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# SCALING EXCELLENCE

## A PRACTICAL GUIDE TO BUILDING AND GROWING A CARDIAC PET/CT PROGRAM

**OCTOBER 2025**


CV BUSINESS WHITE PAPER

With Support From: CDL NUCLEAR TECHNOLOGIES


**"ADVANCED IMAGING ISN'T JUST THE FUTURE OF CARDIOVASCULAR CARE – IT'S THE PRESENT.**
*Practices that embrace cardiac PET/CT today will shape the standards of excellence for tomorrow."*

# INTRODUCTION

Cardiovascular imaging is advancing toward technologies that offer better diagnostic accuracy, improved efficiency and enhanced patient-centered care. Cardiac positron emission tomography (PET) has become the gold standard for noninvasive myocardial perfusion imaging due to its superior sensitivity and specificity compared to single-photon emission computed tomography (SPECT).[1] Cardiac PET/computed tomography (CT) addresses the need for improved outcomes and resource optimization by quantifying myocardial blood flow and aiding personalized treatment.[2]

Despite these clear advantages, barriers such as cost, infrastructure and staffing often delay the adoption of cardiac PET/CT. By providing tailored PET/CT solutions, CDL Nuclear Technologies helps overcome these barriers and enables more organizations to unlock the modality's transformative potential. This CV business white paper serves as a practical guide for cardiovascular leaders on establishing and expanding a successful cardiac PET/CT program. Grounded in real-world experience, this guide highlights the clinical benefits, operational strategies, patient safety considerations and financial implications of cardiac PET/CT, equipping organizations to elevate their cardiovascular imaging services and patient care.

# WHY CARDIAC PET/CT? THE CLINICAL, OPERATIONAL AND FINANCIAL IMPERATIVE

## Clinical Advantages

As the gold standard for noninvasive myocardial perfusion imaging (MPI), cardiac PET outperforms SPECT and stress echocardiography with higher sensitivity and specificity in detecting obstructive coronary artery disease (CAD), leading to earlier detection and more targeted interventions.[3] A key advantage of cardiac PET is its ability to quantify myocardial blood flow (MBF) and coronary flow reserve (CFR), which helps identify multivessel or microvascular disease often missed by SPECT's relative assessments, including "balanced ischemia."[4] Furthermore, cardiac PET minimizes nondiagnostic and equivocal results, which can be as high as 20 to 30% with SPECT, thereby increasing clinical confidence and reducing the need for repeat or invasive testing **(Table 1)**.[5]

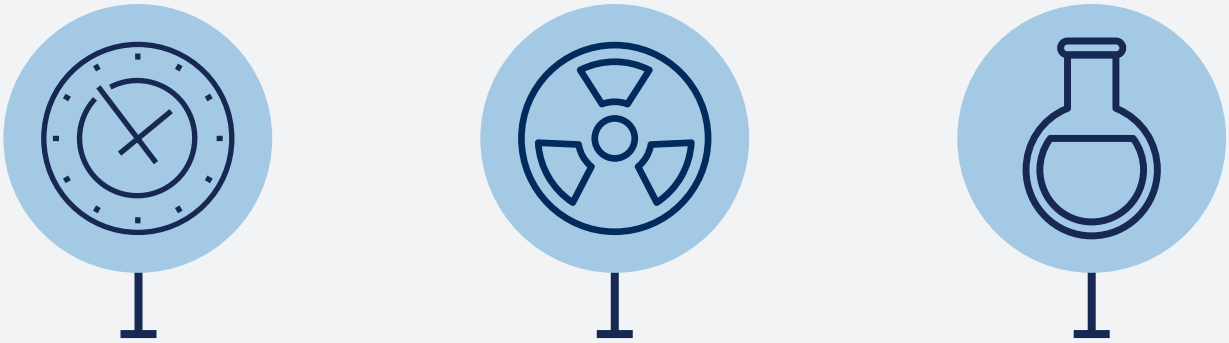
**Table 1: Impact of PET vs. SPECT on Nondiagnostic and Equivocal Results**

| Feature | PET | SPECT |
|---|---|---|
| Sensitivity | 90-95% | 70-85% |
| Specificity | 85-90% | 65-80% |
| Radiation Dose | 3-4 mSv | 8-12 mSv |
| Scan Time | 30-45 min | 2-4 hours |
| Diagnostic Confidence | High | Moderate |

