

Breaking Barriers: Bringing Advanced Cardiac Care to Rural Communities

Brad Serwer, MD, Interventional Cardiologist, CMO, VitalSolution; Amy Newell, Senior Vice President, Corazon; Mike Church, Business Consultant, Corazon

Cardiovascular disease remains a leading cause of death in the United States, and rural populations often face delayed diagnosis and limited access to timely interventions, leading to higher rates of morbidity and mortality compared to urban populations. Establishing emergency cardiac services with a cardiac cath lab in geographically underserved areas can dramatically reduce morbidity and mortality, improve quality of life, and elevate the standard of care. Starting a cath lab in a rural, medically underserved community is not just a healthcare initiative — it's a life-saving mission. Several states even have specific considerations for approving these services based on remote locations or medically underserved populations. However, it requires careful planning, collaboration, and strategic investment.

The first step in the cath lab journey is to assess the need by completing a thorough market analysis and business plan to determine the prevalence of cardiovascular disease, current access gaps, and patient volume projections. It is vital to communicate with local hospital administration, primary care clinics, EMS services, referring hospitals, and community representatives to ascertain these key variables:

- Population of the community and the catchment zone of patients
- Emergency department (ED) volume
- Volume of patients with chest pain seen in the ED
- Number of referring primary care providers
- Existing transport and referral patterns
- Current utilization rates for cardiac cath and interventional services
- Closest cardiothoracic surgical center

This foundational data will support the investment case and guide planning decisions, as well as determine how many interventional cardiologists will be required to support the program.

Building Strategic Relationships

Once it is determined that the community can support an interventional cardiology program, the next step is to secure strategic partnerships to make the program a reality. In a resource-limited environment, collaboration is essential. Seek partnerships with:

- Regional hospitals or health systems for clinical oversight, mentorship, and staff training.
- Strategic solutions organizations that can assist with planning and establishing the service, including ensuring that all necessary protocols, processes, procedures, and other documentation are in place.
- Legal counsel, if needed, to seek necessary state approvals based on local regulations or licensing requirements.
- Organizations that can provide highly skilled nurses, technologists, and interventional cardiologists to operate the program.
- Academic medical centers to provide rotating specialists or tele-cardiology support.
- Community stakeholders and local government for advocacy and funding.
- EMS providers to establish protocols for rapid cardiac care referrals.

Financial Planning & Sustainability

Opening a cath lab involves significant start-up and operating costs, ranging from \$2 to \$5 million upfront. A robust financial plan is imperative, as this service should provide a positive net impact for any organization, though the initial investment can be significant.

- **Capital Funding Sources:** U.S. Department of Agriculture (USDA) rural healthcare grants, Health Resources and Services Administration (HRSA) funds, state rural health initiatives, hospital revenue bonds, and philanthropic support.

Brad Serwer, MD, is a CMO at VitalSolution, a physician-led organization dedicated to providing tailored critical care service lines to hospitals across the country since 2011. Focused on enhancing healthcare in rural and under-resourced areas, it brings vital and specialized interventional cardiology and anesthesiology services to communities nationwide. To learn more, visit www.vitalsolution.com or call 866-456-3228. To reach Dr. Serwer, email brad.serwer@vitalsolution.com.



Michael Church is a Business Consultant at Corazon. To reach Mike, email mike.church@corazoninc.com.



Amy Newell is a Senior Vice President at Corazon. To reach Amy, email amy.newell@corazoninc.com.



Corazon offers program development for the Heart, Vascular, Neuroscience, Spine, Orthopedic, and Surgical specialties, with services in Consulting, Accreditation, Peer Review, Recruitment, and Interim Management. To learn more, visit corazoninc.com or call (412) 364-8200.

Continue reading
Serwer et al online with
this direct link:



- **Reimbursement Strategies:** Ensure Medicare and Medicaid certification, explore value-based care models, and develop efficient billing practices for diagnostic and interventional cardiology services.
- **Revenue Forecasting:** Estimate procedure volumes (diagnostic vs. interventional), expected payer mix, and break-even timelines.
- **Additional Procedures:** Consider the other procedures which may be performed in the cath lab (e.g., peripheral vascular interventions, electrophysiology procedures, interventional radiology, thrombectomy, etc.) and their impact on revenue.

Once funding is secured, the next step is to design and equip the lab. A rural cath lab does not need to mimic those in urban centers, but it must meet clinical, safety, and regulatory standards. Focus on:

- **Space Allocation:** Consider adjacencies to critical areas, such as the ED

or other interventional services (e.g., interventional radiology), as well as accessibility for elective patients. A lead-lined procedure room, control room, pre-/post-procedure recovery area, and sterilization facilities are required.

- **Capacity for Growth:** Consider volume projections and population growth determined through the business plan. How quickly might the program need to expand? Allocate space with long-term plans in mind whenever possible.
- **Equipment Procurement:** Imaging systems (e.g., fluoroscopy), hemodynamic monitoring tools, crash carts, radiation shielding, and cath-specific tools like balloons, stents, and guide-wires. Choose equipment that balances cost with durability and ease of use in low-volume settings.
- **IT Integration:** Ensure EMR connectivity, PACS for imaging, and interoperability with referral centers.

Staffing & Operational Readiness

While the lab is under construction, hiring staff is the next step to help establish key protocols, ensure updated training plans, and prepare to care for the first patient. Rural communities can face unique challenges with respect to recruiting new team members, so unique solutions should be considered as well. A successful cath lab hinges on experienced and well-trained personnel, including:

- Interventional cardiologist(s) can provide coverage in various models. Part-time and shared coverage models can ease the financial burden of maintaining multiple physicians for a program. Locum tenens can fill critical gaps in coverage. Organizations like VitalSolution offer unique physician coverage solutions as an alternative to long-term locum tenens with rotating models.
- Cath lab nurses and technologists, which may be enhanced with contracted team members or education for existing team members.
- Advanced trained nursing staff for pre- and post-procedure management.
- Support staff trained in sterile technique

and emergency response.

