Optimizing Patient Flow: Strategic Initiative Generates $22M in Savings, Boosts Revenue, and Enhances Patient Satisfaction

THE QUEEN'S HEALTH SYSTEM

$22M cost savings. Patients were able to spend 19,000 more days at home, the result of an **8.4 percent relative reduction** in average LOS in 15 months.

$1.9M new revenue, the result of an **8.4 percent relative increase** in admissions over 11 months.

PRODUCTS

- Health Catalyst® data platform
- Patient Flow Explorer
- Tech-Enabled Managed Services

EXECUTIVE SUMMARY

The Queen's Health System (Queen's) recognized the need to improve patient flow to increase capacity, provide cost-effective care, and maintain financial stability. Using a data-informed approach, Queen's leveraged its analytics platform, established a dedicated team for capacity management, standardized interdisciplinary rounds with geographically cohorted providers, and implemented a centralized command center. These improvements have resulted in significant cost savings and enhanced patient flow.
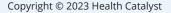
ENHANCING PATIENT FLOW FOR BETTER CARE

Hospitals' total costs increased 17.5 percent between 2019 and 2022, straining many health systems' ability to continue providing care.[1] Additionally, prolonged length of stay (LOS) creates capacity constraints, impeding hospitals' ability to meet patient demands for care and negatively impacting the patient experience. To deliver cost-effective care and remain financially viable, healthcare organizations must have coordinated processes to enhance patient flow, moving patients safely and effectively from admission to discharge.

PROLONGED LOS CAN LEAD TO WORSE OUTCOMES

Demand for services at Queen's was high, but capacity constraints and prolonged LOS impeded the organization's ability to meet patient needs, and patients were frequently boarded in the emergency department. The organization had discussed the need to improve patient flow, but a lack of standard processes and limited insight into performance impeded improvement. Queen's needed new solutions to improve patient flow.

DATA-INFORMED PATIENT FLOW IMPROVEMENT

The solution for Queen's was a patient flow improvement team and executive steering committee, supported by the Health Catalyst® data platform and a robust suite of analytics applications, including Patient Flow Explorer and Tech-Enabled Managed Services.

The patient flow improvement team and executive steering committee clarified roles, responsibilities, and decision-making authority, making changes in three key areas, and engaging all team members to improve patient flow.

⊙ **A capacity management plan.** The capacity management plan identifies action items for each stage, including standard operations, pre-surge, and specific-surge levels. These action items include activities to increase bed capacity and plans for patient placement that address both the volume and acuity of the patients requiring admission.

⊙ **Geographical hospitalist assignment and standardized daily interdisciplinary rounds.** Teams conduct daily interdisciplinary rounds and use the rounds to consistently work patients to safe discharge, ideally at the standard daily discharge time. The team addresses any outstanding patient needs, such as mobility, prompt discontinuation of lines and drains, outstanding tests and imaging, and education. The team plans for discharge, ensuring that patients have transportation, needed medications, and a post-discharge follow-up plan.

⊙ **A centralized command center.** New patient flow coordinators staff the centralized command center. The team proactively engages with care teams to identify and resolve patient flow barriers. Care teams also contact the centralized command center to escalate issues. Patient flow coordinators play a pivotal role in the organization's surge plans, implementing standard and consistent interventions to improve capacity.

Additionally, Queen's leverages the Patient Flow Explorer analytics accelerator to:

⊙ Understand demand and capacity.

⊙ Identify areas where demand and capacity don't match.

⊙ Quantify patient flow improvement opportunities.

⊙ Evaluate the impact of interventions on outcomes.

⊙ Assess and quantify the value of the improvement efforts.

ABOUT THE QUEEN'S HEALTH SYSTEM

The Queen's Health System, a nonprofit mission-driven healthcare organization founded more than 160 years ago, includes four hospitals and 70 healthcare centers throughout Hawai'i. Queen Emma and King Kamehameha IV founded The Queen's Hospital in 1859 to address the healthcare needs of the people of Hawai'i during a time when epidemics plagued the island of O'ahu. Their efforts grew into the legacy it has become today. Queen's is the state's largest employer, with 8,000 caregivers, medical staff, and leadership, and is dedicated to improving the health of Native Hawaiians and all the people of Hawai'i.

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Actionable Patient Flow Explorer data and analytics, standard work, and a consistent improvement methodology enabled us to dramatically reduce the length of stay and improve capacity so we can continue to serve our community.

Alexandra Wroe, RN, ACM-RN, BSN, MBA, VP of Patient Care, The Queen's Health System

Health Catalyst Tech-Enabled Managed Services support ongoing clinical quality improvement, advancing analytics adoption, and facilitating improvement using a seven-step improvement model, giving Queen's team members a proven methodology to drive improvement.

RESULTS

Queen's data-informed improvement efforts are producing meaningful results. The organization has improved capacity management effectiveness, decreased LOS, increased the ability of the organization to serve more patients, and improved the patient experience. Results include:

- **$22M cost savings.** Patients were able to spend 19,000 more days at home, the result of an **8.4 percent relative reduction** in average LOS in 15 months.
  - Without this work, Queen's would have had as many as 18 more patients a day boarded in the emergency department.
- **$1.9M new revenue**, the result of an **8.4 percent relative increase** in admissions over 11 months.

WHAT'S NEXT

Queen's plans to expand its standard interventions across the health system and will continue to use data, analytics, and the proven improvement methodology to further improve patient flow, ensuring patients can access care when they need it. Queen's is also building a centralized command center to further expand its patient flow efforts. ◊

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> By leveraging our data and analytics, we've been able to significantly improve patient flow—reducing length of stay, decreasing costs, and increasing revenue—all leading to enhanced healthcare delivery and an improved patient experience.
>
> Matthew Ing, MD, VP of Medical Affairs & Chief Medical Officer, The Queen's Medical Center

REFERENCES

1. Krishnamurthy, B. (2023). Margin misconceptions: What do break-even hospital margins mean for patient care? *American Hospital Association.* Retrieved from https://www.aha.org/news/blog/2023-08-01-margin-misconceptions-what-do-break-even-hospital-margins-mean-patient-care

ABOUT HEALTH CATALYST

Health Catalyst is a leading provider of data and analytics technology and services to healthcare organizations, committed to being the catalyst for massive, measurable, data-informed healthcare improvement. Our customers leverage our cloud-based data platform—powered by data from more than 100 million patient records, and encompassing trillions of facts—as well as our analytics software and professional services expertise to make data-informed decisions and realize measurable clinical, financial, and operational improvements. We envision a future in which all healthcare decisions are data informed.

Learn more at **www.healthcatalyst.com**, and follow us on **Twitter**, **LinkedIn**, and **Facebook**.