## Operational Challenges

Efficiency is increasingly critical in today's cardiovascular service lines, and cardiac PET imaging supports operational excellence on multiple fronts **(Figure 1).**

**Figure 1: Why Cardiac PET Outperforms SPECT in Operational Efficiency**

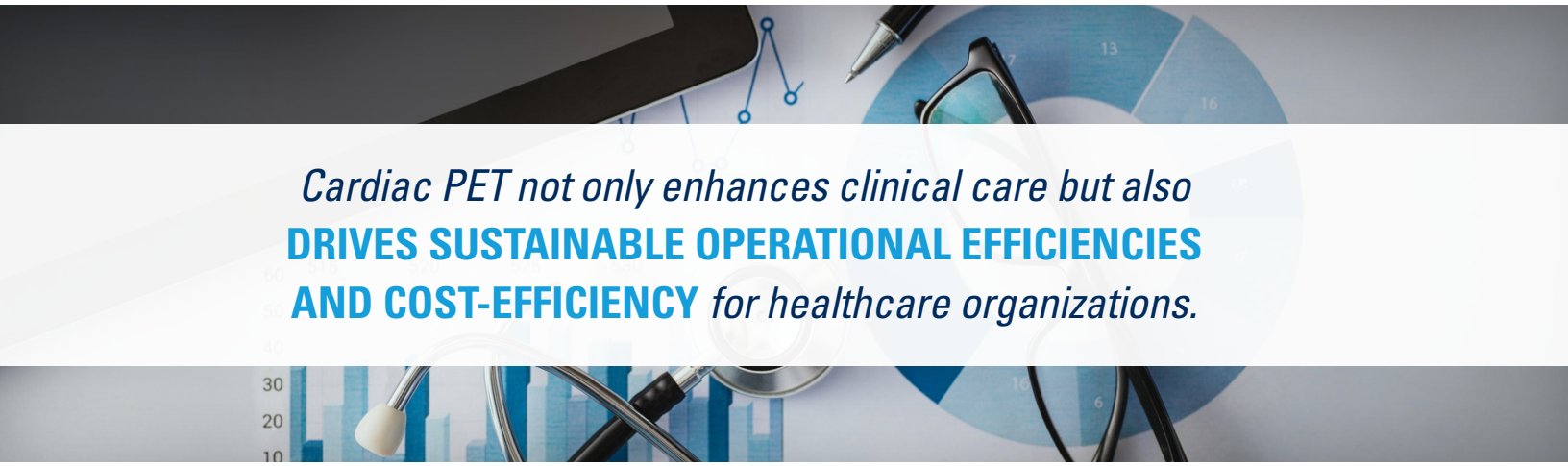


First, scan times are significantly shorter with PET compared to SPECT. A typical cardiac PET study can be completed in 30 to 45 minutes, compared to two to four hours for traditional SPECT imaging workflows.[6] This allows imaging centers to increase daily patient volumes without compromising quality.

Second, patient and staff safety is enhanced. Cardiac PET often results in lower radiation doses, typically three to four millisieverts (mSv) per scan, compared to eight to 12 mSv with SPECT.[7] Lower exposure not only benefits patients but also reduces cumulative occupational exposure for imaging technologists and physicians.

Third, PET workflows are increasingly simplified. Advances in radiopharmaceutical technology, such as Rubidium-82 generators, have eliminated the need for complex onsite cyclotron infrastructure.[6] As a result, practices can deploy high-quality PET/CT services with less upfront technical investment and training requirements than before. Several institutions that transitioned from SPECT to PET have reported tangible operational benefits:

- Decreased no-show rates due to shorter patient appointments.
- Improved patient satisfaction scores tied to faster, more comfortable experiences.
- Increased staff satisfaction related to simpler protocols and improved safety.

