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HEART FAILURE

VAD programs can be profitable, but only for hospitals willing to make the big commitment

FEBRUARY 2, 2011 | Reed Miller

ST3 San Diego, CA – Implanting ventricular assist devices (VADs) can improve a hospital's bottom line and reputation, but surgeons working in established VAD programs warn that building a successful VAD program requires a hospitalwide commitment and presents challenges many surgeons have not faced before.

The recent development of reliable VADs that can be implanted in heart-failure patients as an **alternative to heart transplant** has allowed many nontransplant centers to start VAD programs. "In recent years, the costs have decreased significantly while reimbursement has increased significantly, and there's a large population of heart-failure patients potentially [eligible] for the VADs, so this is an excellent opportunity for nontransplant surgeons to start a VAD program, but you have to be cautious because not every program is successful," head of the University of Pittsburgh's cardiothoracic transplantation program, **Dr Yoshiya Toyoda** (University of Pittsburgh, PA), explained during a session on building VAD programs at the **Society of Thoracic Surgeons (STS) 2011 Annual Meeting**.



Dr Yoshiya Toyoda [Source: University of Pittsburgh]



Dr Nahush A Mokadam [Source: University of Washington]

Codirector of heart transplantation and program director of mechanical circulatory support at University of Washington Medical Center, **Dr Nahush A Mokadam** (University of Washington, Seattle) told **heartwire** that his advice for colleagues thinking about starting a VAD program at their hospital is, "Don't do it because it sounds pretty. Don't do it because you think it's going to make the hospital a lot of money, [because] it's going to take a lot of time and a lot of effort and it's going to take relationship building that you haven't ever had to do before—with people on your own team and people outside the hospital."

Moreover, he emphasized that the program cannot succeed financially if it does not produce excellent results for the patients. Without good results, the program will not get referrals from cardiologists, and without referrals, the program will not have enough revenue to pay the personnel it needs to produce excellent results.

There are currently about 90 centers **certified by the Centers for Medicare & Medicaid Services (CMS) to implant VADs** as a destination therapy. Mokadam estimates that this number will continue to grow, but some centers will quit implanting VADs because their programs lose money. The centers that give up will be the ones "that didn't do it right, that didn't put the team together well and didn't do their homework correctly, that aren't billing correctly. Those centers are going to fold. You're not going to be able to stay in a losing proposition, either in terms of poor patient care or poor reimbursement."

Team-building exercise

Mokadam and Toyoda emphasized that the key to any successful VAD program is having a coordinated team of professionals who dedicate at least a significant portion of their time to caring for VAD recipients. Mokadam said that this team will usually include at least two surgeons trained in implantation and management, at least one cardiologist, plus perfusionists, anesthesiologists, and nurses throughout the system who will help take care of these patients. Because device malfunctions and complications can happen at any time, the program will also need at least two VAD coordinators—usually nurses, nurse-practitioners, or physician's assistants—to oversee all aspects of the patients' care around the clock.

The VAD program will set itself up to fail if it is not very careful in selecting patients to receive the VAD. "A critical first step in all cases is patient selection. The optimal process for appropriate patient selection demonstrates the multidisciplinary infrastructure required for a successful VAD program," Toyoda said. For example, psychosocial issues such as the patient's family support and their willingness to comply with physicians' instructions will have a major impact on their outcomes.

Mokadam stressed that caring for VAD patients is different from caring for most cardiac-surgery patients, who see the surgeon only around the time of their procedure and then return to the care of their regular

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cardiologist. "The new [VADs] are better than they used to be, but they aren't perfect," Mokadam said. VAD patients will routinely return to the implanting center for help resolving problems with their device or their heart failure. "These patients don't go away. They're your patients forever, so you have to be willing to take care of these patients for years on end, which most surgeons are not familiar with doing."

Because these heart-failure patients are so severely ill, their long-term care may also require contributions from professionals both inside and outside the hospital—psychosocial workers, a variety of intensivists, respiratory therapists, dieticians, physical therapists, and cardiac-rehabilitation specialists, Toyoda said. Also, before a VAD patient is sent home, someone from the hospital's VAD team must educate the local paramedics or first responders on how to provide emergency care for VAD patients.

"The entire discussion begins with partnership. You have to have a good relationship, with not only your [referring] cardiologists but also the hospital," Mokadam said. "You're going to have to work closely with your administration to make this [successful], and you're going to need their support."

"These patients consume resources at a systemwide level," Mokadam said. These patients use resources in the operating rooms, the ICU, and the telemetry floors, and if a few VAD patients aren't discharged as soon as expected or if several come back with complications all at once, the hospital will be forced to cancel other scheduled procedures and shuffle patients and resources around to accommodate their VAD patients. When that happens, the VAD program "can easily disable a system so that it can't take care of anybody else. That's the real cost," he said. The VAD program will lose money for the hospital and compromise the quality of patient care if the hospital administration is not prepared for this kind of bottleneck.

Paying the bills

The lifeblood of the VAD program is **Medicare** reimbursement, so the hospital's billing staff must understand the complexities of Medicare coding for all of the equipment, supplies, and services associated with implanting the VADs and taking care of the patients, and some larger programs should consider hiring dedicated billing staff that work only for the VAD program, Mokadam explained.

The current reimbursement rates for VAD implants and the services associated with caring for advanced heart-failure patients are enough that a VAD program can be "self-sustaining and allow reinvestment into itself. The hospitals and physicians aren't running away with zillions of dollars from [Medicare], but it allows you to comfortably reinvest in yourself to keep your team together to improve your results," he said.

Based on average Medicare payment rates and the typical costs of the devices, staff salaries, and training costs, Mokadam calculated that a successful VAD program can expect to earn around \$50 000 in profit per VAD implant. "This is where everybody starts to say, 'it's raining money,' but it's really dependent on attention to detail on the billing, coding, and provider level," he said.

At that level of profit, a program could break even with as few as 10 VAD patients per year, but that may be too few for the VAD team to maintain its skills well enough to provide quality care, he said. Most programs currently implant between 20 and 50 VADs annually, he estimated.

On top of the direct revenues, VAD programs create a "halo effect" for a medical center. Because the center can implant a VAD if necessary, physicians will begin referring more of their heart-failure patients there. Many of these patients won't get a VAD, but they will undergo percutaneous interventions, surgery, or an electrophysiology procedure at the center. There are other "intangible benefits of building relationships with a transplant center and your own multidisciplinary team. These are all things that build the stature of your program internally and externally."

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Mokadam and Toyoda reported no conflicts of interest.

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Mary Mackenzie **Cardiac rehab and VAD patients**
Our program has been working with VAD and transplant patients for several years (since Heart mate I) and while we were a bit nervous about safety initially, before many of us knew how patients would respond to exercise and what the limitations were, It has worked out well to date. I believe the key is a healthy flow of information between the rehab staff and the VAD team, and regular in-services as more was learned about the devices. The VAD team has ultimate case management, yet the patients have a safe place to exercise that feels "normal", not so clinical, often with the benefit of observing their peers in the process of post-transplant rehab, or being in different stages of living with the VAD.

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