MILLIMAN WHITE PAPER

Cardiac ablations in ambulatory surgical centers: Estimated costs, utilization, and projected savings

Commissioned by Current Clinic

Spencer Marshall, FSA, MAAA
Austin Barrington, FSA, MAAA
Sam Yih, ASA, MA
Samuel Kwao, MA

Milliman

Background

Atrial fibrillation (AFib) is a heart condition characterized by irregular beating in the upper chambers of the heart.[1] AFib is the most common cardiac rhythm disorder, affecting approximately 10.5 million adults in the U.S. as of 2019,[2] with projections estimating that this number will rise past 12.1 million by 2030.[3]

AFib and its complications create a substantial burden on patients, affecting their quality of life and increasing their healthcare costs. Due to improper or irregular blood flow, AFib patients are at higher risk for heart failure and stroke – in particular, AFib patients are five times more likely to have a stroke, which tends to be of higher severity compared to those without AFib. One in four strokes is attributed to AFib.[4] Approximately 20% of AFib patients also suffer from severe or disabling symptoms that lower their quality of life.[4]

These symptoms and complications impose a substantial burden on the U.S. healthcare system as well. AFib is associated with higher healthcare utilization and costs.[3] Given that AFib episodes and symptoms can develop suddenly, patients are at an increased risk of emergency room visits and hospitalizations.[4] Previous studies examining the financial burden of AFib using public and private health insurer data estimated that average annual healthcare costs for patients with AFib were about $28,000 higher per patient than for those without AFib between 2017 and 2020,[5] and projected that AFib-related total annual healthcare costs in the U.S. would rise approximately 200% from 2020 to 2050, reaching $175 billion.[6]

One pillar of AFib treatment is rhythm control, which involves treatments intending to restore the heart to a normal rhythm and maintain it. Typically, rhythm control is achieved through medication or cardiac ablation, a minimally-invasive medical procedure in which a thin catheter is inserted into the left side of the heart to create a scar that prevents abnormal heart signals from firing.[4]

Currently, cardiac ablations are only covered by Medicare in a hospital setting, according to coverage determinations from the Center for Medicare & Medicaid Services (CMS). On November 1, 2024, CMS published its final rules for the Ambulatory Surgery Center (ASC) covered procedures list (CPL) for the calendar year 2025, marking the fourth consecutive year that CMS has not included cardiac ablation codes in the CPL.[7] CMS explained their rationale by stating that “many of these [cardiovascular] codes have associated inpatient admissions, where the beneficiary requires active medical monitoring and care at midnight following the procedure.” [8] This is despite recent retrospective studies of ASC ablations finding this procedure safe in the ASC setting, with adverse event rates similar to ablations performed in the hospital outpatient setting.[24] Furthermore, even in the hospital setting, studies have found that 90% of patients were able to achieve same-day discharge (SDD), with no difference to post-discharge complication rates.[25]

Given the significant societal and financial burdens of AFib and CMS’s rationale for excluding cardiac ablations from the ASC procedure list, Current Clinic engaged Milliman to conduct a study examining cardiac ablation cost and utilization trends. The study also projects potential healthcare savings that may result if CMS adds cardiac ablations to the ASC CPL final rule for calendar year 2026.

Cardiac ablations

ACCESSIBILITY AND EARLY RHYTHM CONTROL (ERC)

Recent literature on AFib has emphasized the importance and efficacy of early rhythm control (ERC). A retrospective U.S.-based cohort analysis found that, among patients eligible for ERC, the procedure was associated with 15% lower risk of stroke, death, and hospitalization for heart failure or myocardial infarction, replicating the results of an earlier European randomized clinical trial[9] conducted in the 2010s and generalizing the conclusions to a U.S. cohort.[10] The same study found that in a population of 109,739 people with newly diagnosed AFib, approximately 24.7% were receiving ERC and 32.7% were using oral anticoagulation, typically used for stroke prevention.[31]

Several studies[11,12] have also found that cardiac ablation improves clinical outcomes compared to drug-related rhythm control. In 2023 cardiac health guidelines from U.S. institutions adopted cardiac ablation as a first-line therapy for AFib in appropriately selected patients, citing its superiority to drug therapy for patients at low risk of complications and highlighting the importance of early administration.[13] Studies have also found that longer durations between AFib diagnosis and cardiac ablation are associated with higher risks of AFib recurrence and all-cause hospitalization, increasing by approximately 20% and 8%, respectively, per year between diagnosis and ablation.[14]

