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Understanding Preference-Sensitive Care: Benefits, Limitations, and Potential Cost Savings

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Key Highlights

How to use results of these kinds of analyses ❯

Geographic and provider-level insights ❯

What this analysis tells us about effective PSC strategies ❯

Implementing change ❯

"Preference-sensitive care includes treatments with significant trade-offs that may affect a patient's quality and/or length of life[1]." The essence of preference-sensitive care (PSC) includes medical decisions where multiple valid options exist, and the best choice depends on patient preferences. By informing and involving patients, providers can align care with individual values, improving satisfaction, outcomes, and resource use. These decisions often arise in situations involving elective surgeries, cancer treatments, or chronic disease management, where no single option is superior in all cases, and the right choice varies based on individual priorities and lifestyle considerations[1].

Patients might prefer conservative therapy over surgical intervention when they are fully informed about the risks, benefits, and trade-offs of each treatment option. For example, in the context of knee or hip osteoarthritis, the potential downsides of joint replacement surgery may outweigh the expected benefits for some patients, even when they are clinically suitable candidates. Supporting this, a population-based study in Ontario found that although a considerable number of people had severe hip or knee arthritis and clinically qualified for joint replacement, no more than **15%** of them, were definitely willing to undergo surgery[2]. Conservative management for knee osteoarthritis may include both pharmacological and non-pharmacological options, such as physical therapy, acupuncture, and aquatic therapy, and is commonly considered a first-line approach to help avoid or delay surgical management[3,4]. Beyond supporting individual patient decision-making, preference-sensitive care can also help healthcare organizations identify opportunities for improvement within their populations such as reducing potentially unnecessary utilization, managing avoidable costs, improving care quality, and better aligning treatment decisions with patient preferences. To effectively generate and act on these insights, healthcare organizations require strong analytical capabilities driven by well-defined PSC measures that highlight variations in treatment patterns and patient outcomes. Public programs and private insurers are already advancing this approach by integrating shared decision-making tools into care models. A notable example is Medicare's Shared Decision-Making Model, part of its Beneficiary Engagement and Incentives initiatives, which demonstrates how these concepts can be effectively operationalized in practice[5].

Drawing inspiration from Dartmouth's identification of 14 preference sensitive key conditions[1], our team applied clinical analytics, quality measurement, and an evidence-based care lens to examine these conditions, explore potential cost savings, assess associated limitations, and propose solutions. To investigate the frequency and trends of admissions related to preference-sensitive care, we analyzed a twelve-year claims dataset (2013-2024) comprising all available lines of business in our data: Commercial (COM) and Medicare (MCR), representing a total population of approximately six million members over this period, with the demographic breakdown shown in Table 1. It is important to note that this analysis focuses solely on the specific population represented in our dataset and the findings may not

match observations of other populations. This analysis demonstrates how healthcare organizations can use data-driven approaches to identify trends and uncover opportunities specific to their population related to preference-sensitive care.

Table 1: Demographic breakdown of the population in the dataset

Category	Subcategory	Percentage
Gender	Male	42.07%
	Female	47.39%
	Unknown	10.54%
Insurance Type	Commercial	84.92%
	Medicare	15.08%
Age Group	0–17	18.19%
	18–39	29.44%
	40–64	28.85%
	65+	23.52%

We used MedInsight's Potentially Avoidable Hospital Events (PAHE) tool, which identifies key conditions from Dartmouth's preference-sensitive care measures, where care management strategies could be optimized. These measures identify admissions and their associated costs for surgical interventions that could have been potentially avoided by adopting conservative care management as the preferred line of treatment.

- In our analysis, preference-sensitive events were found to make up **5.3%** of all acute inpatient events between 2013 and 2024 and account for approximately **8%** of the total allowed Amount for the acute inpatient care. Across all potentially avoidable PSC events, the analysis identified an estimated **$3.59 billion** in total potential savings over the 2013–2024 study period.
- The overall utilization of Potentially Avoidable PSC events was **4.61** per 1,000 members each year.

Figure 1 below shows the percentage of potential savings and utilization for Potentially Avoidable PSC events.

