

Cath Lab Digest

A product, news & clinical update for the cardiac catheterization laboratory specialist



CATH LAB SPOTLIGHT

Wayne Memorial Hospital

Sandra Skrobiszewski, RT(R), RCIS, with co-authors Cassidy Cohen, RT(R), RCIS, Kristen Schmale RT(R), and Andrew Tomicek, Corazon Honesdale, Pennsylvania

Tell us about your cath lab and facility. What drove the need to implement a cardiac cath/percutaneous coronary intervention (PCI) program?

Wayne Memorial Hospital (WMH) is a small, independently owned, rural community hospital with just under 100 beds. We are a standalone cath lab Level 2, meaning we do not have an on-site open heart program. We are located in the Poconos mountain range where cell service is spotty. Many patients drive to the emergency department, as they feel it is quicker than calling an ambulance (this is definitely not something we promote – ever!). In addition, the population around Honesdale, Pennsylvania, doubles in the summer. Summer homes around the lakes are filled, along with many summer camps, bringing both children and adult staff members from city areas to the mountains for retreat. Hence, our cardiac business increases.

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CALCIUM CORNER

Taking a Pulse Check in Complex Calcified Vessels

CLD talks with Jaikirshan J. Khatri, MD, FACC, FSCAI.

Dr. Khatri is the Director of Complex Coronary Intervention at Cleveland Clinic, performing 150-200 chronic total occlusion (CTO) procedures annually, along with a high volume of complex and high-risk coronary intervention procedures (CHIP).



Can you describe your approach to evaluating arterial calcium?

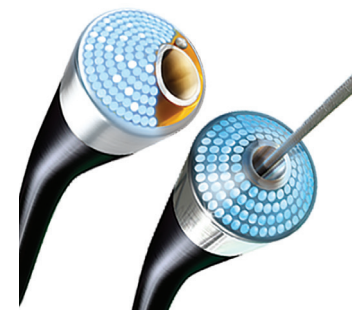
Conservatively, at least 90% of our cases utilize intravascular imaging. We try to image lesions up front to have a better idea of what we are facing. There are broad categories we can use to describe the type of calcium we are dealing with, such as focal, diffuse, thin cap, thick, nodular, limited arcs of calcium, and concentric calcium. These categorizations help us decide what modality will be most useful. Device use is predicated on the anatomy, as well as our options of what we can deliver to assess the lesion.

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OFFICE-BASED LABS

Out-of-Hospital Lower Extremity Intervention in Severe PAD: How the Right Equipment and Devices Support Limb Salvage

CLD talks with Douglas Redd, MD, and Liese Redd, Practice Manager.



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Wayne Memorial Hospital

Sandra Skrobiszewski, RT(R), RCIS, with co-authors Cassidy Cohen, RT(R), RCIS, Kristen Schmale RT(R), and Andrew Tomicek.

When a heart attack occurs, time is of the essence. Every minute counts and it can quickly become a life-threatening condition. Tertiary hospitals are approximately 45 minutes to reach by ambulance. In our community, patients didn't want to leave in order to receive advanced cardiac care. Our community has promoted the cardiac services program and actually helps fund it via a local capital campaign.

Our Director of Ancillary Services, James Hockenbury, spearheaded the development of our program and brought on Corazon, a consulting company offering program development and service line experts, to guide us. David Fuller from Corazon did an on-site feasibility study of projected incremental volumes over 5 years. A strategic business plan was drawn up for low risk PCI to include ST-elevation myocardial infarction (STEMI). Ultimately, after two long years of planning, the WMH Heart and Vascular program was born, starting on June 1, 2016. We surpassed our projected cath numbers for Year 1 in the first 5 months of opening.

Starting a cath lab from the bare bones was no easy task to achieve. Corazon was instrumental in the startup. They helped lay the foundations of our program, including room design, equipment, pre and post op, family lounge, staff areas, policies and procedures, forms for down time, workflow algorithms, education, and training. They made

sure we satisfied all state requirements. Corazon has also become our yearly accrediting body.

Our program also included making necessary alliances with a tertiary hospital, essential in case the need arises for emergent or urgent open heart surgery. This tertiary facility is also the hospital where we send our high risk PCIs. Our facility has Life Image in place between our imaging services and the tertiary hospital, which enables the tertiary hospital to view the images moments after they are taken and ensures face-to-face details are exchanged about the patient on our table. Transportation could not be overlooked and agreements were forged into place with local ambulance companies. An ambulance is put on standby each time we put an angioplasty case on the table. Air transport was also put in place. A heliport was built that is also used for our stroke and trauma programs. In addition, all patients are encouraged to return to our on-site clinic for post cardiac care.

