

Rural Georgia-based ACO Reduces Avoidable Admissions by 4% Using Prescriptive AI to Focus Proactive Care on the Most Impactable Patients

Background

We partnered with a rural Georgia-based Medicare ACO serving over 16,000 Medicare beneficiaries across multiple hospitals and providers. As an ACO, it operates under a Medicare Shared Savings Plan (MSSP) contract, taking on financial risk for the cost and quality of care. The ACO's four population health center's (PHC) are spread across four regions and each is managed by just two staff, typically one RN and one subclinical patient navigator. Its operations leadership team wears many hats, including management, analytics, and IT.

Challenge: The ACO Struggled to Identify Impactable Patients to Prevent Avoidable Admissions

One of the ACO's primary challenges is reducing avoidable hospital admissions, a key quality metric preventing it from achieving its full value-based care savings potential. With both a decentralized patient population and decentralized PHCs operating across multiple regions and EHRs, the ACO struggled to identify patients at risk of avoidable admissions and assign to care teams for early intervention.

The ACO's data sources identified patients with already high costs and utilization, which was too late to bend the cost curve because patients were too far along in their disease progression. Without insight into the rising-risk, and social determinants of health (SDOH) that are strongly linked to utilization, the ACO lacked key data that could help its care teams prevent admissions.

As a result, the ACO's care teams felt frustrated not knowing the patients where proactive interventions would impact outcomes and costs. According to the VP of Clinical Operations at the ACO, "Our case managers would say, this happened 4 months ago, do you really want me to call this patient now?"

Rural Georgia-based ACO

Macon, Georgia

Outcomes

3.9% Average admission rate reduction

\$2M In cost savings from admission rate reductions

21% The ACO could see that it was able to address 21% of avoidable admissions risk by focusing on the top 5% of highest risk patients

41 Hours saved each week, the equivalent of 1 FTE

“At first I was skeptical of using an AI model to identify our highest-risk patients. But as I started doing outreach, I was amazed by how accurate the risk predictions and recommended actions were.”



Vice President of Clinical Operations, sharing case manager feedback

Solution: To Address these Challenges, the ACO Partnered with Lightbeam to Implement it's Prescriptive AI Platform

30-day Avoidable Admissions Predictive Model

The ACO deployed the 30-day Avoidable Admissions model within Lightbeam’s Prescriptive AI platform, which analyzed thousands of clinical and socioeconomic factors to accurately predict which patients are on a trajectory toward an avoidable admission within the next 30 days. The model output also provided the top five impactable clinical, and soceioeconomic factors driving risk for the individual, and recommended interventions, that when implemented are likely to create the greatest reduction in risk. The hard working PHC teams were now able to identify their rising-risk population. By focusing the ACO's limited case manager resources on the impactable rising-risk population, combined with the recommended interventions, they maximized their potential to reduce admissions.

Analyzing the ACO’s Population with Prescriptive AI

While the model narrowed the risk factors and interventions to take, it also narrowed the size of the population that needed to be addressed. Using the 30-day Avoidable Admissions model, the ACO could see that it was able to address 21% of avoidable admissions risk by focusing on the top 5% of highest risk patients (see Fig. 1). If capacity allowed, the ACO could move down to focus on the next 10% and reach another 21% of its avoidable admissions. The ACO’s population health center case managers could support a limited number of patients, and thus focused on the narrow sliver of patients that would reduce the greatest amount of risk. The ACO would focus on the 5% of patients deemed as high risk for an admission within the next 30 days, (830 patients a month), a much smaller population to manage compared to the 85% (14,600 patients per month) patients deemed lower risk for an admission (see Fig. 2). With a number needed to evaluate (NNE) of 13, the ACO needed to intervene with 13 high-risk patients to identify one avoidable admission.

Figure 1: Quarterly Avoidable Admissions Risk Distribution Across Patient Panel

Lightbeam assessed the entire population and found that just 5% of high-risk patients drove 21% of its avoidable admission risk.

