Turnover of Cath Lab Staff: Is Complexity to Blame?

Andrew Youmans, RN, with Morton Kern, MD; Lloyd Klein, MD; Michael Lim, MD; Steve Ramee, MD

Letter to the Clinical Editor

Andrew Youmans, RN

Dr. Kern and other expert contributors recently discussed *TAVR: Who Should Prep the Device?*[1] (January 2022), outlining the role of industry representatives compared to cath lab staff. In this article, several contributors cited the staffing and turnover of cath lab staff as one of the main reasons they choose or support using industry representatives to prep valves instead of hospital staff. Physicians are already identifying turnover as a problem, causing them to make adjustments for how they do their procedures. As turnover accelerates against the background of the pandemic, what other adjustments will need to be made to how procedures are done in order to accommodate this challenge?

The issue of staff turnover deserves more discussion. The impacts of turnover extend beyond just structural heart procedures and encompass the entirety of the lab. It is true that the pandemic has exacerbated issues with staff turnover, but this problem predated the pandemic. Many factors contribute to staff leaving the cath lab: pay, work-life balance, call commitments, advancement opportunities, bad management, and the physical demands of the job. While each of these topics are worthy of discussion, one factor that I have not heard suggested is how the complexity of working in the cath lab plays a role in staff turnover.

The cath lab has become significantly more complex since Gruentzig's angioplasty balloon made at the kitchen table. Today there are dozens of options just for angioplasty balloons alone. Even a diagnostic left heart catheterization has evolved beyond angiography, with the introduction of fractional flow reserve (FFR), intracoronary imaging, and even functional studies to add to the complexity. Transcatheter aortic valve replacement (TAVR) has advanced from a procedure that was only for those who were deemed to be too high of a surgical risk to the preferred method for aortic valve replacement. Even percutaneous coronary intervention has increased in complexity. There are a multitude of ways to perform bifurcation stenting, and chronic total occlusions are being treated in more and more labs. To add to the complexity, patients themselves have even greater complexity than decades before.

Has the cath lab become too complex for the average staff member to gain the proficiency needed to be comfortable in their job? I would argue that it has. I would also propose that the complexity can be mitigated by improving how we educate and train cath lab staff. If a staff member does not have a level of proficiency to be comfortable at work, this presents two distinct issues related to turnover. First, the staff members who are not proficient will eventually leave the lab. Secondly, the staff who are proficient have to support those who are not. This can lead proficient staff to leave.

In his radio show, *The Prairie Home Companion*, Garrison Keillor used to refer to the fictional town of Lake Wobegon as a place where "all of the children are above average". The tendency may be to have a similar view towards lab staff, to think of only the exemplary technologists and nurses who seemingly can do anything, or to think that your lab is better than average. For this conversation, we must realize that for every above-average lab staff member, there is an average and a below-average one as well.

On Complexity

The cath lab has always been a complex environment, but it has steadily gotten more complex. The amount of equipment, techniques, medications, and options for treatment in the cath lab is staggering. To further add to the complexity, a cath lab may not focus solely on cardiology procedures. There are hospitals where the cath lab is part of the operating room or is combined with interventional radiology. There are even some labs where the staff cover call for interventional cardiology, interventional radiology, and interventional neurology cases.

Since Dr. Kern and the expert contributors specifically mentioned turnover in the context of TAVR, is it time to consider specializing the cath lab staff? In the discussion, Dr. Kodali posed the example of a hypothetical lab that does around 25 TAVR per year, suggesting it would be challenging to have technologists experienced in prepping valves at that low of a volume. This is a valid point, but it extends beyond a low-volume lab. I pose the very plausible example of a high-volume lab where TAVR and structural cases comprise a small portion of the lab's overall case volume, but are still around 100 TAVRs a year. Management at that lab could insist on rotating staff through structural cases to keep everyone exposed to structural cases, rather than increasing the case numbers for a small group of staff. In this example, a high-volume lab staff member could participate in fewer TAVR than a staff member at a lab doing just 25 cases per year. Structural heart is already more than just TAVR. Is it time to move to a dedicated team for structural heart?