How did you market your program and accreditation?

We held a grand opening for the public. They were receptive and excited about the new program. We try to hold an annual experience that the community looks forward to attending.

For advertisements, we proudly display our program in the local newspaper, and on TV, billboards, and our hospital website.



Figure 1. Another successful accreditation! Pictured left to right: James Hockenbury, Director Ancillary Services, Rob Brzuchalski, Manager Imaging Services, Dr. Bradley Serwer, Director of Chest Pain Center, Dr. Walid Hassan, Director of Cardiovascular Services, Kristen Schmale RT(R), Chelsea LaTourette, RT(R), Cassidy Cohen RT(R), RCIS. Front row: Sandi Skrobiszewski, RT(R), RCIS, Cardiac Care Coordinator, and Holly Miszler, RN. Absent from photo: Frank Reid RN, Coordinator of Cardiac Nursing.



Figure 2. Colleen Shaffer RN, Sandi Skrobiszewski RT(R), RCIS, Cardiac Care Coordinator, and Dr. Raymond Resnick.



Figure 3. "Show and Tell" during an open house with Sandi Skrobiszewski RT(R), RCIS.



Figure 4. Cutting the ribbon for our new program!

How did you feel about Corazon's initial process and the startup of the program?

At 6-9 months, we did an initial survey on the implementation. As a Registered Cardiovascular Invasive Specialist (RCIS) and Registered Radiologic Technologist (RT[R]), I had worked in a cath lab for over 20 years, but I previously was not a part of management. I was nervous. I knew the importance of achieving efficiency was paramount, while understanding cath lab quality should never be compromised for the sake of time or reducing cost. No corners could be cut at the expense of patient care. We had to emphasize quality over quantity. Providing quality care was the ultimate goal.

Corazon's process helped me grow comfortable and embrace policies and procedures, data collection, and dashboards. Cath cases are reviewed monthly as well as annually. Yearly, cases are sent out for external review.



Figure 5. Dr. Bradley Serwer.

Data are watched closely. From the beginning, if there needed to be even the smallest change, it was made without hesitation. Corazon taught us how to not be stagnant, constantly changing our workflow so we can provide the best program possible for our patients. We are not simply meeting requirements; we are embracing best practices and establishing ourselves as a top-performing program in the country. Continual quality review is not required by the state of Pennsylvania. Therefore, not everyone goes through continual quality review, but at the end of the day, we believe that everyone needs to be held accountable to ultimately ensure the best patient outcomes are met.

Corazon worked with physicians, not just the hospital leadership team. Their engagement and preparedness helped our physicians buy into the program and take on a greater sense of accountability. Physician accountability led to them maintaining compliance with set criteria. Foremost, patient safety is always stressed. We strive for excellence and physicians resonate with this.

Our program has been continually evolving since its opening. Corazon's engagements and relationship with our team have remained consistent over past 6 years. We at Wayne have all matured and evolved over the past 6 years. There have been changes in physicians over the years, the impact of COVID, people throughout the hospital leaving, but our program and its excellence have remained the same.

We are extremely grateful that Corazon gives the same care and attention to detail here as they do to the bigger health systems and city hospitals they work with.

How did you draw qualified interventional cardiologists to your rural hospital?

Finding qualified interventional cardiologists for a rural area hospital has been quite a challenge. How do we make it appealing for doctors and their families to relocate here? We have had the pleasure of utilizing both hospital-based employee interventional cardiologists and interventional cardiologists that are company based.

So, what does "company based" mean? Some backstory: across the United States, closures of small rural hospitals have doubled in the last 8



Figure 6. Dr. Walid Hassan, Cath Lab Director, with Cassidy Cohen RT(R), RCIS.

years, doubling EMS response times in rural areas to match that of urban areas. As many hospitals face the possibility of cardiac care in their hospital closing, a solution was being born. A new practice model was being rolled out. A group of highly skilled interventional cardiologists who saw the need began to build this new practice model. It consists of a significant number of highly qualified, accomplished interventional cardiologists whose mission is to make life-saving treatment available in small town and rural hospitals, and to keep cardiac units up and running. Thus the name, CardioSolution. The CardioSolution contract provides hospitals a two-person interventional cardiologist team that shares the job role. Each doctor works 7 days and then spends 7 days at home. CardioSolution has proven to be key for our facility. Because they live in the local community during their 7 days, they are able to provide 24/7 care of the community patients and emergencies that may arise.

