MEDAXIOM
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LEVERAGING CARDIOVASCULAR PROCEDURE LAB DATA

TO ACHIEVE PERFORMANCE EXCELLENCE

REPORT

In partnership with: PHILIPS

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SYNOPSIS

Data analytics provide the basis for performance improvement. Gathering data represents half the battle; whereas, gleaning insight within an effective timeframe is critical for driving performance. Whether presenting data on quality improvement, research findings or operational performance, data must be accurate and timely. Reliability of your data is essential for building rapport and trust among team members. Although a great deal of focus is placed on quality improvement metrics for cardiovascular procedures, solutions have lagged for streamlining data to analyze operational performance management and financial intelligence. As the healthcare industry becomes more technologically advanced, it becomes more complex to integrate and capture useful information across numerous applications.

The ability for cardiovascular procedure labs to achieve efficiency is paramount for sustainability. Cardiovascular service lines (CVSLs) are pressured to continue to provide high quality patient care with falling reimbursement for procedures. Furthermore, the COVID-19 pandemic has escalated the need for highly efficient cardiovascular procedure labs to minimize exposure for both staff and patients. Procedure labs across the nation have been hit hard by multiple factors related to the pandemic, including mandated cancellations of elective procedures due to the scarcity of supplies and staffing shortages.

MedAxiom has witnessed the challenges of effectively capturing and analyzing data to drive performance management of cardiovascular procedure labs. To better understand the current state of data analytics for cardiovascular procedure labs, which include cardiac catheterization (cath) labs, electrophysiology (EP) labs and hybrid operating room (OR) labs, MedAxiom conducted a study in Spring of 2021. The goal of this study, which included interviews with various cardiovascular procedural programs across the U.S., was to better understand the need for data intelligence to improve cardiovascular procedure lab operations and financial performance.

The study found significant opportunity to improve and leverage data analytics to support performance management of cardiovascular procedure labs. The study also confirmed the top key performance indicators (KPIs) cardiovascular procedure labs used regularly for operational performance management, and highlighted the industry need for benchmarking and guidelines. Each program emphasized the importance of accurate, reliable and timely data to effectively manage and support excellence of their labs.

IN THIS REPORT:

Assessment of the current state of data analytics for cardiovascular procedure labs

- Study results of interviews with 29 healthcare organizations across the U.S.
- Overview of top KPIs and findings of 219 cardiovascular procedure labs

Key opportunities to improve data analytics in support of operational performance

- Compare your organization's operational performance measures to the study findings
- Determine which operational KPIs you should be tracking
- Explore in-depth how to improve data analytics for your cardiovascular procedure labs

TOPIC OVERVIEW

Cardiovascular procedure labs are fast paced, highly technical environments providing complex care to patients which requires staff to routinely use numerous applications while providing care and capturing data. Unfortunately, this environment renders cardiovascular procedure labs prone to operational redundancies and inefficiencies, which is not advantageous in the current economy. As U.S. healthcare costs continue to rise, healthcare organizations are under tremendous pressure to decrease expenses while providing the highest quality of care. With significant changes to reimbursement, insurers and government payers are moving away from fee-for-service payment structures and adopting quality-based reimbursement. For instance, the *Medicare Access and CHIP Reauthorization Act* in 2015 dramatically changed cath lab reimbursement for Medicare Part B (physician services).

Cardiovascular procedure labs can optimize their performance management to offset decreases in reimbursement, rising costs of supplies and shortages of lab staff. Operational efficiency is a core competency of successful businesses yet challenging to apply to cardiovascular procedure labs given the many components involved in each episode of care. Although there may be heterogeneity in how these labs operate across the U.S., best practice guidelines and standardization of metrics are not available, presenting a high need and opportunity for the industry[1].

Conversely, quality of care is well defined with plenty of best practice guidelines, consensus statements and research available. Several organizations, such as the American College of Cardiology, the American Heart Association and the Society for Cardiovascular Angiography and Interventions, provide guidance, ratings and accreditations for clinical standards of care and outcomes. However, data analytics on quality do not provide direct, actionable insight into cardiovascular procedure lab operational management nor the program's ability to innovate; thus, operational efficiency cannot be inferred from quality metrics[2]. A CVSL's strength in data analytics capabilities is critical for providing top quality of care while striving for optimal operational performance management and program sustainability.

STUDY METHODOLOGY AND PARTICIPANTS

In Spring 2021, MedAxiom interviewed 29 healthcare organizations in each major U.S. geographic region **(Figure 1)** representing a total of 219 cardiovascular procedure labs. Among the procedure labs represented, 53% were specifically considered cardiac cath labs (diagnostic and interventional cardiology procedures), 29% were EP labs and 18% were hybrid OR labs **(Figure 2)**.

Figure 1: Healthcare Organization Totals by Geography

219 CARDIOVASCULAR PROCEDURE LABS REPRESENTED

Figure 2: Cardiovascular Procedure Lab Breakdown

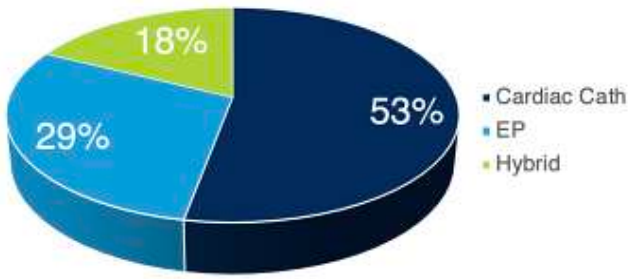


Figure 3: Program Procedure Types

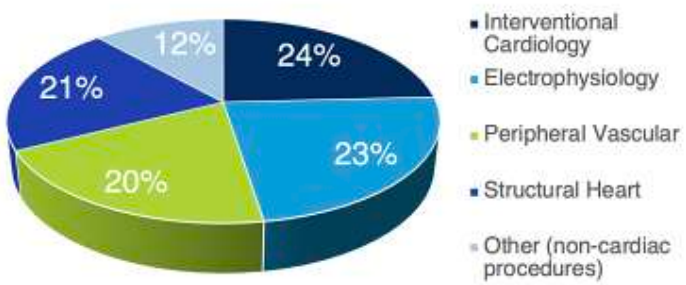
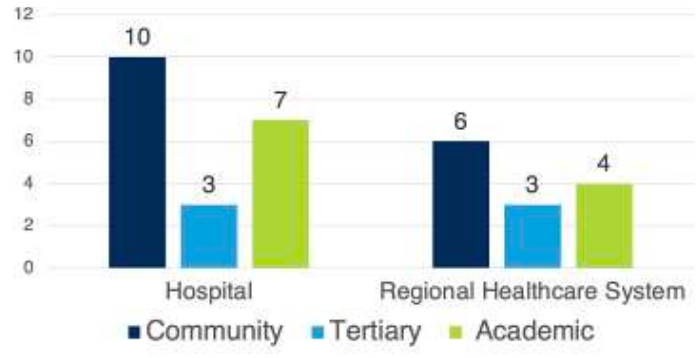