To enhance the accessibility of cardiac ablations as a first-line treatment for AFib patients, it is important to consider potential barriers to utilization. Lack of geographic access to an electrophysiology cardiologist (EP), the specialist who performs cardiac ablations, is one such barrier. A recent study mapped geographic proximity to cardiologists across the U.S. using CMS provider data and U.S. census data. That study found a trend that many cardiologists practice at hospitals and estimated that only 65.9% of the U.S. population lived within approximately 12 miles of an EP, with only 18.9% of rural residents having an EP within this distance. In contrast, even in rural areas, 92.6% of residents have an internal medicine and/or family medicine physician within the same radius.[15]

Expanding cardiac ablation sites to include ASCs may increase geographic accessibility and could lower other barriers to care. The Medicare Payment Advisory Commission's March 2025 report to CMS noted that patients may prefer ASC access to hospital outpatient departments, due to more convenient locations, shorter wait times, lower cost sharing, and easier scheduling.[16] However, this report also found that ASCs were disproportionately located in urban areas, suggesting further measures may be needed to address geographic disparities and improving treatment access in underserved rural areas.[17]

SAFE SDDS IN ASCS

Researchers have documented the safety of cardiac ablations and SDDs,[17,18,19] with established SDD protocols allowing many patients to avoid overnight stays and to potentially lower treatment costs, achieving SDD rates of up to 90%.[25] Additionally, the Heart Rhythm Society and American College of Cardiology have also performed an analysis of claims and clinical data and found that cardiac ablation procedures have lower complication rates compared to other cardiac procedures that are already on the ASC CPL.[20]

Recent studies have also explored the safety of cardiac ablations directly in the ASC setting. In the U.S., a multicenter study across six ASCs examined the safety of cardiac ablations performed at these centers mostly during the COVID-19 pandemic, a time when the hospital system faced significant disruptions, and CMS expanded provisions for services to be provided in ASCs and other nonhospital settings with the CMS Hospitals Without Walls program.[21] In 1,341 cardiac ablations performed for AFib between January 2017 and May 2024, with 82.1% occurring during the COVID-19 pandemic, only 11 patients (0.82%) experienced serious adverse events, with 7 patients requiring unplanned hospital admission. No significant difference was found between these rates and the complication rates of other electrophysiology procedures performed at these ASCs that are currently on the CPL.[21]

A cardiac ablation ASC established in the UK saw a low incidence of complications. Out of 450 patients treated between 2020 and 2024, only 2 required transfer to an off-site hospital; the remaining 448 patients had SDD.[22] The authors highlighted the importance of the clinic's strict procedural protocol in minimizing the variability among operators and reducing major adverse event rates.

ASC savings projections

MILLIMAN METHODOLOGY

Data sources

This study utilizes data from the Medicare 5% Sample Limited Data Set (5% sample) and Milliman's Consolidated Health Cost Guidelines™ Source Database (CHSD). The Medicare 5% sample data contains claims and membership for a 5% sample of the Medicare population, which has undergone a standardized cleaning and summarization process. The CHSD is a multi-year, multi-line-of-business, longitudinal claims and enrollment data structure. It represents administrative healthcare claims and enrollment data from a collection of national and regional health plans, employer groups, and claim aggregators in the US.

Analytical approach

Cost and utilization are collected for the following four procedures across different lines of business, including Medicare Fee-for-Service (FFS) from the 5% sample data, along with Medicare Advantage (MA) and commercial plans from the CHSD:

- HCPCS 93650: intracardiac catheter ablation of atrioventricular (AV) node function.
- HCPCS 93653: comprehensive electrophysiologic study (EPS) evaluation with atrial ablation.
- HCPCS 93654: comprehensive EPS with ventricular ablation.
- HCPCS 93656: comprehensive EPS with pulmonary vein isolation for AFib. (AFib ablation)

The measures utilized in the study include:

- Visits per 1,000: the number of outpatient facility visits per 1,000 members, calculated as the total number of outpatient visits in a year, normalized per 1,000 members in the population.
- Population: the total number of enrolled members in each line of business.
- Cost per visit: the total combined payment amount by both the payer and the patient in a year, divided by the number of members who utilized the procedures included in the study.

COST AND UTILIZATION TRENDS

Figure 1: Annual trend (year-over-year change) in outpatient visits per 1,000 for ablations

	Line of business		
Year ending	**FFS**	**MA**	**COM**
2017	n/a	14%	9%
2018	8%	7%	7%
2019	11%	8%	8%
2020	-2%	-8%	-10%
2021	23%	23%	19%
2022	10%	9%	5%
2023	14%	9%	7%
Average annual	11%	8%	6%

Cardiac ablation utilization rose substantially across all three lines of business examined, with average annual utilization year-over-year increase of 10% or higher between 2017 and 2023. Even with the outpatient utilization decline in 2020 corresponding with the COVID-19 pandemic public health emergency, cardiac ablation rates rose materially in 2021 and have continued to grow past pre-pandemic levels. Because of the recent cardiac health guidelines in 2023 advocating early cardiac ablations,[13] as well as technological advancements in ablation delivery mechanisms which lower procedure times and expand the pool of eligible patients,[26] utilization for ablations may continue this growth pattern in subsequent years.

