

Removing Discharge Barriers Reduces Hospital Length of Stay



HEALTHCARE ORGANIZATION

Academic Medical Center

Integrated Delivery System

PRODUCTS

- Health Catalyst® Data Operating System (DOS™) Platform and robust suite of analytics applications

SERVICES

- Professional Services

EXECUTIVE SUMMARY

Managing and reducing length of stay (LOS) can be challenging for many healthcare systems as the causes behind the delays are not always clear. It is critical that organizations understand LOS as it is an essential measure of hospital efficiency and quality of care.

With the knowledge that LOS is an essential indicator of hospital operational efficiency, Albany Med compared its performance with benchmark data and determined that it could improve inpatient LOS. By convening a multidisciplinary team of providers committed to decreasing hospital LOS and leveraging its data and analytics platform, Albany Med was able to uncover underlying issues causing unnecessary extended hospital stays and substantially reduce LOS. Results include:

- 28,561 recoverable bed days, the result of a 50.5 percent relative reduction in LOS greater than 30-days.
- 15.9 percent relative improvement in echocardiogram turnaround time.
- 0.68-day reduction in LOS.

REMOVING BARRIERS TO IMPROVE HOSPITAL LOS

LOS is an essential measure of hospital efficiency and quality of care. Delays in clinician ordering and review of diagnostic tests can increase the likelihood of protracted LOS by 13.2 percent and increase the probability of later discharge by 33.6 percent.¹

Albany Med is northeastern New York's only academic health sciences center and is one of the largest private employers in the Capital Region. The 734-bed Albany Medical Center Hospital and the Albany Medical College provide the community with the highest level of patient care across disciplines while receiving regional, national, and international recognition for high standards in patient care, education, and biomedical research.

“ We could write the book on ‘50 ways to reduce length of stay (LOS)’ from the diverse lessons learned from our lean-based, LOS improvement teams. Our analytics applications and dashboards have been the target-finding and change-proving enablers, leading to an accumulation of many discrete cycle time reductions.

George Hickman Executive
Vice President &
Chief Information and
Analytics Officer
Albany Med

TIMELY, ACTIONABLE DATA CRITICAL TO REDUCING LOS

With the knowledge that LOS is an essential indicator of hospital operational efficiency, Albany Med compared its performance with benchmark data and determined that it could improve its inpatient LOS.

Albany Med leverages lean methodology as its performance improvement framework. However, it lacked access to the timely, actionable data it needed to identify important drivers impacting LOS, such as wait times for tests or services.

The health system sought a data-driven solution to support LOS improvement efforts. This required the analysis of large volumes of operational data, which delayed the implementation and evaluation of improvement efforts.

ACCURATE DATA AND TEAMWORK IMPROVE LOS RATES

Albany Med created an interdisciplinary guidance committee, led by the Office of Medical Affairs, along with increased accountability for team members in prioritizing and coordinating hospital-wide initiatives to reduce hospital LOS.

To gain needed insight to drive improvement efforts, Albany Med leveraged the Health Catalyst® Data Operating System (DOS™) and a robust suite of analytics applications. The data and analytics platform extracts data from multiple source systems and aggregates the data into an easy-to-consume visualization dashboard, enabling the improvement team to see the factors contributing to extended LOS, including wait times or delays in services on an individual patient, unit, and provider level (see Figure 1).

FIGURE 1: ANALYTICS APPLICATION—LOS AT THE PATIENT, UNIT, AND PROVIDER LEVEL

- 1 Filters to select data of interest, including timeframe, patient type, clinical program, and visit details (APRDRG, admit date, discharge date).
- 2 Tabs to select specific measures of interest.
- 3 Summary LOS data, including total LOS, inpatient LOS, and observation LOS.
- 4 Financial LOS.
- 5 30-day readmission rate vs financial LOS.