- Most of these potentially avoidable hospital events were concentrated under a few surgical specialties. Knee Replacement **(27.44%)**, Coronary Angiography **(22.48%)**, and Hip Replacement **(18.59%)** contributed about 70% to the total potentially avoidable PSC event count.
- Knee Replacement and Coronary Angiography also rank high in savings, contributing **21.65%** and **21.53%**, respectively, while Hip Replacement accounts for a relatively smaller share at **14.22%**.
- Conversely, Percutaneous Coronary Intervention contributes a similar share to both avoidable events **(15.57%)** and potential savings **(17.10%)**, indicating that its savings are broadly proportional to its utilization rather than being driven by unusually high costs per case.

Figure 1: Distribution of Potentially Avoidable Hospital events and associated Savings by Preference Sensitive Conditions

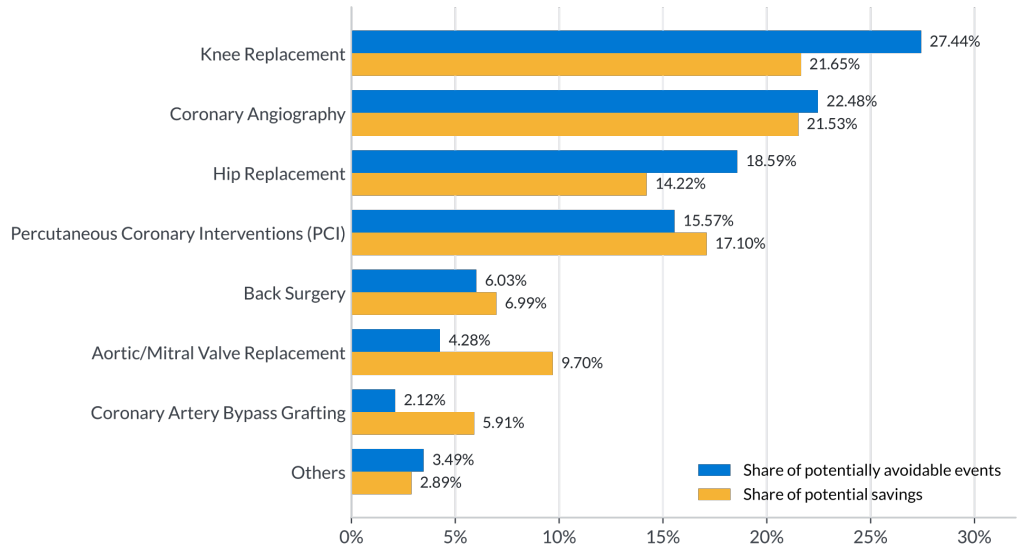
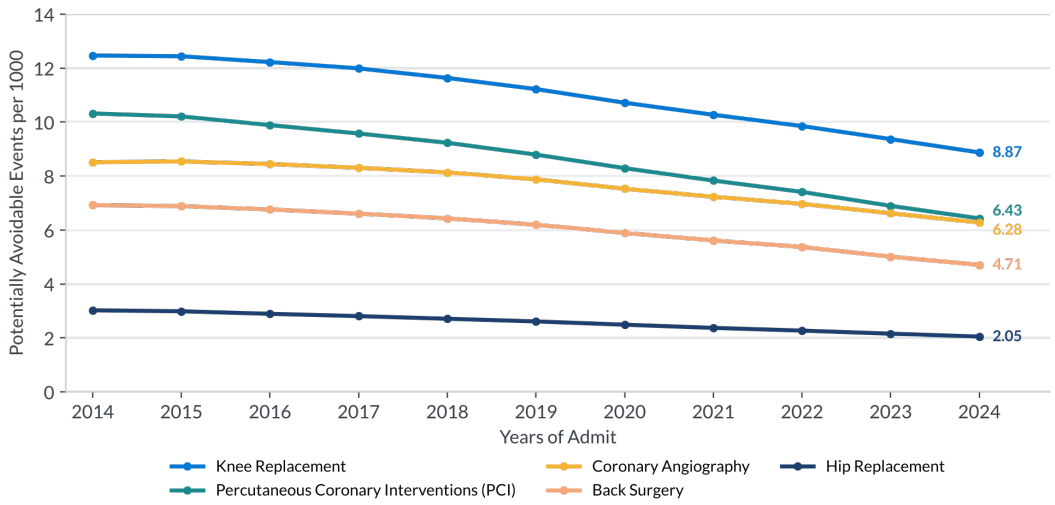