Figure 4: Hospital Type



**Hospitals can be listed in more than one category*

The cardiovascular programs represented healthcare organizations of all sizes and patient populations including adult, pediatric, urban, suburban and rural. Seven programs specialized in pediatric cardiovascular procedures, five of which were pediatric-specific hospitals.

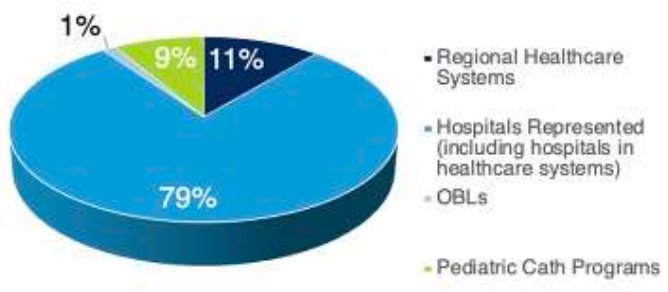
Hospital sizes based on total beds ranged from 40 to 900 licensed beds, the majority falling in the 200 to 400 bed range. Hospitals represented a mix of tertiary, quaternary, community and academic hospitals, with varying physician leadership and employment models. Most hospitals included in this study were considered community hospitals **(Figure 4).** One of the participating programs was a highly successful office-based lab (OBL) and was in process of opening an ambulatory surgery center **(Figure 5).**

Participant Interviews

A variety of leaders were interviewed who provided direct insight about performance management of their cardiovascular procedure lab programs. Interviewees included leaders of the cardiovascular procedure labs, CVSL administrators, performance and quality improvement leaders, cardiovascular nurse managers and physician medical directors. Most interviewed leaders held responsibility for the cardiovascular procedure labs at the hospital level, while several leaders were responsible for labs across multiple hospitals or all sites at their healthcare system.

The interviews were completely voluntary without any financial compensation or in-kind benefit provided to participating programs. The study was double-blinded in which the industry sponsor and the programs involved remained anonymous to each other except to MedAxiom who conducted the interviews and analysis.

Figure 5: Total Health Systems / Hospitals /OBLs Represented



INTERVIEWEES INCLUDED:

- **CARDIOVASCULAR PROCEDURE LAB LEADERS**
- **CVSL ADMINISTRATORS**
- **PERFORMANCE AND QUALITY IMPROVEMENT LEADERS**
- **CARDIOVASCULAR NURSE MANAGERS**
- **PHYSICIAN MEDICAL DIRECTORS**

"The start of my motivation to improve data analytics began when I presented to a group and all the data were wrong. As a leader, I want the ability to make data driven decisions instead of basing decisions on hunches."

– CVSL Director, Regional Healthcare System

STUDY FINDINGS

Major Opportunities in Data Analytics For CVSLs and Cardiovascular Procedure Labs

The study confirmed that a major opportunity exists in the industry to improve data analytics solutions for cardiovascular procedure lab performance and operational tracking. Currently there is a major gap in the industry, and each program had a history of dealing with the lack of support and data analytics solutions. Every program emphasized the importance of accurate, reliable and timely operational data to effectively manage and support performance of their cardiovascular procedure labs.

Although numerous tech companies have commercialized products to bridge the gap, the lack of interoperability and compatibility with other applications, and issues in usability, present overwhelming obstacles for hospitals and leaders.

Cardiovascular procedure labs and CVSLs must use numerous software applications that often do not interface well with each other, if at all.

The interviewed programs each had varying degrees of support and capabilities in terms of their operational data analytics for their cardiovascular procedure labs, but every program highlighted the complexity and labor required to achieve workable solutions. Most programs expressed a lack of trust in the validity of data their organizations presented to their teams regarding lab operations since a disconnect exists between data sources and analytics for the cardiovascular procedure lab.

KEY OPPORTUNITIES TO IMPROVE CARDIOVASCULAR PROCEDURE LAB DATA ANALYTICS

	System interoperability: Cardiovascular procedure labs and CVSLs must interact with many software applications that do not talk to each other. This is an overwhelming obstacle for hospitals and leaders to analyze data effectively.
	Data-driven decisions: Lack of solutions and support to drive procedure analytics. The gap in data analytics has been a long struggle for programs trying to resolve this issue. Programs are still searching for the perfect solution.
	Cardiology data analytics framework: Cardiovascular procedure labs function differently than other hospital departments, so metrics such as productivity, cost-per-case, scheduling and staffing cannot always be measured the same way as other departments.
	Cardiovascular care acuity measurement standards: Factoring acuity of case into productivity metrics is a challenge for most programs. Complex cases require more time, staff, and resources, which unfairly hurt productivity metrics.
	Cardiology variable cost tracking: Cost-per-case, charge capture and inventory are generally not tracked effectively and force leaders to rely on manual tracking.
	Cardiology data analytics team: Most CVSLs must rely on their own staff to support data analytics despite having an enterprise analytics team.

CVSLs and Procedure Labs Lack Data Analytics Support

While large enterprise analytics and IT teams serve as important assets for the organization as a whole, their presence does not necessarily indicate the strength of data analytics capabilities specific to the needs of cardiovascular procedure labs and the CVSL. Many hospitals had enterprise analytics teams and large IT teams >50 dedicated full time equivalents at their organization **(Figures 6 and 7).** However, most CVSLs, including several with stronger data analytics capabilities, had to rely on staff within their department to enter and extract data from various applications, and mine and analyze data to develop metrics for the management of their CVSL and procedure labs.