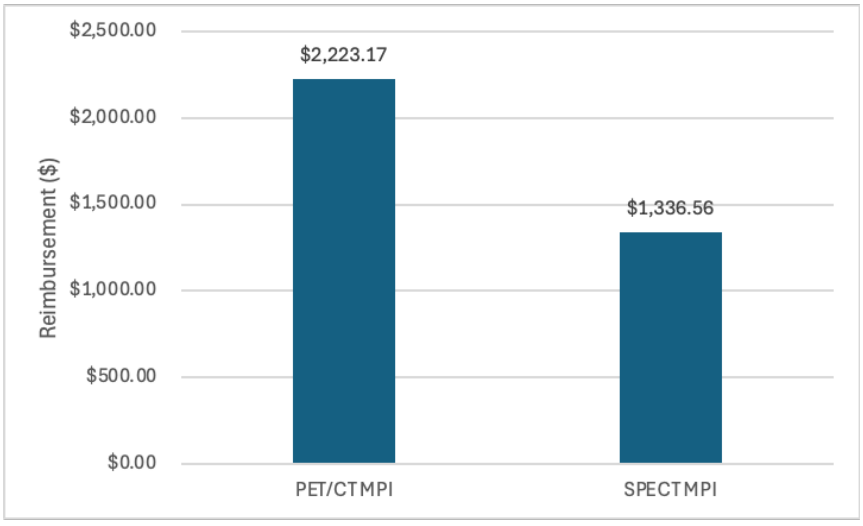


*Cardiac PET not only enhances clinical care but also* **DRIVES SUSTAINABLE OPERATIONAL EFFICIENCIES AND COST-EFFICIENCY** *for healthcare organizations.*

## Economic Advantages

Beyond clinical and operational gains, cardiac PET offers strong financial sustainability. Medicare reimbursement for cardiac PET is 30 to 40% higher than SPECT,[8] and faster scan times allow for greater patient throughput and revenue **(Figure 2)**. PET's higher diagnostic accuracy reduces downstream costs from unnecessary tests, admissions and procedures, leading to overall cost savings compared to SPECT-guided care.[9] Moreover, adopting cardiac PET aligns facilities with emerging value-based care models that reward quality and improved outcomes.

**Figure 2: Medicare Reimbursement: PET vs. SPECT (2025)**




*Note: Data reflects reimbursement as of May 2025.*

# CASE STUDY: BUILDING MOMENTUM WITH CARDIAC PET/CT

How One Health System Maintained Quality, Advanced Imaging and Operational Efficiency During Facility Construction

## Background

A large regional health system with over a decade of experience in cardiac PET found themselves at a crossroads in 2023. Their aging, cardiac-only PET equipment could no longer support best practice imaging standards. To stay ahead, they needed to transition to PET/CT. But there was a catch: the imaging suite would be under construction for six months, and pausing patient care wasn't an option.

## The Solution

To maintain uninterrupted access to cardiac PET, the organization deployed a CDL mobile PET/CT trailer as an interim solution. The decision was sparked by a Google search. When traditional vendors could not offer help, CDL provided a fast, customizable path forward.

## Operational Impact

The CDL unit remained onsite full time and was fully operated by the health system's own team. While there were initial concerns about space and patient flow, the mobile setup quickly became a real-world testing ground for optimizing workflow.

Imaging times dropped significantly, allowing two to three additional patients to be seen each day. The team made adjustments to staffing models and leaned into CDL's initial workflow roadmap, ultimately tailoring it to their environment.

*"They gave us a roadmap to efficiency. Our team built on it."*

**– Cardiology Imaging Manager**

## Clinical Benefits

The organization saw significant gains in image quality and diagnostic performance. The CT component provided clearer localization, while myocardial blood flow data helped correlate perfusion defects with greater accuracy. Clinicians gained confidence in early detection of ischemia, sometimes preventing myocardial infarction altogether.

*"We're saving these people before they have damage done."*

**– Lead Nuclear Medicine Technologist**

## Physician Perspective: Cardiac PET in Practice

The healthcare organization's interpreting cardiologists provided additional clinical insight into the value of cardiac PET/CT. They emphasized its utility in patients with high body mass indices, women with dense breast tissue, and individuals with new-onset heart failure – populations often prone to equivocal results with SPECT.

*"Myocardial blood flow quantification was the big gain for us."*

**– Interpreting Cardiologist**

They also highlighted the importance of interdisciplinary planning when implementing cardiac PET, including strong radiology partnerships for CT overreads, evaluating space/shielding needs, and selecting reporting systems that can handle large imaging datasets. While they currently use 4DM for reporting, future integration with Epic is on the horizon.

