

# PET PROGRAM SUCCESS: LESSONS FROM CARDIOVASCULAR INSTITUTE OF THE SOUTH

## Introduction

Although the imaging modality of Cardiac Positron Emission Tomography (PET) has been available for many years, its adoption has been slower than expected. The cardiovascular (CV) industry is increasingly under pressure to reduce the costs and utilization of imaging, so any newer modality is viewed with a critical eye. The objective of achieving high quality imaging that provides accurate information for good clinical decision making is key to achieving clinical outcomes. Cardiac PET can be a great way to meet this objective for many CV patients, and the quality of the diagnostic information it delivers should put those critical eyes at ease.

Several studies<sup>1 2</sup> have shown significant cost effectiveness of PET due to the technology's ability to produce better imaging that can reduce the false positive rate at catheterization and decrease invasive procedure utilization. As the reimbursement landscape shifts from volume to value, CV imaging programs are exploring ways to improve quality and reduce costs. A review by Lundby and Heller in 2015<sup>3</sup> indicates that PET may offer opportunities for both. The authors outline the following benefits of PET vs. Single Photon Emission Computed Tomography (SPECT).

### Benefits of PET vs. Single Photon Emission Computed Tomography (SPECT)

- ✓ High diagnostic accuracy and better utilization
- ✓ Less downstream testing
- ✓ Improved spatial and temporal resolution
- ✓ Increased ability to measure regional blood flow
- ✓ Less patient radiation exposure

## Program Summary and Demographics

The Cardiovascular Institute of the South (CIS), a CV program in Louisiana and surrounding states, has been achieving

impressive results using PET since 2015. CIS is a program with 63 cardiovascular physicians and almost 250,000 patient visits per year. With 18 clinic locations and a total of 6 PET scanners, the program performed slightly more than 8,000 scans in 2018.

CIS chose to add PET as part of its mission to maintain technological superiority and high-quality patient care. According to CIS Founder and President, Craig Walker, MD "Good care is more cost effective, and the choice to adopt PET was an easy one for its diagnostic accuracy, superior imaging, ability to perform myocardial viability, and blood flow reserves, all of which provide better direction for therapy." In addition to the clinical benefits, PET patients are exposed to less radiation and often report a better patient experience than with other modalities. CIS currently offers gated resting and Lexiscan gated stress images and is in the process of developing functionality for myocardial viability and coronary flow.

## Clinical Strategy and Adoption

Several physician champions with a strong interest in adding PET were supported by executive leadership, as the imaging platform met two of the organization's key missions: technology superiority and excellent patient care. The physician champions provided initial vision and direction, developed clinical protocols and quality assurance, and led physician and care team education, all of which were key to successful adoption. Although some physicians were initially less enthusiastic about the program, all of them adopted PET for their appropriate patients after finding the clinical information superior. In fact, the program has seen a 25-28% decrease in diagnostic catheterization rate post-nuclear imaging, for patients receiving PET compared to nuclear SPECT imaging.

## Operational Rollout

CIS chose to use an outside resource to initially develop and roll out the program. This partner was invaluable in assisting with facility planning, protocol development, process workflow development, and staff training. In addition, Bracco Diagnostics, CIS's isotope vendor for Rubidium 82, provided team training,

support and education, and a variety of resources to help CIS be successful.

CIS began its program with a single camera at one location, and optimized processes prior to rolling out in other locations so that implementation was streamlined at each site.

An important component of any successful rollout is the engagement of all PET stakeholders.

### For CIS, this group included:

- ✓ Physician champion
- ✓ Director of Imaging
- ✓ Nuclear team/Department lead
- ✓ Revenue cycle/Finance
- ✓ Scheduling

Another key to a successful rollout is appropriate PET education.

### For CIS, the teams that received education included:

- ✓ Ordering physicians
- ✓ RN/MA team
- ✓ Scheduling
- ✓ Revenue cycle
- ✓ Interpreting physicians

## Patient Experience

Improving patient experience was a key reason CIS chose to adopt PET imaging. From a patient's perspective, the test lasts 45 minutes compared to 3 hours for a SPECT study. In addition, the nuclear team describes a single patient focus, meaning that they can focus on that single patient for the entire encounter before

moving to the next patient. Another benefit is having the nuclear tracer available on site to provide flexibility for add-ons, etc.

