

USNWR Top 10 ranked cardiovascular provider improves same day discharge rate 400%, increases capacity to care for more patients.

Biome Analytics identifies opportunities to optimize PCI care pathway, safely lowering length of stay for patients while saving hospital bed days for the provider health system.

Challenge

Even though the health system had achieved high national rankings, clinical and administrative leadership knew further opportunities existed to improve cardiovascular service line performance. The list of core metrics to consider was long, including same day discharge rate, rapid extubation rate, OE mortality, readmission rate, amongst many others. The question before them was exactly where to focus next?

“Our biggest challenge was making decisions that allowed our cardiovascular service line to deliver better care, to more patients, without increasing costs.”

The client partnered with Biome Analytics, a leading provider of clinical performance solutions for enterprise heart centers and cardiovascular teams. Working with the service line executive director of heart and vascular, Biome helped surface meaningful clinical and financial opportunities and assisted in driving achievable improvement that included aligning CV teams around measurable performance goals.

Identifying opportunities

Biome started the client engagement by initiating a dive deep analysis of several years of clinical and financial data. Leveraging the Biome Opportunity Engine™ — a cardiovascular performance application with proprietary machine learning algorithms — Biome analyzed a large volume of enterprise system data to

> CHALLENGE

- Surface meaningful clinical and financial opportunities to drive achievable clinical and financial improvements.

> SOLUTION

- Biome Opportunity Engine™
- Biome Knowledge Network™
- Biome Analytic Engine™

> RESULTS

- Outpatient PCI patient’s same day discharge rate increased from 9% to 38%
- CVSL contribution margin improved by \$238,000
- Hospital bed days saved = 140
- Improved results were achieved in safety end points

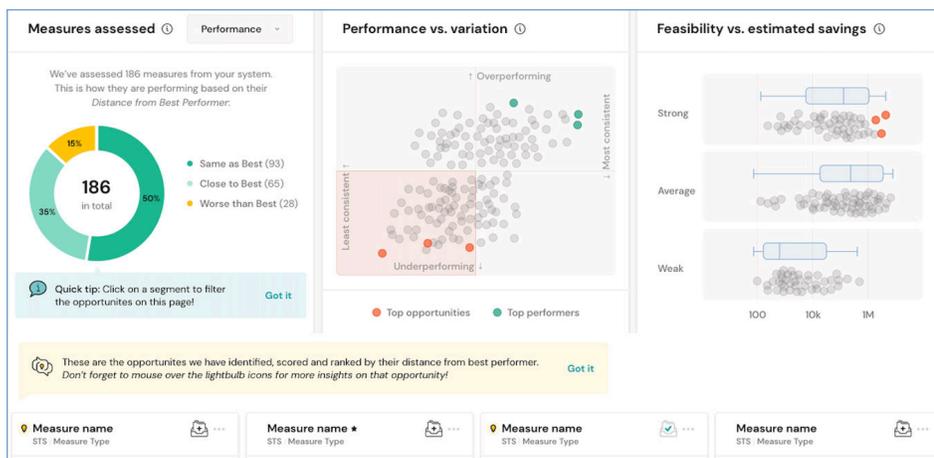


Figure 1: Biome Opportunity Engine – Same Day Discharge Score Card

identify and rank hundreds of clinical and financial improvement opportunities. Using this knowledge, the team quickly identified several significant areas for improvement, including an opportunity to lower length of stay for patients receiving percutaneous coronary interventions (PCI).

“Working with Biome has fundamentally changed how we look at our data.”

The results of this analysis enabled Biome to forecast annual savings of several hundred thousand dollars in direct costs to the service line while opening up to 100 hospital bed days, simply by shifting a percent of the health system’s elective outpatient

PCI cases from a length of stay of 1 to a same day discharge (length of stay of 0).

Biome’s Knowledge Network™ — a library that connects tens of thousands of clinical and financial measures, metadata, benchmarks, transform rules, decision trees and predictive algorithms into a proprietary ontology — was then used to assist the catheterization lab clinical leadership in creating a precise plan-of-action, including recommendations, insights and proven best practices to help the care teams focus on activities and care pathway modifications which would have the greatest impact on success. Areas of focus included:

Patient Distance from Hospital: The care team put in place the ability to

“Biome really helped us derive benefit from our cardiovascular data and use it in ways that we didn’t see were possible at the time. We couldn’t have done this without them.”

identify patient’s residence distance from the hospital, and then used this metric to help determine a patient’s ability to be discharged same day. This information was used for pre-procedure scheduling and for post procedure discharge optimization.

Time of Outpatient Elective Procedure: The care team put in place scheduling intelligence that helped to place low-risk outpatient, elective procedures between 7:00 AM and 12:00 PM.

Femoral vs. Radial Access: Using a shared knowledge strategy allowed practitioners with higher percentages of femoral access to share best practices with the clinical team. The shift in access site approach from femoral to radial in low-risk cases allows patients to ambulate quicker after their procedure and creates the potential for same day discharge.

“We’re leveraging our own data with Biome’s shared network of knowledge to improve the care we provide our patients while optimizing clinical and financial performance.”