Quality Improvement Is Not the Same as Operational Efficiency Data Analytics

While most programs reported dedicated quality and registry teams that provided majority or all of the work related to clinical quality improvement data management **(Figure 8)**, most programs currently had little to no support beyond their department for operational management metrics. With lack of support, responsibility for data and metrics fell on the shoulders of cardiovascular procedure lab leaders and team members, already stretched thin, who felt pressured to find time outside of their administrative and clinical duties. With numerous software applications that store data and lack interoperability between systems, leaders and their teams expressed frustration over the inability to mine data. They often had to resort to manually entering and extracting data, which is cumbersome, time consuming and inefficient since the data and dashboards cannot be easily updated.

One Size Does Not Fit All

Although the "one size fits all" approach to capturing and analyzing data might be applicable to multiple service lines, it does not apply to the cardiovascular procedure lab. This was a clear theme from interviews with 40 leaders of cardiovascular programs. Data analytics for procedure labs require slightly different approaches compared to other departments, even compared to cardiothoracic surgery and the OR. This highlights an opportunity for the cardiovascular industry to provide guidance in defining each measure and providing methodology in tracking and analyzing the data.

Figure 6: IT Team Size

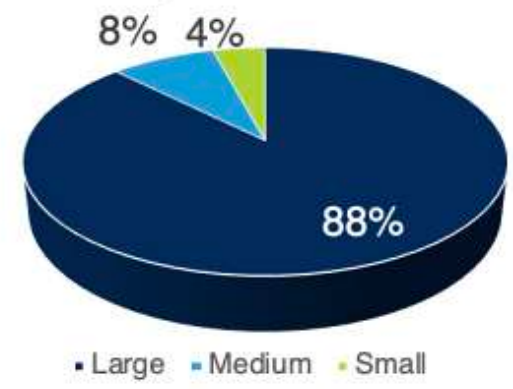


Figure 7: Do you have an enterprise analytics team?

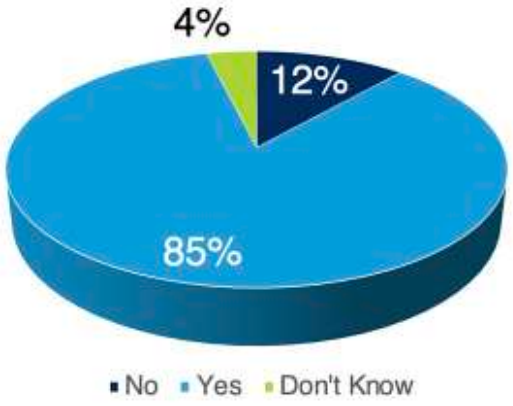
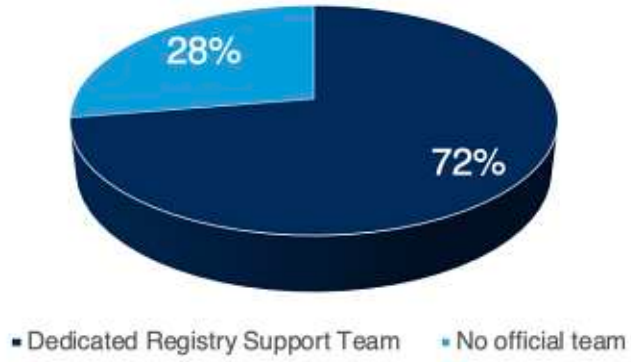


Figure 8: How do you support registry abstraction?



Common Performance Management KPIs for Cardiovascular Procedure Labs

Prior to this study, several KPIs for cardiovascular procedure lab operational metrics were identified: procedure volumes, turnaround times, percent of on-time starts, cost-per-case, room utilization, staff productivity, same day discharge and radial access percentage. The majority of programs confirmed that they track these KPIs; however, definitions for each metric / KPI can differ between cardiovascular programs and may even differ between departments at the same healthcare organization. An overview of the study findings for each KPI is provided in this paper.

Commonalities Among CVSLs With Advance Data Analytics Programs

Regardless of each program's current state with respect to operational analytics capabilities, every cardiovascular procedure lab acknowledged that there is much room for improvement when it comes to data analytics. Leaders emphasized urgency in finding innovative solutions. With staff at risk for burnout and immense pressure to maximize value while minimizing costs, leaders and their teams struggle to find capacity to resolve this data analytics gap. However, a few of the interviewed programs were further along in the journey.

PROGRAMS THAT SUCCEEDED IN ASSEMBLING STRONG DATA ANALYTICS PROCESSES SHARED COMMON THEMES:

- They had a dynamic team approach dedicated to solving the gap in data analytics.
- They had support from leadership to prioritize resources and staff to identify solutions
- The team shared an innovative mindset and proactively sought opportunities to resolve issues in data analytics
- Team leaders clearly understood the need and were dedicated to finding solutions specific to the need
- Their organization embraced a culture of excellence where they would constantly seek improvement through tight feedback loops

"There are so many different software programs we use and most of them don't talk to each other so my team has to bridge the gaps by doing a lot of manual work."

– Cath Lab Director, Regional Hospital

Who Has Mastered Data Analytics?

Closing the gap in data analytics requires a team approach with support from leadership. Identifying metrics that provide valuable insights specific to operational performance is a critical step. It's also crucial to understand sources of data and interoperability between systems.

Among the interviewed programs, three had well-developed, advanced data analytics processes specifically targeting operational performance intelligence for the cardiovascular procedure labs.

- Two programs (both community hospitals) built a tailored application to fit their operational needs and partnered with external resources that specialized in data analytics platforms.
- One program (academic hospital) had a hospital data analytics team that developed in-house methodology for streamlining data analyses and metrics to support the CVSL and cardiovascular procedure labs.

Even programs with more advanced analytics emphasized the need for innovative solutions to improve the current state of operational performance data analytics in order to close the gap.