Figure 2: Ablation utilization trends - Medicare FFS and MA outpatient visits per 1,000

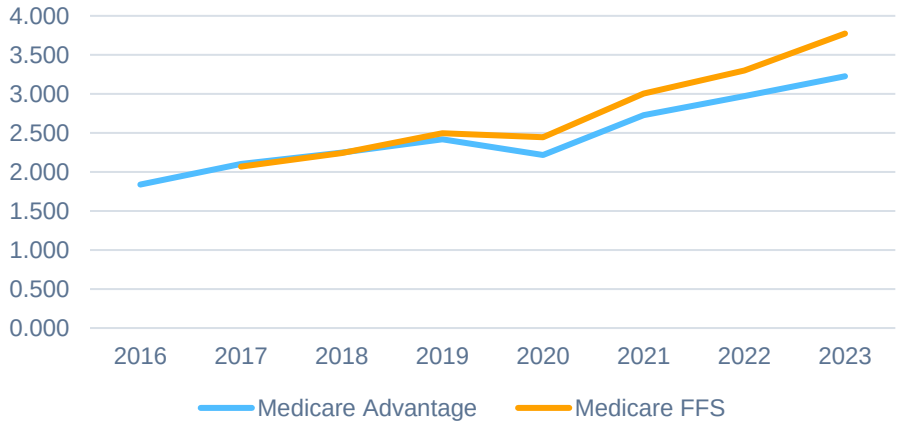
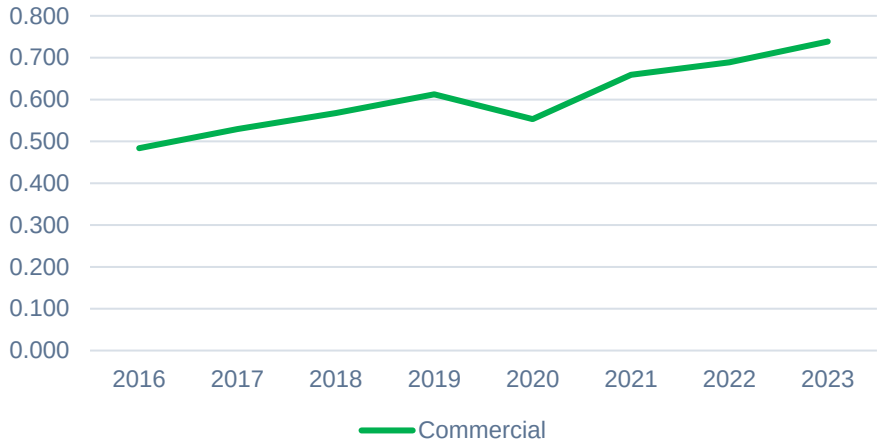


Figure 3: Ablation utilization trends - Commercial outpatient visits per 1,000



SAVINGS CALCULATION

The projected savings calculation of shifting ablations to ASCs is demonstrated in the following example using calendar year 2023 claims experience

Figure 4: Estimated potential savings by line of business (2023)

	Line of Business – 2023 Example			
	FFS	MA	COM	Total
Visits per 1,000	3.773	3.226	0.738	7.737
Average unit cost	$23,984	$23,422	$47,848	n/a
Population (2023)	30 M	31 M	158 M	219 M
Total cost (a)	$2,695 M	$2,342 M	$5,597 M	$10,634 M
Shift to ASC % (b)	5%	5%	5%	n/a
Unit cost savings % (c)	22%	22%	22%	n/a
Potential Savings (d)	$30 M	$26 M	$62 M	$117 M

(d) = (a) * (b) * (c)

Visits per 1,000 and average unit cost is derived from the Milliman data sources - Medicare 5% sample data for FFS and the CHSD for COM and MA nationwide claims experience. Calendar year 2023 populations for each line of business are from Kaiser Family Foundation studies [23,24]. Using the average unit cost per service from Milliman data sources, the total cost based on utilization and scaling up membership to the total population size is calculated, assuming consistency between individuals found and not found within the Milliman data sources.

A portion of these costs is assumed to shift from the hospital outpatient setting to the ASC setting. Estimates for this shift range from 5% to 33% with a smaller shift in the first year followed by additional growth in subsequent years.[28,29] In the 2023 calculation, a 5% shift is used to represent a conservative first year shift.

