How Heart Teams Are Adjusting to a Changing Landscape

Experts provide their views on current challenges facing heart teams and expanding from a transcatheter aortic heart valve clinic to including structural heart valve procedures.

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When should your transcatheter aortic heart valve clinic become a structural heart valve clinic?

Dr. Rogers: The decision to expand a transcatheter aortic valve repair (TAVR) clinic to include nonaortic structural patients depends on the number of patients being referred and the resources at that site. There are very busy TAVR centers and those that are less busy. A lot of it comes down to practical considerations related to the staffing of the clinic. How many doctors and nurses need to be pulled into a given clinic? At what point does it become too large? Focusing on a single valve may be more efficient. The heart team can get into a TAVR treatment groove and see patients sequentially with the same condition, which can streamline the review of echocardiograms, CT imaging, and similar care pathways.

Non-TAVR structural patients are a diverse population. The most natural expansion for a site after a TAVR clinic would be a mitral valve clinic given the expanding number of new transcatheter therapies available for mitral regurgitation. Less common structural defects, such as atrial septal defect and ventricular septal defect, can likely be seen outside of a formal structural clinic setting. Evaluation of patent foramen ovale (PFO) in the setting of cryptogenic stroke could also warrant its own multidisciplinary specialty clinic of neurologists and cardiologists.

At our center, we have physicians who specialize in TAVR and those focused on non-TAVR (mitral/left atrial appendage [LAA]) structural conditions, with two TAVR nurse coordinators and one mitral/LAA nurse

coordinator. We have separate TAVR and non-TAVR structural clinics.

Dr. Manoharan: It depends on the TAVR volume of the unit and the complexity of cases the unit is treating. If the unit is doing TAVR as well as mitral valve and LAA closure, perhaps there may be logic in having one clinic to do it all. However, it would mean that a particular outpatient clinic becomes highly complex and demanding; furthermore, in most centers, all these procedures are not performed by one or two individuals, but are most likely done by two to three teams. The practicality of arranging two or three teams, which would include at least six or seven interventionalists to be in the same room at the same time may be challenging.

Dr. Moussa: The transcatheter aortic valve clinic was established with the emergence of TAVR because of the multidisciplinary nature of the team, including surgeons, imaging specialists, and interventional cardiologists. This team has served a very good purpose, by ensuring that everyone is onboard and involved, and that their opinions are heard because it's multiple expertise that is needed.

Right now, TAVR is becoming somewhat algorithmic. By that I mean, the preplanning for the procedure has become a lot more straightforward with more experience and data. The clinic can be transformed for a broader purpose, which speaks to the question of whether it's time to transform to a structural heart disease clinic.

I think the answer is yes, but having said that, it's a qualified yes. Because of the varying nature of what structural heart disease is, whether it's mitral valve interventions, LAA interventions, or maybe an atrial septal defect, the field of structural heart clearly is very broad. There needs to be an overarching design for a structural heart clinic, and underneath there needs to be some specialization, such as, the use of the Watchman LAA closure device (Boston Scientific Corporation) by electrophysiologists and interventional cardiologists. To be honest, it's very difficult and impractical to have one clinic and one or two physicians see all those patients.

I would like to see it as a structural heart disease clinic with branches where half a day per week is devoted to TAVR, half a day per week is devoted to LAA closure, and every 2 weeks is devoted to mitral regurgitation. There needs to be some specialization in the structural heart disease clinic because of the expertise and different people who need to be involved. But I think they could all benefit from the original structure of the heart valve clinic by having a clinical coordinator, an interventional cardiologist, and then obviously, an electrophysiologist and a surgeon involved.

Regarding the TAVR team and having the patient see two surgeons, at this point in the development of the technology, there is no rationale to have two surgeons involved in the TAVR team. We have so much data and experience that a single surgeon would be appropriate as part of the team to make things more efficient and serve patients quicker.

Now it becomes a question of coordinating the time required because that is becoming somewhat burdensome and not as efficient as we would like it to be.