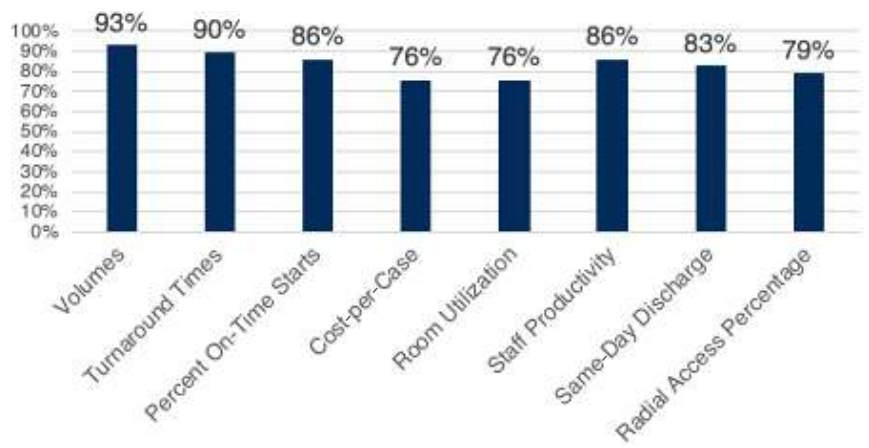
"After managing the operating room for years, I now realize there's a big difference in operational metrics and culture between the OR and the cardiovascular cath lab."

– Cath Lab Manager with 10+ Years of Experience Managing the OR

TOP OPERATIONAL METRICS FOR CARDIOVASCULAR PROCEDURE LABS

The following KPIs are performance metrics that were identified by physician and administrative leaders from the CV TRIAD[3] as critical to monitor as part of regular operational management of cardiovascular procedural departments. Most programs interviewed reported that they regularly track these metrics **(Figure 9)**, although opportunities exist to clearly define and improve the analysis of each metric:

Figure 9: Programs Who Measure Each Operational KPI



**A small number of programs did not know whether the cath lab / procedure labs tracked each measure*

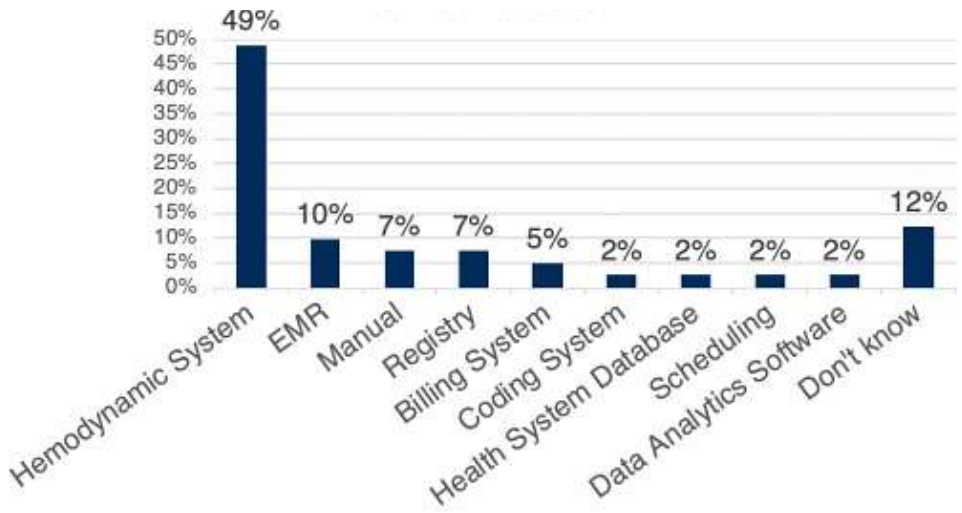
TOP OPERATIONAL METRICS

1. PROCEDURE VOLUMES
2. TURNAROUND TIMES
3. PERCENT OF ON-TIME STARTS
4. COST-PER-CASE
5. ROOM UTILIZATION
6. STAFF PRODUCTIVITY
7. SAME-DAY DISCHARGE
8. RADIAL ACCESS PERCENTAGE

Volumes by Procedure Type

Almost every program reported that they track volumes by procedure type. Most programs pull this data from their hemodynamic system; however, there are many different sources used to extract procedure volumes data **(Figure 10).** The variety of software applications that cardiovascular procedure labs rely on for data adds to the complexity.

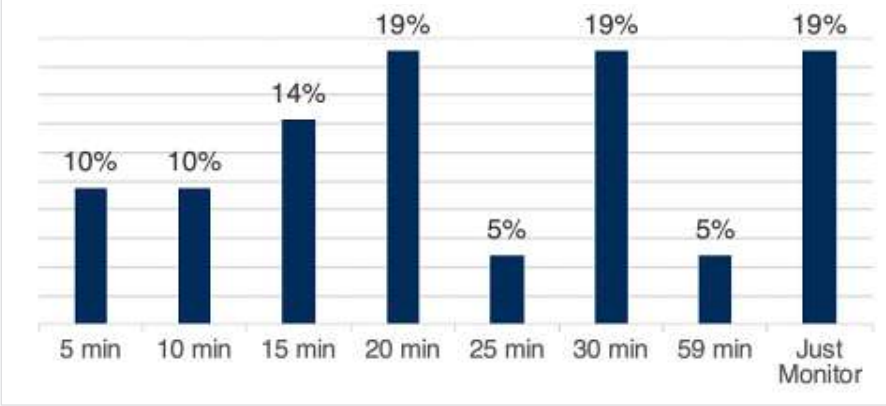
Figure 10: What is your data source(s) for CV procedure lab volumes data?



Turnaround Times

The majority of programs reported that they tracked turnaround times; however, definitions varied. Some programs defined turnaround times as "wheels in / wheels out," but other definitions included "wheels in / case end," or based turnaround times around the physician entering the procedure lab and then "breaking scrub." Goals for turnaround times varied and often depended on the procedure-type. Generally, goals ranged from five minutes to less than an hour; whereas, some programs reported that they did not have a goal but rather just monitored the metrics **(Figure 11).**

Figure 11: What is your goal for turnaround times?



On-Time Starts

Most programs that tracked turnaround times also tracked on-time starts. The goal for on-time starts ranged from 75% to 100% of cases; however, approximately a third of the programs indicated that they only monitored this metric with no specific goal **(Figure 12)**. Some programs only measured on-time start for the first case of the day since a domino effect occurred if the first case did not begin on time.

Cost-Per-Case

As hospitals and CVSLs are pressured to maximize quality while minimizing costs, the ability to accurately measure cost-per-case is a major opportunity for most programs. The majority of programs interviewed tracked cost-per-case, and most tracked actual costs vs. estimated costs **(Figure 13)**; however, many shared skepticism in the validity of their internal data reported.

The definition of cost-per-case varied among programs, and even varied among departments inside the same hospital, which again highlights the unique needs of the cardiovascular procedure lab from other departments. Furthermore, the way programs defined cost-per-case varied widely, and if it was calculated by another department, such as finance, it was not uncommon for the CVSL and procedure lab leaders to not know the algorithm used to calculate costs.