Figure 2 illustrates the year wise trend of potentially avoidable hospital events per 1,000 for major PSC measures from 2014 to 2024. There was a consistent and substantial decline across all measures throughout the decade. This trend suggests that healthcare organizations are already recognizing and acting on opportunities to reduce potentially avoidable PSC events. As a result, focusing on preference-sensitive care should increasingly be viewed not just as an opportunity, but as an important capability for improving quality, managing utilization, and delivering higher-value care.

Overall, the combined rates decreased by approximately **31.3%**, reflecting a potential shift toward more conservative treatments over surgical interventions. Percutaneous Coronary Interventions (PCI) demonstrated the most pronounced reduction, while Coronary Angiography registered the smallest relative decrease.

Figure 2: Yearwise Trend of Top 5 Potentially Avoidable Hospital events



Members aged 65 and older experienced the highest rate of avoidable (PSC) events (Figure 3), followed by the 40-64 age group. In contrast, children and adolescents aged 0-17 had the lowest rates of avoidable PSC events.

Figure 3: Admits per 1000 by Age

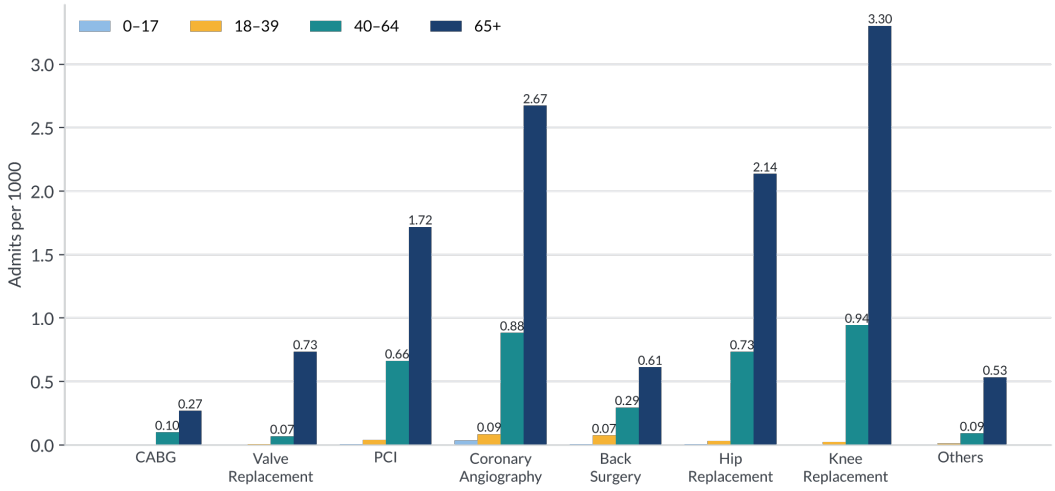
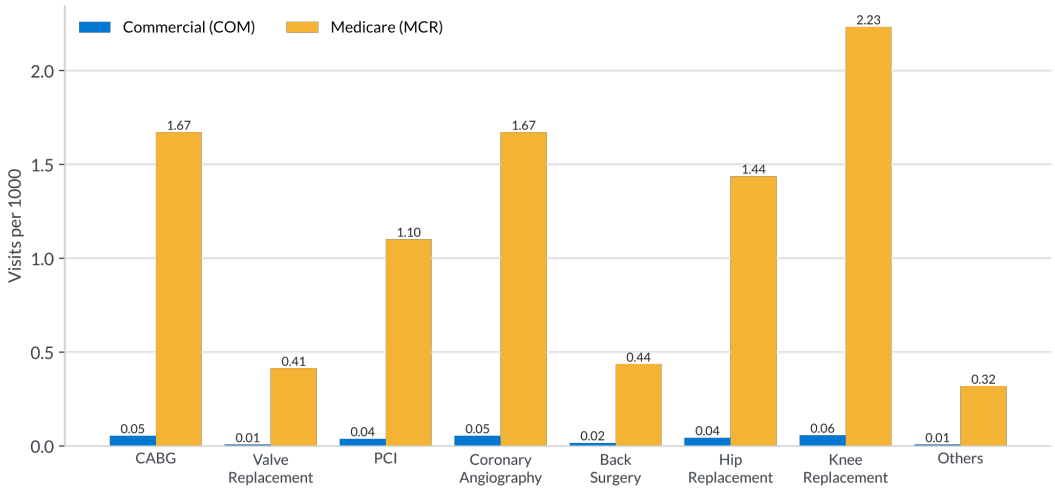


