

## Modernizing Stroke Management: Unlocking Cost and Quality Improvement with Biome's Enterprise Tool

### Introduction

Stroke is a leading cause of death and disability worldwide, with a significant impact on patients, families, and healthcare systems. In the United States alone, stroke accounts for one out of every twenty deaths, and the total costs related to stroke are projected to reach \$240 billion by 2030. Minorities and patients from rural areas are affected at disproportionate rates, highlighting the need for targeted and effective interventions to reduce healthcare disparities.

### Problem

Hospital Administrators are aware of the challenges associated with stroke care, including door-to-treatment times, patient outcomes, and the high costs of care.

### Solution

Biome Analytics, a performance improvement solutions company, has recently developed an innovative solution to address these challenges: the Biome Neurovascular Solution. This product merges readily available clinical stroke data endpoints and submits them to a national registry with internal direct cost accounting systems, allowing for the improvement of quality and quantification of costs.

The Biome Neurovascular Solution is an enterprise stroke management tool that drives decisions around both cost and quality improvement. The tool utilizes advanced AI software to reconcile clinical and administrative data, including data abstracted from multiple EHRs and financial systems. This allows for the capture of an extremely accurate picture of the baseline performance of each hospital within the system, adjusting for important differences like patient risk scores and comorbidities, and accounting for nuanced subcohorts defined by a wide range of demographic and clinical variables.

This solution provides the Neuro Service Line (NSL) an integrated cloud-based portal to view all metrics and is equipped with facility-based security so users can only see data for facilities they are associated with. It unifies all facility data in a single source and blends quality and financial data to provide insights on where cost savings can be achieved. By merging quality and financial data, the solution allows for a rapid ability to answer clinical questions and see how admit source, admit shift, NIHSS, and multiple other values impact your quality and cost metrics. This allows for the appropriate analysis of the impact of meeting AHA defined treatment goals on every measure, including cost and quality.

Users have the flexibility to include an exclusive case type assignment feature, which assures like-for-like comparison based on treatment. This feature allows users to compare the utilization of different treatment options, such as Isolated Stent Retrievers vs Stent Retriever + Thrombolytics and see how this impacts quality and cost.

### Implementation

The Biome Neurovascular Solution has been successfully implemented in a nationally leading healthcare system. The system's NSL leadership, in collaboration with the Biome Performance Improvement team, set ambitious but realistic goals for measures such as door-to-CT (DTC), door-to-needle (DTN), and door-to-thrombolytics (DTT). DTC and DTN times are a high priority as they have been shown to determine costs and outcomes, as well as the length of a hospital stay. Longer time to intervention also increases the likelihood that patients will have costlier hospital stays, and risk other complications.

The solution also includes a user-friendly resource library that allows hospitals to implement quality improvement (QI) projects, and access to services by

the Biome Performance Improvement Team without expending valuable resources on research and planning. Leadership has easy access to evidence-based solutions for acute stroke care, secondary prevention, and stroke rehabilitation. In addition, feedback from front-line workers can be integrated back into the platform to improve internal targets and goals and instill a culture of continuous improvement.

## Results

The solution implementation resulted in a significant improvement in door-to-treatment times and improved the value of care provided. The healthcare system was able to exceed the American Heart Association's guideline of sixty minutes or less for DTN, driving DTN down towards thirty minutes. This not only improves community health but also opens bed days and increases the value of care provided to patients overall.

## Conclusion

The Biome Neurovascular Solution is a unique, and innovative tool for hospitals looking to improve the quality of stroke care and reduce costs. By merging readily available clinical stroke data endpoints and internal direct cost accounting systems, the solution allows for the identification of opportunities for improvement and the quantification of costs. The resource library and real-time data review features also make it easy for hospitals to implement QI projects and instill a culture of continuous improvement.

As a hospital administrator, investing in the Biome Neurovascular Solution can help your institution meet the challenges associated with stroke care and improve the value of care for your patients. The Biome Analytics Performance Improvement team is committed to working closely with your team to help hit the ground running with these changes and ease the burden on healthcare professionals so they can focus on what they do best-taking care of patients.

## 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.

## Biome Analytics

1160 Battery Street East  
Suite 100  
San Francisco, CA 94111

[info@biome.io](mailto:info@biome.io)

+ 888 246 6330