Assessing Education/Training

While it is beneficial to have a diverse group of educational backgrounds for cath lab staff, at the same time, it presents a challenge. While there are staff with other credentials working in the lab, most staff typically hold at least one of the following credentials: nursing (RN), radiographic technologist (RT), and registered cardiovascular invasive specialist (RCIS). Before diving into the different educational foundation of each credential, it is important to note that even within the same credential, there are variations based on the program faculty and also the clinical experiences can vary significantly based on the location and preceptors. Only one of these credentials, the RCIS, provides a very direct focus on the specifics of a job in the cath lab. The other two credentials, nursing and RT, provide a more generalized pathway. Initial licensure nursing school teaches very generalized skills. It has become standard for hospitals to invest in nurse residencies and extended orientation for every new graduate nurse. Nursing education places the burden of teaching nurses to be nurses on their first employer. RTs have a similar situation, where they must earn a primary certification in radiography and then complete a post-primary pathway to learn cath lab skills. Another factor impacting the relevance of initial education to a current job in the cath lab is the speed of the advancement of technology and procedures in the cath lab. Textbooks, exams, etc., all take time to revise and update, and in many cases, the advancement of technology and practice in the cath lab outpace the environment.

No matter the credential an individual new to the cath lab holds, there is a gap between what they know and what they need to know. There is a

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wide variation in how labs orient new employees. Some labs have a very formal orientation system and some are very informal. Overwhelmingly, one of the most common methods is a process where a new staff member is taught while working with other lab staff. This process is only as good as the quality of the staff member mentoring/teaching the new staff member. It is a method similar to a copy machine, where you can take the finest quality paper and load it into the machine, but the print quality will never exceed the quality of the original document. Especially with the issue of turnover being the problem it is today, it is not uncommon for less experienced staff to be orienting new staff. This problem also magnifies itself the more turnover occurs, and staff become less and less experienced. Even a formal orientation is only as good as the educator.

Just as the job of cath lab nursing is substantially different from what nurses are taught during their initial licensure education, perioperative nursing also is a very different. To address this issue, the Association of periOperative Registered Nurses (AORN) has developed a formal core curriculum called Periop 101 that is used in conjunction with department-based orientation.[2] While not mandatory, this program is very common in hospitals, and there are even variations for ambulatory surgery centers and Cesarean birth. Periop 101 also has a quality improvement mission as well. Having a common core curriculum for all cath lab staff, not just nurses, would help establish the acceptable level of foundational knowledge. In addition, a common core curriculum also has the potential to provide even higher quality education than individual labs can provide. An individual educator in a lab may not have graphic design, animation, or virtual simulation skills, and it may be cost prohibitive to have this work done. A national core curriculum could invest in the cost of development of high-quality training. This training could also expand to include structural heart, electrophysiology, peripheral vascular, and other disciplines within the cath lab.

Progress in the cath lab has marched at a steady pace. Practices become obsolete and new practices are introduced. Even with a stellar orientation, the other challenge is to keep staff up to date with current knowledge. While hospitals may be willing to invest in continuing education dollars for physicians and advanced practice providers, there is less enthusiasm to support other staff. As a cath lab nurse, I was fortunate to work for a hospital that hosted an interventional cardiology conference annually. While we did have to provide support for the live cases, we were able to attend some sessions. Other than that, I have had not financial support to attend conferences at any of the other hospitals where I have worked. I believe the likelihood of support for non-nursing staff in the lab is unfortunately even lower. It is likely that most lab staff get their updates in knowledge through in-service education from industry clinical representative when a new or updated product is introduced. There needs to be a continued investment in lab staff.

For many years, cath labs have relied on an orientation that is akin to throwing someone learning to swim into the deep end. This sink-or-swim method, while effective, is now complicated by the fact that the water has gotten deeper, murkier, and rougher. It is tougher to swim now. The other issue is that this is not a binary outcome. Not every person who swims will be Michael Phelps or Katie Ledecky. For every person who is able to excel at swimming, several others will just struggle to keep their head above water. If every day you come to the pool and you just keep struggling to keep your head above water, eventually you will stop coming to the pool at all. To add to this, staff that are proficient swimmers grow tired having to help other staff who are not proficient.

Cath labs can continue to rely on a sink-or-swim method, but investing in teaching people to swim ensures more people learn to swim and swim effectively. While complexity and inadequate training is not the singular cause of staff turnover, these factors certainly do not help. Physicians and lab staff alike should be invested addressing the issues of turnover. Physicians are making procedural decisions based on turnover.

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—Lloyd Klein, MD

Reference

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Responses and Discussion

Mort Kern, Long Beach, California: To recap Mr. Youmans' review above, many factors contribute to staff leaving the cath lab: pay, work-life balance, call commitments, advancement opportunities, bad management, and the physical demands of the job. The role complexity of working in the cath lab plays into staff turnover. If a staff member does not have a level of proficiency to be comfortable at work, the staff will eventually leave the lab. Secondly, the staff who are proficient must support those who are not. This can lead proficient staff to leave.

