University Hospitals

CUSTOMER OVERVIEW

University Hospitals
Cleveland, OH, USA

- Private, not-for-profit, academic health system

- 2,240 beds and 128 ORs

- 12 community medical centers, 40 health centers, and 1 joint-venture hospitals

- 114,000 inpatient and 565,000 ED admissions annually

- 4,700 total providers and 25,000 non-physician employees

- $4 billion total annual revenue

Proactive Staffing and Patient Prioritization to Decompress ED and Reduce Length of Stay

Hospital IQ's powerful Census Solution enabled **University Hospitals** to analyze, predict, and help manage demand, capacity, and staffing in the ED, inpatient areas, and OR. The platform's predictive capabilities gave leaders the time and insights necessary to:

Proactively open and close flex beds resulting in a 10% decrease in ED boarding hours and a 50% reduction in the incidence of patients who left the ER without being seen (LWBS).

Improve patient discharge planning resulting in a 15% reduction in length of stay.

Reduce overtime and improve float pool utilization.

Improve patient safety and staff satisfaction by increasing the frequency of deep cleaning of units.

Simulate capacity allocation changes to streamline and improve capacity planning.

" University Hospitals are engaged in a process of continuously improving the care we provide our patients. Hospital IQ has helped our units pull together as a team to see the full picture. They have given us the tools to successfully predict patient demand and to determine which changes will help us better serve our large and diverse community. "

Robyn Strosaker, MD
Vice President and Chief Medical Officer
University Hospitals Cleveland

Hospital IQ®

University Hospitals' Census Challenge

University Hospitals Cleveland (UH), one of the nation's leading healthcare systems, faces the same challenge that every major hospital confronts: how to deliver increasingly complex, high-quality healthcare to a diverse population efficiently and economically. In 2017, UH's leadership embarked on a value improvement program (VIP) with the focus on improving quality while saving $400 million over a five-year period. The hospital established an Operations Excellence department focused on identifying ways to improve care, reduce waste, grow volume, and expand into new service lines such as precision medicine. Key performance indicators and goals were established for each department to measure improvement. In the emergency department and inpatient units, the focus was on decreasing boarding and length of stay, and eliminating wasted patient days – that is, unnecessary bed days for patients who could have been discharged earlier.

Hospital leaders knew they had a wealth of data within their own records but their existing systems couldn't provide the information department leaders needed to predict operational problems and implement improvements. The hospital had no way to take a system-wide look at how its departments were performing or to foresee the impact of future changes.

Leaders found anticipating demand difficult, and consequently units were often overstaffed when demand was low and understaffed when demand was high. In these situations, hospital leaders were uncertain about how to reallocate resources based on capacity needs, for example, whether they should close a unit when patient demand is low or open a unit when patient demand increases.

Hospital IQ for Census Solution

University Hospitals Cleveland turned to Hospital IQ's Census Solution to proactively manage capacity, staff, and flow in the ED and inpatient areas. Initially, UH focused on reducing ED boarding, inpatient length of stay, and the time patients spent waiting to be discharged. In addition, leaders found anticipating demand difficult, and consequently units were often overstaffed when demand was low and understaffed when demand was high. In these situations, hospital leaders were uncertain about how reallocate resources based on capacity needs, for example, whether they should close a unit when patient demand is low or open a unit when patient demand increases.

UH Cleveland used Hospital IQ's predictive capacities to forecast ED and inpatient demand, capacity, and staffing requirements. By applying artificial intelligence, machine learning, and external data (i.e. weather forecasts) to the hospital's own data (including EMR data and hospital policies), the Census Solution helped University Hospitals make two-day census forecasts that managers used to determine whether to open or close inpatient beds to handle predicted patient volume.

Benefits Achieved and Value Created

As a result, the Chief Medical Officer and her leadership team now lead daily reviews of the predicted census across the hospital, make proactive decisions to close and open flex units, and, when necessary, divert low-acuity patients to other hospitals in the system. ED boarding hours have since declined by 10 percent and the hospital has seen a 50 percent reduction in the number of patients who leave the hospital without being seen (LWBS).

Hospital IQ for Census has also helped unit managers significantly enhance their discharge-planning capabilities. The hospital uses the platform's Discharge Planner to predict in advance which patients will be ready for discharge and to identify potential discharge roadblocks such as incomplete lab tests or missing admissions certifications. This has enabled staff to more quickly follow up and get patients ready to go home on time. Within four months of launch, the Discharge Planner helped UH reduce the average length of inpatient stay by 15 percent.

Hospital IQ for Census provided UH leadership with reliable census forecasts, enabling them to better predict upcoming demand. They were able to better manage full-time and agency staff, and reduced the use of overtime and cut overall labor costs. The hospital has also been able to close specific units on weekends and significantly increase the number of rooms that can be sterile cleaned, which has increased staff satisfaction and improved patient safety.

Using Hospital IQ for Census, UH was also able to provide high quality "what if" analyses in support of strategic capacity planning. For example, UH used Hospital IQ's simulation tools to quantify the likely impact on staff, wait times, and capacity if sickle cell patients were moved to a new unit in the hospital. Hospital IQ not only gave hospital leaders insight on where these patients should be moved, but also streamlined the overall undertaking (data collection, analysis, and decision making), reducing it from a months-long to days-long process.

Founded 150 years ago, University Hospitals Cleveland is one of the nation's leading healthcare systems. By giving hospital leadership the tools and insights they need to not just meet but anticipate the needs of patients, physicians, and staff in the ER, inpatient units, service units, and throughout the entire system, Hospital IQ is helping University Hospitals fulfill its mission to offer the highest quality patient-centered medical care to the people of Northeastern Ohio.

About Hospital IQ

Hospital IQ is a team of industry veterans who are passionate about using their collective knowledge and experience to help hospital leaders transform operational practices and improve performance – and deliver the best patient care to the most people.

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