They advised new programs to consider their patient demographics, invest in staff training across roles, and embed quality improvement early in the planning process.

*"Have an A-team in place, and think about quality improvement from the start."*

**– Interpreting Cardiologist**

Looking ahead, the interpreting cardiologists anticipate cardiac PET will outpace SPECT due to faster scan times, improved reimbursement, and superior data quality.

## Implementation Timeline

The process took approximately eight months from the initial decision to go live. Their state's stringent radiation safety regulations accounted for much of that timeline, especially in securing mobile trailer and generator approvals. The organization led the regulatory navigation, and CDL provided critical support throughout. Key milestones included:

- RB-82 Generator transition.
- Staff training and application support (~two weeks).
- Radiation board approval (~six months).

*"Show me a seamless process, and I'll tell you you've missed something. But CDL helped us navigate the bumps."*

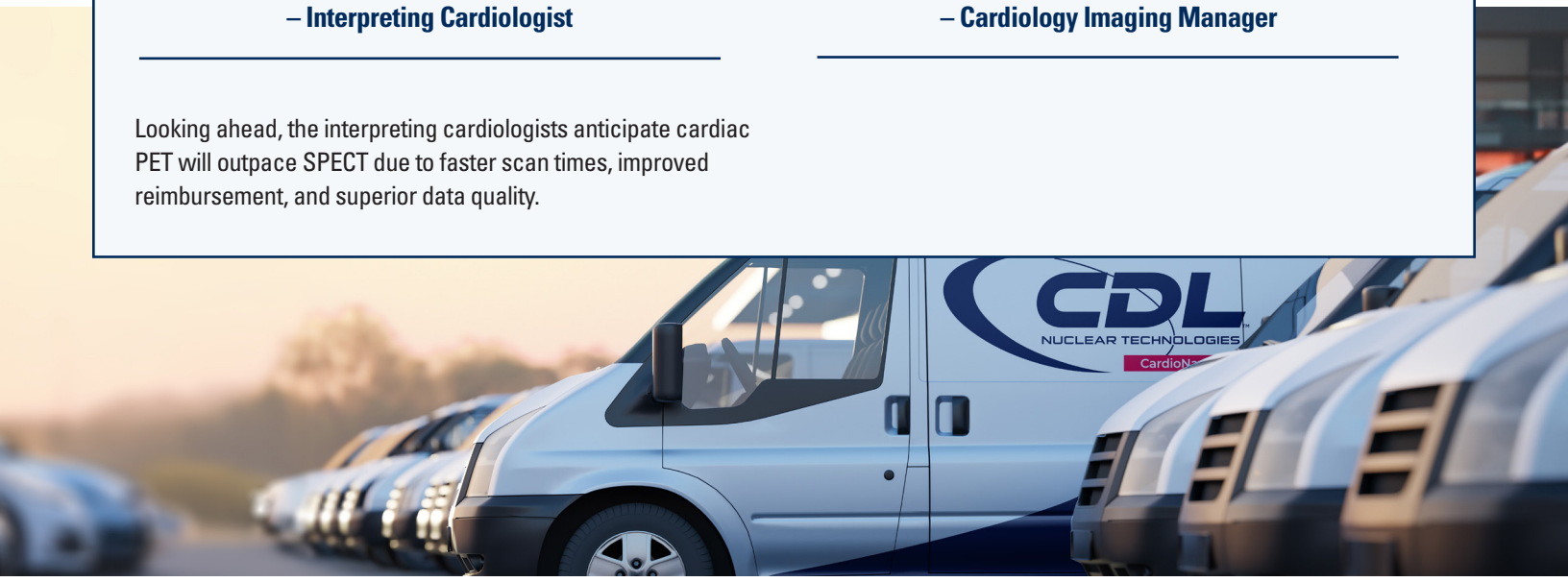
**– Cardiology Imaging Manager**

## The Outcome

The health system expects to double PET/CT capacity once construction is complete. The CDL experience gave them a live, hands-on opportunity to refine workflows and train staff, dramatically shortening the learning curve for long-term operations.

