

Data Source Creation to Support Tableau Dashboards

UC San Diego Health System

Overview

To support the transition of multiple Excel dashboards to Tableau, I created multiple data sources that required complex SQL and data ingestion from third party software. The data sources were novel implementations in diverse areas such as patient flow, environmental services, and nurse staffing.

Problem

The transition of multiple organizational dashboards from Excel to Tableau required data sources built from the Epic EMR database (Clarity). In all three cases, no data source or SQL framework existed for the dashboard. Therefore, all three data sources required thorough research in the Clarity database, root cause analysis of data errors, and an extensive data quality process to ensure the data represented what was happening in reality. The data sources also had to be created with performance in mind, as the automated scripts would be running on a daily basis to build the data source.

Process

I will briefly outline the process for each of the specific data sources created below :

Patient Flow

- Weekly reports existed for different areas of patient flow, namely admissions, census, and discharges.
- Worked closely with Information Services on transforming the logic from these reports into one SQL query needed to build the data source
- Created a novel method based on event types that included all admission, census, and discharge information in one table. This allowed for a simple, single source of truth to support all patient flow dashboards and analysis.

Environmental Services

- Past analysis was conducted in an ad-hoc fashion whenever the need arised. In those cases, reports were pulled out of Epic, based on the Chronicles database.
- Entirely new SQL query was created to pull the historical data from the Clarity database.
- First time anyone in the organization had utilized the Clarity database for EVS data. Therefore, thorough research was needed, as well as closely working with EVS leadership and staff to ensure the operational process was represented accurately in the database.
- Multiple instances of business logic had to be incorporated into the SQL query to ensure the data portrayal was accurate.

Nurse Staffing

- The Nurse Staffing was administered by a third party software, with the data housed in that system's own data warehouse.
- Past analysis was conducted in an ad-hoc fashion whenever the need arised. In those cases, reports were pulled out of the third party software.
- Worked closely with third party and UCSD Information Services to create ETL process moving the data from third party data warehouse to UCSD data warehouse. Therefore, thorough research was needed, as well as closely working nurse staffing departments to ensure shifts were represented accurately in the database.
- Multiple instances of business logic had to be incorporated into the SQL query to ensure the data portrayal was accurate.

Solution

All three data sources were successfully moved into the Production environment, supporting the automated Tableau dashboards on a daily basis.