Real-Time Capacity Management Solutions: Leading Change One Dashboard at a Time

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Problem

- Daily capacity management is integral to our ability to serve our community and patients requiring the level of inpatient care UCMC can provide. **Swift responsiveness to our bed access and patient management needs is critical** as key variables such as patient census, transfer requests, and patient complexity (medical and social) change rapidly.
  - In FY26, we expect a 6.6% increase in admissions and a 1.2% in Case Mix Index, which requires us to be able to effectively manage our patient throughput to allow for a higher volume of patients with a greater level of acuity. Also, Emergency Department (ED) Boarding, or how long patients wait in the ED for an inpatient bed, is a new throughput measure that will be included in evaluation criteria used by external assessment organizations like Leapfrog, along with other outcome measures like Length of Stay (LOS) and 30-Day Readmissions.
  - These measures and related improvement efforts focused on reducing wait times, improving throughput, and adding capacity are targeted outcomes under the Patient Experience and Quality Safety Pillars on the FY26 AOP and the Clinical Excellence Scorecard.
- **Enhanced utilization of real-time data and patient flow tools was a missing piece of our overarching capacity management strategy.** We set out to improve use of the real-time data available to us in Epic to better support our capacity and access efforts and ensure we can meet the demand for inpatient care and patient acuity.

Goal

- We sought to adopt 2 real-time dashboards and supportive tools in Epic for proactive monitoring and transparency of key patient flow indicators to ensure UCMC achieves our FY26 LOS target of 6.87 days (baseline: 6.94 days) and ED Boarding target of 5.8 hours (baseline: 6.3 hours) by June 30, 2026.

Strategy

- Epic has a full suite of dashboards and tools that are intended to help frontline staff to senior leadership understand expected demand and current and potential occupancy, along with where we can prioritize efforts to move patients through their care and discharge plan.
- At the end of Q2 of FY25, executive leadership for IT and Capacity & Access held a kickoff meeting with key stakeholders from our UCMC inpatient care teams (Providers, Nursing, and Care Coordination) and support services (Environmental Services, Patient Transport, Procedural/OR, and Radiology) to review the "why now" and the ways the Epic reporting solution can support more efficient, effective capacity management (Figure 1). Office hours were held after the kickoff meeting to help with troubleshooting questions and receive end-user enhancement suggestions/feedback.
- Targeted adoption efforts followed, with a specific focus on dashboard utilization to bolster existing standard work and streamline manual reporting efforts; implementation efforts expanded to include documentation tools that provided better ease and visibility of key throughput indicators.
- Our main outcome measure is LOS. Additional KPIs include EDD Accuracy, Discharge to Home rate, and Documented Avoidable Days. We also monitored overall dashboard utilization.
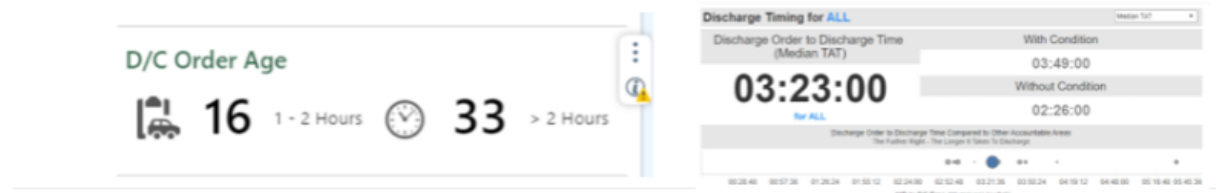

Figure 1. Revised HOA Report using Epic's Capacity Management Occupancy Report

Impact

Three process improvement efforts were identified to align the implementation of Epic real-time dashboards and tools with existing operational throughput priorities:

1. Hospital Operations Administrator (HOA) Report Re-Design
- The HOA report is a twice per day email (7:00am and 7:00pm) that goes out to over 200 recipients that shares key details on inpatient capacity, including bed occupancy, bed needs, and blocked beds
- **Pre-implementation:** to complete the report, the HOAs pulled data from 6 different reports in Epic, including manually entering current bed occupancy in an Excel table (Figure 2); the report took 1-.5-2 hours to complete.