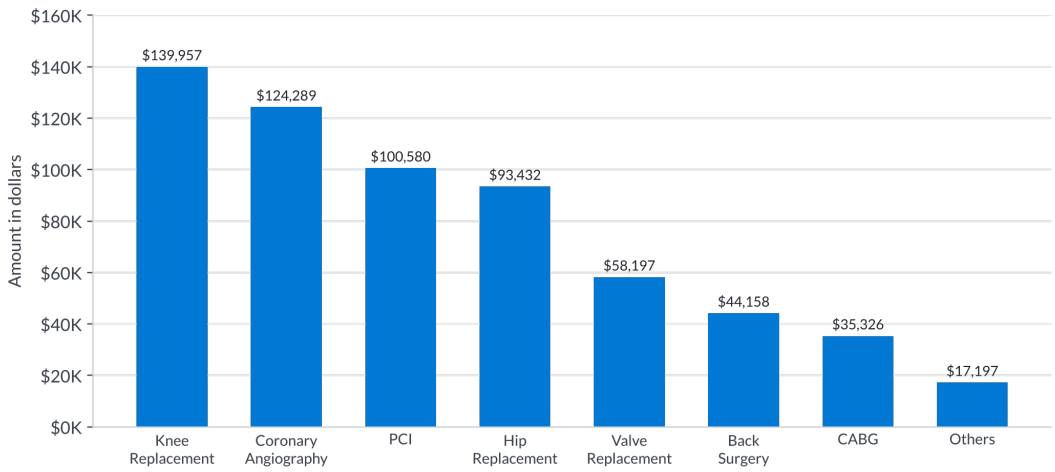
Figure 4: Potentially Avoidable Hospital visits per 1000 by LOB



Medicare members are more likely to experience such events compared to Commercial plan members as depicted in Figure 4. This strengthens the observation that age is a contributing factor in PSC prevalence, as older adults tend to have a higher burden of chronic conditions, undergo more surgical procedures[6], and experience age-related physiological changes that increase vulnerability. We also observed in our analysis that males tend to have slightly higher rates of potentially avoidable hospital events than females.

Aligning to the admit counts, surgeries like Knee Replacement and Coronary Angiography stand out, with potentially avoidable event costs making up more than **43%** of the total spend of PSC events when calculated per 1000 members. In contrast, procedures like Back Surgery and coronary artery bypass grafting (CABG) have a much smaller share, around **8%** of the total expenditure of PSC events, as depicted in Figure 5.

Figure 5: Potential Savings per 1000



Preference-sensitive care measure logic applies measure-specific exclusion criteria to remove higher-risk patients and cases with clear clinical indications or complications, so the avoidable cohort reflects a more refined population for whom the procedure may have been potentially avoidable. Figure 6 provides additional context by showing mortality rate for potentially avoidable PSC events. Coronary Angiography and PCI had the highest observed rates, at 2.25% and 2.18%, respectively, followed by CABG at 1.11% and Valve Replacement at 0.90%. These findings should be interpreted as additional context rather than evidence of a direct procedural outcome. The final part of our analysis (Figure 7) depicts the heat map of Potentially Avoidable Hospital events which revealed significant variation in the utilization of these events across the United States. The state of Washington had the highest rate of potentially avoidable hospital events, followed by Georgia and Pennsylvania. In contrast, Alaska, Rhode Island, and West Virginia reported much lower rates.

