

# Improved Care Transitions Reduces Readmissions Saving \$3.2M Annually



**\$3.2M** in total variable **cost savings**, the result of avoiding 420 readmissions.

## PRODUCTS

- Health Catalyst: Data Operating System (DOS™) Platform
- Readmissions Explorer analytics accelerator

## EXECUTIVE SUMMARY

Hospital readmissions cost Medicare \$26 billion annually. However, some of these readmissions are potentially preventable. Allina Health had previously realized significant reductions in readmissions, but it desired to uncover additional ways to further reduce readmissions. The organization leverages its data and analytics platform to effectively identify the factors influencing care transitions to determine specific improvement opportunities and evaluate the impact of interventions on outcomes. Allina Health's readmission reduction efforts are delivering the desired results.

## EXPLORING CARE TRANSITION DATA

More than 3.8 million adult hospital patients are readmitted every year, with an average readmission cost of \$15,200.<sup>1</sup> Hospital readmissions cost Medicare \$26 billion annually.<sup>2</sup> Allina Health had previously focused on reducing potentially preventable readmissions and had realized significant reductions. While it achieved significant improvement, the organization recognized it had the opportunity to address new challenges and further improve performance.

Allina Health recognized that hospital discharge and follow-up activities weren't as consistent as they could be throughout the organization. In addition, evolving patient patterns related to the COVID-19 pandemic presented new challenges to post-discharge follow-up. The organization desired to further learn from its data, scale its analytics-driven readmission reduction efforts, and improve care transitions for its patients.

## IMPROVING CARE TRANSITIONS TO REDUCE UNNECESSARY READMISSIONS

High-value data and analytics are a cornerstone of Allina Health's readmission improvement efforts. The organization leverages the Health Catalyst® Data Operating System (DOS™) platform and a robust suite of analytics applications, including the Readmissions Explorer analytics accelerator, to:

- Identify and understand the factors influencing readmissions.
- Determine specific improvement opportunities.

- Evaluate the impact of changes on outcome measures of interest.
- Monitor the impact on balance measures like length of stay, mortality, and patient satisfaction.

The organization also uses its trusted, high-value data and analytics to explore hypotheses about readmissions and potential improvement opportunities.

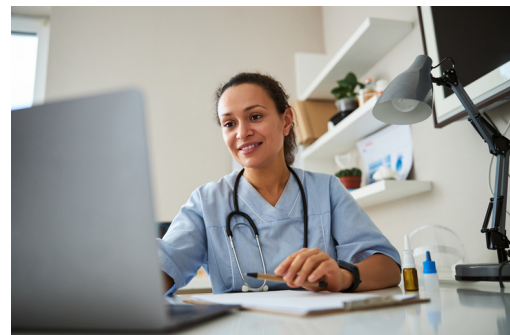
Using the Readmissions Explorer analytics accelerator, Allina Health can visualize readmission performance, including risk-stratified identification and segmentation of patients at risk for readmission, enabling care managers to target interventions to those patients at the highest risk of readmission. The organization can visualize readmissions by the level of care, discharging department/care unit, provider, primary problem, discharge disposition, and payer. Providers and care managers can immediately identify the number of previous inpatient visits each patient has had within the last seven and 30 days.

### Redesigning Discharge Planning

Allina Health redesigned the timing of its discharge planning, initiating discharge planning at the time of admission. Accurate medication reconciliation is a critical component of discharge planning, and the organization ensures medication reconciliation occurs within 24 hours of admission. Care managers and providers collaborate to develop effective discharge and transition-of-care plans for each patient. Discharging providers use a standard discharge note and an order in the EMR to document and communicate patient needs and medication changes, ensuring primary care providers have the critical information required to effectively manage the patient and prevent an unnecessary readmission.

### Monitoring Preventable Readmission

Allina Health uses its risk-adjusted data to calculate and monitor a potentially preventable readmission (PPR) actual/expected (A/E) ratio. The organization can monitor the PPR A/E for the entire health system and each of its 11 hospitals. Allina Health uses the PPR A/E and data in the analytics application to identify and respond to changes in performance. For example, initially care managers connected with patients within two days of discharge, with the goal of scheduling patients to be seen within five days of discharge. Allina Health was able to identify that a meaningful proportion of follow-up appointments were occurring on days six and seven. Using its data platform and analytics, the organization was able to determine that seven-day follow-ups still positively impacted readmissions, allowing the organization to adjust its target.



### ABOUT ALLINA HEALTH

A not-for-profit health system with 11 hospitals, 90+ clinics, and more than 28,000 employees and 6,000 associated and employed physicians, Allina Health is dedicated to the prevention and treatment of illness and enhancing the greater health of individuals, families, and communities throughout Minnesota and western Wisconsin.

