Wakely
An HMA Company

Wakely.com

WHITEPAPER

Annual Wellness Visits and the Economics of Prevention

Insights from a Longitudinal Study of Medicare Enrollees

Hunter Schouweiler, MS, HSM
Luis Arzaluz Angulo, MS
Stephen Gates, ASA, MAAA, MBA
Luke Barnes

December 15, 2025

EXECUTIVE SUMMARY

Building on Wakely's previous analyses of Annual Wellness Visit (AWV) utilization and its relationship to healthcare spending, this study sheds light on how AWVs create value in Medicare populations. Previous research demonstrated that beneficiaries who received an AWV generally had lower total costs of care, with utilization patterns shaped by demographic, socioeconomic, and clinical factors.

AWVs were introduced as part of the Affordable Care Act (ACA) in 2010, making them a fully covered service under Medicare Part B. The purpose of AWVs is to identify care needs and create a preventive care plan for the enrollee, effectively acting as a long-term preventive care action plan. This analysis relies on claims and enrollment data for a constant cohort of Medicare fee-for-service (FFS) beneficiaries (2018–2023) to longitudinally examine AWV utilization, the impact of social determinants of health (SDOH) and primary care physician supply, and the observed effects of AWVs on enrollee care costs. We rely on descriptive statistics and regression modeling to estimate the impact of AWVs on care costs after controlling for relevant enrollee characteristics.

Our findings indicate that AWVs are considerably underused, with 45 percent of Medicare beneficiaries not engaging with their AWVs (had none or only one AWV during the six-year study period between 2018 and 2023). SDOH factors such as county-level primary care physician supply and household income influence AWV use, with enrollees living in more disparate counties having lower utilization rates. FFS beneficiaries who were more engaged with their AWVs (had at least four AWVs from 2018 to 2023) had a lower annual trend in their total cost of care (TCOC) and considerably lower inpatient and emergency department (ED) spending. After adjusting for enrollee fixed effects, time effects, and other covariates, the analysis showed that beneficiaries who received an AWV were associated with an average of $885 reduction in TCOC per beneficiary per year compared to years without an AWV.

Our findings show a statistically significant association between AWVs and care costs. Providers should consider implementation strategies that can increase member engagement with AWVs, which could lead to reductions in costs—significant in the context of population health management and value-based care contracting.

Cohort Development and Analytical Approach

This study employed a longitudinal, constant cohort design to assess the relationship between AWVs, SDOH, and healthcare spending among Medicare FFS beneficiaries. A six-year dataset (2018–2023) was constructed using the Medicare FFS claims Limited Data Set (LDS) 5 percent sample. The cohort included beneficiaries continuously enrolled in Medicare Parts A and B throughout the study period, allowing for consistent longitudinal analysis of utilization and cost trends, while minimizing bias related to enrollment fluctuations. Beneficiaries who met the criteria for the institutional, end-stage renal disease (ESRD), or new enrollee risk score models were excluded to harmonize the sample, including only Medicare beneficiaries in the community with full calendar year data and without ESRD. The final sample comprised 733,532 beneficiaries with data for each year.

To evaluate the impact of community- and system-level factors, the analysis incorporated multiple county-level SDOH indicators. The Health Resources & Services Administration's Area Health Resources Files provided key measures of primary care physician rate per 10,000 population and median household income at the county level. We used the Centers for Disease Control and Prevention's (CDC's) Social Vulnerability Index (SVI) to assess county rankings for racial and ethnic minority status and housing and transportation domains in relation to AWV utilization; however, no clear patterns emerged, likely because of data lags and the inherent limitations of county-level aggregation.

To assess the effect of chronic conditions on AWV utilization, we relied on member-level data using Chronic Special Needs Plan (C-SNP) condition flags, which are based on Hierarchical Condition Categories (HCCs), enabling a consistent classification schema of key comorbidities. Chronic conditions included diabetes, obesity, chronic heart failure, stroke, and chronic lung disease, among others. Spending metrics focused on risk-adjusted measures based on claims allowed costs across major categories of care, including ED, inpatient, and primary care spending,[1] as well as TCOC. Risk adjustment used the V24 model to account for variations in population health status and demographic characteristics, enabling accurate comparisons across subpopulations and time.