Numerous software applications are used to track the overall picture for costs, such as inventory management, charge capture and staff and physician time; however, it was common for these applications to not interface well, if at all, with each other. Sixteen out of 29 programs tracked actual costs, but only seven of these programs felt that their cost-per-case data was accurate and reliable. These seven programs had specifically targeted this issue, and often had dedicated team members focused on tracking costs and/or the programs partnered with companies that specialized in solutions for cost tracking and analytics.

Room Utilization

Most programs tracked room utilization with goals ranging from 70% to 85% although a quarter of programs reported that they only monitored this metric **(Figure 14)**. Programs varied in the way room utilization was calculated and was dependent on the number of cardiovascular procedure labs. Programs that had multiple labs were more likely to track room utilization rates, but even programs with one lab found value in tracking room utilization unless their lab schedule was maximally utilized then rendering the metric moot.

Figure 12: What is your goal for on-time starts?

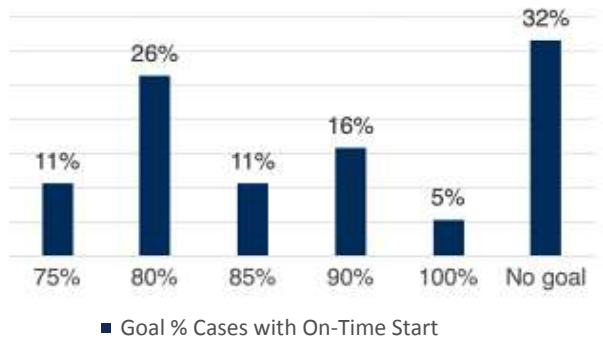


Figure 13: Do you track actual or estimated cost-per-case?

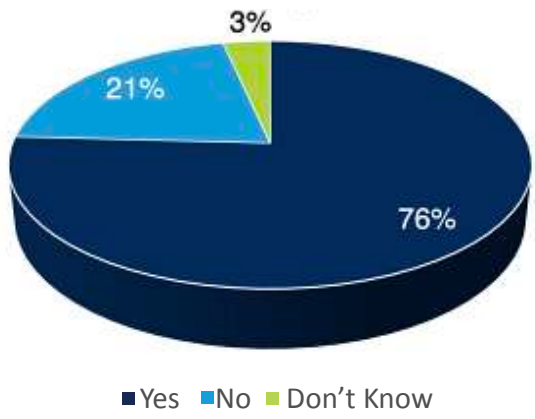
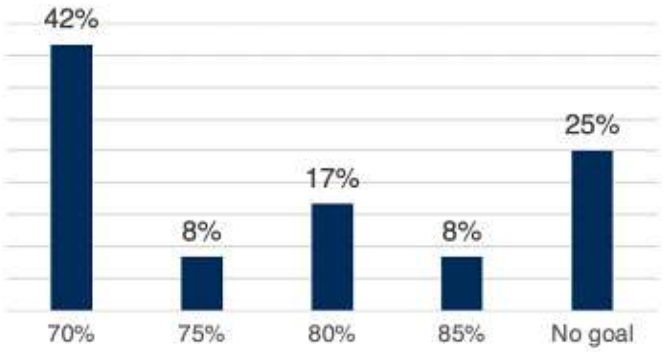


Figure 14: What is your goal for room utilization?



Staff Productivity

Measuring staff productivity in the cardiovascular procedure lab presents a major opportunity for improvement across the industry. Many programs emphasized that their organization measured productivity regularly **(Figure 15)**; however, the algorithms used do not accurately capture the true productivity of the team in the procedure labs. The ability to accurately factor in acuity of case is critical for fairly representing lab productivity. In many circumstances, higher acuity cases that required more resources and time negatively impacted productivity metrics. This is concerning since optimizing the quality of patient care may negatively impact productivity metrics, which in turn makes the care team appear inefficient.

The way productivity is defined varied greatly among programs yet often did not accurately measure the complexity of care provided by staff in the procedure lab. Furthermore, the algorithms used to calculate this measurement were ambiguous to most program leaders highlighting a major opportunity. In addition to the inability to measure the acuity of cases for productivity, cardiovascular procedure labs provide both elective and emergent care requiring the need to 'staff' labs at times when there are no cases. Very few programs found a fair and effective way to accurately measure lab productivity. When care teams were held to metrics that were misrepresented or misinterpreted, rapport with leadership and optimal patient care were jeopardized.

Same-Day Discharge

Most programs tracked same-day discharge **(Figure 16)**; however, the methodology to track this metric varied. Most programs tracked same-day discharge for appropriate patients while others tracked specific to procedures. Goals depended on the methodology for tracking same-day discharge.

Figure 15: Do you track productivity?

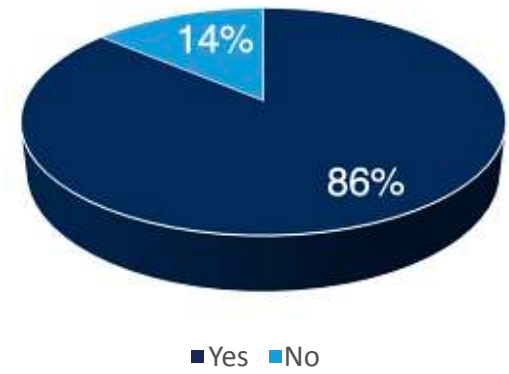
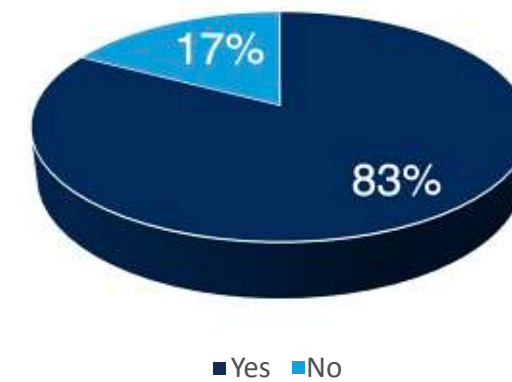


Figure 16: Do you track same-day discharge?



Radial Access

Most programs tracked radial access percentage **(Figure 17)**; however, this metric did not pertain to pediatric programs. The radial access goal varied depending on how programs calculated this metric **(Figure 18)**. For example, some programs only tracked radial access for specific procedures; whereas, other programs tracked radial access across all cases. This accounts for the wide variation in radial access percentage goals.

