
What's Next for Value-Based Care in Cardiology?

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Specialty Overview

Cardiology is an expansive subspecialty of internal medicine that addresses medical needs across a numerous and varied set of conditions. Cardiologists, including interventional cardiologists and alongside peers such as cardiac electrophysiologists and cardiothoracic and vascular surgeons, address issues related to primary care; chronic conditions; physical, electrical, and circulatory dysfunction; and interventional or surgical treatment. Many chronic cardiac conditions, such as congestive heart failure (CHF) and persistent atrial fibrillation (AF), as well as conditions (e.g., chronic kidney disease (CKD) and diabetes) that impact the heart, also involve long-term pharmaceutical needs. The breadth of cardiology services, the chronic nature of many cardiac conditions, and the potential for drug and surgical costs make cardiology one of the most utilized and costly of all specialties.

A 2022 survey of health plan executives across all lines of business designed and administered by Avalere found that payers consider cardiology the greatest driver of plan medical spend. Of the 15 specialties assessed, payer stakeholders ranked cardiology among their top three areas of greatest focus with respect to major plan priorities that include:

- Reducing unnecessary utilization (e.g., medical necessity criteria)
- Reducing total plan spend (e.g., site-of-service optimization)
- Redesigning relevant benefits (e.g., tiered formularies)
- Expanding value-based payment arrangements
- Increasing the use of physician extenders

Surveyed payers also indicated a belief that cardiology would outpace most other specialties with respect to provider consolidation and the use of telehealth over the next three years.

Factors Affecting Value-Based Care (VBC)

Disease Prevalence and Burden

Relevance to (VBC) Uptake: The complexity of cardiovascular disease and the magnitude of necessary care utilization make VBC attractive, but difficult to bound.

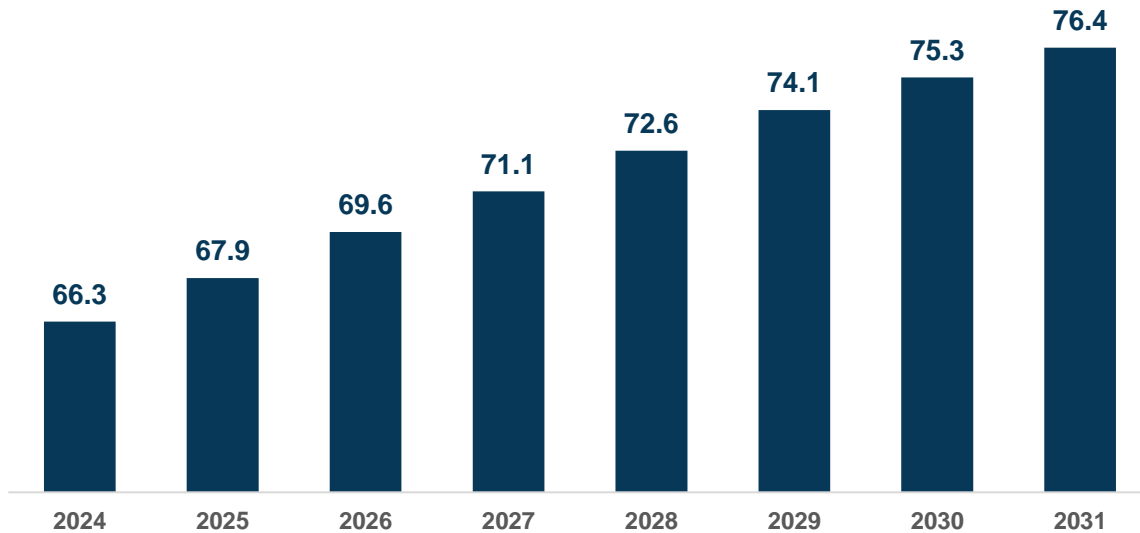
Heart disease is the most common cause of death in the United States. In 2022, 704,863 Americans [died](#) of heart disease, the majority of whom (80.7%) were aged 65 or older. Every year since at least 2001, heart disease has been the leading cause of death overall and for

individuals 65 and older, as well as the second leading cause of death for individuals aged 45 to 64.