*"It's stair-stepped us into our new system. The learning curve will be much shorter now."*

**– Cardiology Imaging Manager**



## Conclusion

This case illustrates how a smart, strategic partnership with CDL enabled one health system to transform a temporary disruption into a long-term advantage. The mobile PET/CT solution preserved continuity of care, accelerated operational innovation and enhanced clinical performance.

For systems navigating facility constraints or seeking to pilot cardiac PET/CT, this example offers a compelling roadmap. With the right vendor and a committed internal team, a temporary solution can do more than bridge a gap, it can lay the groundwork for scalable success.

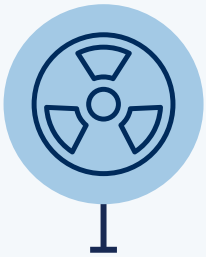
## Key Takeaway

A well-executed interim solution is not just a placeholder. It can be a launchpad.

**Sharper Imaging:** Higher resolution, fewer artifacts compared to SPECT.

**Better Data:** Myocardial blood flow quantification for deeper insights.

**Faster Scans:** Improved patient throughput and reduced scan times.



**Lower Radiation:** Safer for patients without sacrificing diagnostic quality.

**Higher Reimbursement:** PET studies are typically reimbursed at nearly twice the rate of SPECT.

# KEYS TO A SUCCESSFUL PET PROGRAM

- ✓ Build a multidisciplinary "A-team" (technologists, nurses, physicians, physicists).
- ✓ Plan for radiology collaboration on incidental findings.
- ✓ Design imaging suites with patient safety and visibility in mind.
- ✓ Focus early on myocardial blood flow training and interpretation.
- ✓ Align billing, pre-authorization and scheduling workflows.

# PRO TIPS FROM THE FIELD

- **Understand Your Population:** Tailor PET use to your patient demographics and diagnostic questions.
- **Invest in Training:** Get your team comfortable with MBF quantification, which unlocks the real power of PET.
- **Simplify Reporting:** Choose systems that can handle large datasets easily.
- **Think Long Term:** Prepare for evolving applications like sarcoid, viability and infection imaging.

# ESTABLISHING AND EXPANDING CARDIAC PET/CT SERVICES WITH MOBILE SOLUTIONS

Developing a cardiac PET/CT program often encounters hurdles related to infrastructure and significant capital investment. Mobile PET/CT solutions that integrate with an existing program, whether addressing immediate needs or supporting long-term expansion can address that. Fully equipped mobile units that are customized to an organization's specific needs facilitate rapid implementation, while ensuring high-quality imaging and regulatory compliance for either the short or long term.

For health systems that may be hesitant about a full build-out or require an interim solution, the mobile model presents a low-risk, high-impact pathway to harness the capabilities of cardiac PET. They can also serve as a platform for future program development.

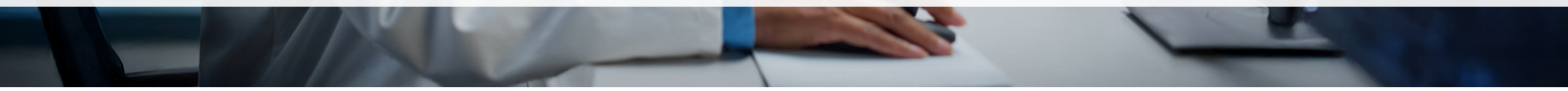
## Mobile Service Models for PET/CT Services

- **Fixed Mobile Trailer:** In this model, the healthcare organization's staff operate PET/CT trailer, which remains on-site continuously. The necessary equipment, initial setup and comprehensive training is provided. Day-to-day operations fall under the customer's radioactive materials (RAM) license, allowing for seamless integration into established workflows.
- **On-Demand Mobile Service:** This model involves delivering a trailer for pre-scheduled service days each week. The entire operation is managed, including providing equipment, staffing (nuclear and stress technologists), radiopharmaceuticals and ancillary tools. This option is particularly suitable for hospitals or facilities with lower patient volumes, sites that need cardiac PET on a limited or intermittent basis, or organizations looking to optimize resources across multiple locations.

## Comprehensive mobile PET/CT Solutions should include:

- State-of-the-art PET/CT camera with a range of camera options.
- Rubidium generator and infusion system.
- Board certified/licensed nuclear medicine technologists and stress techs as needed to supplement staffing.
- On-site ancillary and emergency equipment.
- Ongoing clinical support, including training and workflow optimization, to maximize efficiency.
- Consultation services if needed to assist with study interpretation, reporting systems and protocol development.