## Responding to COVID-19 Readmissions

The organization—including its data platform, analytics, and data analysts—are incredibly agile, responding to changes in patient conditions and needs and integrating changes into its data and analytics. With the emergence of COVID-19, the organization employed analytics to identify patients discharging from the hospital who had COVID-19, customizing the discharge follow-up activities to ensure the patients received the right support.

During the COVID-19 pandemic, primary care providers quickly adapted to provide telehealth, adding virtual and phone visits. Allina Health integrated these new visit types into its analytics application, enabling visualization and evaluation of the impact of visit type on timely follow-up and hospital readmissions. Initially, the organization wasn't confident that virtual and phone visits would prevent readmissions. However, its data and analytics demonstrated a positive impact on readmissions, which Allina Health was able to use to engage its care teams in ensuring patients received a virtual or phone visit after discharge.

## Illuminating Care Gaps

Allina Health's data illuminated a gap related to patients admitted to medical units whose primary problem was a mental health diagnosis. The organization leveraged analytics to identify these patients, evaluate their outcomes, and support planning for how to better meet these patients' needs. Care managers now reach out to these patients within two days of discharge, conduct an initial assessment, and ensure the patient has a follow-up appointment with a specialist and/or primary care provider, as well as transportation to the appointment.

Leveraging high-value data and analytics, Allina Health identified a gap in follow-up for patients who were not discharged immediately to their homes. Patients who had an additional step through a third party, such as a rehabilitation facility or skilled nursing facility (SNF), were not consistently receiving timely follow-up after discharge from the SNF. Care managers now receive a list of patients discharged from an SNF from the analytics application, ensuring patients are seen within seven days of discharge from the SNF.



The Health Catalyst analytics platform and data analysts are critical components of our readmission improvement efforts. The accessibility of consistent, high-quality data, and agility of data experts who can help us answer questions, enables us to identify and understand new opportunities, and evaluate if our interventions have had the desired impact.

**David Beddow, MD,**  
**Medical Director, Allina Health**  
**Hospitalist Service**

## Timing End-of-Life Discussions

While providers at Allina Health were engaging their patients in discussions about treatment near the end of life, the organization's data helped it gain new insights regarding the timing of those discussions and the impact on outcomes. The organization's data demonstrated that serious illness conversations—conversations with seriously ill patients about their values and goals—were most effective when they occurred at least four to six weeks before a serious illness event. The organization developed a custom serious illness risk model, using its analytics platform and a subject area data mart specific to that model to apply the risk score to all Allina Health patients. The custom risk model identifies patients upstream from their deterioration, signaling to the provider the best time to facilitate a serious illness conversation with the patient.

## RESULTS

Allina Health's data-informed readmission reduction efforts are delivering the desired results. In just one year, the organization achieved:

- **\$3.2M in total variable cost savings**, the result of avoiding 420 readmissions by supporting patients with transitions of care and facilitating five-day or seven-day follow-ups.
- **71.5 percent** of patients completed follow-up within the seven-day period.
- **0.83 PPR A/E ratio** for patients completing either a five-day or seven-day follow-up, a ratio that was 31.4 percent lower than patients without follow-up.



The effectiveness of Allina Health's work to improve care transitions can be seen in a recent patient experience. A patient was admitted to the hospital for suspected bacterial endocarditis. The patient was admitted to the hospital for treatment on a Friday and discharged the following Monday. The care manager contacted the patient within two days of discharge, ensuring he was receiving intravenous antibiotics required to treat his infection at home. To further reduce the likelihood of readmission, the care manager scheduled the follow-up appointment with his primary care provider on Friday, where he received education about and adjustments to his care.

## WHAT'S NEXT

Allina Health continues to leverage its high-value data and analytics to improve performance. The organization has visualized the care ecosystem across the entire health system's geographic footprint. It uses the ecosystem visualization to assess care demands and availability of services (hospitals, primary care and specialty clinics, long-term care, skilled nursing facilities, etc.), supporting strategic planning and performance improvement. 📈

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## REFERENCES

1. Weiss, A. J. & Jiang, H. J. (2021). Statistical Brief #278 – Overview of clinical conditions with frequent and costly hospital readmissions by payer, 2018. *Agency for Healthcare Research and Quality*. Retrieved from <https://www.hcup-us.ahrq.gov/reports/statbriefs/sb278-Conditions-Frequent-Readmissions-By-Payer-2018.jsp>
2. Wilson, L. (2019) MA patients' readmission rates higher than traditional Medicare, study finds. *Healthcare Dive*. Retrieved from <https://www.healthcaredive.com/news/ma-patients-readmission-rates-higher-than-traditional-medicare-study-find/557694/>

## 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](http://www.healthcatalyst.com), and follow us on **Twitter**, **LinkedIn**, and **Facebook**.