Achieving greater financial sustainability in your cardiovascular service line

Supply cost analysis in a practical example: CABG

With a growing percentage of the U.S. population being diagnosed with cardiovascular disease, healthcare providers are preparing their organizations to meet the escalating demand for care and the financial impact that will come with it.

Figure 1: Cardiovascular disease in America by 2025[1]

45M Americans will have cardiovascular disease by 2025

$1.8T The total cost of cardiovascular disease will triple to $1.8 trillion when considering direct and indirect costs.

Why?
- Older, more diverse population
- Increase in risk factors, such as high blood pressure and obesity

The most common type of cardiovascular disease is coronary artery disease (CAD), occurring when a coronary artery is narrowed by plaque buildup that severely restricts blood flow and oxygen delivery to the heart muscle. Revascularization strategies consist of two main techniques: percutaneous coronary intervention (PCI) and coronary artery bypass grafting (CABG).

New bundled care model from CMS to include CABG procedures

Reimbursement considerations will become more complex with the new Transforming Episode Accountability Model (TEAM) bundled care program from the Centers for Medicare and Medicaid Services (CMS). The TEAM model targets five common, costly procedures, including CABG. There are many hospitals that will be required to participate in this program, and selected hospital participants will be responsible for the cost and quality of care from surgery through the first 30 days after leaving the hospital. Quality performance on these measures will generate a composite quality score that potentially impacts the reconciliation payment or repayment amount by 10-15%. TEAM is different from previous models with clearly defined roles between primary and specialty care, plus an increased focus on health equity. Regardless of whether your organization is in a mandatory market, this is an opportunity to develop a coordinated and high-value specialty care strategy for CABG procedures.

10 – 15%
potential impact on the reconciliation payment or repayment amount

Source: Introducing TEAM, Medicare's newly proposed mandatory bundled payment model

Figure 2: Cardiovascular procedural volume, 10-year forecast

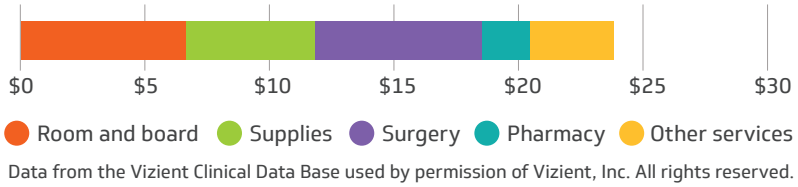
+4% CABG

+6% PCI

+5% Revascularization (CABG and PCIs)
With PCIs making up roughly 85% of revascularizations

Sources: Impact of Change®, 2024; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2019. Agency for Healthcare Research and Quality, Rockville, MD; Proprietary Sg2 All-Payer Claims Data Set, 2022; The following 2022 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2024; Sg2 Analysis, 2024.

Figure 3: Cost per case for coronary artery bypass, 2023 discharges



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Diving into the variable costs for a coronary artery bypass grafting procedure

To improve performance in coronary artery bypass grafting (CABG), hospitals should review the factors impacting their cost per case to identify opportunities to reduce expenses without compromising quality.

The average reimbursement in 2024 for DRG 236 (coronary bypass w/o cardiac cath w/o MCC) is approximately $26,000. The average cost per case is $24,000, but is highly variable by organization. Combining this data with what we know about the potential impact of the TEAM model creates a need to evaluate the total cost of care for this procedure.

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Taking action: standardize supplies used in CABG procedures to reduce costs

Approximately 20% of CABG expenditures fall into supply costs (See Figure 3). Analyzing the supplies used in CABG procedures could reveal opportunities to reduce costs. As an example, endoscopic vein harvesting (EVH) kits are the single largest portion of supply cost. There are many suppliers in this product category and great variability in kit costs (See Figures 4 and 5). Evaluating the use of EVH kits, stabilizers and potentially consolidating suppliers can help organizations pursue cost savings.

This range of variability in supply costs, when combined with a small margin, creates an opportunity for providers to seek ways to stabilize variable expenses to improve performance. Benchmarks can be used to compare performance across variable costs to seek opportunities to improve.