Questions posed by Andrew Youmans, RN, are:

1. Has the cath lab become too complex for the average staff member to gain the proficiency needed to be comfortable in their job?
2. In addition, should cath labs cover radiology and radiology labs?
3. Is it time to move to dedicated teams for structural heart?
4. Should there be a national core curriculum of high-quality training?

Let's turn to our expert colleagues for their perspective.

Lloyd Klein, MD, Napa, California: Mr. Youmans' review is right on target. Specialization in cardiology is not new and is highly desirable, and so the idea of specialization in staff ought to be embraced by everyone. The idea that staff can be cross-trained for radiology and even operating room is the pipe dream of nursing administrators without a clue.

Cath lab staff, like all workers, must rationally balance the great excitement, contributions, and advantages of working in a rapid turnover, fast-paced, high-pressure environment with its occupational hazards and risks, long and unpredictable hours, and insufficient pay scale. It is no surprise that our best and most experienced nursing and technical staff, who are highly dedicated, intelligent, and capable, are able to find safer working conditions, more cognitive and less physical responsibilities, better compensation and/or more predictable time at home with family, while doing other jobs or being promoted into administrative positions. The shocking thing is how little hospital administration appreciates what these people do or how long it takes to learn these skills. Oh, they say they do, but words are cheap. Where is the money, the free time, the enhanced staff and working conditions, which underlie vapid sentiments not backed by real support and change?

In fact, high turnover is an expected part of the job of the cath lab director. This underlying labor management strategy becomes a medical problem when we look around for competent staff to help us in a procedure and discover that we need to use outside help to prep equipment. I think the experienced people, particularly those who contribute regularly here, do get it, but so many of our colleagues don't realize prior to that moment how directly staff turnover affects them. This is just one motivation for our longstanding concern about occupational safety[1] and its economic impact[2].

"There are different motivations and drivers for the multiple people working in the lab, and that this point of view doesn't necessarily cover all the issues that are contributing to the current shortage of staff in our cath labs."

— Michael Lim, MD

Michael Lim, MD, Hackensack, New Jersey: This thesis is interesting and likely on point from many aspects. However, I might take the liberty to point out that there are different motivations and drivers for the multiple people working in the lab, and that this point of view doesn't necessarily cover all the issues that are contributing to the current shortage of staff in our cath labs. Taking one particular aspect, while one nurse may have a strong sense of purpose to be at the top of their field and is willing to climb a career ladder with some increases in salary, another is in a completely different position and is willing to jump around to different labs in a similar region over a few years to bump their salary with sign-on bonuses and a better overall pay. As with anything this complex, if there were a simple answer, we wouldn't be having these conversations.

To your questions: I'm not sure the cath lab environment is disproportionally more complex and challenging to train staff and have them maintain proficiency than before, despite newer tools and more of them. The patients have always been more challenging than other procedural areas in the hospital and the techniques have been unique enough that the learning curve has always been steep. Cross-covering other procedure areas (eg, radiology) adds to this stress, as there is a different way of caring for those patients with different approaches that need to be learned — but skilled people have ability to adapt, depending on their motivation and what provides them job satisfaction. Certainly, increased abilities for cath lab nurses and techs to gain top-level continuing education has always been an issue that many want and we should increase our efforts to meet that demand.

Steve Ramee, MD, New Orleans, Louisiana: At Ochsner, we have had staffing and complexity problems. The two together are creating a difficult situation.

1. To increase utilization, our holding area is now taking care of interventional radiology, vascular surgery, interventional nephrology, electrophysiology (EP), and interventional cardiology patients. Our cath lab is doing vascular surgery, interventional nephrology, and interventional cardiology and structural heart procedures. So, the complexity has increased.
2. To address the staffing problems, our cath lab manager, who I respect, has taken to hiring people with no nursing or radiologic technology background to work in the cath lab as "cath techs". This dilutes the pool of knowledgeable people with specialized skills to do complex procedures and is a drag on the professionalism of the professional cath techs. So, the work pool has become less specialized.

In summary, at Ochsner, the complexity of procedures has increased at the same time the pool of employees has become less specialized. I can only guess where this is heading.

The Bottom Line

These are challenging times from a cath lab staffing standpoint and will only become more challenging over the next couple of years if national projections are correct. All hands on deck are required to try and successfully navigate this challenge. ■

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Disclosures: Dr. Morton Kern reports he is a consultant for Abiomed, Abbott Vascular, Philips Volcano, ACIST Medical, and Opsens Inc.

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