Should all patients with valve disease be discussed in a multidisciplinary meeting?

Dr. Manoharan: My personal view is no. The practicalities of doing this correctly for all valve patients at high-volume centers is increasingly challenging. Most physicians agree that if a patient is high risk and inoperable, then there is enough current trial data to support TAVR as the first choice. However, existing guidelines from the American College of Cardiology and European Society of Cardiology do not reflect this. Future updates should make the change to say that patients who are at high risk or surgically prohibitive for surgical aortic valve replacement should be offered TAVR, and then these patients would not need to be discussed at the heart meeting for consent to have a procedure done. This can mainly help for practical reasons, as the burden for a heart team to review all TAVR and mitral valve transcatheter patients would be enormous.

The heart team could have discussions about a challenging access route or valve device type, but in most centers worldwide, the option for TAVR is probably only available following a multidisciplinary team discussion to say that surgical aortic valve repair is not an option.

Therefore, it's not necessary that every patient be discussed. High-risk patients and inoperable patients, if they meet certain guideline and protocol benchmarks, should be offered TAVR as a first choice without needing to go through a process.

Dr. Moussa: I would say yes, if it's limited to valve disease and does not include LAA closure or other structural conditions. At my center, we have already started scheduling time to discuss the TAVR and mitral regurgitation in the same setting. Because essentially, with those procedures, the team is the same and includes the interventional cardiologist, the clinical coordinator, the imaging specialist, and the surgeon.

Discussing those patients in the same meeting is certainly doable right now; that would be more efficient.

I think combining the mitral and the aortic valve discussion in the same meeting could be implemented very quickly. Occasionally, patients have both pathologies, so there are many reasons why it would be helpful to the team to make an official plan.

Dr. Rogers: At some level, yes, all patients undergoing transcatheter aortic or mitral valve interventions should be discussed as a team with the cardiologist, cardiac surgeon, and imaging specialist. In terms of a formal multidisciplinary meeting, this can take many forms. One option is to schedule time for a set location on a regular basis. Another option may be more frequent "mini" sit-down meetings during hospital rounds and clinics.

Many patients referred to valve centers are clearly at high surgical risk at the time of referral; a less formal meeting to review these cases may be more appropriate. The most important issues are that the patient should receive the most appropriate therapy for their condition, and that there is shared decision making to avoid biased decisions in favor of particular therapies.

Should the heart team be expanded to include other structural interventions, such as LAA occlusion, which would involve electrophysiologists, or other disciplines such as heart failure specialists?

Dr. Moussa: That's a bit challenging because with LAA occlusion with the electrophysiologist involved, I think the electrophysiologist will not be present in the valve discussion. At least for the foreseeable future, LAA closure discussion would probably need to be done separately because there are different physicians involved in that preplanning.

Heart failure specialists are valuable members of the team and their expertise would lend itself more to the mitral space. We have heart failure specialists involved with the mitral meetings, for the MitraClip (Abbott Vascular) placement, but we don't have them involved with the TAVR meetings.

We must continually evaluate the benefit of having a lot of experience around the table at the expense of efficiency and respect for physicians' time.

Dr. Rogers: How one defines the heart team will be specific to each center. The heart team should be driven by those physicians most knowledgeable and passionate about a given therapy at their center. No single physician can do it all when it comes to treating structural heart disease. Many specialists are quite busy and it may not be time-efficient to have them attend every structural clinic in person.

Dr. Manoharan: I think not. Currently, it is to go over all TAVR patients in a timely manner each week. Furthermore, including other structural heart interventions may lead to significant resource and time management challenges. For example, should PFO patients be included and if so, do neurologists and a neuro rehab team sit in during the full heart team discussion?

For LAA, it depends on where you are. In some centers, LAA closure is done by interventional cardiologists, and in other centers, it is being done by electrophysiologists. So, should we discuss all LAA closures as a multidisciplinary team? I'm not sure. I suspect we probably should, but identifying who should be a part of the heart team can be a challenge. I do not think the same group of people who perform TAVR or mitral valve repair would be the same group of people discussing LAA closure in high-volume centers.

