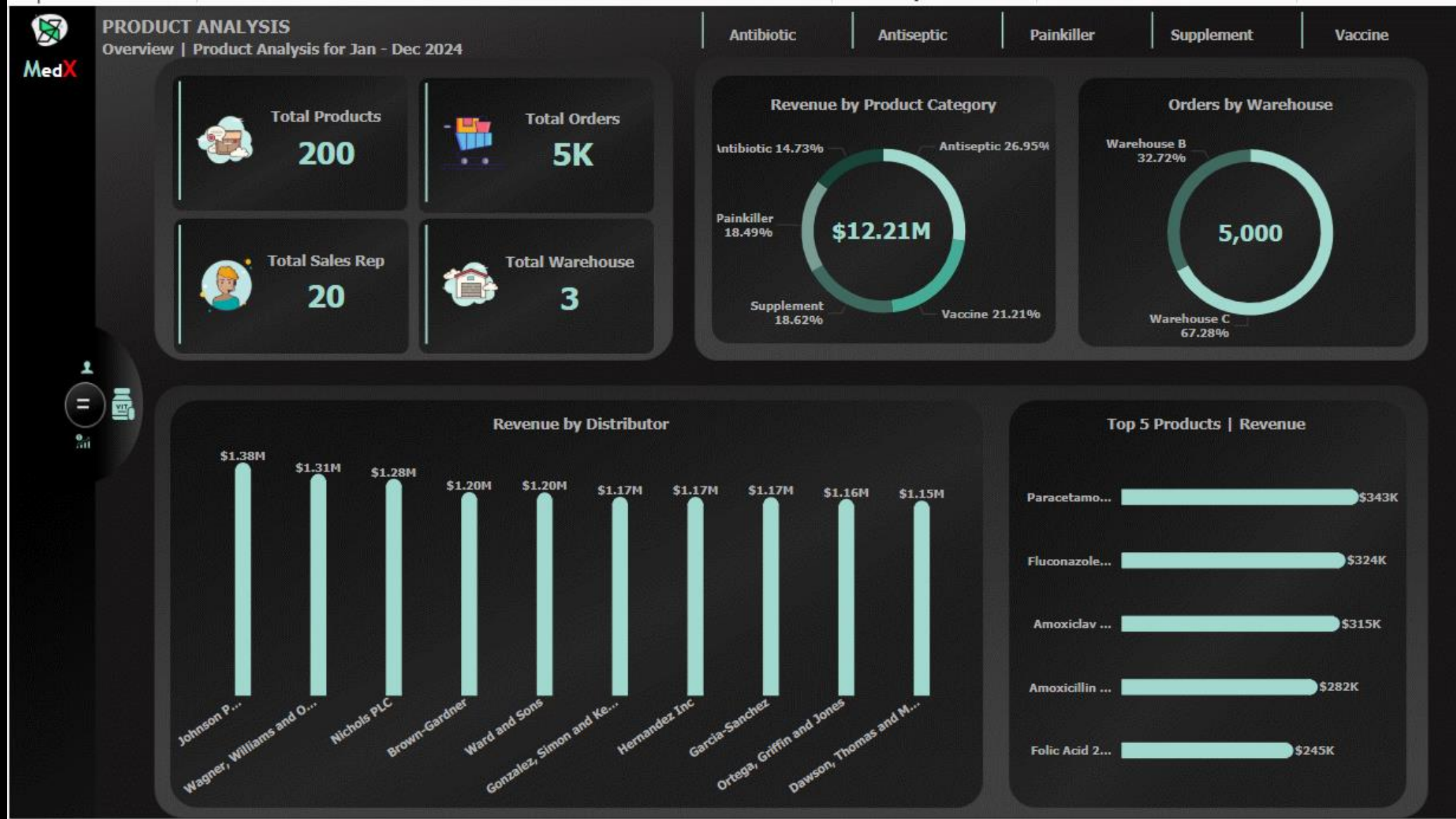Discount Applied (%): The percentage discount applied to the sale, if any.

Payment Method: The mode of payment used by the customer (e.g., Cash, Credit, Bank Transfer).

Delivery Status: The current status of the order delivery (e.g., Delivered, Pending, Cancelled).

MedX Data Model

❑ **Cards (New):** To display Key Performance Indicators (KPI) such as Total Products, Total Orders, Total Sales Rep, and Total Warehouse.

