

► Systemwide Cardiac Intervention for South Jersey

South Jersey now has a systemwide capability for percutaneous cardiac intervention (PCI). With Virtua Mount Holly Hospital now authorized for elective PCI, it joins Virtua Marlton and Virtua Our Lady of Lourdes in conducting coronary angioplasty and related procedures at three locations across South Jersey's largest health system.

"With this PCI expansion, we confidently avoid sending patients between facilities or outside of South Jersey for most interventional heart procedures," said interventional cardiologist Ibrahim Moussa, DO, FACC, FSCAI, RPVI, who is medical director of the Virtua Structural Heart Program. "Keeping care at each campus and within the system also allows us far superior collaboration and conferencing with referring clinical cardiologists."

Complete Complement of Interventions

To date, both the Marlton and Mount Holly (Memorial) locations have provided diagnostic cardiac catheterization and emergency PCI. Virtua Marlton also provided elective PCI under a New Jersey demonstration project that evaluated the safety of elective PCI without onsite cardiothoracic surgery. Based on the results, as of December 2021 both facilities are now offering a wide range of elective inpatient and outpatient diagnostic cardiac catheterization procedures, including percutaneous coronary and vascular interventions.



Virtua cardiac interventionalists rotate through the three campuses, with the Lourdes location remaining the surgically backed site for high-risk PCI, including for patients with triple-vessel disease, for structural procedures (including TAVR, MitraClip™, left atrial appendage occlusion, and PFO closure), and for multidisciplinary cases that require treatment in the hybrid OR, as well as for carotid stenting.

All sites offer percutaneous pulmonary embolectomy and removal of deep venous thrombosis. And, the two newer PCI sites have a growing limb preservation program offering advanced percutaneous revascularization techniques that complement the established peripheral vascular disease program at Virtua Our Lady of Lourdes.

Mechanical Support Bridges Sicker Patients

All three Virtua PCI locations use the most current diagnostics to determine coronary physiology, including:

- Fractional flow reserve (FFR) and instantaneous wave-free ratio (iFR), both of which indicate whether a stenosis is impeding blood flow to heart muscle
- Intravascular ultrasound (IVUS) visualization to assess lesion morphology and degree of stenosis, to plan for stent placement or atherectomy

For patients whose hearts are failing due to cardiogenic shock or have severely diminished ejection fraction, Virtua's team—including an expanded staff of critical-care cardiothoracic surgeons—can employ mechanical circulatory support by such means as the Impella device or cannulation and bypass for ECMO, to provide for rapid, stable transport to Virtua Our Lady of Lourdes. In some cases, patients may undergo a first-step intervention at the expanded PCI hospitals and have treatments completed at Lourdes. The team, referrers, and patient/family may confer between the centers by video conference for transfer. This system of getting patients to high-risk PCI or surgery, or both, in a seamless, expedited manner saves lives.



For immediate or emergent physician consult, call Virtua's Transfer Center at 856-886-5111. Patient appointments for Virtua heart and vascular services can be made by calling at 888-847-8823.

Expanded Leadership and Goals for Cardiac Services

Unified heart services in a health system make cardiologic, cardiovascular, and cardiothoracic care more efficient, capable, and accessible. Cross-fertilization of skills and integrated resources produce more seamless and effective experiences for patients. And now, Virtua continues to build on this model with expanded leadership and fluid interworking of its facilities—taking on not just tertiary-level, but quaternary-level goals for its offered procedures.

Arriving to Virtua from Johns Hopkins to advance this position, cardiothoracic surgeon Chun Woo (Dan) Choi, MD, will coordinate and help develop heart services, seeking to solidify Virtua's role even beyond serving as a primary destination for South Jersey and a regional heart center.

"We're aiming for the highest technical level of procedures while maintaining that culture of delivering the kind of quality care that we would recommend for our own loved ones without any hesitation," said Dr. Choi, who now serves in the newly formed position at Virtua of vice president of clinical operations for cardiovascular service lines.

The program seeks to grow capacity and steadily enhance evidence-based outcomes, and to go beyond offering patients clinical trials to taking a greater leadership role in these investigations. Becoming more intentional in these goals and completing a comprehensive profile is a path toward national prominence, according to Dr. Choi, who earlier was chief resident in cardiac and thoracic surgery at UCLA Health and has been a faculty member at Vanderbilt and Stanford, where he trained as the cardiothoracic transplant and mechanical circulatory support fellow.

"We're en route to a full gamut of care in which our referrers and served population understand our strengths and have confidence in every sector and niche of Virtua heart services, so they have comfort in staying in South Jersey for this care," said Dr.

Choi, whose area of special interest and activity is surgical interventions for advanced heart failure. "At the same time, we want to be champs at the less obvious measures, which means doing away with silos of care or barriers to continuity, with well-managed hand-offs, transitions and follow-up, for ongoing involvement in that all-important post-acute phase."

Over the next year, Dr. Choi—who was most recently surgical director of cardiac mechanical circulatory support at Johns Hopkins—will spearhead an effort to establish capability in ventricular assist devices (VAD) at Virtua. This technology supplements heart capacity and restores patients for years to nearly all types of activities. "Patients look almost unrecognizable because they feel so much better after rescue from heart failure with VAD," he said.

Heart transplant at Virtua is the longer-term target. Meanwhile, Dr. Choi will help to manage and connect operations across the full range of Virtua's medical cardiology, PCI, cardiothoracic surgery, structural cardiology, and cardiac electrophysiology activities.



Chun Woo (Dan) Choi, MD