Outpatient Workflow Efficiency Dashboard

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Project Objective

This project was created to simulate the responsibilities of an Epic Outpatient Clinical System Analyst by modeling workflow efficiency using mock outpatient appointment data. The goal was to identify delays in clinical operations, evaluate provider performance, and suggest workflow improvements that would align with Epic tools and outpatient best practices.

Tools and Approach

- **Python**: Used to generate a dataset of 100 realistic outpatient visits, simulating fields such as check-in time, provider sign-in, order entry, chart closure, and discharge
- **Power BI**: Used to model, analyze, and visualize workflow data across departments and providers
- **DAX**: Used to calculate performance metrics such as visit duration, charting delay, and order entry timing

Key Metrics and Calculated Insights

- **Check-in to Discharge Duration**: Average time from patient check-in to discharge
- **Chart Closure Delay**: Time between provider sign-in and completion of charting
- **Order Entry Lag**: Delay between provider sign-in and initial order entry
- **Performance Flags**: A binary column was created to flag visits with chart closure time exceeding 30 minutes

Visual Components

- **KPI Cards**: Summary row displaying average visit duration (45.6 minutes), chart closure time (29.7 minutes), and order delay (4.8 minutes)
- **Bar Charts**: Showed departmental and provider-level performance variation
- **Line Chart**: Tracked changes in average chart closure time over the course of the month
- **Donut Chart**: Displayed the breakdown of delayed vs on-time chart closures (50/50 split)

Insights and Takeaways

- Primary Care and Neurology had the longest average visit durations (48 minutes)
- Chart closure delays were most common among providers averaging close to the 30-minute threshold
- Operational consistency varied across time, highlighting the need for workflow standardization and potential SmartTool enhancements
- 50 percent of visits resulted in delayed chart closures, suggesting opportunities for targeted training, updated templates, or optimization of Epic note tools

Relevance to the Role

This project demonstrates how Epic-related data can be translated into clear operational insights to support provider efficiency and outpatient throughput. It reflects a systems-thinking approach, an understanding of Epic workflows, and the ability to bridge communication between clinical teams and IT. This type of analysis can be used to identify areas for user training, workflow redesign, or targeted configuration changes within Epic.