As of 2021, roughly [5% of adults](#) in the United States had coronary artery disease. That year, atherosclerotic heart disease of the native coronary artery without angina pectoris [accounted](#) for 4.4% of all cardiology diagnoses, second only to essential (primary) hypertension (8.0%). In 2017, the Centers for Medicare & Medicaid Services (CMS) [reported](#) that both CHF and arrhythmias were among the five most common reasons for inpatient admission for Americans aged 65 and older. Based on [2015–2018 data](#), more than three quarters of Americans have some kind of cardiovascular disease (including hypertension).

Census projections [indicate](#) that, in 2030, Baby Boomers—all of whom will then be 65 or older—will account for roughly 21% of the population. By 2034, they will likely outnumber children under 18 (approximately 77 million vs. 76.5 million, respectively). CMS [predicts](#) that Medicare enrollment will be 75.3 million in 2030 (Figure 1); if 40% of older adults still have a heart condition in 2030, Medicare may include more than 30 million individuals who require cardiovascular care.

Figure 1: Medicare Enrollment Projections, 2024-2031 (in Millions)



Source: CMS

Certain comorbidities may materially worsen the health of an individual with cardiovascular disease, especially CKD and diabetes. Patients with heart failure (HF) and CKD [require](#) especially costly care that may include numerous drugs (e.g., sodium-glucose cotransporter 2 (SGLT-2) inhibitors, such as Jardiance and Farxiga, both recently selected for Medicare price negotiation), devices (e.g., implantable cardioverter-defibrillators), and/or kidney transplants. Similarly, patients with diabetes are at greatly increased risk for cardiovascular disease and may [require](#) treatment that includes pharmacological and/or surgical weight loss management. A

recent study [predicts](#) that, by 2030, 42 million Americans will have diabetes and that 109.7 million will be obese.

Economic Burden

In 2016, [heart disease](#) was responsible for \$320.1 billion in direct medical costs across all payers, most of which were attributable to adults aged 65 and older (\$185.3 billion, 57.9%) and to inpatient care (\$129.4 billion, 40.4%). Annual spending on cardiovascular care [increased](#) more than \$100 billion between 1996 and 2016.

More recently, Avalere analysis of the [2020](#) Medicare Current Beneficiary Survey found that the total annual cost (Part A and Part B) for Medicare beneficiaries with a heart condition (acute myocardial infarction, atrial fibrillation, congestive heart failure, hypertension, hyperlipidemia, or ischemic heart disease) was \$15,186, compared to \$4,001 for beneficiaries without one of those conditions.

Some experts [believe](#) that technology and outcomes metrics will enable providers to take on episode-based bundle payments for defined conditions. However, the chronicity of many cardiovascular conditions, coupled with high prevalence of comorbidities that affect multiple organ systems, makes it difficult to design value-based structures that can offer clinically meaningful boundaries for such episodes while assuring providers that their scope will be appropriately supported by the associated bundle payment.

Physician Landscape

Relevance to VBC Uptake: High rates of physician employment, concentrated in health systems, and labor undersupply continue to incentivize fee-for-service (FFS) over VBC.

In 2021, four of the 25 specialties with the highest average procedure charges per provider were cardiology-related ([Table 1](#)).

Table 1: Provider Statistics for Cardiology and Related Specialties, 2021

Specialty (Rank)	Number of Providers	Total Procedures	Average Charges per Provider
Cardiac Electrophysiology (#2)	2,480	12,203,824	\$5,568,993