What procedures are performed in your lab?

We perform radial and femoral artery access diagnostic coronary angiograms, low risk PCI with stenting (including STEMI), intravascular ultrasound (IVUS), instantaneous wave-free ratio (iFR), fractional flow reserve (FFR), right heart catheterization, intra-aortic balloon pump (IABP), renal angiograms, iliac and lower leg percutaneous transluminal angioplasty and stenting, loop implants and removal, and pacemaker implants.

We perform an average of 350 catheterizations per year with 45%-50% becoming PCIs. More than 30% of our STEMIs make up our angioplasty numbers, confirming the need for a cardiac cath lab in our location. Some of these patients may never have survived the ride to a tertiary hospital. One patient was a 59-year-old male who collapsed at a business close to the hospital. He was quickly brought into the hospital emergency department where a STEMI alert was called. He was rushed to the cath lab and found to have a 100% occluded left main coronary artery. Needless to say, he was intubated and in shock. We performed cardiopulmonary resuscitation, and inserted an IABP and temporary pacemaker. Using our newly formed STEMI



Figure 7. Sandi Skrobiszewski RT(R), RCIS, Kristen Schmale RT(R), Cassidy Cohen RT(R), RCIS, Kristyna Poska RN, Chelsea Henderson RN, and Dr. Brad Serwer.

protocols, the patient survived and walked out of the hospital. One of our many shining moments!

Who manages your cath lab, and what is the mix of credentials and experience?

An RN and I were recruited from local city hospitals for the startup. We run under a co-leadership role, as RN and RCIS Cardiovascular Coordinators. We actually came from competing hospitals located a few blocks apart. This has proven to be an unexpected bonus — our very best ideas, thoughts, and practices from each hospital have come together in the lab. Having connections to both hospitals was also key. It gave us unwavering support whenever we needed it, both on and off site.

Can you describe your staff members?

Our staff consists of 3 full-time and 3 part-time technologists, a mix of RT(R)/RCIS and RT(R). We have 7 registered nurses (RNs). Our training experience stems from someone on orientation to 25-plus years. There is always someone new coming to join the team.

How has COVID-19 affected your lab?

COVID-19 had an impact on the entire hospital, including the cath lab. Only urgent and emergent procedures were being performed. It was all hands on deck by all cardiovascular staff members, as they were placed into other departments to help. Once the state of Pennsylvania changed COVID-19 restrictions to "green" status, elective cases started back up again; however, due to a shortage of nurses, outpatient cases were only being scheduled on Mondays, Wednesdays, and Fridays. Inpatients and non STEMIs are done at any time of their admission.

Technologists were also deployed to other areas, ie, cardiology and radiology. Nursing was deployed to other areas of the hospital that included the COVID unit.

Can you describe the extent and use of radial access at your lab? Is your lab utilizing same-day discharge?



Figure 8. Co-Coordinators Cardiac Care Sandi Skrobiszewski RT(R), RCIS, and Frank Reid, RN.



Figure 9. Dr. Walid Hassan, Director of Cardiac Cath Lab, Marcy Grimes RN, Sandi Skrobiszewski RT(R), RCIS, and Cassidy Cohen RT(R), RCIS.



Figure 10. Cardio-TRAP radial shield (Trans-Radial Solutions, LLC).

In our cath lab, we currently are at 92% radial access. We follow Society for Cardiovascular Angiography and Interventions (SCAI) best practice recommendations for “radial first” (vascular ultrasound). This better allows for same-day discharge for many of our patients. Radial access has been shown to have a lower complication rate versus a femoral approach. The radial approach has also proven to be cost effective, not only in supporting earlier discharge, but also in eliminating the high cost of femoral closure devices.

We recently purchased the Terumo R2P Destination Slender 75 cm guiding sheath, which can help with guiding support and dual pressures for right and left heart cases. Peripheral cases can be done with more ease from radial access, as the sheaths come in many lengths.

How does your cath lab handle radiation protection for physician and staff?

We take radiation safety and protection very seriously. All staff and physicians are required to wear lead aprons and radiation dosimeter badges. This has become part of our time out to ensure that everyone is cognizant and acknowledges the safety concerns around radiation.

All cath lab staff is required to participate in a radiation safety program annually, presented by our radiation physicist. It includes a review of radiation, as low as reasonably achievable (ALARA), and knowledge of the importance of wearing a dosimeter badge, how and where to see their badge readings, and time, distance and shielding (the basics never change). Last but not least, close those collimators, even just a little, whenever possible.