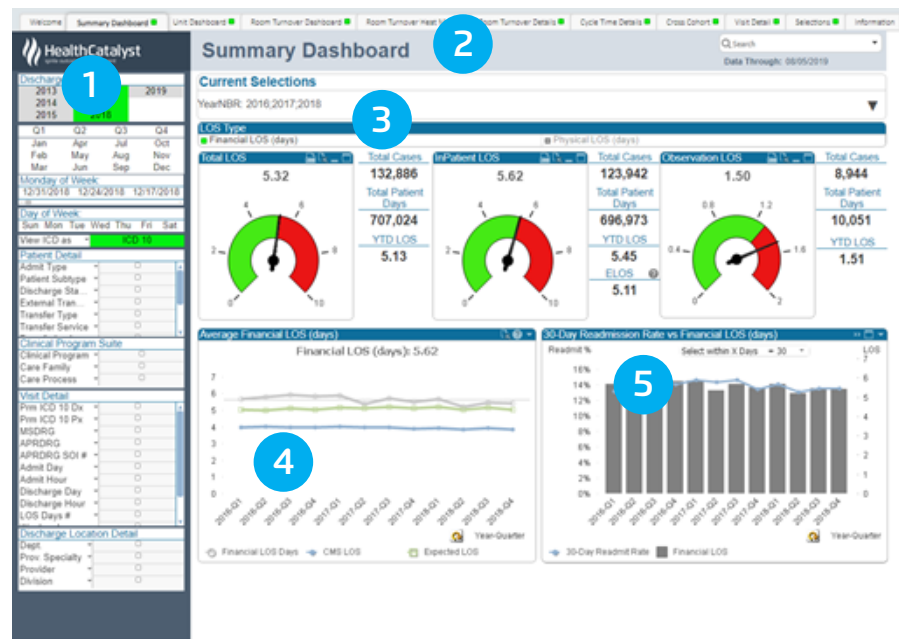


Figure 1: Analytics application—LOS at the patient, unit, and provider level

Upon analysis of the data, Albany Med identified two significant contributors that were negatively impacting LOS outcomes: extended LOS (defined as greater than 30 days) and delays in patients receiving echocardiograms.

Albany Med used its standard improvement methodology to design and implement several changes to address barriers for patients with extended stays and to improve the turnaround time for echocardiograms.

Addressing barriers to discharge for patients with extended stays

With access to up-to-date data through the data and analytics platform, Albany Med can rapidly identify patients with stays in the hospital for a non-clinical reason beyond 10, 15, and 30 days who could benefit from case management.

The interdisciplinary workgroup, consisting of a clinician, caseworker, attorney, financial expert, an ethicist, and others, reviewed the list on a weekly basis to discuss patient needs and then planned case management activities to proactively address discharge barriers.

“The successful outcomes achieved in collaboration with these multidisciplinary performance improvement teams under the guidance of our physician champions have positioned our analytics platform as a source of trust and increased systemwide adoption.

Michael Hamilton
VP, Analytics
Albany Med

For long-stay patients, the committee begins working on the case as early as barriers to discharge are discovered and meets three times a week to ensure clear communication and care coordination. Case managers are careful to involve the patient, healthcare providers, and other agencies in the process of targeting the patient's specific areas of concern.

Case managers meet with patients to assess their psychosocial and medical care coordination needs. Based on this assessment, case managers collaborate with patients to develop a service plan that addresses the needs of the patient and the family. As the patient's needs change, case managers provide continued support, education, and advocacy. Staff are also available to assist with an array of needs, including:

- Family and domestic issues (e.g., disclosure, partner notification, domestic violence, permanency planning).
- Health insurance.
- Home care.
- Referrals for mental health and substance abuse services (both within the program and externally).
- Agencies to assist with housing, food, income assistance, supplemental security income and disability services, and employment services.

Reducing echocardiogram delays

Information from the data and analytics platform demonstrated that 18 percent of patients who had an echocardiogram during the hospital stay had an estimated one-day increase in their LOS.

Drawing on this information, the workgroup analyzed the workflow and identified pain points that negatively impacted the timeliness of patients receiving an echocardiogram, focusing their performance improvement efforts on flexible hours of service, technology improvements, and workforce optimization, all resulting in a material reduction in results turnaround time.

RESULTS

Using this comprehensive data-driven approach, Albany Med has substantially reduced LOS, exceeding benchmark targets, including:

- 28,561 recoverable bed days, the result of a 50.5 percent relative reduction in LOS greater than 30-days.
- 15.9 percent relative improvement in echocardiogram turnaround time.
- 0.68-day reduction in LOS.

WHAT'S NEXT

Albany Med intends to further expand the use of its data and analytics platform to look for opportunities to reduce costs while providing excellent care quality and patient outcomes. 📈

REFERENCES

1. Ong, M. S., Magrabi, F., & Coiera, E. (2018). Delay in reviewing test results prolongs hospital length of stay: a retrospective cohort study. *BMC health services research*, 18(1), 369. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5956538/>

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.

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