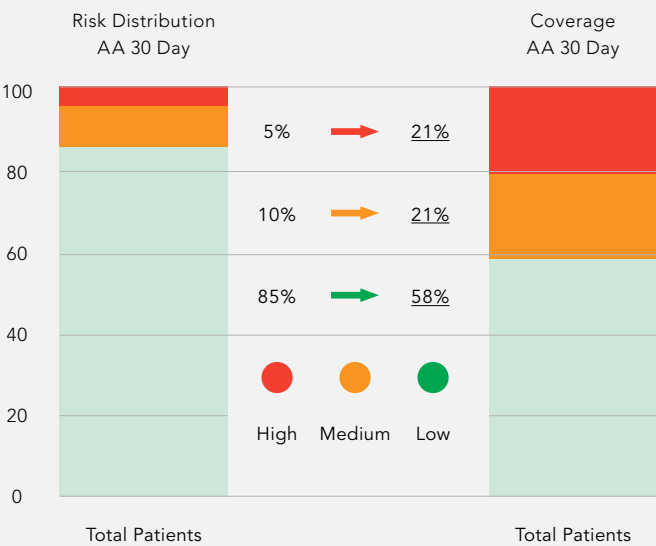


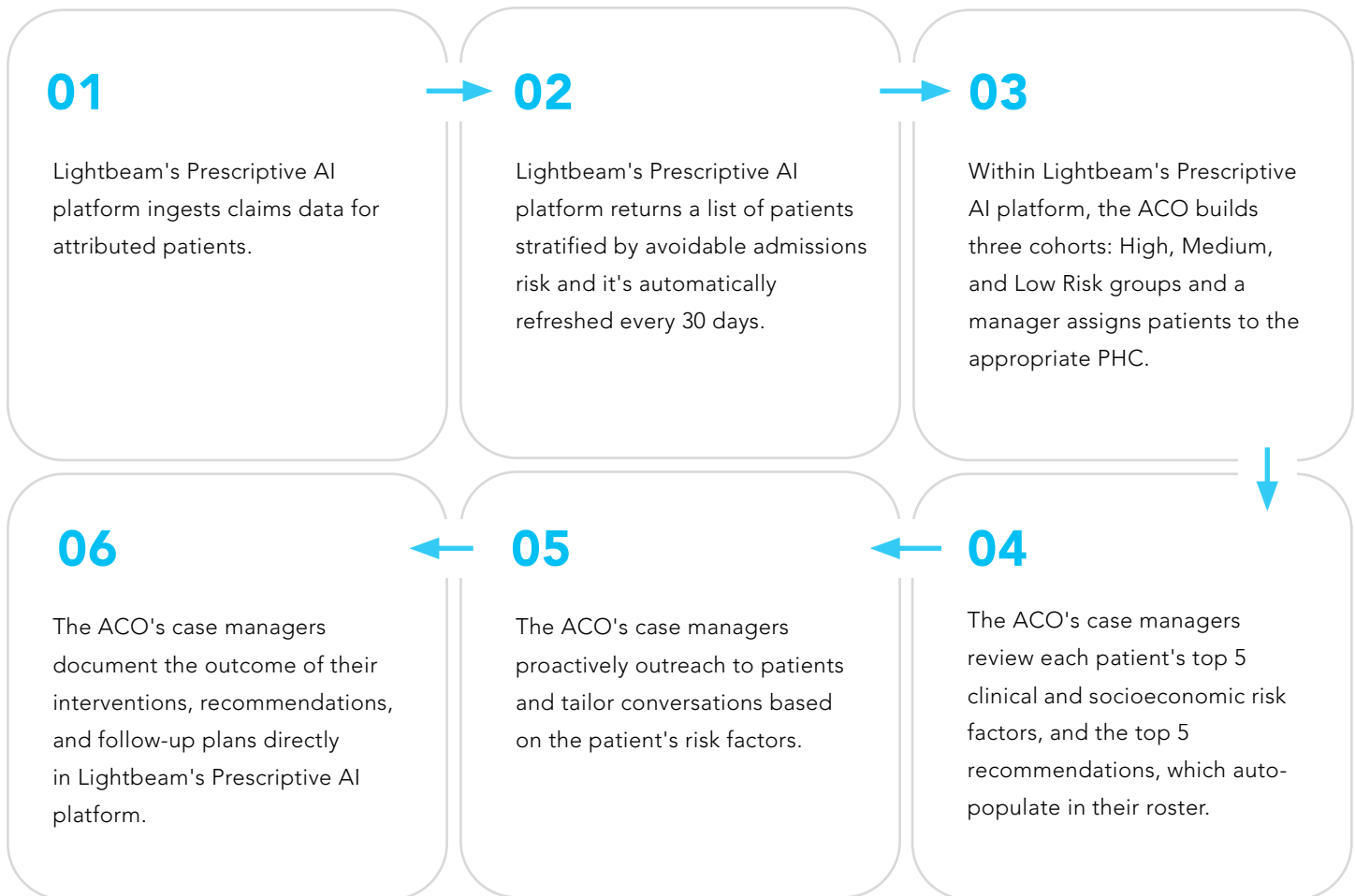
Figure 2: Quarterly Avoidable Admissions Risk & Patient Volume

Drilling down further, Lightbeam identified the 2,515 patients within the top 5% of highest-risk profile and how many patients the ACO would need to intervene with to reduce avoidable admissions. This helped inform care team capacity management, goal setting, and performance.