[1] Primary care was defined by CPT codes related to preventive care, evaluation and management, care management, assessment and screenings, care coordination/integration, transitional care, advanced care planning, and home visits.

To facilitate our understanding of AWV utilization, we created three AWV engagement levels:

- **Not Engaged with AWV:** Having 0–1 AWV from 2018–2023
- **Somewhat Engaged with AWV:** Having 2–3 AWV from 2018–2013
- **Engaged with AWV:** Having 4–6 AWV from 2018–2023

Our definition of an AWV for the purposes of this study was based on codes G0438 (the initial AWV), G0439 (the subsequent AWV), and G0402 (the Welcome to Medicare or Initial Preventive Physical Examination [IPPE]). The latter covers a review of medical and social health history and preventive services education. Providers may bill these codes once every 12 months.[2] We included the IPPE to provide a broader yet related definition of preventive visits aligned with the purpose and timing of AWVs.

Regression Model Methodology

A fixed effects regression model was used to estimate the impact of an AWV on costs using longitudinal data for our cohort of Medicare beneficiaries. This approach controls for unobserved, time-invariant individual characteristics—such as perceptions of the health system, health behaviors, or other personal attributes, including sex and underlying education—which for most Medicare beneficiaries remain constant over time. Without controlling for these factors, estimates of the relationship between AWV and spending would be biased. The fixed effects model estimates within individual changes, measuring the impact of an AWV on spending relative to an individual's own average or usual behavior.

The dependent variable was annual TCOC, and the primary independent variable of interest was an indicator of whether a beneficiary received an AWV in a given year. Additional time-varying control variables included age, average risk score, dual enrollment in Medicaid and Medicare, county level primary care physician supply (on a per 10,000 population basis), county median household income, number of primary care visit days[3] to control for enrollee interactions with the health system, and year-effects to control for shocks like the COVID-19 pandemic.

[2] Refer to the Medicare Learning Network Medicare Wellness Visits guidelines available at: https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/preventive-services/medicare-wellness-visits.html

[3] Primary care visit days were identified as unique days where enrollee had CPT codes related to preventive care, evaluation and management, care management, assessment and screenings, care coordination/integration, transitional care and advanced care planning, and home visits; this variable was to control for beneficiary's engagement with their health/health system interactions.

TCOC and primary care visit days were truncated at the 99th percentile to minimize the impact of extreme outliers. Upon assessing model stability, we decided to exclude enrollee age, as it caused significant multicollinearity with year effects. Last, county median household income showed moderate multicollinearity with year effects and had no meaningful impact on the model (its coefficient was negligible), so we excluded it from the final specification.

Results

AWV Engagement and Utilization

From 2018-2023 most Medicare FFS beneficiaries, 45 percent, were not engaged with their AWVs, 25 percent were somewhat engaged, and 30 percent were fully engaged, indicating considerable underutilization of AWVs. Over time, AWV utilization has modestly increased, but still most enrollees do not utilize this preventive service.

