

CARDIOVASCULAR EXCELLENCE: THE INSTITUTE MODEL'S PATH TO COMPREHENSIVE CARE



INTRODUCTION

Delivering patient-centered care has long been a goal that health systems across the world have been working diligently to achieve. Patient-centered care encourages shared-decision making between patients, families, and providers to design a comprehensive care plan and is focused on ensuring that health systems missions are aligned to patient-centered goals (NEJM Catalyst, 2017). Realizing patient-centered care is challenging, especially in an ever-increasingly complex healthcare landscape. In an effort to transform patient-centered care from more than just a buzzword to a model for care delivery, health systems over the past several decades have implemented the institute model in cardiovascular centers across the country.

Cardiovascular (CV) institutes first emerged in the 1970s and have transformed how care is delivered over the past 50 years. Since that time, many well defined cardiovascular institutes across the country have emerged. Healthcare systems are leveraging institute models to deliver high-value, patient centered care. But how do systems implement patient-centered care and transform the institute model from just a concept to a proven method of offering patients best-in-class care? This white paper outlines some of the key benefits and barriers to implementation of an institute model and outlines critical elements that systems must address to be successful on this journey.

AT A GLANCE

Health systems across the country are adopting institute models to deliver high-value care. These heart institutes, with the support of leading industry partners, are defining the future of patient-centered care.



For over 10 years, Biome has been partnering with ambitious cardiovascular centers who want to maximize clinical, financial, and operational performance across the service line.

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

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CARDIOVASCULAR DISEASE

Cardiovascular disease in the United States (US) is the leading cause of death and costs the about \$240 billion each year (Centers for Disease Control and Prevention, 2023). Over the next decade more than 130 million adults, about 45% of the US population, are projected to have some form of cardiovascular disease. With increased disease burden, costs are expected to reach \$1.1 trillion in 2035 (American Heart Association, 2019). Comorbid conditions are also on the rise and are extremely common in patients with cardiovascular disease, even in younger age cohorts (Buddeke, et al., 2019). To offer optimal treatment options, control costs, and maintain a high-level of patient satisfaction, organizations must be willing to adapt new ways to deliver care. The institute model is one approach that healthcare systems are adopting to address these challenges in an ever-increasingly complex environment.

THE INSTITUTE MODEL: A CONCEPTUAL OVERVIEW

A Cardiovascular Institute Model is a structure that provides centralized and integrated services related to cardiovascular health under a unified entity. The key concepts behind this model are rooted in a multidisciplinary approach to treat cardiovascular diseases, bringing together specialties such as cardiology, cardiovascular surgery, vascular surgery, and other related disciplines.

The development of the specialties of cardiology and cardiac surgery proliferated in the 1950s and 1960s with the advent of procedures such as coronary arteriography and coronary bypass surgery. These developments created the impetus for specialized care units, such as the coronary care units (CCU). During this period, heart institutes began to appear in major cities across the United States and abroad. Initially, cardiovascular institutes primarily concentrated on coronary disease. Yet, over the last five decades, these institutes have expanded to include diverse specialties, treatment approaches, and conditions, encompassing electrophysiology, heart failure, clinical research, and vascular disease (Waters, 2014).

BENEFITS OF THE INSTITUTE MODEL FOR CV SERVICES

Why have so many systems moved towards institute models for cardiovascular care delivery? The benefits are far-reaching and include enhanced patient and provider experience, decreased care variation, reduced costs, and improved access to care.

To fully grasp the advantages of an institute model, examine the conventional care delivery system and observe how it's profoundly improved by a cohesive approach. The institute model truly enables a patient-centric method of care delivery. For example, consider a patient who is followed by cardiology for coronary disease and is subsequently found to have peripheral vascular disease (PVD) as well. In the conventional care model, a patient referred to vascular surgery might need to visit an entirely different location to get treatment. Beyond geographic location differences— care modalities and medical records are often on disparate platforms between specialties. The lack of integration between location, services, and even medical records – leads to an overall decrease in patient experience.