Figure 6: Mortality Rate(%)

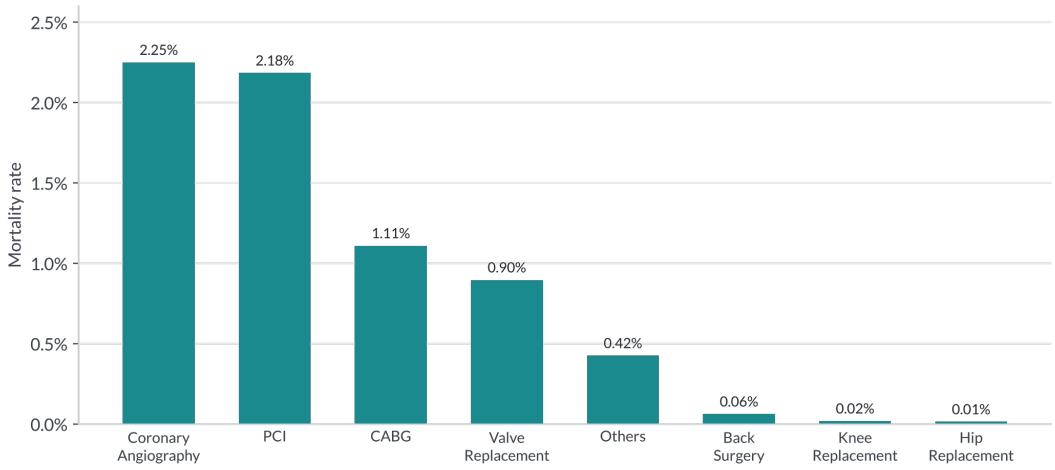
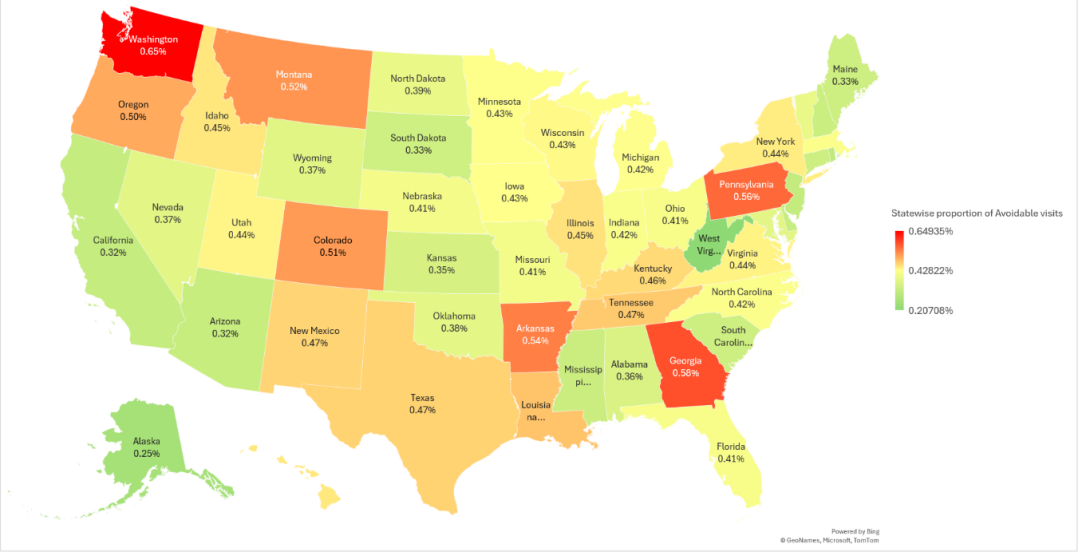


Figure 7: Statewise Proportion of Avoidable PSC Events



How to use results of these kinds of analyses

Preference-sensitive care measures are not just abstract metrics; they are powerful tools for identifying actionable opportunities to improve care quality and reduce costs within specific populations. Our analysis of approximately six million members over twelve years demonstrates how organizations can use their own data to pinpoint where PSC strategies will have the greatest impact.