Figure 2. Legacy HOA Report Occupancy Summary manually entered in Excel

- **Action Steps** (March-April 2025): we solicited input on report content from a multi-disciplinary group of capacity and access stakeholders. We removed duplicative information and replaced the Excel sheet with occupancy and blocked beds reporting from Epic's Capacity Management dashboard (Figure 3) so that all content was easily accessible in the body of the email. We also began our validation efforts and edited the occupancy reporting in the dashboard to reflect accurate unit and bed counts.
- **Results**: through report content re-design and leveraging the Epic dashboard, we reduced the time spent putting together the report by 65%, giving this time back to the HOAs to support frontline operational needs.
- **Future State**: use of a push report of the Epic Dashboard to remove all manual reporting requirements
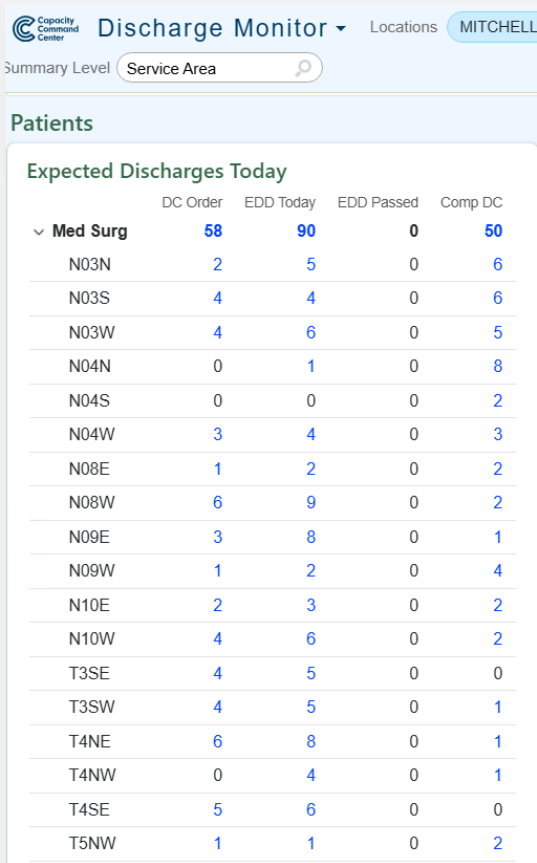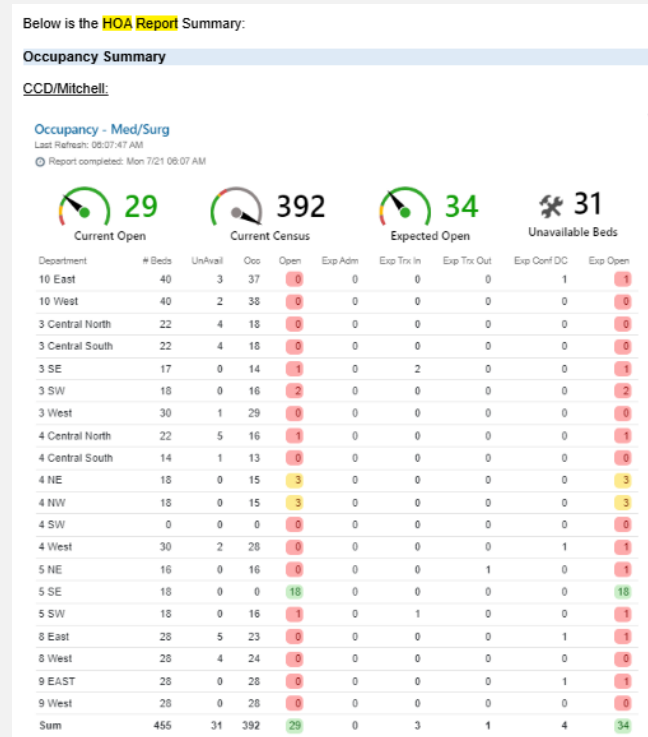

Figure 3. Revised HOA Report using Epic's Capacity Management Occupancy Report

2. Expected Discharge Date (EDD) v. Discharge Order Management
- A patient's EDD is a tool to help gauge where the patient is in their care and discharge plan, along with understanding what may be delaying their discharge requiring escalation.
- **Pre-implementation:** a patient's EDD was updated 1x/day by Care Coordination following multi-disciplinary rounds. Inpatient nursing teams updated past due EDDs related to clinical care changes overnight.
- **Action Steps** (April 2025): a new workflow was developed to track patients with an EDD for today over the course of the day using Epic's Discharge Monitor to ensure a discharge order accompanies the EDD prior to 3p (Figure 4); if no discharge order exists by 3p, Care Coordination updates the EDD based on discharge plan related changes or communicates to the clinical team to make adjustments to the EDD based on clinical care changes, which supports expected bed availability (Figure 5).