❑ **Clustered Bar Chart:** To explain Top 5 Products by Revenue.

❑ **Clustered Column Chart:** Explaining Total Revenue by Distributors.

❑ **Donut Chart:** Breaking down Revenue by Product Categories and Orders by Warehouse.

❑ **Button Slicer:** Filtering report across Product Categories.

Key Insights:

Key Figures:

❑ Total Products: 200

❑ Total Sales Reps: 20

❑ Warehouses: 3 (Warehouse C handles 67.28% of orders)

Top Product Categories (by Revenue):

❑ Antiseptics (26.95%)

❑ Vaccines (21.21%)

❑ Supplements (18.62%)

❑ Painkillers (18.49%)

❑ Antibiotics trail at 14.73%

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Key Insights:

Top 5 Products by Revenue:

❑ Paracetamol: $343K

❑ Fluconazole: $324K

❑ Amoxicillin & Amoxil: $282K–$315K

❑ Folic Acid: $245K

Top Distributors by Revenue:

❑ Johnson PLC, Wagner, Williams and Oneal, and Nichols PLC lead with $1.28M–$1.38M each.

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Recommendations:

❑ **Inventory Optimization:** Balance stock levels based on product revenue concentration.

❑ **Warehouse Load Balancing:** Investigate why Warehouse C handles 2/3 of orders (potential risk or inefficiency).

❑ **Expand Top Product Lines:** Particularly Paracetamol and Fluconazole, consider bundling or upselling.

❑ **Distributor Incentives:** Encourage performance parity by replicating strategies from top distributors.

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DESCRIPTION OF TOOLS USED | CUSTOMER ANALYSIS

❑ **Cards (New):** To display Key Performance Indicators (KPI) such as Total Customers, Total Orders, Total Quantity, and Total Revenue.

❑ **Clustered Bar Chart:** Explaining % Contribution to overall Revenue by Customer Type.

❑ **Clustered Column Chart:** Showing Top 10 Customers by Revenue.

❑ **Shape Map:** Showing Revenue Distribution across Customer States.

❑ **Slicers:** Filtering report across Product Categories and Months.

Key Insights:

Key Metrics (Jan–Dec 2024):

❑ Total Revenue: $12.21M (MoM Growth: 10.31%)

❑ Total Quantity Sold: 510K units (MoM Growth: 9.91%)

❑ Total Orders: 5K (MoM Growth: 9.65%)

❑ Total Customers: 50 (includes 10 Distributors)

Customer Type Revenue Breakdown:

❑ Clinics (27.9%) and Hospitals (27.5%) are nearly equal top revenue contributors.

❑ Wholesalers and Pharmacies contribute 23.7% and 20.9%, respectively.

Key Insights:

Top Customer Revenue:

❑ Highest: Rivera, Gilbert and Lawrence ($357K)

❑ Others in the top 10 range between $275K–$298K.

Geographic Revenue Insights:

❑ Strong presence in southeastern states (e.g., Georgia, Florida).

❑ Opportunities for expansion in underperforming states (e.g., Midwest, Mountain regions).

Recommendations:

❑ **Targeted Campaigns:** Focus marketing and sales initiatives on underpenetrated states.

❑ **Customer Segmentation:** Prioritize clinics and hospitals for high-value offers.

❑ **Loyalty Program:** Launch for top 10 customers to retain and grow share of wallet.

SALES TREND ANALYSIS

SALES TREND ANALYSIS
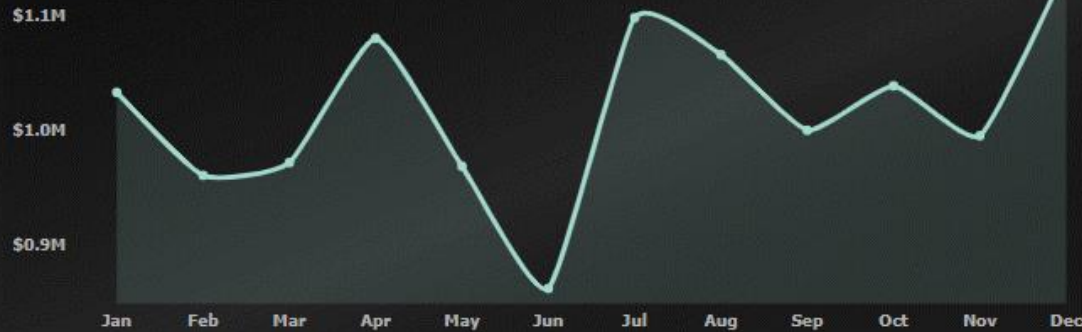Overview | Sales Trend Analysis for Jan - Dec 2024