Is the team already meeting too much? Are too many people tied up for an hour or two every week to make decisions that are increasingly routine?

Dr. Rogers: Yes, this is becoming a real issue. Sites should look for ways to streamline the evaluation and treatment of patients with routine valvular heart conditions. There are "slam dunk" cases where everyone agrees almost immediately that a specific therapy (ie, TAVR) is the appropriate path. These patients can be reviewed briefly. Time should be focused on the more challenging cases, and team members can often review the technical aspects of a case before the larger meeting.

Dr. Manoharan: I would say yes. Going back to the second question, if your patient is 85 years old, high risk, and has severe symptoms, and if that takes 15 minutes to discuss, the answer will invariably always be yes for TAVR. Then, these high-risk patients can go into a protocol-based decision-making process rather than a heart team decision-making process. So yes, there is too much time being used to discuss routine TAVR patients.

I think a guideline change will certainly allow us to develop protocols that can be used in a year or two. For example, if the guideline is for an indication for TAVR in high-risk patients and nonapproved surgical patients, a heart team may use a protocol that says if you're symptomatic, if you're high risk, then TAVR is your first choice. Similarly, if the guideline includes a class 1 indication for TAVR or surgery for moderate-risk patients, the a heart team protocol may say if you're moderate risk then you come to the multidisciplinary team.

I would like to see the future multidisciplinary team discussing moderate-risk patients and challenging access options, rather than to discuss straightforward TAVR-suitable candidates. Today, that is an exercise that needs to be looked at in more detail and have a more rational, practical, workable solution found.

We have protocols for everything else, such as acute coronary syndrome and percutaneous coronary intervention, and we don't discuss every one of those patients at a meeting. With the continuous growth of TAVR in all centers, driven further by the expanded clinical indications (ie, moderate risk, valve in valve, perhaps low-risk pending trial results), we will see over the next 5 to 10 years, I think the practicality of discussing every TAVR, mitral valve, atrial appendage, or PFO patient as a heart team is not logical and not physically deliverable.

Dr. Moussa: Yes, and at some point, especially with TAVR, we may decide that it's not necessary to present all patients. But we're not there yet. Having two surgeons involved in the preplanning process does not add value to patient care and this issue will need to be resolved to reduce the number of patient visits and to improve efficiency.

Undoubtedly, the continued refinement in technology and physician expertise will enable us to reduce the frequency of preplanning meetings and the number of caregivers present at these meetings.

Do you have any other insight into what the heart team should consider?

Dr. Manoharan: It will be important for the heart team to come together and discuss practical ways of delivering a positive and safe treatment option. Ultimately, the service must be safe. I think limiting excessive heart team meetings can be an acceptable policy to follow for mature TAVR centers, but with agreed heart protocols in place for patient selection. However, in centers that are just beginning TAVR or only have 2 or 3 years of TAVR experience, discussing every patient is an important step to help develop physician/center expertise, provide case diversity, and improve patient selection going forward.

Dr. Moussa: The size of the team is critical and expertise representation is important. There are also significant opportunities to improve the preplanning process once the outdated regulatory requirements for team composition is modified to reflect true patient needs.

Dr. Rogers: As structural heart procedures become increasingly less invasive and lower risk, the need for formal heart team discussions may diminish, especially as these therapies are incorporated into guidelines. For instance, if TAVR is a class 1 indication for a high surgical risk patient, there is not much discussion to be had except those related to the technical aspects of the case and bailout planning. Another important consideration is whether certain transcatheter therapies will "burn a bridge" to future surgical or transcatheter therapies. As the field evolves, we will be talking not just about the imminent procedure at hand, but how the patient will be managed in the future for recurrence, or other valve conditions that could develop over time (such as tricuspid regurgitation). ■