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Cath Lab Digest

A Product, News and Clinical Update for the Cardiac Catheterization Laboratory Specialist

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Cath Lab Profitability

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— *Gary Clifton, Vice President, Terumo Business Edge*

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Ryan Graver, President,
MedAxiom Ventures

Recent shifts in reimbursement and policy have highlighted the increasingly significant priority for healthcare systems to proactively manage inpatient and outpatient care in an economically rationalized manner. Healthcare policies such as the Two-Midnight rule, Comprehensive Ambulatory Payment Classifications (APCs), and the Observational Status Notification are all relatively recent regulations that are impacting healthcare systems' ability to admit patients and are forcing new strategies to manage outpatient care. At the same time, operational practices have not stayed current with these new economic realities, compounding operational challenges and a healthcare marketplace that is transforming at an unprecedented rate. Entering 2017 with the Medicare Access and CHIP Reauthorization Act (MACRA)'s implementation and Episode Payment Models (EPMs) on the horizon, risk is being shifted from payers to providers in a new way, which requires not only a focus from healthcare leaders, but new strategies to optimize care delivery in terms of quality, patient outcomes, and the cost to deliver. Over the last decade, cardiovascular provider organizations have integrated into healthcare systems in order to align the economic interests and organize more efficient delivery models (Figure 1).

Today, 78% of cardiovascular providers nationally are integrated with healthcare systems, meaning that either direct employment or financial alignment such as management service agreements are in place.[1] At the same time, as hospitals have been organizing and maturing service lines, there have been extraordinary headwinds facing the healthcare market; declining reimbursements from both Medicare and commercial payers, decreasing Disproportionate Share Hospital (DSH) payments, increasing patient out-of-pocket expenditures, and a skyrocketing patient debt expense. Additionally, the introduction of Advanced Payment Models (APMs) have challenged systems' solvency, resulting in a never-before-seen rate of hospital closures.

Cardiovascular services remain among the top clinical areas of healthcare expenditures nationally and, at the same time, are consistently among the top financially performing services within hospitals.[2] Yet despite the fact that cardiovascular providers are more "integrated" into health systems and the fact that health systems are bearing an increasing financial exposure, largely related to cardiovascular care, providers are not given access to key financial performance data. Today, as an example, with the significant financial forces impacting payment and site of service, as well as changing reimbursement guidelines, many hospitals

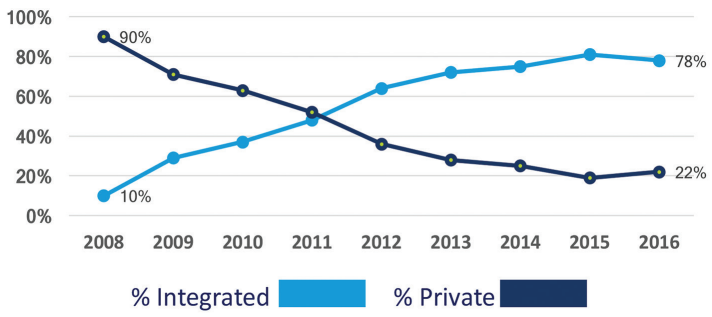

Figure 1. The rate of cardiovascular provider organizations integrating into healthcare systems over the last decade.

Today, 78% of cardiovascular providers nationally are integrated with healthcare systems, meaning that either direct employment or financial alignment such as management service agreements are in place.[1]

across the country no longer report the strong, positive contributing forces of a cath lab to a hospital's bottom line, and in many cases, cath labs have become a cost center rather than a profit center. Thus, MedAxiom has completed an analysis of hospital-related cath lab procedures utilizing hospital cost reports to gain a more detailed understanding of how hospitals' cath-related procedures are performing, and what opportunities may exist to improve the overall financial performance of these programs.

Methods

MedAxiom has analyzed Medicare hospital cost reports for all hospitals in the United States performing percutaneous coronary intervention (PCI) procedures and have found that hospitals are operating on a very slim total margin per case.[3] Between 2014 and 2015, inpatient procedures mapping to DRGs 246-251 were analyzed looking at length of stay (LOS), attributed revenue center costs per case, and reported payments, in order to calculate an estimated hospital inpatient margin per case. MedAxiom analyzed 122,842 discharges to calculate the following descriptive analysis of financial performance:

Weighted Average Total Cost: $17,044.86
Weighted Average Payment: $16,829.73
Total Margin per Case: ($215.14)
Weighted Length of Stay: 3.68 Days
Intensive Care Cost per Case: $3,308.01
Routine Care Cost per Case: $992.68

In their cost reports, hospitals allocated an average of $4,300.70 per case related to hospitalization costs, which represented 25% of the total procedural costs and of which, 70% was associated with the use of intensive care. If we examine the total hospitalization costs reported and account for length of stay, the average per night cost was reported at $1,169.86 nationally. For context, the next highest costs were associated with the cath lab, implantable devices, supplies, and then drugs.