Figure 17: Do you track radial access percentage?

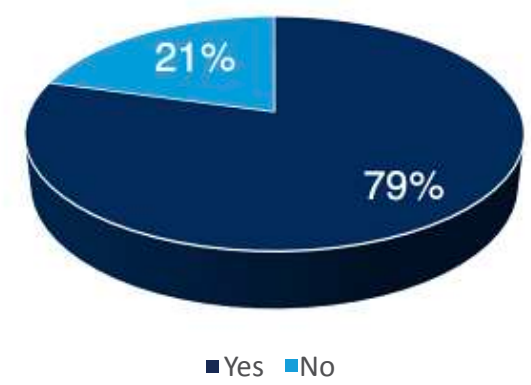
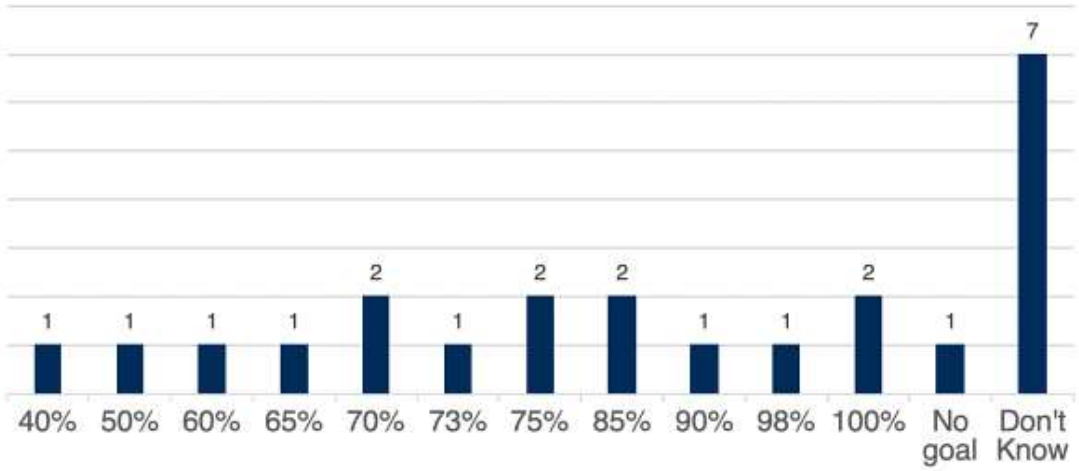


Figure 18: Radial Access Percentage Goal



Other Operational Metrics Tracked

Although the above operational performance metrics accounted for the majority of regularly tracked KPIs, the following were commonly noted metrics across programs:

- Where patients are discharged to and where they came from (i.e., home, skilled nursing facility)
- Transfers
- Referrals
- Emergency department bypass patients
- New patients
- After hour and weekend cases
- Length of stay
- Readmissions
- Patient satisfaction
- Provider satisfaction
- STEMI times
- Door-to-balloon time
- Duration of case
- Quality and safety metrics
- Observed vs. expected mortality
- Complications
- Urgent transfers to the OR
- Time outs
- Unplanned returns to the procedure lab
- Contrast / radiation dosage
- Chart / report completions
- Stents-per-case

What Programs Wished They Could Track

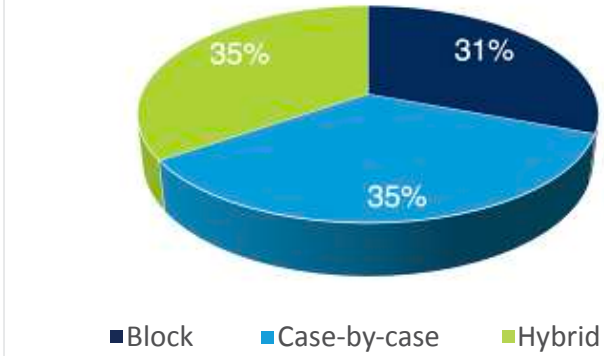
Almost every program mentioned additional items that they wished to track but lacked the resources and capabilities. Most programs emphasized the disconnect in understanding how the cardiovascular procedure lab fits into the overall operational and financial performance for the CVSL and the hospital. Programs emphasized a strong desire to understand their contribution to the hospital's bottom line.

- Stronger correlation of data with finance
- Utilization of supplies and equipment
- Factors that impact work (i.e., bad storm that delayed transfers)
- After hours cases
- Acuity of cases especially as it relates to productivity
- Financial contribution of CVSL/cardiovascular procedure lab (especially diagnosis-related groups)
- Employee engagement
- Readmissions

PROCEDURE LAB SCHEDULING

The methods for scheduling procedure times were somewhat evenly divided among "block," "case by case," and a combination of the two (i.e., "hybrid scheduling"), as shown in **Figure 19**. Most programs who used hybrid scheduling stated that they were moving toward complete block scheduling.

Figure 19: What method do you use for scheduling?



"I've been doing this for 23 years and every year it's the same battle when it comes to budget. The complexity of case does not properly get factored into productivity level."

– Cath Lab Manager, Community Hospital

STAFFING MODELS

Staffing Per Procedure Lab

When asked if the same team members staffed EP and cardiac cath cases, the majority of programs (62%) stated they had separate teams for the various labs, but seven programs noted they had separate teams with cross training **(Figure 20)**. Nearly 40% of programs stated that the same team staffed both EP and cardiac cath labs. Programs emphasized that the ability for staff to interchange between different procedure labs and cases allowed for improved efficiency and flexibility, especially given the staffing shortages.

Staffing Ratio

Most programs reported a team of three staff members per case (i.e., 2:1 ratio per cardiovascular procedure lab case) with either two nurses and one tech, or two techs and one nurse. Three programs reported a team of four staff members (i.e., a 2:2 ratio) which included at least one nurse among the four staff members **(Figure 21)**. One program reported that for lower acuity cases, they might staff one nurse and one tech, and for all cases the charge nurse and clinical manager assisted as necessary. EP and structural heart cases / hybrid labs usually reported four staff members with a ratio of two nurses to two techs, not including the cardiac surgery staff for structural heart cases. A few programs, including a program at a quaternary hospital, always staffed a certified registered nurse anesthetist for every case with strong belief that this improved the quality of care, outcomes and patient safety.