No matter which access site is used, technologists pan from the far right end of the table. Our technologists have learned the best panning techniques (no panned is best panning), so in our lab it has become understood by our physicians

that the technologists pan. Technologists are able to be a few more safe steps away from the image intensifier. A win-win.

Most of our cases are done via radial access, even acute STEMIs. We keep ultrasound in the room to be used as needed. The groin is prepared as a backup if needed. We saw an immediate need for radiation protection for physicians and staff to be incorporated in the radial approach. Actually, we found our solution in *Cath Lab Digest*, when it was featured several years ago.¹ We purchased (and love) The Cardio-TRAP Cardiovascular TransRadial Access Platform (Trans-Radial Solutions LLC). It is found to reduce radiation to the physician and staff. The platform, which the company custom-made to the length of our working space, acts as our radial board and our working area. It is removable and hangs neatly on the wall on a mounted bracket. It also comes with a left radial base and support for left radial access. If you do not have a radial board and are seeking to cut radiation to your staff, we highly recommend it. We also purchased two full, clear-screen, lead-lined floating shields and placed them in front of the nurse charting stations, along with one adjustable lead shield allowing staff to move around the room. It works well during long peripheral cases as added protection for staff.

Who pulls sheaths?

If we do a femoral case, the physician will close the access site with an Angio-Seal VIP (Terumo). If the femoral artery is too diseased, the techs pull the sheath using a hemostasis pad (QuickClot Interventional). This occurs in our pre/post-op area. All techs are trained for sheath pull during orientation. There is a policy in place for sheath removal competency. The staff members must first observe a minimum of 2 sheath pulls and 5 supervised sheath pulls with a preceptor. After that, they must independently remove an arterial sheath, observe the extremity for signs of complication, verbalize understanding of potential complications and potential patient responses to sheath removal, and document sheath removal and patient response. IABP catheters are pulled and held by the physician’s assistant. For young staff coming into the field, this proves to be a challenge, as femoral cases are less likely to be performed and when femoral



Figure 11. Mobile shielding.



Figure 12. Sandi Skrobiszewski RT(R), RCIS, Cassidy Cohen RT(R), RCIS, and Kristen Schmale RT(R), celebrating Cardiovascular Week.



Figure 13. Cassidy Cohen RT(R), RCIS, and Dr. Bradly Serwer.

access is used, typically a closure device is deployed. The need to pull a femoral sheath is beginning to be a thing of the past, like the Sones approach (I may be showing my age).

As of now, almost all of our right heart cath are performed via the right antecubital.

How do you determine contrast dose delivered to the patient during an angiographic procedure?

Previously, we were struggling with contrast delivery amount and who is responsible for calculating the amount. We reached out to other cath labs without finding a satisfactory solution. The cardiologists and leadership in the cath lab came together, and developed a guideline and policy to follow. We only use 100 mL and 50 mL bottles, and determine (by measuring) how much contrast is contained in the lines, the Y connector, and left in the syringe. We calculate some waste via the Y connector during PCI and subtract what is left in the bottle. The cardiologists and tech must both agree on the amount delivered. It is then documented in our charting system, which is later populated to our American College of Cardiology National Cardiovascular Data Registry (ACC-NCDR) data.

How is your lab maintaining focus on and tracking the incidence of contrast-induced acute kidney injury in your patients?

Our contrast policy described above does go a few steps further. Following the SCAI guidelines, pre cath, we determine “ideal dose/estimated glomerular filtration rate (eGFR) x 2 and max dose/eGFR x 3.7.” The result is both charted in our data system and also stated as part of our time out. We realize that with emergency patients (STEMIs), we may not have the luxury of knowing the GFR. Contrast is always used in conservation: each time a bottle is opened, the physician is made aware.