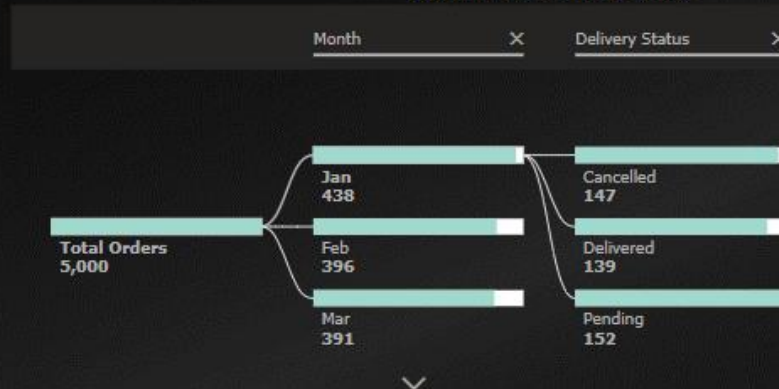Customer Type: All
Product Category: All

Revenue by Month

Top 10 Sales Rep

Sales Rep	Total Revenue	Total Orders
David Cox	$704,387	273
Leslie Torres	$692,273	271
Keith Contreras	$673,235	257
Lisa Lindsey	$670,838	290
Mr. Angel Johnson	$664,033	256
Michael Wilson	$655,408	266
James Smith	$639,226	248
Brian Norman	$635,769	248
Rodney Greene	$624,125	249
Brenda Foster	$608,379	249

Orders by Month & Status

Month   Delivery Status

Total Orders 5,000

Jan 438
Feb 396
Mar 391

Cancelled 147
Delivered 139
Pending 152

Bottom 10 Sales Rep

Sales Rep	Total Revenue	Total Orders
Robert Bauer	$520,344	228
Tracy Gentry	$549,400	230
Jeffrey Adams	$552,579	244
Sara Flores	$553,150	226
Kelly Cummings	$559,891	228
Courtney Randall	$560,064	235
Jonathan Young	$570,270	274
David Love	$585,148	244
Jimmy Rice	$592,166	246
Todd Mendoza	$598,476	238

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❑ **Area Chart:** Visualizing Sales Trend over time.

❑ **Decomposition Tree:** Breaking down orders made and delivery status.

❑ **Matrix:** Showing Top 10 and Bottom 10 Sales Representatives by number of Orders executed and Revenue contribution.

❑ **Slicers:** Filtering report across Product Categories and Customer Types.

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Key Insights:

Monthly Revenue Trend:

❑ Dips in Feb and June; highest spikes in July and December.

❑ Strong end-of-year push may indicate seasonality or successful Q4 campaigns.

Sales Rep Performance:

❑ **Top Performer:** David Cox ($704K revenue, 273 orders)

❑ **Bottom Performer:** Robert Bauer ($520K revenue, 228 orders)

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Key Insights:

Order Delivery Status (Example: January)

❑ Delivered: 139

❑ Cancelled: 147

❑ Pending: 152

Concerns:

❑ High rate of cancelled and pending orders, especially early in the year, likely affecting customer satisfaction and retention.

Recommendations:

❏ **Sales Training & Support:** Close the gap between top and bottom reps through mentoring and performance analysis.

❏ **Order Fulfilment Audit:** Investigate delivery issues causing high cancellations/pending statuses.

❏ **Seasonal Promotions:** Capitalize on December and July highs, replicate campaign strategies in other months.

❏ **Predictive Sales Planning:** Use monthly trends for forecasting and workforce planning.

SUMMARY OF FINDINGS

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Summary:

❑ **Revenue Growth:** Positive momentum with strong MoM growth across all KPIs.

❑ **Customer Segments:** Clinics and hospitals drive top-line revenue, retain and expand these relationships.

❑ **Product Strategy:** Focus on high-performing categories like Antiseptics and Vaccines; review warehouse efficiency.

❑ **Sales Optimization:** Elevate low-performing reps; reduce order delivery issues to boost conversions and satisfaction.

❑ **Geographic Expansion:** Consider regional marketing to underperforming states for broader reach.

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