Figure 1. AWV Engagement Distribution

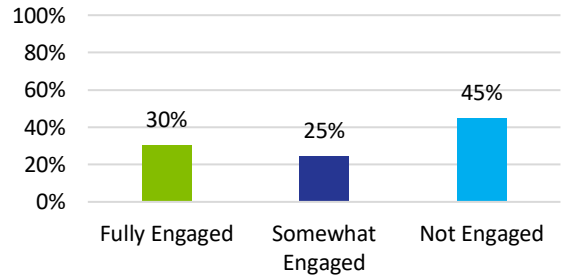
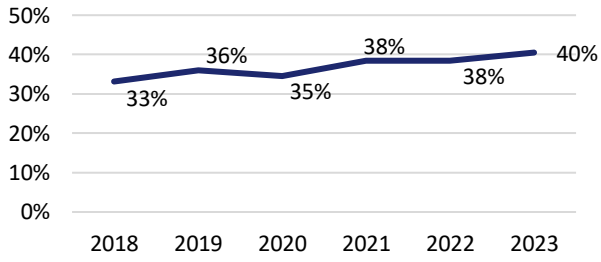
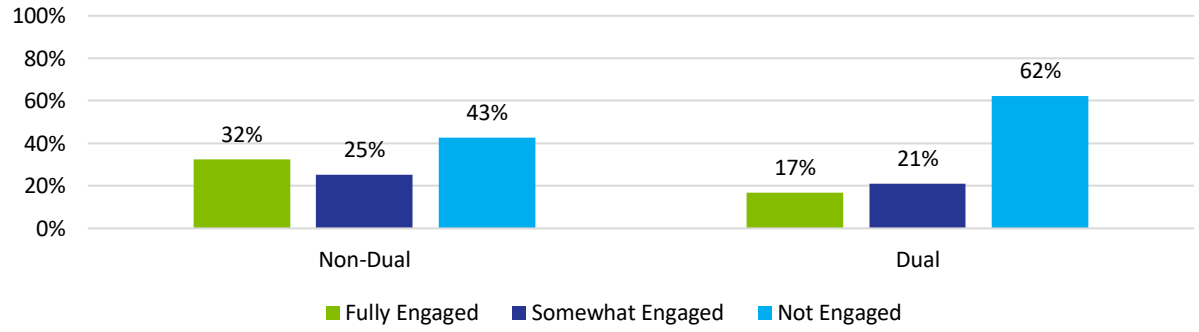


Figure 2. Percent of Enrollees with AWV



Dual Medicare-Medicaid enrollees are considerably less engaged with their AWVs, with most (62%) being disengaged. This points to challenges managing this population's care as well as a considerable opportunity to engage them.

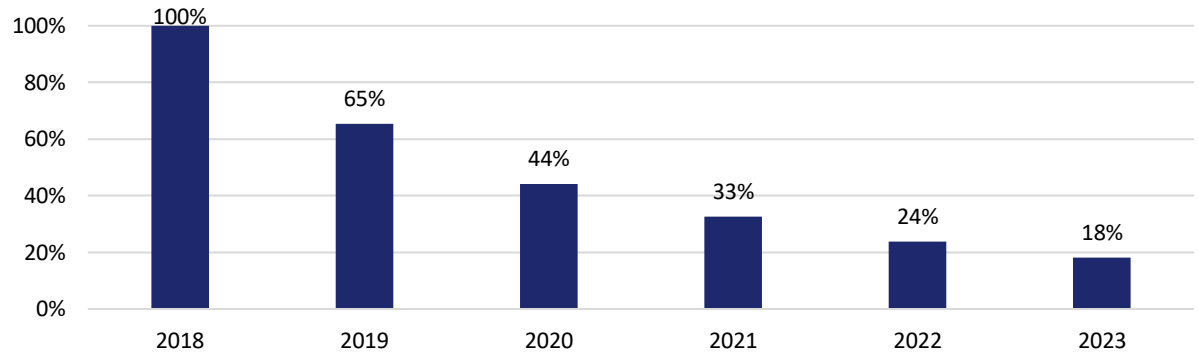
Figure 3. AWV Engagement Distribution by Status



AWV Persistency

To examine the rate at which Medicare enrollees have an AWV year-over-year, a persistence measure was created starting with all enrollees receiving an AWV in 2018. From these enrollees, we calculated the percentage who also had an AWV in 2019, then each year in 2020–2023. From the enrollees receiving an AWV in 2018, 65 percent also had one in 2019, and 44 percent did so in 2020. The percentage of enrollees who had an AWV in 2023 dipped to 18 percent, following a consistent decline through the study years. This drop-off pattern indicates that enrollees slow their utilization of AWVs, which in part could be related to medical necessity and provider decision-making.

