4 Things to Consider as You Implement Your Cardiovascular Outmigration Strategy

Marc Toth, Vice President of Cardiovascular Services, Atlas Healthcare Partners, Phoenix, Arizona; Meredith Banasiak, EDAC | Director of Research, Boulder Associates Inc., Boulder, Colorado

It is anticipated that by 2030, 82% of all outpatient cardiovascular procedures will be appropriate for migration from the hospital to an ambulatory surgery center (ASC).[1] What will that ASC look like? What should we be building today to be ready for this massive shift? Can we manage patients' continuum of care from monitoring and diagnosis to imaging, intervention, recovery, and rehab in an ASC?

Since Medicare's decision to shift percutaneous coronary intervention (PCI) to the ASC in January 2020, there has been a dramatic increase and interest in cardiovascular ASC development. Fueled by the pandemic, and many legislative changes occurring in Certificate of Need (CON) states, most experts agree that these "COVID-Clean Cardiovascular Centers" will continue to see rapid growth in the next decade. Whether they are joint ventures with health systems, independent cardiology groups, or multi-specialty ASCs, there are many considerations that should be evaluated as the type of cardiovascular procedures and other cardiovascular services in the ASC evolve.

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Design Considerations

A typical standalone cardiovascular ASC program will include (2) cath labs equipped with fixed imaging, and (1) general cardiovascular procedure room that may or may not have a mobile C-arm. To provide for future flexibility and procedural expansion, the cath lab rooms should be designed in size, function, and location to accommodate future electrophysiology (EP) ablation and structural heart procedures, based on projected volumes.

OR-like cath labs are typically designed as stark, sterile environments to support surgical procedures. However, a trend is emerging that incorporates nature into workplace building environments, known as biophilic design, and is already present in many physician offices and health system public areas. Nature scenes with green walls, potted plants, or moss gardens are a physical signal to people to communicate that an inside space is safe. Research shows the stress-relieving effects of viewing nature.[2] It has been shown that viewing nature scenes prior to a stressor alters autonomic activity in the recovery period, suggesting that exposure to nature can elicit improvements in the recovery process before and following a stressor.[3]

We envision the cardiovascular ASC of the future designed with nature scenes enhanced by digital projections that simulate natural movements, supplemented by air-filtration systems that produce cross breezes and germ-killing ultraviolet light. In addition to adding a pleasant aroma, aromatherapy is thought to help reduce anxiety and relieve stress, is practiced in some hospitals, and could also be used in the cardiovascular ASC setting.

Offering ambient options in the cath lab can provide a calming wash of engaging color enveloping the room to increase a positive patient experience. Adding windows and projected ceiling lights or murals can engage the patient and provide a comfortable, calm, and tranquil environment. The potential beneficial outcomes include reducing physiologic patient stress that often accompanies tachycardia and hypertension, potentially reducing the need for pain medications and sedatives, and a hemodynamically stable patient who is awake, yet relaxed, which can facilitate throughput within the ASC and the prep-recovery area by requiring less time for observation and recovery from sedation.

Understanding the current case mix and anticipating the future is critical in planning infrastructure that includes imaging, hemodynamic monitoring, a picture archiving and communication system (PACS), patient flow, and recovery in the ASC setting.[4] It is estimated that 80-90% of PCI procedures performed in an ASC setting will eventually be transradial because of the very low risk of complications and faster ambulation times. A great concept for convenient and comfortable recovery likely to gain traction in the cardiovascular ASC model is the "airport sky lounge"[5] recovery room concept for recovering radial patients. It was first designed and implemented by the interventional cardiology team at MedStar Union Memorial Hospital in Baltimore, Maryland. Creating a recovery area with the creature comforts of an airport sky lounge and the ability to order coffee and snacks from delivery services like Uber Eats will also aid in anxiety reduction in the ASC.

The Smart Heart Department

Cardiovascular ambulatory monitoring devices are enabling a new paradigm of healthcare by collecting and analyzing long-term data for reliable diagnostics, treatment, and rehab. With the increase in the ever-growing wearable technologies like Apple Watches, Fitbits, and KardiaMobile (AliveCor), and implants like implantable loop recorders (ILR) and the AngelMed Guardian System (Angel Medical Systems), we envision a whole new department in the ASC dedicated to monitoring, called the Smart Heart Department. This department could utilize a patient dashboard model to closely monitor patients' activity and heart rate, and detect dangerous arrhythmias. The Smart Heart Department could also incorporate telehealth and combine with cardiac rhythm management (CRM) industry partners to become a remote patient monitoring nerve center for a cardiovascular patient continuum of care.

The switch from episodic care in an ASC to continuous care models will be largely enabled using connected health devices and appropriate digital health software for continuous patient monitoring, recovery, and rehab. All forms of remote monitoring devices need to offer safe, confidential, and reliable tools to enhance the treatment strategy for cardiovascular patients. These technologies can improve costs and outcomes, and allow the patient to have more control over their cardiovascular care.

We have seen wearables move from the wellness segment to real-time patient monitoring, largely due to advances in Internet of Medical Things (IoMT) technology, the diminishing cost of sensors, and consumers' desire to manage their own healthcare. Medical wearables' benefits come from their ability to collect valuable information; if the provided sensor data is analyzed and acted upon, healthcare professionals can achieve greater transparency in day-to-day operations and improve patient outcomes in programs such as smoking cessation and rehab. Cardiovascular care is already benefiting from analyzing the data gathered via wearable fitness trackers and implants: some of the devices allow physicians to track patients' physical activity and daily calorie intake, and can detect and alert if a patient is having an arrhythmia or heart attack.