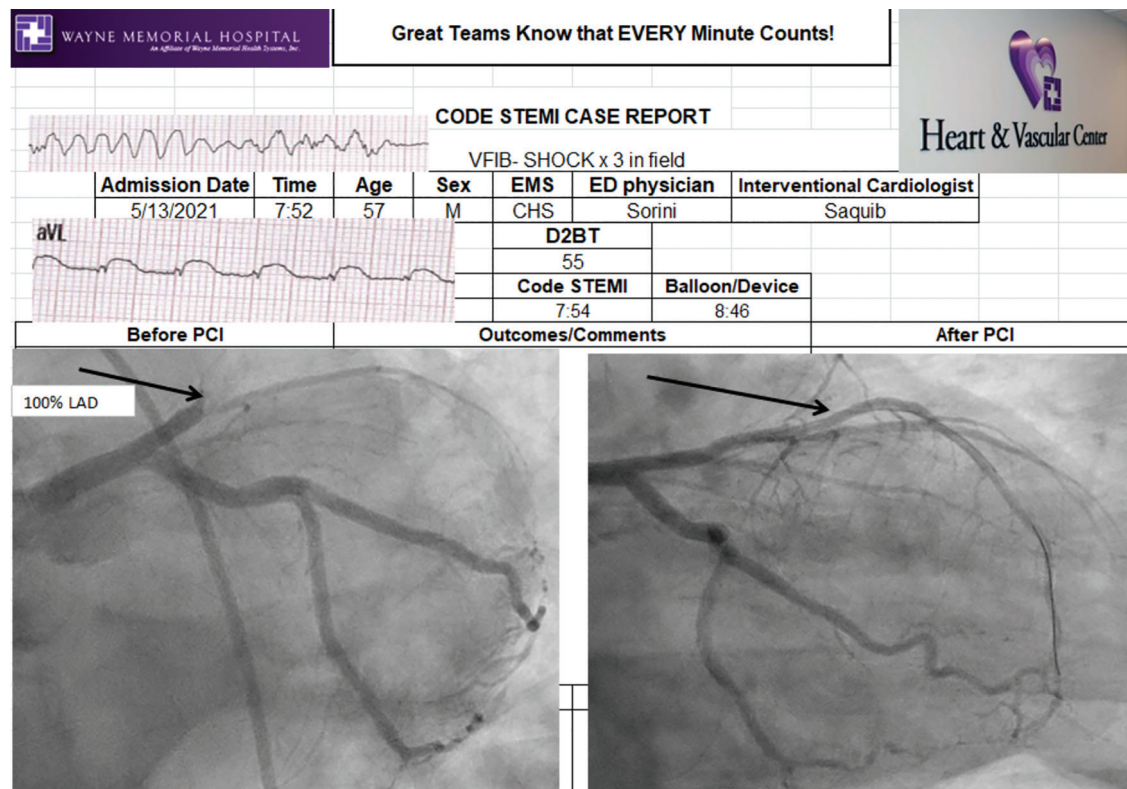


Figure 14. Our STEMI template. Used for teaching at cath conferences, quality, and a copy is also sent to the ambulance crew (if used) to let them know how important their role in door-to-balloon time is as well.

Our patients that are at risk of acute kidney injury are followed closely post cath with post creatine bloodwork. All these patients are entered into the NCDR database.

How do you record fluoroscopy times/dosages?

At the end of each case, the fluoro time (minutes), cumulative air kerma (mGy), and cumulative DAP (mGcm²) are entered into charting, which will flow into the patient’s chart and later into the NCDR. The cardiologist also documents these doses in their cath lab report.

Our policy includes a guideline whereby the radiologic technologist monitors radiation dose during the procedures. The tech periodically notifies the physician performing the procedure of the cumulative dose delivered to the patient. A “warning” is also prompted out in the room on the x-ray monitor to change angles for patient safety.

What is the process that occurs if a patient receives a higher than normal amount of radiation exposure?

We follow the below guideline for cumulative fluoroscopic radiation dose delivered to the patient:

- 3Gy (50% of substantial radiation dose level [SRDL]): Initial verbal communication to the operator.
- 4.5 Gy (100% of SRDL): 2nd verbal communication to the operator with a verbal acknowledgement. Tracked and trended by the Radiation Safety Committee.
- 6 Gy (100% of SRDL): 3rd verbal communication to operator indicating they have reached

a “substantial radiation dose.” The physician should stop and evaluate options. Thankfully, to date, we have not had any patients that have fallen into the 4.5 and 6 Gy categories, so no patient follow-up has been needed.

What are some of the new equipment, devices, and products recently introduced at your lab?

It seems we are always trying new devices and products that are cost effective and that accommodate our cardiologists’ wishes. The newest product introduced to the lab is the OmniWire (Philips) which supports measurements of instant wave-free ratio (iFR), as well as fractional flow reserve (FFR). The solid core design of the wire allows easier maneuverability in the coronary system. Finally, an FFR wire that serves much like a workhorse wire.

The Xience Skypoint drug-eluting stent (Abbott Vascular) is our newest stent on our shelves. The XIENCE 28 study showed that 1-month dual antiplatelet therapy resulted in no increase in ischemic events in high bleeding risk patients.

How is inventory managed at your cath lab?