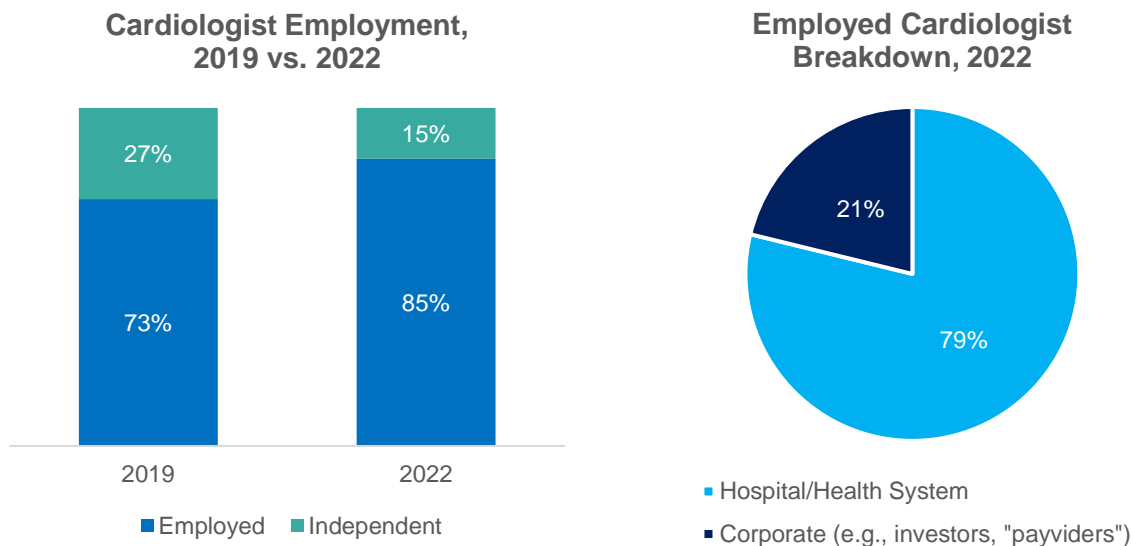
Interventional Cardiology (#10)	4,210	17,251,965	\$2,625,423
Vascular Surgery (#17)	3,859	8,194,675	\$1,740,080
Cardiology (#24)	22,637	76,836,318	\$1,439,911

Source: Definitive Healthcare

The Association of American Medical Colleges' most recent [Physician Specialty Data Report](#) suggests a net movement of cardiology providers toward specialty services. Interventional cardiology and clinical cardiac electrophysiology saw a 32.6% and 21.6% increase in active physician count, respectively, between 2016 and 2021, while the number of active physicians specializing in cardiovascular disease decreased 0.4%.

During the same period, there was an 11.9% increase in first-year residents specializing in cardiovascular disease, but by the end of 2021, cardiovascular disease specialists had the fourth highest percentage of active physicians over the age of 55 (64.9%). Residency programs will have to achieve continued growth to replace an aging and already contracting workforce. In 2021, clinical cardiac electrophysiologists (EPs)—cardiology specialists focused on heart rhythm—had the highest number of people in the United States per active physician (124,076); interventional cardiology ranked tenth, with 68,955 people per physician. Clinical cardiac electrophysiology also had the lowest overall number of active physicians with 2,632 total, only 2,295 of whom were providing patient care. For comparison, cardiovascular disease had 22,262 active physicians serving 14,669 patients per physician (12% of the panel size of a clinical cardiac EP), and general practice had 118,641 physicians serving 2,753 patients per physician (2% of a clinical cardiac EP panel).

Figure 2: Cardiology Employment Statistics, 2019—2022



Source: Avalere, Physicians Advocacy Institute

While demand for cardiology services remains high, the cardiology labor market continues to experience near- and long-term pressure (Figure 2). A [2022 report](#) by Avalere and the Physicians Advocacy Institute found that the proportion of cardiologists who were employed (as opposed to practicing independently) increased from 73% in January 2019 to 85% in January 2022, significantly exceeding the overall physician employment rate of 74% in January 2022. Furthermore, the proportion of hospital-based cardiologists was higher than the overall physician population as well: approximately 67% of all cardiologists (79% of employed cardiologists) were employed by hospitals or health systems, while 18% of all cardiologists (21% of employed cardiologists) were employed by corporate entities (e.g., investors or large, integrated “payvider” entities). The proportion of cardiologists in independent practice nearly halved to 15% between January 2019 and January 2022.

Market Dynamics

Relevance to VBC Uptake: Hospitals/health systems protect cardiology as a referral source and revenue stream, making it difficult for other platforms to compete on value at scale.

Physicians and physician groups in the cardiology space operate under supply and demand conditions that differ meaningfully from those of many other provider specialties. Cardiology

services represent a key referral source and revenue stream for hospitals, a major reason why health systems remain protective of their employed cardiologists. A national 2020 study [determined](#) that cardiologists were more integrated with hospitals/health systems than any other specialty except hematology-oncology, even in markets with high levels of hospital/health system consolidation. A 2019 analysis [found](#) that cardiovascular surgery generates nearly \$3.7 million in hospital revenue per physician per year, making it the highest revenue generator of the 19 specialties assessed. Invasive cardiology was the second highest revenue-generating specialty, generating nearly \$3.5 million per physician per year (Table 2). The per-physician, per-year revenue for non-invasive cardiology services increased more than 80% from \$1.26 million to \$2.31 million between 2016 and 2019.