For this portion of ablation services shifted to ASC, we assumed unit cost savings will result from moving from the CMS Outpatient Prospective Payment System (OPPS) fee schedule to an ASC fee schedule. We reviewed the relationship between several procedures in the 2025 OPPS and ASC fee schedules. For device-intensive procedures, such as ablation, there are two components to the payment: the device portion and the service portion. In our analysis, we found that in the ASC, the device portion is paid at 100% of the OPPS amount and the service portion is typically paid at 55%.

In the 2025 OPPS fee schedule, the nationwide fee schedule amount for AFib ablation is $24,532 with a device cost of $12,423. Applying the ASC reduction factor to the remaining service portion and comparing the reduced service portion plus original device cost to the OPPS fee schedule results in a unit cost savings of approximately 22%. This factor ranges from 22% to 25% for the services we analyzed. This estimate is based on historical information and relationships and is not a recommendation of the ASC rate for ablation services. We assumed the same unit cost savings percentage for commercial and Medicare lines of business. In practice, commercial and MA contracts are based on negotiated agreements between an insurance company and a healthcare provider and will vary from the averages used in this analysis.

Figure 5: Estimated potential savings by line of business (2026)

	Line of Business – 2026 Projection			
	FFS	MA	COM	Total
Visits per 1,000	5.096	4.104	0.885	10.085
Average unit cost	$26,284	$25,669	$52,285	n/a
Population (2023)	30 M	31 M	158 M	219 M
Total cost (a)	$3,989 M	$3,266 M	$7,332 M	$14,587 M
Shift to ASC % (b)	5%	5%	5%	n/a
Unit cost savings % (c)	22%	22%	22%	n/a
Potential Savings (d)	$44 M	$36 M	$81 M	$160 M

(d) = (a) * (b) * (c)

In Figure 5, we projected costs and savings to 2026, if CMS were to add cardiac ablations to the ASC CPL. For this, we applied the year-over-year utilization trends above from 2023 to 2026. We trended the average unit costs using historical hospital outpatient trends from Milliman research of 3.1% for FFS and MA and 3.0% for COM. We assumed the same population totals and mix for each line of business and applied the same ASC shift and unit cost savings percentages that were used in the 2023 example above.[30]

Figure 6: Projected estimated potential savings by line of business (2026 to 2035)

	Line of Business - Potential savings			
Year	FFS	MA	COM	Total
2026	$44 M	$36 M	$81 M	$160 M
2027	$52 M	$42 M	$92 M	$185 M
2028	$61 M	$48 M	$104 M	$213 M
2029	$72 M	$56 M	$118 M	$246 M
2030	$86 M	$65 M	$134 M	$284 M
2031	$101 M	$75 M	$152 M	$328 M
2032	$120 M	$87 M	$172 M	$379 M
2033	$141 M	$101 M	$195 M	$437 M
2034	$167 M	$117 M	$222 M	$505 M
2035	$197 M	$135 M	$251 M	$584 M
Total	**$1,041 M**	**$761 M**	**$1,520 M**	**$3,321 M**

Finally, we projected potential 10-year savings using the same annual visits per 1,000 and unit cost trends as well as the 22% unit cost savings. We anticipate that the portion of ablations performed in an ASC will increase over time. We based our projection on a study of partial knee arthroscopy that found an average annual increase of ASC utilization of 3.7%.[27] The total shift was capped at 33% which is the largest potential shift we observed for ablations. We did not adjust for population changes over time including potential growth or reduction in the population by line of business or shifting population between line of business (e.g., people moving from FFS to MA). As shown in Figure 6, this resulted in a total savings of $3.3 billion in potential savings between 2026 and 2035 if CMS were to add ablations to the ASC CPL.

Caveats and Limitations

Spencer Marshall and Austin Barrington are members of the American Academy of Actuaries and meet the qualification standards to perform the analysis contained herein. To the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices.

This report is intended to provide an overview of the viability of shifting ablations to an ASC setting and cost savings projection from this shift. It may not be appropriate, and should not be used, for other purposes.

If distributed to third parties, this report must be shared in its entirety. We do not intend this information to benefit, or create a legal liability to, any third party, even if we permit the distribution of our work product to such third party. We understand that Current Clinic intends to provide public access to this report and therefore it could be viewed by its prospective clients, competitors, potential investors, or other interested parties. We consent to this distribution if the work is distributed in its entirety. In completing this analysis, we relied on information and data from public sources and Milliman's healthcare claims data assets, which we reviewed for reasonableness, but accepted without audit. If any of this information is inaccurate or incomplete, the contents of this report along with many of our conclusions may likewise be inaccurate or incomplete.

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CONTACT

Spencer Marshall
spencer.marshall@milliman.com

Austin Barrington
austin.barrington@milliman.com

Sam Yih
sam.yih@milliman.com

Samuel Kwao
samuel.kwao@milliman.com