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Virtual Cardiac Rehab

Virtual cardiac rehab services can be delivered through a variety of means, including one-on-one phone or video calls between a patient and cardiac rehab professional, or via a hybrid approach, which combines center-based services with home-based services. Virtual cardiac rehab app-based platforms like Moving Analytics' MOVN program are gaining traction, driving a 60% patient participation rate, which is much higher than the traditional center-based rehab participation rate of 24%.[6] The Smart Heart Department at a cardiovascular ASC could efficiently and efficiently manage this important part of a patient's health journey and free up valuable rehab space in hospital and medical office buildings.

The American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR) partnered with other cardiovascular organizations to jointly release a scientific statement that supports home-based cardiac rehab as an option for some patients, based on a growing body of clinical evidence.[7] The lack of reimbursement is a challenge to adoption, but more research and support of home-based rehab as a safe option could affect payers' decisions moving forward. AACVPR and partners have submitted letters to the Centers for Medicare and Medicaid (CMS) urging the agency to consider expanding telehealth reimbursement for both cardiac and pulmonary rehab services.

MedAxiom, a national consortium of cardiovascular programs, is working to increase engagement in intensive cardiac rehab (ICR) and virtual cardiac rehab (VCR) programs. Joe Sasson, PhD, EVP of Ventures at MedAxiom, states, "The ASC will become a critical entry point into rehab programs as cardiovascular ASCs attract an increasing number of patients for procedures in the coming years. Shifting procedures to a lower cost and high-quality place of service cannot just be about the day of the procedure only — it must also function as a directional stop in the patient's care journey that serves as a conduit for patient wellness post procedure."

Imaging Centers

As the cardiovascular ASC evolves into more than just a site for interventional procedures, the addition of cardiac imaging should be considered and reimbursed as an additional, approved service in the ASC. Adding imaging will help provide wrap-around care and prevent patients from having to visit multiple locations for their cardiovascular care.

Although it isn't currently allowed due to Starke laws, there are many benefits to providing imaging services at a cardiovascular ASC. As cardiovascular imaging continues its evolution from angiograms to cardiac computed tomography (CT) and other imaging platforms, the logical next step is to have the ASC serve as a single home for patient diagnostics and procedures by including imaging in the ASC setting. This would provide the non-complex patient a single location for services outside of the physician's office.

We anticipate that rates in the ASC would also be favorable to payers and help lower costs for the healthcare system. As Medicare and private payers continue to shift more complex cases to ASCs, many anticipate more complex PCI and structural heart procedures (e.g., Watchman [Boston Scientific] and transcatheter aortic valve replacement) will eventually be performed in the cardiovascular ASC. On-site imaging will provide more efficient patient flow and scheduling.

Conclusion

In conclusion, even the ASCs we are building today may not meet the need to deliver high-quality comprehensive cardiovascular care over the next 10 to 20 years. Having an ASC that covers diagnosis and intervention, as well as ongoing monitoring and the delivery of virtual cardiac rehab, may seem like a stretch today, but helping patients through their cardiovascular health journey will continue to evolve in alternative sites of service like ASCs. In order to enhance the value of an ASC investment, we must consider how best to build facilities within today's cost constraints and health economics models that enable easy department additions in the future. Understanding your long-term cardiology outmigration strategy is complex and it can take a good partner to help navigate the ever-changing landscape. This is a strategy that may be best deciphered via a team approach. ■

References

1. Kehayes N, Lutz J. What every health system leader needs to understand about current trends in cardiology. *Becker's ASC Review*. Sept 15, 2020. Accessed February 18, 2021. Available online at https://www.beckersasc.com/cardiology/what-every-health-system-leader-needs-to-understand-about-current-trends-in-cardiology.html
2. Glusac E. The Future of Hotel Design. *The New York Times*. October 14, 2020. Accessed February 18, 2021. Available online at https://www.nytimes.com/2020/10/14/travel/future-hotel-design-virus.html
3. Brown DK, Barton JL, Gladwell VF. Viewing nature scenes positively affects recovery of autonomic function following acute-mental stress. *Environ Sci Technol.* 2013; 47(11): 5562-5569. doi:10.1021/es305019p
4. McDonald T. Managing the shift to elective PCI in the ASC setting. *Cardiac Interventions Today.* January/February 2020; 14(1): 29-35.
5. Siddiqi N, Kaliyadan A, Wang J. The radial lounge, revisited. *Cath Lab Digest.* 2018 Mar; 26(3): 46-48.
6. Kowal R. Remote cardiac monitoring: the rhythm of innovation. *MedTech Intelligence.* November 23, 2020. Accessed February 18, 2021. Available online at https://www.medtechintelligence.com/column/remote-cardiac-monitoring-the-rhythm-of-innovation/
7. How virtual cardiac rehab can fill the Covid-19 treatment gap. Advisory Board. April 22, 2020. Accessed February 18, 2021. Available online at https://www.advisory.com/blog/2020/04/virtual-cardiac-rehab

Marc Toth
Vice President of Cardiovascular Services, Atlas Healthcare Partners, Phoenix, Arizona

Meredith Banasiak, EDAC
Director of Research, Boulder Associates Inc., Boulder, Colorado

The authors can be contacted via Marc Toth at marc.toth@atlashp.com