Figure 4: Supply cost per case for CABG procedures

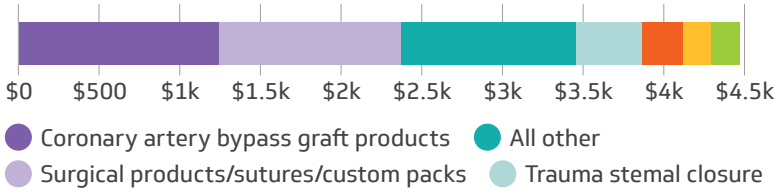

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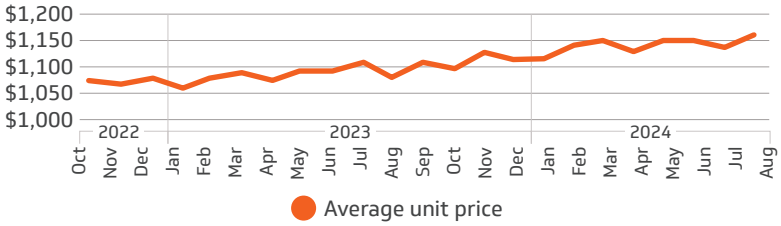
Figure 5: Vein harvest kit unit cost trends (Sep. 2022-Aug. 2024)



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Taking action: optimize care pathways

This represents an opportunity to monitor quality metrics to improve performance and financial sustainability. For example, average length of stay (ALOS) and time spent in intensive care units (ICU) correlates to increased room and board expenditures. In CABG procedures, days in ICU represents over 25% of the cost of care on average (See Figures 6 and 7).

Leverage clinical data: Use long-term clinical data to inform decision-making, especially for high-risk patient groups, to ensure better outcomes.

Evaluate new technologies: Keep abreast of emerging devices and technologies that could enhance procedural efficiency and patient outcomes and consider adopting them if they provide significant advantages.

Evaluate procedural techniques: Assess the use of on-pump versus off-pump CABG techniques, tailoring the choice to the surgeons' skills and patient needs. Specializing in off-pump techniques could lead to fewer complications and shorter recovery times, but it requires highly skilled surgeons. Perfusion services is another component that is often overlooked as a clinical and financial improvement opportunity.

Engage stakeholders: Facilitate strategic discussions with key stakeholders such as supply chain managers, physicians and finance teams to enhance both the financial and clinical aspects of CABG procedures.

Figure 6: Percentage of total days spent in the ICU

Group	ICU% of total days	Room and board	% avg reimbursement
<10	50%	$7,629	29.1%
10-24	47%	$7,698	29.3%
25-49	40%	$7,463	28.4%
50-74	37%	$6,612	25.2%
75-124	25%	$6,718	25.6%
125-174	29%	$6,427	24.5%
174-249	24%	$6,666	25.4%
250+	24%	$5,816	22.1%
Grand Total	**34%**	**$6,784**	**25.8%**

Figure 7: Quality and cost data-volume to outcomes comparison, DRG 236

Hospital volume category	Mortality rate	ALOS	Related readmits	Transfers in	ICU usage
<10	**0.5%**	**6.1**	**3.0%**	**11%**	**97%**
10-24	0.3%	6.3	2.0%	10%	93%
25-49	0.1%	6.3	1.2%	11%	89%
50-74	0.1%	6.2	2.4%	16%	87%
75-124	0.1%	6.2	1.6%	15%	90%
125-174	0.2%	6.5	1.4%	26%	84%
174-249	0.0%	6.3	1.2%	30%	91%
250+	0.1%	6.9	1.9%	32%	98%

Changes as volume decreases

References:

1 Forecasting the Burden of Cardiovascular Disease and Stroke in the United States Through 2050—Prevalence of Risk Factors and Disease: A Presidential Advisory From the American Heart Association. Maddox KEJ et al. Circulation. June 4, 2024. Accessed October 29, 2024. https://www.ahajournals.org/doi/10.1161/CIR.0000000000001256

2 PCI vs CABG at 10 Years: MAIN-COMPARE and SYNTAXES Shine Light on Long-term Outcomes | tctmd.com

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