Table 2: Specialties Ranked by Annual Hospital/Health System Profitability per Physician

Specialty	Average Revenue	Average Salary	Salary as % of Revenue
Internal Medicine	\$2,675,387	\$261,000	9.8%
Family Practice	\$2,111,931	\$241,000	11.4%
Cardiovascular Surgery	\$3,697,916	\$425,000	11.5%
General Surgery	\$2,707,317	\$350,000	12.9%
Pediatrics	\$1,612,500	\$230,000	14.3%
Psychiatry	\$1,820,512	\$261,000	14.3%
Neurology	\$2,052,884	\$301,000	14.7%
Hematology/Oncology	\$2,855,000	\$425,000	14.9%
Nephrology	\$1,789,062	\$272,000	15.2%
OB/GYN	\$2,024,193	\$324,000	16.0%
Orthopedic Surgery	\$3,286,764	\$533,000	16.2%
Gastroenterology	\$2,965,277	\$487,000	16.4%
Cardiology (Invasive)	\$3,484,375	\$590,000	16.9%

Pulmonology	\$2,361,111	\$418,000	17.7%
Urology	\$2,161,458	\$386,000	17.9%
Cardiology (Non-Invasive)	\$2,310,000	\$427,000	18.5%
Neurosurgery	\$3,437,500	\$687,000	20.0%
Ophthalmology	\$1,440,217	\$300,000	20.8%
Otolaryngology	\$1,937,500	\$405,000	20.9%


Source: Merritt Hawkins, Avalere analysis

Despite ranking among the most highly paid specialists, cardiovascular surgeons remain very profitable for hospitals. While the average cardiovascular surgeon generated the most annual revenue of all specialists assessed, their base salary was among the lowest as a percentage of revenue at only 11.5%. Total physician earnings often include various forms of additional compensation, but even using a higher average salary metric of \$584,000 [suggests](#) a salary-to-revenue ratio of 15.8%, lower than any other surgical specialty except general surgery and the lowest of all four specialties with an average annual per-physician revenue in excess of \$3 million. Invasive and interventional cardiologists [reported](#) a 9% year-over-year increase in earnings from 2022 to 2023 for a median compensation of \$677,691.

Though strong incentives exist for hospital employment, the cardiology market is fragmented. In 2020, the four largest platforms were [estimated](#) to have captured less than 10% of total cardiology revenue. While there may be numerous practices available for consolidation, the prospect of a large-scale roll-up, similar to consolidation in some other specialties (e.g., orthopedics), appears comparatively labor-intensive and iterative. As of 2024, there are five major private equity (PE)-backed cardiology platforms that operate in states across the country, relatively few in comparison to other specialties where PE penetration has been higher (e.g., urology, gastroenterology, and ophthalmology).

Setting of Care

Relevance to VBC Uptake: Only recently has procedure volume begun to move to the ambulatory surgical center (ASC) setting, leaving meaningful opportunity for further transition but limited financial and outcomes data.