Category Percentage or Total Per Case Costs	
Hospitalization	25%
Cardiac Catheterization	20%
Implantable Devices	17%
Other	14%
Supplies and Equipment	11%
Drugs	9%
Laboratory	4%

If hospitals on average were paid $16,929.73, then the operating margin reported to CMS could be calculated at a negative $215.14 per case or roughly a -1% margin per case. To illustrate the impact of LOS on financial performance, if hospitals on average reduced 1 night from their length of stay or reduced their total costs by the reported $1,169.86 per case, the average margin would improve from -1% to 6% per case.

In March of 2017, Amin et al published an analysis that further supports this picture of cath lab economics nationally. Amin's findings utilized the same hospital cost report data and found that hospital costs per case associated with inpatient PCI procedures was $17,076 per case[4], within roughly $32/case of our findings. Amin et al demonstrated that PCI procedures where both transradial and same-day discharge (SDD) strategies were employed cost on average $3,689 less than when femoral access was employed with an overnight stay. Amin et al concluded that programs performing 1,000 PCIs per year that adopted a SDD protocol along with transradial in 30% of their interventional cath lab procedures could save on average $1 million annually in operational efficiencies.

While the rate of adoption of transradial services has more than doubled in

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the United States over the last eight years to approximately 40%[5], programs largely have not fully adopted changes around the procedure itself. Furthermore, while transradial access has been widely studied and results have been published showing a significant decrease in risk of patient bleeding, enhanced patient mobility post-procedure, reduction in post-procedural complications, improved length of stay, and an overall reduction in the total cost of care[6], cath lab programs continue to keep patients in the hospital for observation or overnight hospital care. In 2016, the Advisory Board, in an article titled, "Why you should be working toward same-day discharges for PCI," noted that 90% of interventional programs were keeping patients in the hospital for one night.

A convergence of market forces are driving healthcare toward a new normal of transparency, consumerism, and risk. To this end, leaders must identify meaningful strategies that align focus around healthcare provider job satisfaction and improving patient outcomes, all in a manner that enhances the profitability of the healthcare system delivering care, while managing the economics of the entire episode related to that patient's encounter. Rationalizing patient care in the cath lab will be an important area of focus for healthcare systems in order to optimize delivery of care, and succeed both today and moving forward.

Case Example

MedAxiom and Terumo Business Edge have created an illustrative model that utilizes hospital-specific cost report data, length of stay, volumes, and estimated adoption rates of transradial and SDD in order to estimate the economic opportunity at a facility level. It is important to note that hospital cost reports do not capture time- and resource-based cost accounting; thus, for a more accurate picture of your institution's actual costs, it is recommended that you engage Terumo Business Edge and MedAxiom to perform a full assessment of your facility's cath lab optimization opportunities. A full assessment will allow for operational processes, staffing, and facility-tracked costs to be factored into an overall financial perspective of performance.

To help providers understand cost per case and total impact of inpatient cath-related procedures, we have selected a sample hospital to show a comparison of performance and illustrate how hospitals use cost report data to compare their cost and performance (Figure 2). Figure 3 shows a comparison of the allocation of cost by our sample hospital compared to the nationally average reported costs per case.

In our analysis of cost, profitability and a further examination of the impact on patient LOS, we see that while our sample hospital has roughly a full half day shorter stay than the national average, they have allocated $6,115 per case to patient hospitalization, or roughly $1,814 more per case. Given that this hospital allocates $1,975 per day to the cost of hospitalization, let's talk about the impact that a further optimization or reduction of LOS from 3.1 to 2.6 days would have on total financial performance. Such a LOS improvement would reduce total costs by $987.56 and would improve case profit from a negative -$351 to a positive $635 or -2.2% to 3.9%. In this example, the cath lab would go from losing $122,000 to making more than $220,000, based on the same volume of care.

This case example does not factor in cases that are paid on an outpatient basis, but patients are kept overnight for observations. In these instances, there is no incremental reimbursement for keeping the patient overnight and thus the hospital is simply furnishing resources that are unreimbursed. Imagine if you provided $1,814 worth of care hundreds of times a year and received no reimbursement for these services. In both aspects, the need to optimally manage the clinical and operational aspects of care are extremely important, and require alignment of providers and transparency of the data in order to achieve the desired results.