*"CDL's trailer didn't just get us through construction – it made us better.*
**WE SAW MORE PATIENTS, OPTIMIZED OUR WORKFLOW, AND TRAINED OUR TEAM.**
*The learning curve for our new suite is practically gone."*
**— Cardiology Imaging Manager**



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# REDUCING THE BARRIERS TO CARDIAC PET/CT

Custom Cardiac PET/CT Suite Solutions

Daily Use Mobile Rubidium - 82 Solutions

Mobile Cardiac PET/CT Solutions

## Why It Works

- **No Upfront Capital Required:** Organizations only pay once scanning begins.
- **Rapid Deployment Timeline:** Dependent on site readiness and trailer availability.
- **Training and Support From CDL:** Throughout onboarding and launch.
- **Adaptable Length of Engagement:** Typical terms range from 24 to 60 months.
- **Scalability:** Mobile units support service expansion or transition to permanent builds.

*A CDL mobile unit isn't just a trailer —*

**IT'S A LAUNCHPAD FOR WHAT'S NEXT...**

# SUMMARY

As cardiovascular care continues to evolve, practices must adopt advanced technologies that deliver superior clinical outcomes, operational efficiency and financial sustainability. Cardiac PET/CT imaging has firmly established itself as a critical tool in achieving these goals, offering unmatched diagnostic accuracy, faster workflows, lower radiation exposure and a more patient-centered imaging experience.[1-4]

However, simply acquiring PET/CT technology is not enough. Success depends on thoughtful program design, regulatory readiness, continuous staff training, and a culture committed to patient safety and quality improvement. Robust clinical training for physicians and technologists, coupled with ongoing clinical support, is essential to ensure consistent quality and optimal patient outcomes.[5-11]

Organizations that integrate cardiac PET/CT imaging into their service lines position themselves to meet the demands of modern healthcare and lead in an increasingly competitive environment. CDL Nuclear Technologies offers cardiovascular programs a proven path to success. Through a comprehensive approach to site planning, build-out, regulatory support, clinical education and long-term operational partnership, CDL makes it possible for organizations to launch, optimize and sustain high-performing cardiac PET/CT services with confidence.

For healthcare leaders seeking to elevate their cardiovascular imaging capabilities, expand access to advanced diagnostics, and drive better outcomes for their communities, cardiac PET/CT represents a transformative opportunity. A partnership with an experienced ally like CDL Nuclear Technologies that is committed to comprehensive clinical training and support ensures that this opportunity is realized to its fullest potential. CDL Nuclear Technologies that is committed to comprehensive clinical training and support ensures that this opportunity is realized to its fullest potential.

*With CDL, practices are not just installing equipment.*
**THEY ARE INVESTING IN A STRATEGIC PARTNERSHIP.**

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**ABOUT MEDAXIOM** MedAxiom, an ACC Company, is the cardiovascular community's premier source for organizational performance solutions. MedAxiom is transforming cardiovascular care by combining the knowledge and power of hundreds of cardiovascular organization members, thousands of administrators, clinicians and coders and dozens of industry partners. Through the delivery of proprietary tools, smart data and proven strategies, MedAxiom helps cardiovascular organizations achieve the Quadruple Aim of better outcomes, lower costs, improved patient experience and improved clinician experience.

**Learn more at** medaxiom.com

CDL NUCLEAR TECHNOLOGIES

**ABOUT CDL NUCLEAR TECHNOLOGIES** Founded in 1992, CDL Nuclear Technologies stands at the forefront of cardiac diagnostic solutions, driven by a team of former nuclear medicine technologists whose collective experience exceeds 150 years in nuclear laboratories. At the core of our mission is the conviction that cost, equipment, and accessibility should not hinder the advancement and availability of Cardiac PET/CT technologies. As the United States' leading provider of end-to-end Cardiac PET and PET/CT solutions, CDL Nuclear Technologies is distinguished by its unparalleled trust among cardiologists and hospital leaders nationwide, solidifying our status as the premier provider of flexible Cardiac PET/CT solutions.

**Learn more at** cdlnuclear.com

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