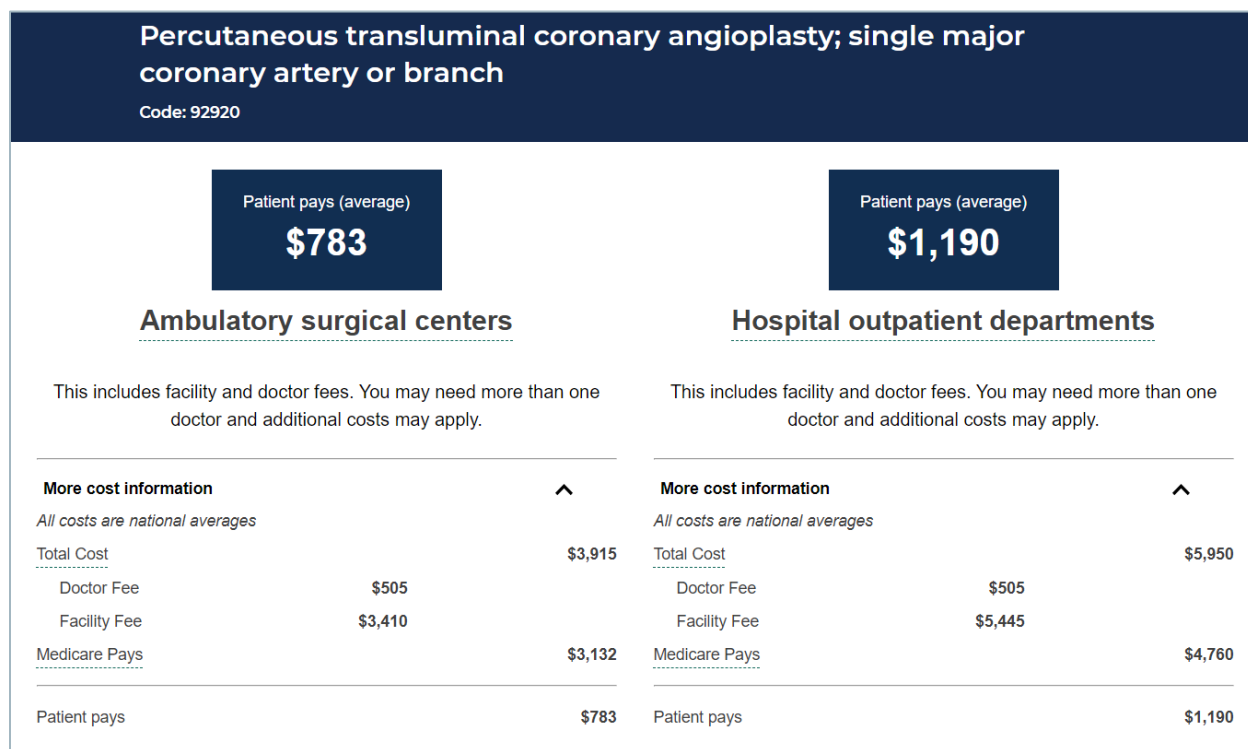


To manage the cost of cardiovascular care, insurers have encouraged a shift of services to lower-acuity SOCs. This trend and the associated opportunity to deliver on the lower cost tenet of the quadruple aim (better care, lower cost, improved patient experience, and reduced provider burden) have been a key driver of interest in the space. All-payer claims data [show](#) that cardiology procedure volume grew 7% in the ASC setting and decreased 3% in the hospital setting between 2018 and 2022. Additionally, a 2023 [report](#) found that, between 2016 and 2022, 3.6% of interventional cardiology procedures shifted from hospitals to ASCs, the ninth highest rate of any specialty. Though this trend has been relatively modest, it is expected to accelerate as CMS continues to add cardiovascular procedures to the ASC covered procedure list (CPL), which has a set of standards and inclusion criteria for providers to bill Medicare for procedures they perform in the ASC setting.

In 2005, CMS [approved](#) arterial endovascular procedures (carotid artery stenting) in the outpatient setting; additional procedure classes began to move outpatient over the succeeding decade. Most recently, CMS [added](#) 17 diagnostic cardiac catheterization procedures to the ASC CPL in 2019, and in 2020 it [finalized](#) the addition of six codes for percutaneous cardiac interventions (PCIs). A 2019 report [predicts](#) that, by the mid-2020s, 33% of cardiology procedures will take place in ASCs, a 23% increase from 2018, and some stakeholders [believe](#) that more than 80% of outpatient cardiovascular procedures may be on the ASC CPL by 2030.

The transition of procedures to ASCs generates meaningful savings, even compared to other outpatient settings (Figure 3).

Figure 3: Medicare FFS Payment for Hospital Outpatient (HOPD) vs. ASC, 2024



Source: Medicare Procedure Price Lookup

For example, the CPT code 92920 (percutaneous transluminal coronary angioplasty; single major coronary artery or branch) is one of the six PCI codes CMS added to the ASC CPL in 2020. Medicare’s Procedure Price Lookup for Outpatient Services tool [shows](#) that, while the physician professional fee remains the same between HOPDs and ASCs, the facility fee is \$2,035 (37.4%) lower in the ASC, leading to a 34.2% discount to total procedure cost in ASCs vs. HOPDs. Medicare would save \$1,628 (34.2%) on each instance of 92920 moved from a HOPD to an ASC, and patient cost sharing would decrease by \$407 (34.2%).