Figure 20: Do you have the same staff or different staff members for EP and cardiac cath labs?

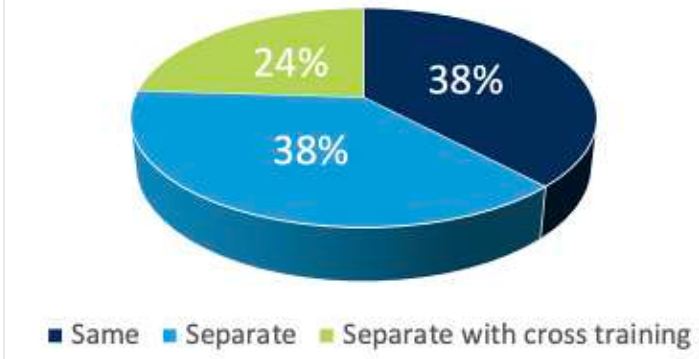
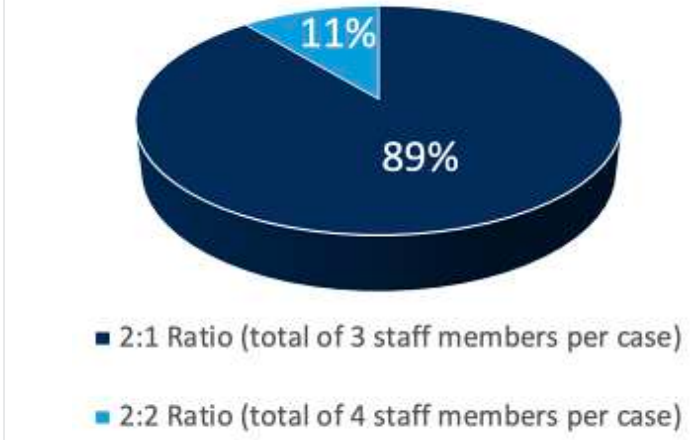


Figure 21: Staffing Model



"Cost-per-case is poorly managed. Registration data doesn't match back to proceduralists involved and we've found that the data are about 60% accurate so we don't even report this."

– VP of CVSL, Regional Healthcare System

CARDIOVASCULAR HEALTH INFORMATION MANAGEMENT

Every program used software applications and imaging systems supplied by an array of different manufacturers **(Figures 22, 23 and 24)**; no programs used a suite of applications solely provided by one manufacturer. This highlights the challenge for software systems to effectively communicate with each other resulting in staff being charged with the burden to manually enter or mine data across the different platforms.

Figure 22: Picture Archiving and Communication System

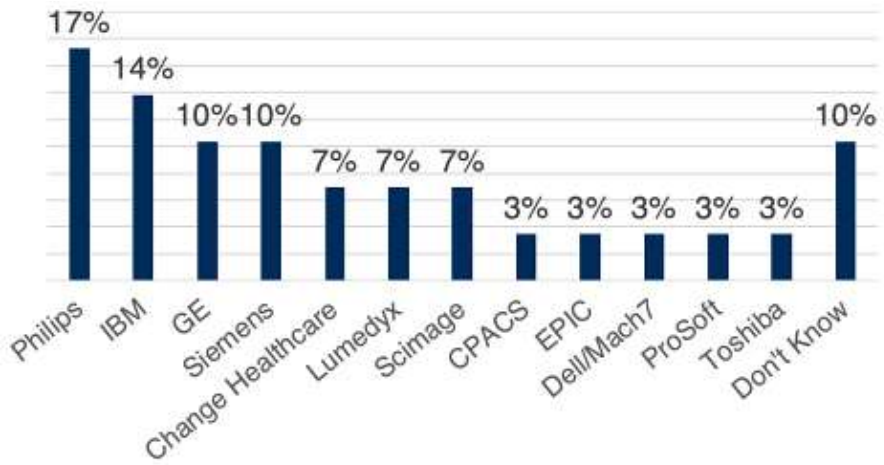


Figure 23: Electronic Medical Records

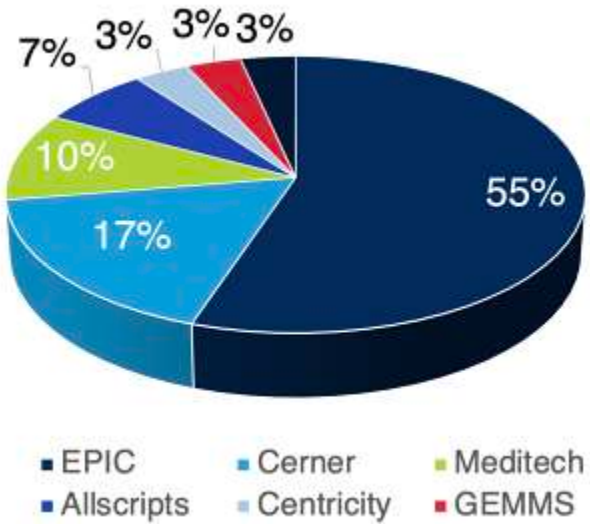
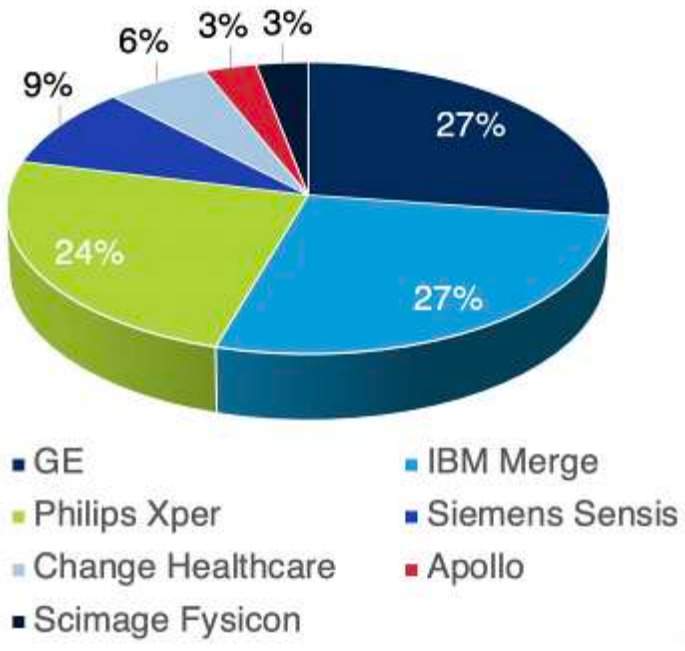


Figure 24: Hemodynamic Systems



VALUE PROPOSITION

Improvement in data analytics has multiple benefits for driving operational excellence for cardiovascular procedure labs.