In addition, communication between providers is often impaired with records and diagnostic testing being inaccessible between specialties. Furthermore, for conditions such as PVD with multiple treatment options that span multiple specialties, choosing the optimal treatment can be extremely difficult. Institute models transform patient experience by not only often offering geographic integration between specialties, but unified EMRs and in some cases, even multidisciplinary clinics. At certain heart institutes, clinics are tailored for specific diseases, enabling patients to undergo multi-specialty consultations, tests, and engage in discussions with providers all in one centralized location. Enhanced patient experience is one of the primary drivers for an institute model, but the benefits do not end there.

Integrated care delivery between specialties from diagnosis to treatment, often leads to standardization and best practices, which helps to promote shared learning and enforce the highest standards of care across the CV continuum. Additionally, the institute model provides an optimal environment for fostering clinical research. The large volume of patients centered in a single entity encourages research and the development of innovative treatments.

Finally, resource optimization and efficiency are a huge benefit of institute models. Pooling of resources across disciplines allows healthcare systems to concentrate both human and capital resources in one place, fostering more cost-effective care. In traditional models, inefficiencies and variance between specialties can often lead to increased costs for cardiovascular services. For instance, within a prominent academic healthcare setting, even though cardiology and vascular specialties conducted identical diagnostic tests, they used two distinct imaging platforms without any system compatibility. This disconnection created delays in patient care, as cardiologists couldn't view vascular studies from the vascular-preferred platform and vice versa. Such barriers resulted in provider dissatisfaction and negatively impacted patient satisfaction. When implementing the institute model, the healthcare system identified this disparity and worked with both teams to choose a single platform for imaging. Not only were significant costs saved, more than \$200,000 annually, but substantial improvements in both patient and clinician satisfaction were achieved.

SUCCESSFUL IMPLEMENTATION

Implementing an institute model requires a significant investment in both time and resources. A robust and well-established leadership structure is critical to the development and success of an integrated model. Ensuring that infrastructure, equipment, and facilities meet the needs of the patients and providers is critical to providing cross-disciplinary care and maintaining high-levels of patient satisfaction. Developing protocols and policies that span multidisciplinary access points in the institute is critical, and of course, appropriate investment in education and training for medical staff and the community is paramount. Interdisciplinary collaboration is also essential. Collaboration between cardiologists, surgeons, therapists, nurses, administrators, medical professionals, and patients is core to a successful model.

A crucial aspect of successfully adopting an institute model is the oversight and analysis of data spanning quality, cost, and operational measures across various specialties. Data analytic systems in healthcare have been shown to help to improve quality of care and patient outcomes. The idea of leveraging 'big data' in healthcare is central to becoming a learning-healthcare system (Rumsfeld, Joynt, & Maddox, 2016). Learning-healthcare systems continually assess data, adapting practices accordingly. Essentially, these systems are never content with just maintaining the current standard and consistently strive to surpass patient expectations. Maintaining a standardized format to review data across CV services in a unified application, which serves as a "source of truth", is critical to leveraging data to drive performance.

The most successful CV institutes leverage performance improvement insights to continuously manage and measure clinical care provided across CV procedures and specialties. In addition, to measuring this clinical care, it is critical to measure cost in the context of clinical data. Consider PCI direct costs for example, examining direct cost by provider may be misleading if important variables such as predicted risk, number of stents utilized, and procedure type aren't considered. Analyzing the data in a manner that contextualizes clinical factors is critical to ensuring a meaningful cost analysis and measuring the success of care provided.