Figure 4. EDD Management Component in the Discharge Monitor

2. Expected Discharge Date (EDD) v. Discharge Order Management (Continued)
- **Results:** EDD accuracy improved to an average 79%, which outperforms other reported accuracy rates by 31%.
- **Future state:** implement Epic's Likelihood of Discharge Today/Tomorrow Predictive Model to better inform the EDD and discharge planning prioritization.

3. Avoidable Days Documentation
- Care Coordination documents when a patient experiences a delay in their care or discharge plan that resulted in an additional day (or more) spent in the hospital, or an "Avoidable Day" (AD) as part of their standard work.
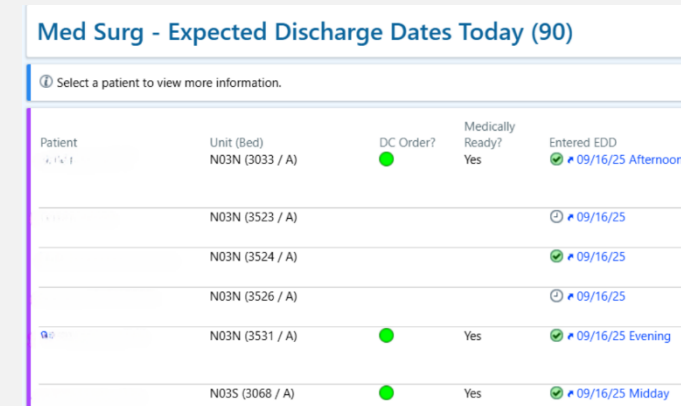

Figure 5. EDD details with discharge order indicator

Figure 6. Discharge delay documentation embedded in the EDD tool

- **Pre-implementation:** while we were able to track AD themes and trends in Tableau, we did not have real-time line of site into patients with ADs; a list of patients with ADs was reviewed weekly during our In-House LOS huddle to confirm if escalation was needed, but these data were often out of date.
- **Action Steps** (May 2025): We reviewed and revised the ADs list improve upon specificity and ease of use for Care Coordinators. We then transitioned documentation of ADs to Epic; the ADs are entered in the same tool where they update the patient's EDD (Figure 6), not only streamlining their workflow but also feeding the reporting in Epic that allows us to see all patients with an active AD and support escalation needs in the Discharge Monitor (Figure 7).
- **Results:** prior to using Epic, an average of 7-12 patients had an active AD during the weekly review; now there is an average of 35-45 patient with an active AD.
- **Future state:** linking reported ADs and Epic's bottlenecks and discharge milestones to create a comprehensive view of a patient's throughput journey and barriers to discharge.

Figure 7. Live list of patients with active Avoidable Days in Discharge Monitor Dashboard

Next Steps

- The Epic real-time dashboards and tools are a key component of the patient throughput process improvement efforts at the end of FY25 and the start of FY26. **There has been a 3.91% reduction in LOS comparing the same time periods (Q1 FY25 performance was 6.91 days and Q1 FY26 is 6.63 days)**. It will also be important to understand impact on ED throughput, particularly boarding hours.
- While we adopted two key dashboards and supportive tools, there are even greater opportunities to expand the suite of dashboards used, with **replication of the approach to align utilization of dashboards to operational priorities, integration into standard work, and further reduction of manual data capture by staff and leaders responsible for daily throughput management.**
- Because the dashboards hold key information to throughput, it's integral to ensure the metrics displayed align to institutional definitions and meet reporting needs that cannot be addressed by other data sharing tools.
- Dashboard utilization trends show continued opportunities for sustained engagement with real-time reporting.
- **Next steps include further validation and expansion of additional dashboards utilized to support additional teams beyond the initial stakeholder groups.**

Acknowledgements