Inventory starts in the cath lab. The technologists perform weekly, monthly, and annual cycle counts to keep equipment and supplies up to date and fully stocked. Materials management handles the purchasing of the equipment and supplies. Expiration dates are checked again at point of use by staff, which has become part of our time out.

All stents, balloons, and guides are kept on consignment.



Figure 15. Kristen Schmale, RT(R) and Cassidy Cohen RT(R), RCIS.



Figure 16. Attempting to get into the on-call house after a snowstorm.

Can you share some data about your lab's door-to-balloon (DTB) times and some of the ways employees at your facility have worked together in order to lower your DTB times?

Remember, we must never settle for the guideline in place; we must be consistently aware and always striving for ways to improve our STEMI DTB times. Sharing protocols and procedures with other hospitals can stimulate the implementation of new standards to help everyone improve.

- 1) The electrocardiogram (EKG) is transmitted via ambulance or obtained in the emergency department (ED). EDs are very busy these days and many people do not present as having chest pain during a STEMI. We have implemented an EKG machine in a triage area to perform EKGs so as not to miss any potential MIs. The EKG image is sent to the cardiologist on call via secure text.
- 2) One phone call activates the cath lab team (both beepers and cell phones).
- 3) STEMI alert is heard overhead, which alerts all necessary personnel.
- 4) ED RNs follow the guidelines set in place: stat COVID test and labs drawn, large bore for IVs (left arm if possible), shave and prep right wrist and groin, place EKG leads and radiolucent defib pads, patient is on a travel monitor, STEMI box (containing meds, consent sheet), and Ambu Bag. Simultaneously, an ambulance is put on standby in case the patient needs a higher level of care (we have practiced dry runs to tertiary hospitals to calculate more exact timing).
- 5) The team is on site within 30 minutes. The ED is asked to bring the patient to the cath lab and simultaneously the team readies the room.
- 6) Each STEMI case is reviewed by a Medical Management Team via spreadsheet.

Who transports the STEMI patient to the cath lab during regular and off hours?

During regular hours, when a STEMI alert is called and more staff is available in the hospital, the cath lab team reports directly to the ED to meet the patient and bring them to the lab, as other team members are upstairs getting the room ready.

During callback cases, the ED nurse and nurse supervisor are asked to bring the patient to the cath lab while the call team gets the room ready. If a cardiologist is not readily available, a hospitalist accompanies the patient as well. The ED is located on the ground floor and the cath lab is on the third floor. To devise a more direct route to the cath lab, a badge access-dedicated elevator for direct access to the cath lab was built.

How does your lab schedule team members for call?

Being a relatively new lab, we have felt it safer to run a 4-person call team: 2 nurses and 2 technologists. The nurses have a rotating schedule of every third weekend with 1-2 nights per week, which makes the nurse on-call average 9-11 days per month. The lead technologist writes up a schedule for the techs. Since we currently only have 3 scrub technologists, we had to get inventive. We came up with a new model, training on-site evening and night radiologic technologists to be hemodynamic monitor techs. This would allow just one scrub tech to be on call. They attended basic life support (BLS), advanced cardiac life

support (ACLS), and EKG courses, completed an orientation process, and when the requirements were met with confidence, we were able to rotate them into our call schedule. All staff receives incentive on-call pay for any overflow days they cover (days covered over their job obligation).

After a late night call-in, staff is permitted to take two hours of paid "sleep time". It can be used either in the morning or if they choose, to go home early.

Within what time period are call team members expected to arrive to the lab after being paged?

All staff is expected to live and stay within 30 minutes of the hospital. DTB times are very important to us. In winter months, we get a lot of snow. It is suggested (but not required) to sleep on site. Rooms are provided for the on-call team.

Do you have flexible or multiple shifts? How do you handle slow periods?

During slow periods, both RNs and techs flex to different areas, ie, cardiology, radiology, same-day surgery, and OR, although we sometimes use these occasions for "team building".

What measures has your lab implemented in order to cut or contain costs?

We have recently taken a hard look at our inventory with a focus on expiring products. Are they really needed? Can we cut amounts ordered? As a team, we made some decisions. For example, since our drug-eluting stents have a 30-day DAPT, we eliminated bare metal stents.

You may not realize it, but time is the biggest cost in the cath lab. When doing more work with less staff, you have to become creative. Eliminating or reducing stock not often used is two-fold. Inventory touches many hands in the process of cycle counting, reordering, swapping out expired items, mailing back, and receiving. The biggest plus is that it saves space, which is precious in a cath lab.