MedAxiom notes four important benefits:

1. Data analytics are essential when striving for excellence.

Peter Drucker once said: "If you can't measure it, you can't improve it." Data and tight feedback loops support a program's ability to make needed adjustments to strive for excellence. Data analytics must be timely, reliable and accurate. A clear understanding of the data source and how metrics are measured is crucial; otherwise, meaning is lost in numbers and will result in misinterpretations.

2. Streamlined data analytics processes enable staff to focus more on patient care and high value work.

Staff time must be prioritized to provide the highest possible quality of patient care. When cardiovascular procedure lab teams are pressured to bridge the gap in data analytics, staff are burdened with a time-consuming and overwhelming problem that they do not have the time or resources available to solve. Short term workaround solutions, such as manually mining and analyzing data, have limitations in capabilities and are not sustainable for the long run. Programs with advanced data analytics processes have dynamic, dedicated teams who target this gap. The resources and time dedicated upfront enable more efficiency and time saved in the long run.

3. Staff engagement increases and the risk of burnout decreases when metrics are timely and trustworthy.

A plethora of research studies show that effective teamwork improves morale and engagement and increases the odds of achieving goals. Metrics give teams feedback enabling them to monitor progress and align. When there is skepticism in how data are analyzed, rapport is jeopardized and team members will not be working together effectively to achieve goals. If significant delays on feedback are encountered, the team's time and effort could be misdirected resulting in suboptimal results, frustration and burnout. Transparency in data analytics and timely feedback empower teams to provide high quality care while improving operational efficiency.

4. Improved operational efficiency will support maximal patient care while minimizing costs.

As healthcare expenditures continue to rise in the U.S., payers pressure healthcare organizations to minimize costs while maximizing value and improving patient outcomes. The complex, fast-paced environment of cardiovascular procedure labs that employ a variety of software applications easily leads to redundancies and inefficiencies. Improving operational efficiencies and performance will increase output while decreasing expenses, which will offset declines in reimbursement and increases in cost of supplies.

CONCLUSION

Healthcare organizations are under tremendous pressure to decrease expenses while providing the highest quality of care. With changes to reimbursement, regulations and growing costs for offering services to patients, the ability for cardiovascular procedure labs to optimize operational performance management and maximize efficiency is paramount for sustainability.

Although cardiovascular procedure labs have many resources and guidelines for measuring quality of care, the industry is lacking best practice guidelines and standardization of metrics in terms of operational performance management. Accurate, reliable and timely metrics and data analytics are crucial to effectively drive operational performance management. This study, which interviewed 29 programs representing more than 200 cardiovascular procedure labs across the U.S., confirmed that this is an industry need. Significant opportunity exists to innovate the market by streamlining processes for capturing and analyzing data to support performance management.

MedAxiom, the American College of Cardiology and Philips Collaborate to Shape the Future of Cardiovascular Care Delivery

In 2021, MedAxiom, the American College of Cardiology (ACC) and Philips, a global leader in health technology, entered into a collaboration to deliver timely and actionable information and guidance to align physicians, operations and finance stakeholders. This study is an output of this ongoing engagement. The long-term goal of the MedAxoim/ACC/Philips collaboration is to drive significant performance improvements in integrated cardiovascular care in terms of the patient and care provider experience, clinical outcomes and productivity.

Learn more

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Advancing Heart Care Worldwide

PHILIPS

References

1. Reed GW, Hantz S, Cunningham R, Krishnaswamy A, Ellis SG, Khot U, Rak J, Kapadia SR. Operational Efficiency and Productivity Improvement Initiatives in a Large Cardiac Catheterization Laboratory. JACC Cardiovasc Interv. 2018 Feb 26;11(4):329-338. doi: 10.1016/j.jcin.2017.09.025. Epub 2018 Feb 1. PMID: 29397359.
2. Reed GW, Tushman ML, Kapadia SR. Operational Efficiency and Effective Management in the Catheterization Laboratory: JACC Review Topic of the Week. J Am Coll Cardiol. 2018 Nov 13;72(20):2507-2517. doi: 10.1016/j.jacc.2018.08.2179. PMID: 30442293.
3. Can we resuscitate cardiovascular care, by taking a frontier, shared-risk approach?

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KEY CONSIDERATIONS WHEN ASSESSING YOUR UTILIZATION OF DATA ANALYTICS

The following questions are designed to help you reflect on your cardiovascular procedure lab's utilization of data analytics and processes:

1. How much time and resources are currently needed to create and collate your performance metric reports and dashboards?

2. Is relevant data readily available and easily accessible in order for you to effectively manage operational performance? If not, why?

3. Have you established your own operational performance benchmarks? Does your organization use these benchmarks to compare different sites with cardiovascular procedure labs across your organization?

4. What are your sources of data? Do you know how data are analyzed?

5. Are your systems integrated so that data flows automatically from one system to the next without having to reenter information? How often do you manually need to enter/extract/analyze data?

6. How confident are you in the reliability and accuracy of the data analytics and reports provided? If you do not completely trust the data, what components of the data cause you to be skeptical? Do various systems report conflicting information?

7. When analyzing KPIs across multiple hospital departments, do definitions differ for the cardiovascular procedure lab? For example, is "turnaround time" defined differently for the cath lab as opposed to the operating room? How about "staff productivity"? Are there opportunities for better alignment of definitions for the cardiovascular procedure lab to produce more helpful metrics?

8. When staffing for your cardiovascular procedure labs, do you use data to make the correlation between lab equipment utilization and the staffing resources available? Do you experience cases being delayed due to lack of staff availability?

9. When measuring the cardiovascular procedure lab's cost-per-case, do reports differ depending on the department producing the report? If yes, do reports differ due to discrepancy in data sources, or due to varying definitions and ways to tabulate cost, or other?

10. How can you make your data analytics more insightful to support operational excellence? Are the metrics you are tracking informative and actionable? For example, if you're measuring "on-time starts," does this metric help you identify how to improve processes?