

Systematic, Data-driven Approach Lowers Length of Stay and Improves Care Coordination



HEALTHCARE ORGANIZATION

Integrated Delivery System

PRODUCTS

- Health Catalyst® Analytics Platform and broad suite of analytics applications

SERVICES

- Professional Services
- Installation Services

EXECUTIVE SUMMARY

Improving and reducing length of stay (LOS) improves financial, operational, and clinical outcomes by decreasing the costs of care for a patient. It can also improve outcomes by minimizing the risk of hospital-acquired conditions.

Faced with declining revenue related to changes in Medicare and Medicaid reimbursements, Memorial Hospital at Gulfport knew additional methods of providing more efficient and cost-effective quality care were needed to maintain long-term success. The organization embraced the challenge of reducing LOS to lower costs and lessen risk for its patients. By adopting a systematic, data-driven, and multi-pronged approach, Memorial has achieved significant results in one year including:

- \$2 million in cost savings, the result of decreased LOS and decreased utilization of supplies and medications.
- 0.47-day percentage point reduction in LOS.
 - Improved care coordination and physician engagement have successfully reduced LOS.
 - The 30-day readmission rate has remained stable.
- Three percent increase in the number of discharges occurring on the weekend.

REDUCING LENGTH OF STAY IMPACTS COSTS AND OUTCOMES

Hospital inpatient care makes up nearly one-third of all healthcare expenditures in the U.S., with an average LOS of 4.5 days and an average cost of \$10,400 per day.¹ Optimizing and reducing LOS improves financial, operational, and clinical outcomes by decreasing the costs of care for a patient, not only in facility expenses and supplies but in staffing and premium pay. It can also improve patient outcomes by minimizing the risk of hospital-acquired conditions.²

Memorial is one of the most comprehensive healthcare systems in Mississippi and includes a 303-bed acute care hospital handling

“Our team was overwhelmed at the thought of reducing our organization’s LOS by 0.5 days and we were not quite sure where to begin. It is important to put aside preconceived notions and look at what the data is telling you. Our team learned so much about taking a data-driven approach at the Health Catalyst Accelerated Practices Program and have begun several additional projects using this training.

Melody Griffith, RN, MSN, CCM
Director of Care Coordination

over 17,000 patient discharges annually. To deliver more efficient care and offset declining revenues from changes in Medicare and Medicaid reimbursements, the healthcare system determined that reducing increased LOS would positively impact both costs and patient outcomes.

MULTIPLE CHALLENGES IMPEDE IMPROVING LOS

Memorial’s assessment of ways to reduce unwarranted LOS showed that optimizing processes related to managing patient flow would benefit both the organization and its patients. Leadership agreed that reducing variable costs associated with increased LOS would improve operating margins, patient satisfaction, and safety, as well as increase patient flow and bed utilization efficiency. The leadership team set a target to decrease LOS by 0.5 days by the end of the fiscal year.

Process and communications improvements needed

Memorial faced several challenges that impeded its ability to manage LOS effectively. Addressing complex operational and clinical processes requires a specified group to champion the work, lead interdisciplinary teams, and provide oversight to the LOS initiatives, which did not initially exist. Further complicating matters was the need to enhance communication between disciplines, while also improving processes to facilitate discharge planning, for example:

- Daily huddles did not include the discharge plan, and case managers were not initially included in this process. Communication gaps between providers, registered nurses, and case managers led to delays, rework, and frustration.
- Often, if patients were not discharged by Friday, they would still be in the hospital the following Monday, as there were few weekend discharges.

Consult response time delays

Prolonged consult response times also emerged as a key factor for Memorial. Average time from consult order to signed consult note hovered around 18-hours, with 20 percent of all consults having a time from order to documentation of consult time of greater than 24-hours.

Consult delays not only impacted patients but providers as well, with potentially negative effects on patient satisfaction, time to care, care coordination, and staff satisfaction.

“ Various processes affect LOS. After attending the Health Catalyst Accelerated Practices Program we were able to realize the importance of stakeholder involvement and engagement. We reached out to case managers, nurses, and physicians to gain insight into what their major pain points were and used those common themes as areas of focus for our project. With data, we were able to prove correlation and causation and make improvements through active stakeholders and process management.

Jonathan DuBose
Project Manager
Performance Improvement

Further analysis of the consult to note process revealed several, distinct opportunities for improvement, including:

- Inconsistent nursing documentation process.
- Unnecessary variation among practices and providers.
- Phone calls to inform receiving providers of the consult requested, which inadvertently created delays.
- Lack of oversight of consult processes.

Targeted data and analytics were needed for monitoring and reporting of progress in relation to goals. Without specific performance information, providers were either unaware of issues or unable to gauge the impact of any efforts they made to address consult delays, readmissions, or LOS.

MAPPING OUT SOLUTIONS

With a strategic goal of decreasing LOS by 0.5 days, Memorial incorporated a systematic, data-driven, and multi-pronged approach to identify solutions with the highest potential impact.

To further build their knowledge and skills implementing organizational improvement and change, a cross-functional team attended the Health Catalyst® Accelerated Practices Program, an immersive and experiential program designed to prepare healthcare teams to accelerate outcomes improvement and lead change throughout the organization.

Integrating concepts from the Health Catalyst improvement methodology into its process improvement efforts, and data from the Health Catalyst® Analytics Platform and broad suite of analytics applications, Memorial deployed a systematic set of solutions to significantly decrease LOS.