We also looked at our cath trays. Do we use everything on our tray on every case? How could we save money? Since most of our cases are radial, we excluded a femoral needle and switched to the PreludeSYNC EVO band (Merit Medical). These bands are cost effective and comfortable for patients. We also switched to TZ Medical's defibrillation pads. These pads are more translucent, which is advantageous in the cath lab. We were having trouble with our table mattress getting ruined and purchased disposable waterproof mattress covers: the material is soft yet strong (Cardinal Health, #ORC999ORA). I am a firm believer in "always be looking to improve."

What quality control measures are practiced in your lab?

We track several indicators to make sure patients are trending in the right direction, including volumes, incidence of nonobstructive disease,

excessive contrast, excessive radiation, transfers for emergent or urgent cases, FFR used and/ or vessel intervened in, bleeding, stroke, death, and missing appropriate use criteria.

DTB time is the biggest quality control measure and has become our performance improvement project. We created an entire team to go over every STEMI, making sure every single minute was accounted for and measures met. In addition, our accrediting body, Corazon, does a quarterly analysis of our NCDR volume data. If there is a downward trend in 2-plus quarters, a Continuous Performance Improvement Plan (CPIP) is sent out to us, which carries a monetary fine and a corrective action plan must be put into place.

Who documents medication administration during the case?

Both the monitoring tech and the charting nurse document medications. The monitor tech's documentation shows who gave the medication and at what time. The physician's meds are charted the same way: ie, radial cocktail and intracoronary nitroglycerin (IC NTG). Both sets of charting are reconciled at the end of case and signed off on.

Are your physicians dictating their cath procedure reports, or do they use a structured tool?

Our cardiologists currently dictate their cath and angioplasty reports. In our EMR system, they fall into a group category of cardiology, which makes the studies easier to find and compare.

How are you populating the registry data records?

The data is abstracted from the patient's chart and entered into our Philips system. At the end of the case, the data is populated into a third-party vendor. We are currently using Cedaron Medical. Their services offer customization of workflow, dashboards, and flash reports. Quarterly, 100% of the data is scrubbed of any errors and a "harvest" is done, populating the data to the NCDR. The cardiovascular techs are currently entering all the data.

How do you handle vendor visits?

Vendors will call ahead of time and ask for a date and time that works well for us to schedule their visit. They check in electronically and receive a visitor pass. Vendors are only allowed in the procedure room during down time to do cycle counts. They are allowed to bring snacks/lunches.

What continuing education opportunities are provided for staff members?

The hospital pays for radiologic technologists' yearly membership with the American Society of Radiologic Technologists (ASRT) and also offers both BLS and ACLS certifications. Nurses get paid unlimited credits through CE Direct.

What works well for your lab for onboarding new team members?

We believe it is important for a new member to feel welcome joining our team. It can be scary walking into a new lab, not knowing anyone, but we make sure they know that we are a family and now they are part of it. A suggestion I have would be team bonding. Something we like to do, when we get the chance, is go out for a lunch or dinner together.

Do you require your clinical staff members to take a registry exam for RCIS?

It is recommended that after two years of working, the clinical staff members take the registry exam for the RCIS. The hospital pays for the education needed and the exam itself. The staff does receive an incentive raise upon passing the exam.

Does your lab have any physical (layout) bottlenecks or limitations? What do you do when the call team is already doing a procedure and a STEMI comes into the ED?

The biggest limitation that we have is our size. We only have one procedure room and a 3-bed holding area. Three beds in the holding area makes things difficult on a busy day. We work around it with teamwork, rotating patients through Same-Day Surgery, where they can be monitored post cath.

One procedure room makes things difficult when we are in the middle of a case and a STEMI comes in. If this situation occurs, when it is considered safe for the current patient on the table, we explain and quickly move the patient off the table. We immediately clean and turn the room over ourselves to prepare for the incoming STEMI.

What do you appreciate about your department's physical space?

Our entire lab is badge access, including the prep/holding area, the control room, and the lab. Our lab is very spacious, which makes it easier for the circulating tech or the nurse to move around and gather the equipment or appropriate medications needed for the procedure. We also love art! We have multiple pieces of heart-related art, along with a cultural piece donated by one of our interventional cardiologists, hung around our patient areas.

Do staff members have any little or big perks that you might want to share?

We offer several perks. A free lunch card on your birthday, a monetary Christmas bonus, 2 hours paid sleep time after a night called in, paid credits for your license, and incentive on-call money for any days after your work obligation on-call days worked (7).

We received some nice COVID bonus money from the state, along with many lunches and snacks provided by all the local restaurants in our area (a definite perk living in a small community). The hospital is also offering paid tuition for any staff interested in attending LPN school. What a nice



Figure 17. Kristen Schmale RT(R), Dr. Walid Hassan, and Cassidy Cohen RT(R), RCIS.