Risk Level	IP30 Admits	Total Patients	NNE	Admission Rate	Coverage
High Risk	198	2,515	13	7.9%	21%
Medium Risk	198	5,079	26	3.9%	21%
Low Risk	550	44,255	80	1.2%	58%
Grand Total	946	51,849	55	1.8%	100%

Workflow: How the ACO Identified Impactable Patients and Assigned Them to Care Teams For Intervention

The ACO workflow streamlined identifying, assigning, and intervening with at-risk patients



Reducing Case Manager Chart Review & Documentation Burden

The workflow improved chart review and documentation efficiency for case managers. Whereas, previously they needed to check multiple sources for patient data and document across Excel sheets and EHRs, Lightbeam's Prescriptive AI platform provided one place to centrally search and document. "For them to see the recommendations Lightbeam provides without needing to log into separate EHRs, they can do chart reviews in 10-15 minutes now, less than half the time," said the AVP of Operations at the ACO. This not only saved time, but improved collaboration. "We had an emergency recently where we had to call protective services and it was very easy for me to go into Lightbeam and see who called the patient when we had a nurse, social worker, and pharmacist working on the same patient. Everyone could put in their notes in and see them in real time and escalate to the doctor quickly."

Efficiency Improvements Total 1 FTE

On average, the ACO's care teams addressed 400 high-risk patients per month.

With a time savings of 25 minutes per patient, the team saved 41 hours per week, the equivalent of 1 FTE.

Pre Call:

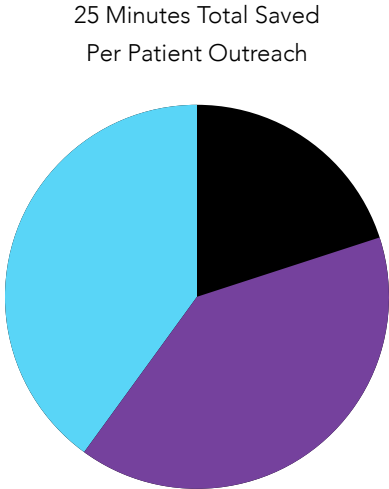
Chart Review Time Saved = 10 Minutes

During Call:

Precise Assessment Time Saved = 10 Minutes

Post-Call:

Documentation Efficiency = 5 Minutes



Accessing Hard to Reach Social Determinants of Health Data to Deliver Whole-Patient Care

The VP of Clinical Operations at the ACO shared, “previously, we tried to get social determinants data by calling patients and asking them, but it was hard because they don’t want to disclose it and it’s hard to start those conversations unless you have background data. The platform's recommendations added an extra layer to help start and guide the conversation. “Before Lightbeam, we were calling to say 'hey I saw you were in the ED 6 months ago.' As a result, we wouldn’t get a lot of engagement. Now, when we say 'hey, I see that not only clinically these things are happening, but maybe socially these things may become a barrier so I wanted to check in on you and see how things are.' Patients are way more inclined to engage then.” See Fig. 3

Figure 3: Example Top 5 Impactable Risk Factors and Interventions

Risk Factors

Clinical

- Type 2 diabetes mellitus with foot ulcer
- Essential primary hypertension
- Furosemide, loop diuretic, oral
- Shortness of breath
- Inhalation treatment for acute airway obstruction

Socioeconomic

- Very rural area
- Low household income
- Low transportation availability
- Education likely limited to high school
- Lack of other adults in household