Transformational Opportunity

Today, hospital executives use terms like "managing to Medicare margins," which means that service lines can no longer rely on commercial contract premiums in order to achieve budget; they must achieve profitability within Medicare payment rates. Building on the work previously referenced from Amin et al, we have seen cardiovascular service lines across the country increase the adoption of the transradial technique for their interventional patients. However, data suggests that a full programmatic approach to operationalizing transradial and deploying SDD protocols regularly has not yet been achieved on a consistent basis. Together, Terumo and MedAxiom have created a partnership that is working with a number of labs across the country, with a focus on supporting cardiovascular groups

Profitability Analysis	Sample Hospital	National Average
Number of Discharges	347	156
Geometric Mean Length of Stay	3.10	3.68
Mean Age	74	72
Provider Reported Cost Per Case	$ 16,565.65	$ 17,044.86
CMS payment	$ 16,213.91	$ 16,829.73
Estimated Profit Margin	$ (351.74)	$ (215.14)
Profit Margin Percentage	-2.2%	-1.3%
Total Cath Related Revenues	$ 5,626,226.77	$ 2,633,755.49
Total Cath Related Margin	$ (122,054.03)	$ (33,667.53)

Figure 2. A sample hospital's use of cost report data to compare their cost and performance to national averages.

Reported Cost Comparison	Sample Hospital	National Average
Routine Days	$3,267.24	$992.68
Intensive Days	$2,848.19	$3,308.01
Cardiac Catheterization	$2,976.53	$3,435.84
Implantable Devices	$3,360.30	$2,826.62
Supplies and Equipment	$1,974.19	$1,839.10
Drugs	$654.19	$1,592.71
Laboratory	$260.73	$687.03

Figure 3. Per case allocation of cost by our sample hospital compared to the nationally average reported costs per case.

in achieving the full clinical and operational benefits associated with transradial access. Combining Terumo's expertise in transradial access and MedAxiom's cardiovascular operational knowledge, the Cath Lab Patient Care Pathway Program is being offered to assist cath labs in fully implementing a transformative care program. The results of this program include: reduced LOS, reduced cost per case, enhanced operational efficiency, and an improved profitability.

Conclusion

There may be no other area of clinical medicine that aligns the interest of today's healthcare requirements for success. Cath lab optimization impacts a large patient population, improves quality of care, improves patient outcomes, and reduces the total cost of patient care, while reducing the cost to deliver care. The healthcare marketplace is transforming and solutions are emerging that focus on standardizing the clinical delivery of care, which will improve patient outcomes and quality, and bring program profitability within reasonable reach. These efforts are targeting large patient populations and sharing best practices from among peers throughout the healthcare community. The transradial care pathway program is perhaps the most focused, achievable, and significant opportunity healthcare systems can pursue to achieve success today.

The term "risk" has taken on a new meaning for healthcare leaders today and there continues to be new ways in which stakeholders are working together to align risk. Payer and providers, providers

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and hospitals, and hospitals and employers are working together to achieve shared goals and success continues to expand across the market. If you are interested in learning more about your hospital's reported costs to CMS or further understanding how MedAxiom and Terumo Business Edge are helping hospitals achieve millions of dollars of operational efficiency, we are ready to receive your inquiry. Please use our contact info at www.terumobusinessedge.com. ■

Terumo and MedAxiom have created a partnership that is working with a number of labs across the country, with a focus on supporting cardiovascular groups in achieving the full clinical and operational benefits associated with transradial access.

References

1. MedAxiom 2016 Annual Survey. Data on file.
2. Sobal L. Why cardiovascular is (still) the healthcare leader. MedAxiom Blog, April 27, 2017. Available online at https://www.medaxiom.com/blog/why-cardiovascular-is-still-the-health-care-leader. Accessed July 18, 2017.
3. 2014 / 2015 CMS Hospital Specific Cost Report Analysis – Rate Setting File.
4. Amin AP, Patterson M, House JA, Giersiefen H, Spertus JA, Baklanov DV, et al. Costs associated with access site and same-day discharge among Medicare beneficiaries undergoing percutaneous coronary intervention: an evaluation of the current percutaneous coronary intervention care pathways in the United States. *JACC Cardiovasc Interv.* 2017 Feb 27; 10(4): 342-351.
5. Correlative data from IMS, NCDR, MRG and Terumo.
6. Valgimigli M, Gagnor A, Calabró P, Frigoli E, Leonardi S, Zaro T, et al; MATRIX Investigators. Radial versus femoral access in patients with acute coronary syndromes undergoing invasive management: a randomised multicentre trial. *Lancet*. 2015 Jun 20; 385(9986): 2465-2476.
7. Contos B. Why you should be working toward same-day discharges for PCI. Advisory Board. January 19, 2016. Available online at https://www.advisory.com/technology/crimson-continuum-of-care/members/expert-insights/same-day-discharge-for-pci. Accessed July 18, 2017.