

## FOSTERING RESILIENCY IN A DIFFICULT LANDSCAPE



“Fostering resilience in cardiovascular programs necessitates embracing advanced analytics and strategic partnerships”

Many of the nation’s top cardiovascular (CV) programs have started taking significant steps to increase their operational resiliency. Hospitals are still grappling with the many difficulties created by the COVID-19 pandemic and are increasingly concerned with preparing to navigate future public-health crises. Resilient hospitals are thoroughly prepared to deal with unexpected challenges while maintaining their core functions and continuing to provide high-quality care to their patients.

Recent developments in analytical technologies and performance improvement (PI) strategies have helped ambitious programs bolster their resiliency without draining already limited resources. Technology allows these programs to build a culture of preparedness, adaptability, and collaboration among clinicians, leadership, and stakeholders. It also creates a centralized source of dependable information that increases institutional alignment, protects against clinician turnover, and helps make cost-efficient care second nature. These measures are key for hospitals that hope to navigate future challenges and thrive in a difficult landscape.



For over 10 years, we’ve been partnering with ambitious cardiovascular centers who want to maximize clinical, financial, and operational performance across their CV service line.

Our mission is to provide health systems with leading solutions that enable robust performance improvement projects and optimize the value of care delivered.

### **Stuart Jacobson**

Chief Executive Officer  
Biome Analytics

## THE CHALLENGES AHEAD

Several factors threaten to destabilize the American healthcare system. A recent study estimated that there is a 38% chance of another pandemic on the scale of COVID-19 taking place during the next two decades.<sup>1</sup> There are other worrying events on the horizon: Medicare insolvency seems increasingly likely,<sup>2</sup> the growing elderly population will put additional pressure on already strained services,<sup>3</sup> and hospitals will face increasing difficulty recruiting and retaining qualified clinicians.<sup>4</sup> By 2025, the United States could see a deficit of up to 450,000 registered nurses available for direct patient care.<sup>5</sup>

A recent analysis by the U.S. Centers for Medicare & Medicaid Services emphasized the importance of proactive crisis preparation on the part of hospitals, underscoring that such readiness should take precedence before the next public health emergency.<sup>6</sup> This is particularly important for CV programs, which are responsible for a growing patient population with complex diseases and increased risk of morbidity and mortality. Delays in the treatment of this population are unacceptable, even during times of instability or crisis. Finally, despite modest improvements, unnecessary variation and waste are persistent problems in CV care. Hospitals that increase the resiliency of their CV programs are likely to see significant institutional improvement across a wide range of important measures.<sup>7</sup>

## CONCRETE STEPS FOR AMBITIOUS PROGRAMS

The nation's leading CV centers are taking creative steps to prepare themselves for the challenges ahead. First, they are using national and local data to project capacity capabilities under different situations and to identify flaws in work processes and resource distribution that could lead to disruptions in operational continuity. Second, they are using new analytic and PI strategies to help foster a workplace culture of adaptability and resiliency, preparing employees to work effectively under emergency conditions. Finally, these hospitals are building repositories of reliable information about clinical performance and best-practices, increasing alignment, and making collaboration easier, while also protecting themselves against employee turnover.

All three of these aims require hospitals to have a strong basis in advanced data analytics. Most institutions in the U.S. are already collecting more data than they can efficiently “analyze”—that is, quickly convert data into useful information about how to improve care and reduce operational costs. In addition, reports are often too delayed, cannot elucidate root cause accurately enough, and lack financial perspective. In a recent survey, more than one-third of hospital stakeholders cited inaccessible information, including disorganized electronic health records (EHRs) and subpar analytics as areas of pressing concern for their institutions.<sup>8</sup> These gaps make it all but impossible to conduct accurate capacity planning, build a central repository of reliable information, or foster a culture of preparedness and continuous improvement.

But many leading CV programs have adopted new technology, including artificial intelligence (AI) that—in the hands of experienced PI experts—absorbs masses of data and efficiently produces accurate and actionable conclusions, thus creating a solid basis for cultivating lasting resiliency.

## LEVERAGING EXPERIENCED PARTNERS

Many prominent cardiovascular centers are using experienced partners to help them create this essential groundwork. These partnerships have clear advantages: Internal IT teams already have key operational duties, the hiring pool of qualified healthcare analysts is small,<sup>9</sup> and the time and resources needed to build working analytics and PI systems are prohibitive for many institutions.<sup>11</sup>

Amid the backdrop of the COVID-19 pandemic, Biome Analytics emerged as a valuable ally for leading CV programs, assisting them in designing effective patient triage systems and developing strategies for prioritizing elective procedures. Biome has over a decade of experience working closely with both clinicians and leadership to address preventable medical errors, improve clinical outcomes, reduce the cost of care, and cultivate resiliency. With this experience in hand, our performance improvement team is well-equipped to guide hospitals as they prepare themselves for public emergencies and patient overflow situations. This expertise extends to capacity planning and helping healthcare systems increase the number of patients they can safely treat under normal operating conditions.