We spoke with several patients who had undergone PET at CIS, and they all noted an improved experience in terms of time on site and comfort during the test, compared to prior SPECT studies they had undergone. In addition, they noted higher confidence in the results and physician decision making, as they both had had previous equivocal studies that required repeat testing. Finally, the fact that they were offered something that is considered an evolution of cardiac imaging and technology gave these patients an additional level of confidence in the cardiovascular program that they had chosen for their care.

## Program Economics

The addition of PET imaging has increased revenue, which has allowed for investment in other program areas. Overall, the program has been financially viable, and to date, the only need has been to add an RN.

From a revenue cycle standpoint, staff found that PET is not that different from SPECT. The team conducted a significant amount of preparation on the front end to understand the requirements and documentation needed. Although most payers require prior-authorization and may have different requirements, the prior-authorization denial rate is currently no different than that for SPECT.

Not surprisingly, CIS has seen an approximate 40% reduction in SPECT MPI studies in the locations where PET is available. Because part of the PET rollout strategy was to redeploy these resources to the PET program, there has not been a net reduction in staff or resources due to the adoption of the PET modality.

CIS has also begun to evolve from volume to value with PET imaging being a key lever. The ability to get high quality imaging to allow for better decision making has shown a decrease in diagnostic catheterization and patient management, which may lead to potentially lower costs to payers and patients.

## Quality

Quality assurance is important to any clinical program. CIS's robust quality assurance process for the PET program includes skill and competency building for the nuclear technology team, with a skills evaluation at 0, 6, and 12 months, and annually after that. In addition, program staff perform peer to peer

image processing review and image interpretation review and receive an annual program review by Bracco Diagnostics to evaluate, manage and sustain program performance.

## Conclusion

Launching and expanding a PET program has increased the efficiency of clinical decision-making, improved patient experience and clinical quality, and increased revenue for CIS.

The organization continues to evolve the program in size as well as imaging offerings. Based on the lessons learned throughout development, rollout, and adoption, physician leaders and program administrators suggest these factors to ensure success:

- ✓ Name a physician champion
- ✓ Use outside resources to assist with implementation
- ✓ Involve revenue cycle early in the process
- ✓ Educate key stakeholders early
- ✓ Develop a strong quality assurance process
- ✓ Partner with a trusted nuclear tracer vendor

While technological superiority, enhanced patient outcomes and financial viability are paramount to the mission of CIS, those objectives are hardly unique in today's CV business. Stakeholders from all areas of the CIS organization steadfastly believe the addition of cardiac PET fits clearly with their mission.

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**This paper was developed by MedAxiom and Bracco Diagnostics.**

<sup>1</sup> Merhige ME, Breen WH, Shelton V, Houston T, D'Arcy BJ, Perna AF. Impact of myocardial perfusion imaging with PET and (82)Rb on downstream invasive procedure utilization, costs, and outcomes in coronary disease management. J Nucl Med 2007; 48:1069-76

<sup>2</sup> Blankenstein J, McArdle B, Small G, et al. Reduced rate of diagnostic coronary imaging following Rubidium PET vs Thallium SPECT, as alternatives to Technetium SPECT myocardial perfusion imaging. J Nucl Med 2013; 54 (Supplement 2): 1735.

<sup>3</sup> Lundbye J, Heller G. Cardiovascular Positron Emission Tomography: A State of the Art and Into the Future. ACC Jun 26, 2015.

## About MedAxiom

As the nation's leading cardiovascular performance community, MedAxiom provides expert consulting, networking and membership services including data analytics, program excellence tools and educational events to improve business and patient care outcomes. MedAxiom and its partners can help you decide if a successful PET program fits with your mission to deliver the best patient care.



## About Bracco Diagnostics

Bracco Diagnostics Inc. (BDI), the U.S.-based subsidiary of Bracco Imaging SpA, and part of the Bracco Group, is a leader in innovative contrast imaging agents in the U.S. BDI, established in 1994, with headquarters and research offices in Monroe Township, NJ, offers a product and solution portfolio for all key diagnostic imaging modalities: X-Ray Imaging (including Computed Tomography-CT, Interventional Radiology, and Cardiac Catheterization), Magnetic Resonance Imaging (MRI), Contrast Enhanced Ultrasound (CEUS), and Nuclear Medicine through radioactive tracers. The diagnostic imaging offer is completed by several medical devices and advanced administration systems for contrast imaging products in the fields of radiology.