Recommendations

Interventions

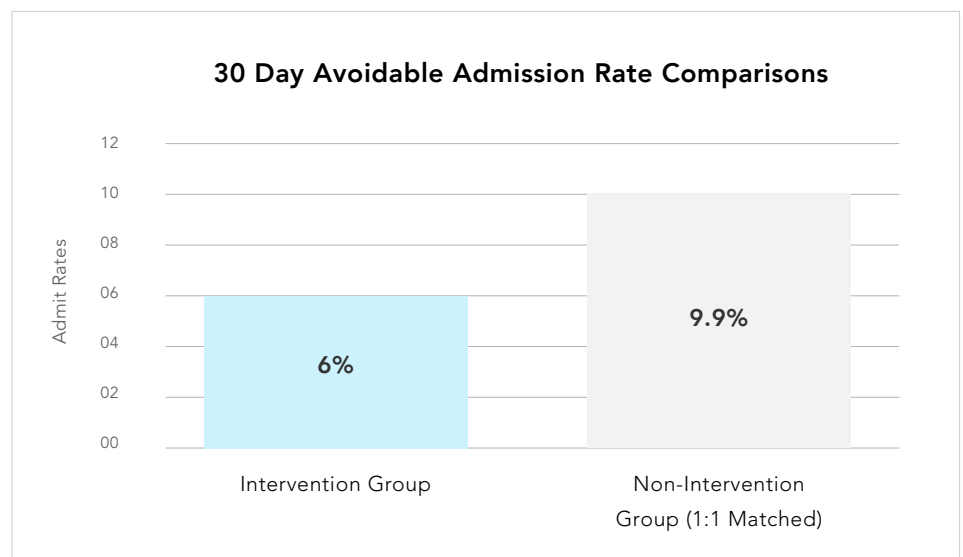
- Focus on medication compliance and access
- Activity of daily living review
- Optimize glucose control
- Explore barriers to care
- Review of symptoms: dizziness / fainting on standing

Results

To measure the ACO case manager's impact we compared outcomes for patients who received proactive interventions based on the Avoidable Admissions risk predictions ("intervention group") versus a control group matched on age, gender, and risk level) who were identified but did not receive an intervention. The average absolute rate reduction is the difference in the admit rate between the intervention and matched control group during the analysis time period between February 2022-July 2023. In the intervention group, we found:

- A 3.9% average reduction in the admission rate compared to the control group, representing over 130 admissions and nearly \$2 million in cost savings ¹.
- Increased staff productivity, with case managers saving an average of 41 hours per week (1 FTE) due to centralized documentation and streamlined workflows.
- Higher case manager satisfaction due to the ability to intervene with the right patients

Group	IP30 Admits	At Risk	Admit Rate	Absolute Rate Reduction	Relative Rate Reduction	Avoided Cases	Avoided Cost
Intervention Group	203	3,373	6.0%	3.9%	39%	130	\$1,911,000
1:1 Matched Non-Intervention Group	333	3,373	9.9%				
Everyone Else (Non-Matched Patients)	2,548	40,977	6.2%				



The ACO's case managers increased their utilization of the 30-day Avoidable Admissions patient list and associated recommendations from 15% to over 50% as their confidence and trust in the data grew. The VP of Clinical Operations at the ACO shared the feedback of one of her case managers, "At first I was skeptical of using an AI model to identify our highest-risk patients. But as I started doing outreach, I was amazed by how accurate the risk predictions and recommended actions were. The model helped me proactively address issues before they became emergencies, which made me feel like I was finally able to make a real difference for these patients."

The combination of prescriptive AI and streamlined workflows has enabled the ACO to focus their case management expertise and resources on precisely the right patients at the right time, improving outcomes and reducing costs for the ACO.

1. Source: <https://www.hcup-us.ahrq.gov/reports/statbriefs/sb262-Medicare-Advantage-Costs-2009-2017.jsp>

Latest Workflow Enhancements and Future State

In February, 2024, the ACO implemented additional elements of the Lightbeam platform; the Cohort Builder, and Care Management module to further enhance workflow efficiency.

The Cohort Builder enables the ACO to further risk stratify patients into manageable volumes for the PHCs. Meanwhile, the Care Management platform streamlines chart reviews and provides a single location for patient assignment and documentation for case managers, while providing management analysis of care team performance that would otherwise be spread across and duplicated on six EHRs.

Analytics Improve Efficiency for Operations & Measure Impact

Early feedback suggests the updated workflow has improved efficiency for operations management by replacing the manual task of aggregating claims and discharge lists from six disparate EHRs, and manually assigning patients to case managers. Now operations management creates risk-stratified cohorts in Lightbeam, with patient assignments automatically populating in the case managers' patient rosters.

It also enabled management to assess its case manager's impact. "One of the biggest benefits is the reporting--to be able to know how many patients our social workers are touching in a day. As a manager, I need to know is it enough and is it working," said the VP of Clinical Operations. "In the future, we'll be able to create care plans from best practices and standardize them across PHCs."