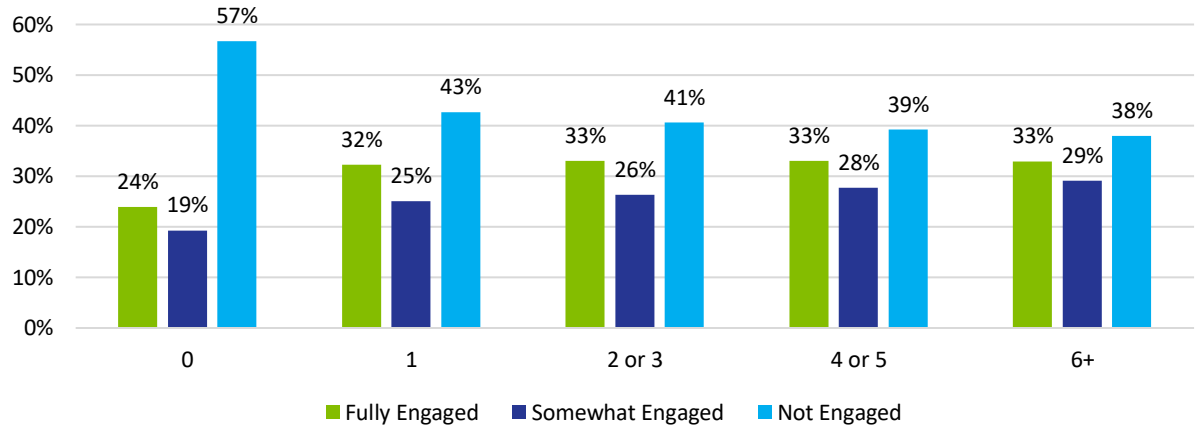
Figure 4. AWV Persistency



Effects of Chronic Conditions and Age

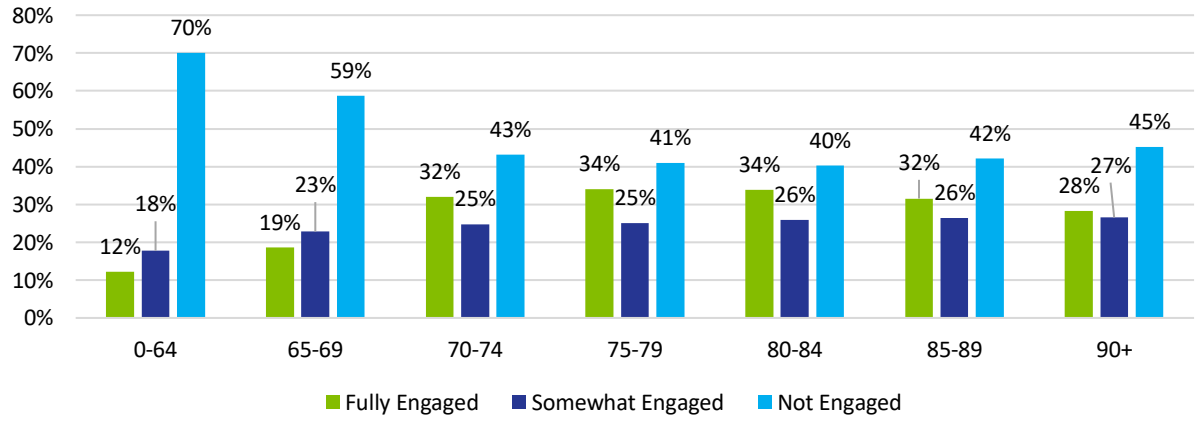
Medicare enrollees with zero chronic conditions, an indicator of better health status, are the least likely to be engaged with their AWVs, with only 24 percent being fully engaged. Beneficiaries with at least one chronic condition have higher engagement levels than those without; however, once an enrollee has a chronic condition, engagement remains relatively consistent, despite an increase in the number of such conditions. This indicates that AWV utilization may be partly driven by enrollee health, but only to a certain extent, as having two or more chronic conditions does not make a difference.

Figure 5. Engagement by Number of Chronic Conditions



Age was also found to have a notable impact on AWV engagement, with the percentage of fully engaged enrollees being considerably higher for those ages 69 and older. This may indicate that as enrollees age and health status deteriorates, they are more likely to receive AWVs because of increasing interactions with the health system.