Establishing structure and ownership

Memorial engaged the utilization management (UM) committee, which consists of administrators, providers, revenue cycle and performance improvement staff to review LOS and resource utilization, ensuring appropriate care is provided, and patients are progressing toward safe discharge.

Improving interdisciplinary communication and discharge process

From implementing the role of a UM registered nurse (RN), who assists with denials management and avoidable day identification and trending, to integrating case managers into morning huddles with discharge planning as part of huddle discussions, Memorial expanded roles and introduced several new processes to close communication gaps and eliminate unnecessary discharge delays.

To further accelerate appropriate weekend discharges, and to support providers' workflow, Memorial increased weekend case management staffing and hired advanced registered nurse practitioners for the hospitalist team, brought in specifically to provide additional coverage and assistance with weekend discharges and care for patients with a longer than expected LOS.

Case managers assess each patient's risk for 30-day hospital readmission. For high-risk patients, case managers follow up and engage patients for 30-days post-discharge. Case managers also closely follow up with select patients that have a history of frequent readmissions. By adding an extra hospitalist liaison to the case management department, Memorial also looked to enable clearer communication between the case managers and the hospitalists.

Optimizing critical processes to meet improvement benchmarks required organizational buy-in, especially from the hospitalists, who provide care to more than 70 percent of Memorial's patients. Hospitalists have embraced the strategic effort and implemented several changes to further reduce LOS including:

- Developing a detailed handoff process, including a progress note that provides information about the medical treatment plan and activities that need to be completed prior to discharge. The progress notes help improve care coordination for weekend providers and help ensure care progression avoiding unnecessary weekend discharge delays.
- Case managers and unit managers receive a daily list of anticipated discharges to improve communication between hospitalists, case managers, and unit managers.
- Daily assignments of case managers and their contact information are sent to hospitalists via secure text, helping to ensure hospitalists are aware of who to contact for assistance with discharge planning and care coordination.

- Hospitalists also receive a patient list that shows the providers which patients have central lines, indwelling urinary catheters, telemetry monitors, and outstanding labs and diagnostics. This targeted list also includes LOS and the patient's status (inpatient or observation), which assists hospitalists in the discharge planning process.

In addition to implementing these new processes, members of the case management leadership team review data weekly from the EMR on LOS outliers. The team also identifies potential outliers and works with the case managers and providers to identify additional discharge options.

Improving the consult note process

The team sought to improve the timeliness of consults through several interventions, leveraging its EMR capabilities to automate much of the consult, saving time and improving reliability. Traditionally, making multiple phone calls to inform the provider of a new consult resulted in delays. Rather than rely on phone calls, RNs now use a structured form within the EMR to convey critical information regarding the physician's consult request.

The medical staff established and clearly communicated expectations of consult times, including the need for prompt documentation following consult completion, which ensured a more efficient and reliable consult process.

The critical role of data and analytics

Memorial understood the importance of data and analytics in accomplishing its objectives. Needing insight into its performance and processes, Memorial adopted a data-driven approach to improvement and leveraged the analytics platform to better recognize, understand, and eliminate non-value-added activities.

The analytics platform enables Memorial to track and monitor progress on its LOS initiatives, including the improvement of its weekend discharge process, and actively monitors the readmission rate to ensure any decreases in LOS do not negatively impact the readmission rate.

Memorial also engages providers in its improvement efforts, sharing provider-specific, individual performance data, including LOS, readmissions, avoidable days, and consult delays with each provider.

RESULTS

Memorial's commitment to a data-driven, multi-pronged approach to reducing LOS has produced the desired results in one year, including:

- \$2 million in cost savings, the result of decreased LOS and decreased utilization of supplies and medications.
- 0.47-day percentage point reduction in LOS.
 - > Improved care coordination and physician engagement have successfully reduced LOS.
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WHAT'S NEXT

Not resting on its initial success, Memorial will continue to monitor LOS initiatives to sustain and build on its improvement and plans to implement additional interventions to further reduce LOS. ♪

REFERENCES

1. Agency for Healthcare Research and Quality. (2014). *Overview of hospital stays in the United States, 2012*. Retrieved from <http://www.hcup-us.ahrq.gov/reports/statbriefs/sb180-Hospitalizations-United-States-2012.pdf>
2. Jennings, N. (2015). Inpatient care - Calculating the cost of length of stay. *Hospitals & Health Networks*. Retrieved from <https://www.hhnmag.com/articles/3378-inpatient-care>

ABOUT HEALTH CATALYST

Health Catalyst is a next-generation data, analytics, and decision support company committed to being a catalyst for massive, sustained improvements in healthcare outcomes. We are the leaders in a new era of advanced predictive analytics for [population health](#) and [value-based care](#). with a suite of machine learning-driven solutions, decades of outcomes-improvement expertise, and an unparalleled ability to integrate data from across the healthcare ecosystem. Our proven data warehousing and analytics platform helps improve quality, add efficiency and lower costs in support of more than 85 million patients and growing, ranging from the largest US health system to forward-thinking physician practices. Our technology and professional services can help you keep patients engaged and healthy in their homes and workplaces, and we can help you optimize care delivery to those patients when it becomes necessary. We are grateful to be recognized by Fortune, Gallup, Glassdoor, Modern Healthcare and a host of others as a Best Place to Work in technology and healthcare.

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