Figure 18. Kristen Schmale RT(R), Cassidy Cohen RT(R), RCIS, Dr. Walid Hassan, Sandi Skrobiszewski RT(R), RCIS.

perk to encourage someone in a career they may not be able to afford. Another win-win.

Our biggest recent perk was that all employees received a retention raise of about 10%.

Has your lab recently gone through a national accrediting inspection?

The Department of Health (DOH) is our annual inspection for Certificate of Licensure.

My advice is that when you have scheduled yearly inspections, don't look at it as a nuisance. Every time inspectors find a deficiency, be open-minded. Look at it as a chance to improve. Rarely are you ever written up for the same thing twice. Find it a time to prioritize, eliminate clutter, and do a deep-down cleanse of the entire facility.

The DOH recently did a surprise inspection at our facility. This was a first for our hospital.

Always be vigilant. Never become complacent. Follow the guidelines and protocols all the time, not just once a year. Keep your program department area up to date and review your entire checklist daily. Report leaks, bulbs out, or paint that needs



Figure 19. Our technologists: Cassidy Cohen, Sandi Skrobiszewski, Chelsea Latourette, Kristen Schmale, and Taylor Williams.

We perform an average of 350 catheterizations per year with 45%-50% becoming PCIs. More than 30% of our STEMIs make up our angioplasty numbers, confirming the need for a cardiac cath lab in our location.

touching up as these items occur. Ensure a deep terminal clean is done at the end of each day. This way you are always “white glove” inspection ready.

What is unique or innovative about your cath lab staff?

Our hospital is affiliated with local colleges that have a radiology school. Students can choose to do an internship in the cath lab. This is good for our lab. It constantly keeps us on our toes, teaching and leading. Because staffing became an issue, we were compelled to develop a new model. As mentioned before, we trained staff to become a hemodynamic monitor. These staff members still require rigorous cath lab training, they just do not perform first assist and scrub with the cardiologist (although during training, they do scrub with a tech to be able to get an up-close look and understanding of the entire case start to finish).

We are exploring options for a traditional 3-person



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on-call team with the mix of 2 RNs and a tech, or vice versa.

What is special about your city or general area in comparison to the rest of the U.S.?

Honesdale is a quaint and historic town that has embraced its old-time charm while welcoming modern-day amenities. It is located in north-east Pennsylvania. The history of Honesdale goes back to the early 19th century. It is known as the “birthplace of the American railroad”. The town earned a reputation as a major railroad center in the late 1820’s. In 1829, a steam locomotive, the Stourbridge Lion, was brought to the United States from England. This locomotive was the first steam locomotive to run on commercial tracks in the U.S. It became a vital part of anthracite coal transportation history. Today, visitors can discover a full-size replica of the famous Stourbridge Lion housed in the Wayne County Historical Museum, a popular stop for history buffs and train fans. Visitors can also enjoy a step back in time to rail travel with a relaxing train ride on the passenger train through lush landscapes along the Lackawaxen River. Our area celebrates all four seasons, which makes for year-round activities such as boating and fishing in the summer, and skiing and snowboarding in the winter. Hiking is also popular in our area due to the amazing mountain views that northeastern Pennsylvania offers. Located in a rural area, Wayne Memorial Hospital is a convenience to all tourists and locals in the area. The next-closest hospital is about 30 miles away.

Even though we are in a rural setting, New York City and Philadelphia are just a 2.5-hour drive away.

How do you use the ACC-NCDR Outcomes Reports to drive the quality improvement initiatives at your facility?

As a new facility opening a cath lab, the NCDR was a new responsibility for us. All our patient data are submitted to the NCDR for analysis. We put in a lot of time and effort to make sure all our data entered are correct and it is done in a timely matter. As NCDR reports are published and become available, two things happen. The NCDR “fine lines” report is submitted to Corazon via a secure app, The Box. Both Corazon’s analysis report and the actual NCDR report become part of our bi-monthly quality meeting.

We have also gone through an NCDR audit. Even though we excelled in the audit, we still strive to do better. It is important to us that we take time to learn from audits and inspections. These experiences can only make your program better and more efficient in the long run. ■

Reference

1. Shealy R. An introduction to the Cardio-TRAP. *Cath Lab Digest*. 2017 Aug; 25(8): 45. <https://www.hmpglobal-learningnetwork.com/site/cathlab/article/introduction-cardio-trap>

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