- Cath lab manager responsible for daily operations as well as monitoring quality and financial performance.
- Cardiovascular service line administrator may be necessary once the program develops to a certain point, but is not always required for lower volume programs.
- Some states also require third-party oversight through an accreditation process (sometimes called verification, certification, or attestation). Even where not required, accreditation provides invaluable resources, particularly for lower-volume programs or organizations that may not be part of a larger

for Cardiovascular Angiography and Interventions (SCAI), which regularly provide guidance related to interventional cardiology practices and can ensure the accrediting body maintains high standards.

- Realistic and applicable standards which focus on the care of the patient versus data collection, such as ensuring the presence of transfer protocols, post-procedure monitoring plans, community-based cardiac rehab and education plans, and more.

Rural communities are built on collaboration, and healthcare services should be no different. Through these action steps, themes of collaboration emerge — among providers, patients, ad-

A rural cardiac cath lab does not need to be a full-service program, and should have a clear identity in mind when being built.

health system, related to quality. Critical considerations for accreditation include accountability concerning performance, preferably in a proactive manner, which supports immediate corrective action or prevents negative outcomes before a trend develops. Organizations often turn to experienced partners like Corazon for guidance through this process, benefiting from structured support and industry-specific insights.

- Understanding the impact of negative outcomes on program and organization perception in the community. This is particularly important for low-volume and rural programs where these services are essential to expand access to care, and where a single negative event can have a significant impact on quality scores or publicly-reported information.
- Compliance with state, county, or EMS regulations regarding facility licensing and cardiac intervention capabilities.
- Endorsement of the accreditation by clinical societies, such as the Society

ministrators, families, accrediting organizations, clinical societies, and sometimes even competing providers. Having this type of collaboration ensures there is a clear escalation plan for more advanced disease or critically ill patients, which builds safety and confidence not only within the community, but within the organization offering the service, with EMS providers in the region, and even with other healthcare providers. A rural cardiac cath lab does not need to be a full-service program, and should have a clear identity in mind when being built. An established scope of services will help to ensure a high-quality program and a strong reputation in all respects, while improving utilization.

Once trust and reputation are established, ensuring a quality program is equally important. This should review any “outliers” or patient outcomes that may not meet the standard of care, as well as provide guidelines so that patient safety remains first and foremost. Regular quality reviews will help to refine operations and ensure long-term viability.

Establishing a quality program involves a multidisciplinary approach to care that should

include the primary physician provider(s), front-line emergency department staff, triaging physician, first responders, EMS and clinicians, cardiac cath lab staff, post-care unit staff, hospitalists, data abstractors, and quality department leadership.

Continuous Improvement Through Data

Through a multi-disciplinary approach, a quality committee/charter is established, including the membership as listed above. This committee/charter is tasked with developing and defining the goals of the charter, as well as specific clinical and operational metrics. Examples of these goals/metrics can include the following:

- Door-to-electrocardiogram (ECG) benchmarks, as defined by governing societies
- Door-to-balloon (reperfusion) times as defined by governing societies
- Monitoring major adverse events, such as bleeding, stroke, acute kidney injury, and death
- Incidence of patients in need of transfer for a higher level of care (transfer to the tertiary)

The development of the above, as well as other key metrics, is critical to ensure patient safety. Participation in a national or societal outcomes registry is highly recommended, particularly in rural markets. In fact, in many states where cardiovascular services are regulated, registry participation is mandatory. This participation supports the monitoring of numerous clinical and outcome metrics and benchmarking against other registry participants.

Although participation in a national registry provides value, more important is what a program does with this information. Through the quality committee, these outcomes are reported, discussed, and acted upon if a metric is below the benchmark. The quality committee builds action plans to ensure improvements are made through additional or revised processes, improved patient optimization, education to team members, or other actions as required by the specific metric under review. These action plans are built to be measured and monitored to ensure improvement.

For example, the current national benchmark for door-to-balloon (D2B) time for ST-elevation myocardial infarction (STEMI) patients is 90 minutes. However, if a program knows that patients do not always meet this benchmark, there may not be enough granularity to address the issue. Within these 90 minutes, more detailed increments of time should be measured:

- Patient arrival time to the emergency department
- Patient being triaged, and a 12-lead ECG is performed
- Patient being identified as a “STEMI”
- Emergency department physician communicating directly with the interventional cardiologist to discuss the patient’s presentation and need for immediate treatment
- Decision to treat and activate the cardiac catheterization laboratory (CCL) staff
- CCL and interventional cardiologist response time (off hours)
- Patient arrival in the cath lab
- Arrival in the cath lab to procedure initiation

The quality committee must be able to dissect the process from arrival in the emergency department (or inpatient unit) to the reperfusion time to understand where the delay occurred. Further, the quality committee should be empowered to ensure the above detail is monitored for adequate reporting and analysis, or to enact changes if needed. An action plan would then be developed, measured, and discussed to ensure progress is made and additional course corrections can be implemented as needed.

Final Thoughts

Building a cardiac cath lab in a rural, underserved area is a bold and necessary step toward health equity. While the logistical, financial, and regulatory barriers are real, they are not insurmountable. With a well-structured plan, committed leadership, and community collaboration, this initiative can become a regional beacon of lifesaving care and innovation. ■