Hospitals must increasingly [consider](#) competing incentives as opportunities for physician groups to practice profitably in lower-acuity SOCs become more widespread. Indeed, cardiology [ranked](#) among the specialties with the greatest increases to ASC payment rates in 2022. Avalere analysis of Medicare FFS claims data (Table 3) estimates that, if 100% of the 2022 HOPD volume of the six PCI codes (representing three primary procedures) recently added to the ASC CPL had instead been performed in the ASC setting, Medicare would have saved nearly \$750 million.

Table 3: Estimated Theoretical 2022 Savings for 100% HOPD-to-ASC Shift for PCI

CPT Code	Description	Medicare FFS HOPD Utilization, 2022	Difference Between Medicare Portion of HOPD and ASC Payment	Estimated Annual Savings per Procedure
92920	Percutaneous transluminal coronary angioplasty; single major coronary artery or branch	18,058	\$1,553	\$28,044,074
92928	Percutaneous transcatheter placement of intracoronary stent(s), with coronary angioplasty when performed; single major coronary artery or branch	97,703	\$3,944	\$385,340,632
C9600	Percutaneous transcatheter placement of drug-eluting intracoronary stent(s), with coronary angioplasty when performed; single major coronary artery or branch	87,204	\$3,824	\$333,468,096
Total				\$746,852,802

Source: CMS, Avalere analysis

Finally, the Medicare Payment Advisory Commission [reports](#) that, between 2016 and 2021, the number of single-specialty cardiology ASCs increased nearly ninefold, from 13 to 118, representing 2.2% of ASCs nationally (and 3.3% of all single-specialty ASCs) in 2021. This does not include ASCs that may be operating under a joint venture between multiple specialty groups, which may represent additional cardiology volume in the ASC setting. It should be noted that, as of January 2023, 35 states and the District of Columbia have certificate of need laws, at least 11 of which include provisions specifically [restricting](#) cardiac catheterization services and equipment. Setting-of-care dynamics for cardiac procedures will thus vary by state.

Drug Costs

Relevance to VBC Uptake: Drugs can be a meaningful long-term expense in cardiology, and providers may feel that drug costs preclude them from taking condition-based risk. If drugs are carved out from risk agreements, insufficient opportunity for savings may exist within services revenue to incentivize risk.

Beyond procedures and professional services, drugs contribute meaningfully to the overall cost associated with cardiovascular care, especially for chronic conditions. In 2020, Medicare spent \$7.7 billion on the 50 most utilized generic cardiology drugs. A study [published](#) in the Journal of the American College of Cardiology in 2023 found that more than 34 million Medicare beneficiaries had at least one cardiovascular risk factor between 2016 and 2019, more than 1 million of whom experienced out-of-pocket (OOP) drug costs in excess of \$2,000 per year.

In late August 2023, CMS [released](#) its list of the first [10 drugs](#) whose price will be negotiated under the Inflation Reduction Act (IRA). Five of these drugs (Eliquis, Jardiance, Xarelto, Farxiga, and Entresto) are cardiology drugs and/or are often prescribed by cardiologists (Table 4). Eliquis and Xarelto prevent and treat blood clots; Jardiance, Farxiga, and Entresto are HF drugs. The list of drugs selected by CMS for negotiation substantiates the view that cardiology drugs constitute a material proportion of drug spend for payers and patients.

Table 4: Part D Drugs Selected for Medicare Drug Price Negotiation for Initial Price Applicability Year 2026

Drug	Total Part D Covered Prescription Drug Costs, June 2022–May 2023	Part D Enrollees Who Used the Drug, June 2022–May 2023
Eliquis	\$16.5B	3,706,000
Jardiance	\$7.1B	1,573,000
Xarelto	\$6.0B	1,337,000
Farxiga	\$3.3B	799,000
Entresto	\$2.9B	587,000

Source: CMS, Avalere

For example, chronic HF patients with a reduced ejection fraction (HFrEF) are typically prescribed a beta blocker called spironolactone, an angiotensin receptor neprilysin inhibitor (e.g., Entresto), and/or an SGLT-2 inhibitor (e.g., Farxiga or Jardiance). A 2023 cost analysis [found](#) that the annual OOP baseline for HFrEF patients in 2023 was \$2,827. In 2025, when the

IRA will cap OOP costs at \$2,000 annually, HFREF patients can expect to see a savings of 29%. These savings could be increased if price negotiation results in lower prices for these drugs.

