COVID-19 Capacity Dashboard and Forecast

UC San Diego Health System

Overview

I managed the development of the COVID-19 Capacity Dashboard in Tableau. The automated Tableau dashboard is being used by capacity management leaders to track COVID-19 census impact and as a resource for surge planning.

Problem

The impact of COVID-19 on hospital capacity needs to be closely monitored in the current environment. A larger COVID-19 tracking dashboard was developed by UCSD IT, but it did not meet the requirements needed by capacity management leaders. Decision makers needed to know COVID-19 census at the most granular detail, and also have an intelligent method to forecast capacity issues.

Process

In order to create the data source with the level of detail needed, our department's Patient Flow data source had to be linked to the existing COVID-19 data source created by UCSD IT.
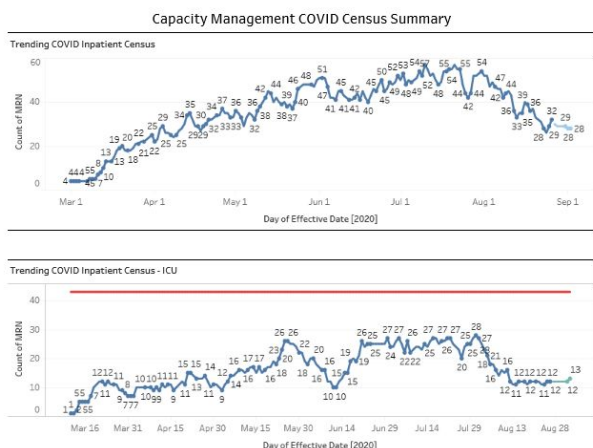
I met with capacity management leadership to discuss the information needed and the best way to visualize it. The final dashboard consisted of the following sections :

- Overall COVID-19 Census, broken out by vented versus non-vented patients
- Trending Historical Admissions
- Daily and Cumulative Admissions
- Daily and Cumulative Discharges (including deaths)
- Trending Census and Forecast by Level of Care

Capacity management leadership reviewed the dashboard every morning before the daily bed meeting to identify census constraints and forecast what the next few days might look like. This was especially critical for the ICU beds, where ICU overflow space was needed if the ICU beds were full. The forecasting tool helped immensely in giving leadership a warning that ICU capacity was close to full. This dashboard also ensured that accurate information was being shared among leaders in the Command Center and frontline operations.

Solution

Screenshots of final dashboard examples included below :