POTENTIAL BARRIERS TO ADOPTION

As with all major changes in care delivery, there are several potential challenges to consider when implementing an institute model. First, resource constraints. Implementation can be costly and require a significant amount of time and resources. While the implementation process demands significant time and resources, it's vital to see this initial outlay as activation energy. With this investment made, the potential for substantial returns downstream becomes clear. Considering solutions like partnerships, grants, and fundraising are critical to combat resource constraints. Resistance to change is another significant potential barrier to implementation. Leveraging other leading centers' experience in implementing an institute model can be helpful in minimizing resistance to change. Reviewing success stories, especially framed as improvement in care, patient and provider satisfaction, and enhanced access to care are immensely helpful in reducing anxieties about change.

Technology integration can also present challenges if not addressed early in the process. Ensuring seamless integration of new and existing technologies will be integral to streamlining care and maximizing efficiencies. It is important to consider the bandwidth constraints of the internal teams and potentially outsource technology or tools where appropriate.

BIOME AS A STRATEGIC PARTNER

Biome partners daily with some of the leading cardiovascular institutes across the country. Systems that are part of the Biome Performance Network leverage leading evidenced-based practices, procedures, and protocols to maximize efficiency and optimize clinical outcomes at their institutions. Biome helps CV institutes reach their maximum potential through a variety of methods including:

- Advanced Benchmarking: leveraging Biome's extensive benchmarking capabilities allows healthcare systems to understand care delivery and create goals based on institution specific factors. Benchmarking is available at the system level, but also at the patient and procedure cohort level creating the ability to benchmark across various profiles.
- Maximizing Time-to-Value: home-grown solutions can take years to implement and are costly to maintain. Biome offers a solution that is ready to implement in a matter of weeks, drastically decreasing the time and resources required to build and maintain a robust performance improvement platform.
- Providing Cost-Effective Insights: Biome goes beyond dashboards to offer performance improvement insights for less than the cost of a full-time employee, backed by top-tier Quality Improvement (QI) resources. We harness AI and NLP to offer best-in-class performance improvement solutions.
- Maximizing and Streamlining Resources: resources within healthcare systems are often bandwidth constrained given a multitude of competing priorities and projects. Biome's team of experts can offset this workload and function as a force multiplier.
- Creating a Common Source of Truth Across CV Disciplines: creating a CV institute requires a unified source of truth across specialties. Biome has a decade of experience creating robust insights across cardiovascular services and creating a trusted source of truth for healthcare leaders.
- Leveraging a Library of Insights: marrying clinical, operational, and financial data and creating context specific insights is crucial to measuring success in healthcare systems. Biome's suite of products is equipped with state-of-the-art dimensions and cohort capabilities that allow for meaningful analyses across domain-specific outcomes.

- Harnessing the Power of Advanced Technologies: a unified source of truth, on a common platform, is a hallmark of successful integrated care delivery systems. Gone are the days of having multiple excel documents, PDFs, and sifting through files to understand system performance. Biome's inventory of data insights is conveniently housed on a unified platform offering a streamlined user experience and access to the insight's healthcare leaders need within one tool.
- Leveraging Best Practices from Premier CV Institutes: With Biome, there's no need to start from square one. Gain insights from the nation's standout CV programs and exchange proven strategies with respected peers. Biome cultivates collective knowledge from various centers, integrating these findings into its products to establish a collaborative learning network.
- Supporting Research Initiatives: In addition to helping systems measure and analyze their performance data, Biome supports research initiatives through creating a central repository of data for the use of academic and quality improvement studies.
- Timely Data Driven Decision Making: Leading CV programs are leveraging data insights daily to drive decision-making at their organizations. Current data feeds often lag by months, if not years. Biome changes the paradigm allowing for smooth transfer of data with rapid proliferation of the Biome Performance Network, decreasing the time for data availability from months to days.

CONCLUSION

Health systems across the country are adopting institute models to deliver high-value care. These heart institutes, with the support of leading industry partners, are defining the future of patient-centered care. Biome Analytics is the ideal partner to healthcare systems on the journey to institute model implementation. As an experienced CV partner with a history of success, Biome's team of experts can accelerate the journey to integrated care, allowing healthcare teams to focus on delivering the best patient care, to the most patients, at the lowest cost- that's our mission.

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