With strong analysis, organizations can prioritize PSC interventions based on their specific population characteristics and strategic goals. For example:

- For organizations focused on **direct cost savings**, our analysis indicates that, within the population studied, knee replacement and coronary angiography represent the highest-value targets, contributing **21.65%** and **21.53%** of the estimated **$3.59 billion total potential PSC savings opportunity**, respectively. Together, these two procedures account for over **43%** of potential savings, suggesting that even modest reductions in unnecessary utilization could translate into meaningful financial impact.
- Organizations prioritizing **decreased utilization of intensive treatments** can focus instead on procedures with high volume but lower individual costs. In the case of our study population, knee replacement (27.44% of events) and hip replacement (18.59% of events) rise to the top for consideration in PSC programs. Targeted interventions for these procedures might include identifying high-referring providers and orthopedic surgeons performing these procedures, analyzing their utilization patterns, and implementing educational programs that emphasize conservative management options like physical therapy and pharmacological interventions as first-line treatments.

Organizations managing populations with different characteristics may, based on these kinds of analyses, recalibrate their focus accordingly. For example: organizations with lower overall PSC rates could prioritize identifying outlier providers or regions rather than broad interventions. Medicare-heavy populations should emphasize cardiovascular and high-risk procedures, supported by age-specific decision aids and risk communication. Younger commercial populations may benefit more from early conservative care pathways to prevent escalation to surgical intervention. Analytics like those we have presented above support these kinds of insights and decisions.

Geographic and provider-level insights

Our state-level analysis revealed significant variation, with Washington, Georgia, and Pennsylvania showing the highest rates of potentially avoidable PSC events. In high-utilization regions, systemic factors—such as regional

practice patterns, specialist density, or cultural attitudes toward surgery—may require community-wide interventions rather than isolated provider education. Measurements of these factors at a geographic level could be brought to bear on PSC analyses of geographic variation.

A logical next step might be provider-level analysis. Organizations could identify which providers and practice groups account for the highest volumes of potentially avoidable PSC events. To make these analyses meaningful, however, organizations need clear provider definitions and thoughtful provider groupings. Without them, analyses may misidentify key players, mischaracterize the market, or fail to capture the full scope of services delivered by a provider group or health system.

When structured appropriately, provider-level analysis can help organizations:

- Target education and feedback to high-utilizing providers
- Recognize and learn from providers with consistently low PSC event rates
- Design incentive structures that reward preference-aligned, conservative-first care
- Implement peer comparison dashboards to encourage best practices

This is also consistent with MedInsight's broader work on healthcare service analysis, which highlights the importance of clear provider groupings in producing accurate, actionable insights[7].

What this analysis tells us about effective PSC strategies

While this analysis does not directly assess the effectiveness of specific interventions, it reveals critical patterns that may inform strategy selection:

1. The 31.3% decline in PSC events in our population from 2014-2024 suggests that broader systemic changes—potentially including increased awareness, evolving clinical guidelines, and growing acceptance of conservative management—may already be influencing practice patterns. Organizations could identify and build on this momentum in their own contexts rather than starting from scratch.
2. The concentration of our population's PSC events in specific procedures (70% in just three procedure types) indicates that focused, specialty-specific interventions would be more efficient than broad, system-wide programs. Resources should concentrate on where they will have the greatest impact based on findings from the given population.
3. Age and insurance type patterns highlight the need for population-specific approaches. Medicare beneficiaries and older adults require different engagement strategies than younger commercial members.

Observed mortality patterns may add context to shared decision-making discussions for higher-risk procedures. However, if discussed, these findings should be framed as contextual rather than causal, since claims data cannot confirm whether mortality was directly related to the procedure or influenced by other clinical factors.

Implementing change

Although our analysis was based on limited administrative data and did not directly assess the impact of patient and provider education, first-line treatments, or follow-up care, the findings highlight actionable opportunities.

Healthcare leaders and clinicians should use this type of analysis as a roadmap: examine your own population's PSC utilization patterns, identify high-opportunity services and providers, and implement targeted interventions where the data suggests they will be most effective. Tools like MedInsight's Potentially Avoidable Hospital Events (PAHE) solution make this analysis accessible and actionable, enabling organizations to apply the same methodology demonstrated here to their own populations, identify their unique opportunities, and track progress over time. By combining robust data analytics with targeted clinical interventions, organizations can transform preference-sensitive

care from a theoretical framework into measurable improvements in patient experience and healthcare value. Now is the time to move from analysis to action—let's drive meaningful change in preference-sensitive care.

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