The IRA also established inflation-related adjustments for Part B drugs beginning January 1, 2023. Manufacturers must pay rebates to Medicare when drug prices grow faster than inflation. For such drugs, coinsurance will be 20% of the inflation-adjusted amount. CMS [updates](#) the list of drugs subject to these adjustments quarterly. In Q2 2024 (April 1–June 30, 2024), 41 drugs across 45 Healthcare Common Procedure Coding System codes have reduced coinsurance based on the inflation-adjusted payment rate. Four of these drugs treat primarily cardiovascular issues: argatroban is a thrombin inhibitor, dalteparin is an anticoagulant, amiodarone is an antiarrhythmic, and sotalol is a beta blocker.

A Brief Case Study in Stents

Relevance to VBC Uptake: Unpredictable need for expensive devices may consume margin on bundles or capitated payments, diminishing their value proposition; however, clinically appropriate and less costly alternatives represent meaningful opportunities for savings.

A recent [report](#) found that more than 20% of stents placed in Medicare beneficiaries may be unnecessary, costing over \$800 million annually. Overuse of low-value care typically offers an immediate opportunity to generate savings through a value-based payment arrangement. However, in cardiology, the transition from FFS models to VBC has been complicated by a variety of factors. Specifically for stents, while moving procedures to lower-acuity SOC codes may save payers money, it may simultaneously create margin pressure for facilities and physicians, especially for independent practices without the scale necessary to leverage attractive contracts with device manufacturers or group purchasing organizations, wholesalers, and/or distributors.

For example, one of the PCI codes approved for addition to the ASC CPL in 2020 is C9600, percutaneous transcatheter placement of a drug-eluting intracoronary stent, with coronary angioplasty. A drug-eluting stent (DES) is a device placed in an artery to widen the artery and combat arteriosclerosis; a bare metal stent (BMS) serves the same purpose, but a DES also elutes (releases) an antiproliferative drug to prevent cell proliferation.

Although the cost of DES can be [nearly twice](#) that of a BMS, a DES is generally [preferable](#) because of its success in preventing restenosis and avoiding subsequent associated costs. CMS considers C9600 a device-intensive procedure, meaning that the device represents a significant percentage of the total procedure cost, defined as the device offset percentage. In 2024, C9600 carries a device offset percentage of 36.39% (\$3,818) in the HOPD setting and 45.71% (\$4,070) in the ASC setting. In practice, the device may account for anywhere from 36.4% of the \$10,482 HOPD payment to 60.7% of the \$6,701 ASC payment. This dynamic

could create margin pressure for physicians interested in moving procedures to a lower acuity, higher value setting, counteracting some of the incentives of value-based care.

Alongside the reduction of unnecessary testing and intervention, one way to reduce costs and [encourage](#) uptake of VBC associated with such procedures would be to manage the cost of the device (e.g., the DES). However, device costs are only likely to decrease to the extent that: (1) multiple vendors manufacture different versions of the device in question; (2) physicians agree that said devices are comparatively commoditized and that no one device offers a clear technological advantage; and (3) hospitals/health systems and other cardiology platforms have adequate scale to negotiate a lower price for that type of device, often in exchange for a volume commitment to the vendor with the best price. While it may be challenging to orchestrate these three conditions systemically, market- or platform-specific dynamics may drive opportunities for cost savings.

Conclusion

Cardiology is a complex specialty with a broad scope of care. Dynamics related to physician employment and payment, facility reimbursement and incentives, and drug and device costs, among other market and clinical factors, define the opportunities for value in this space. The material growth of the patient population served by cardiologists, coupled with the nascency of non-hospital employment in the specialty, suggests near-term opportunities to be an early developer of innovative value-based arrangements in the space. If your organization wants to explore these opportunities in cardiology or related fields, [connect with us](#).

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