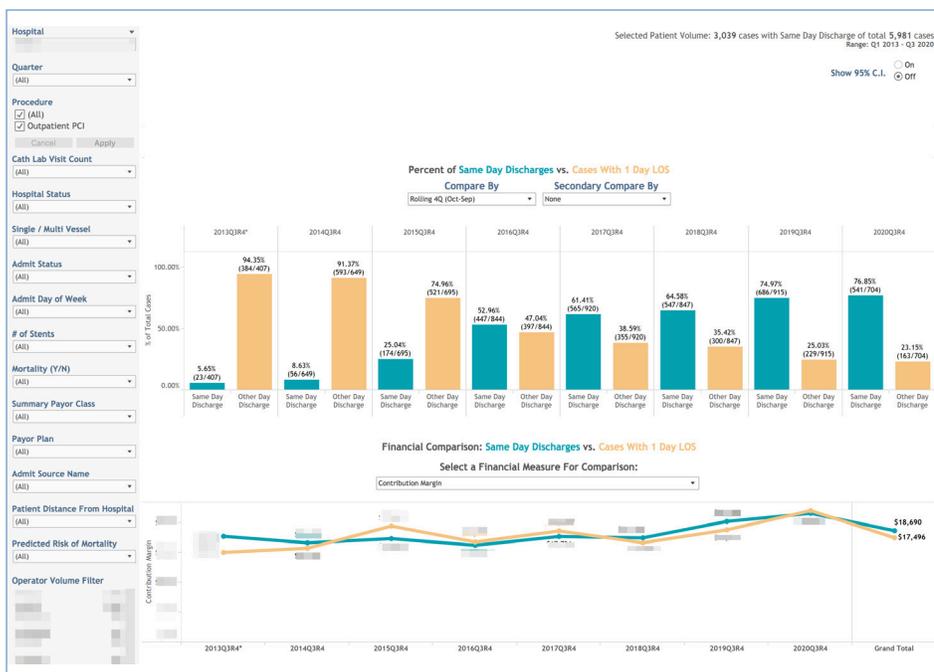


Figure 2: Biome Analytic Engine – Same Day Discharge Trend

Outpatient PCI same day discharge rate improves 400% over 1st 6 quarters

Within one quarter the interventional cardiology department began experiencing improvement. The results far exceeded expectations.

“We saw the shift in outpatient PCI performance almost immediately,” reported the executive director of heart and vascular. “The same day discharge rate started to climb, and this also had a positive and direct impact on the hospital’s bed capacity.”

Since implementing these improvements, the same day discharge rate for outpatient PCI has risen from 9% to 38%. The interventional cardiology department also contributed over \$238,000 in cost savings to the CVSL. Moreover, there remains significant opportunity for continued improvement with Biome’s Opportunity Engine forecasting an additional \$206,000 in new annual revenue.

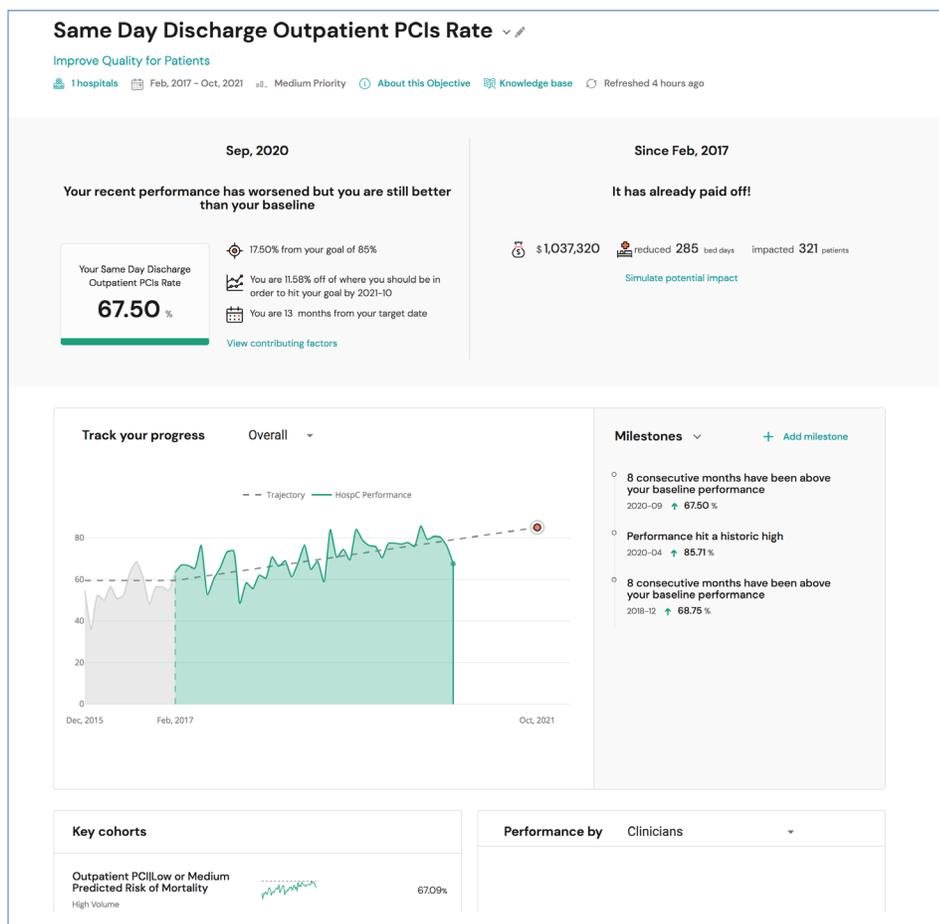


Figure 3: Biome Performance Manager – Same Day Discharge Trend

About Biome

Biome is the leading cardiovascular performance company dedicated to helping doctors and health systems deliver the best care, to the most patients, at the lowest cost. Biome partners with ambitious enterprise heart centers and cardiovascular teams looking to achieve superior clinical and financial performance.

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