More importantly, Biome's data solution also allows CV programs to create the kind of cultural change that is the cornerstone of enduring resiliency. Our performance improvement team works tirelessly to ensure that data analysis and PI planning are conducted primarily for the benefit of patients and care teams rather than in the service of abstract performance measures. Research has found that clinicians are more likely to trust their institution when they see that it is geared toward genuine improvement.<sup>11</sup> This institutional alignment, in turn, helps create a collaborative, quality-oriented workplace that thrives even during emergency situations. Finally, Biome provides a centralized source of reliable, up-to-date information about current performance, best practices, and PI strategies, streamlining work processes and protecting against turnover.

The recent pandemic shone a light on a variety of vulnerabilities in the American healthcare system. Ambitious CV programs will use this information to prepare themselves for the next emergency while also driving improvements in care quality. Biome can help make this happen.

## ABOUT BIOME

For over a decade, clients have relied on Biome's proprietary machine learning, human-enabled technology, and community-driven knowledge network to activate their data assets, engage physicians, and accelerate performance improvement. The UCSF Digital Health awards recently recognized Biome as a "Top 10 Best Patient Cost Savings" solution.

1. Marani M, Katul GG, Pan WK, Parolari AJ. Intensity and frequency of extreme novel epidemics. *Proceedings of the National Academy of Sciences*. 2021;118(35):e2105482118. doi:10.1073/pnas.2105482118
2. Medicare Is Not “Bankrupt” |Center on Budget and Policy Priorities. Published August 4, 2014. Accessed September 27, 2023. <https://www.cbpp.org/research/health/medicare-is-not-bankrupt>
3. The Growing Cost of Aging in America Part I: An Aging Population and Rising Health Care Costs. GW-UMT. Published April 6, 2018. Accessed September 27, 2023. <https://onlinepublichealth.gwu.edu/resources/cost-of-aging-healthcare/>
4. AAMC Report Reinforces Mounting Physician Shortage. AAMC (American Academy of Medical Colleges). Accessed September 27, 2023. <https://www.aamc.org/news/press-releases/aamc-report-reinforces-mounting-physician-shortage>
5. Assessing the lingering impact of COVID-19 on the nursing workforce | McKinsey. Accessed September 27, 2023. <https://www.mckinsey.com/industries/healthcare/our-insights/assessing-the-lingering-impact-of-covid-19-on-the-nursing-workforce>
6. Blackstock SC, Moody-Williams JD, Fleisher LA. Learnings Regarding Emergency Preparedness During the Public Health Emergency: A Mixed-Methods Study of Hospitals and Long-Term Care Facilities. *Catalyst non-issue content*. 2022;3(4). doi:10.1056/CAT.22.0152
7. Bradley SM, Adusumalli S, et al. The Cardiovascular Quality Improvement and Care Innovation Consortium. *Circulation: Cardiovascular Quality and Outcomes*. 2021;14(1):e006753. doi:10.1161/CIRCOUTCOMES.120.006753
8. ZS’s 2020 state of AI in Life Sciences. Accessed September 29, 2023. <https://www.zs.com/insights/zs-2020-state-of-ai-in-life-sciences>
9. Meyer MA. Healthcare data scientist qualifications, skills, and job focus: a content analysis of job postings. *J Am Med Inform Assoc*. 2019;26(5):383-391. doi:10.1093/jamia/ocy181
10. Flyvbjerg B, Budzier A. Why Your IT Project May Be Riskier than You Think. *Harvard Business Review*. 2011;89:23-25. doi:10.2139/ssrn.2229735
11. Linzer M, Poplau S, Prasad K, et al. Characteristics of Health Care Organizations Associated With Clinician Trust: Results From the Healthy Work Place Study. *JAMA Network Open*. 2019;2(6):e196201. doi:10.1001/jamanetworkopen.2019.6201
12. Linzer M, Neprash H, Brown R, et al. Where Trust Flourishes: Perceptions of Clinicians Who Trust Their Organizations and Are Trusted by Their Patients. *Ann Fam Med*. 2021;19(6):521-526. doi:10.1370/afm.2732