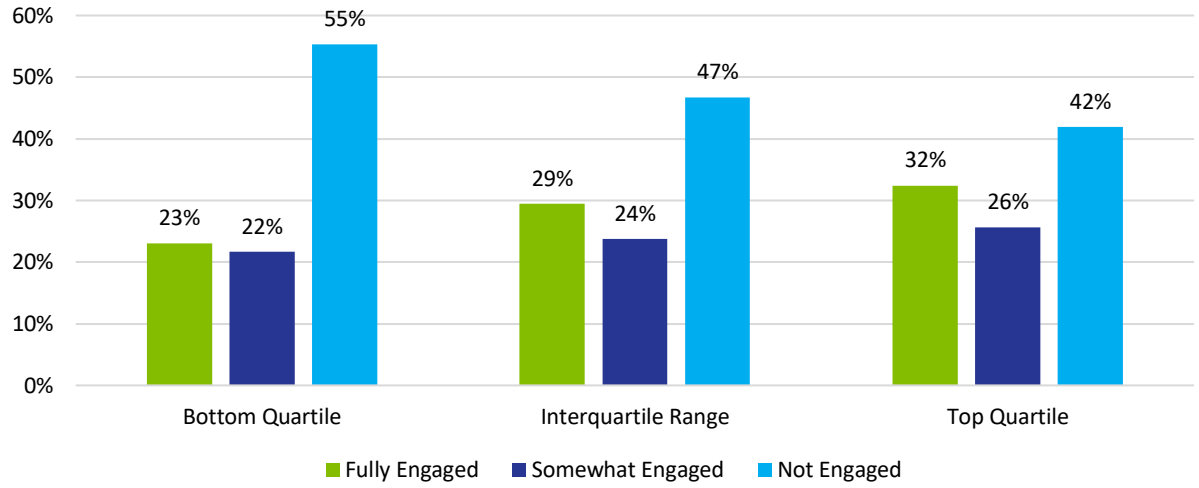
Figure 6. Engagement by Age



Effects of Income and Primary Care Physician Supply

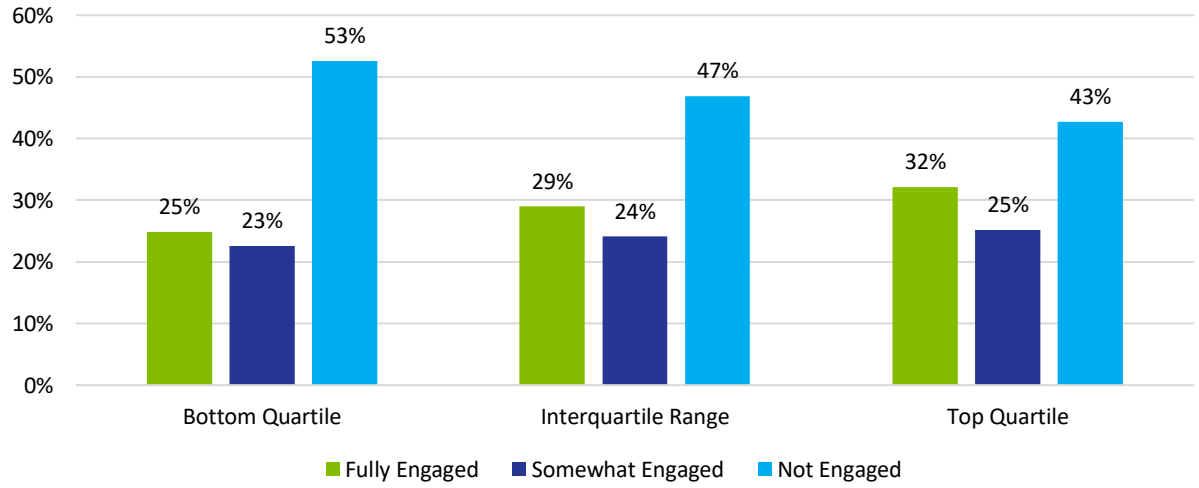
To assess the impact of SDOH factors, we examined AWV engagement by county-level median household income. Enrollees living in the lowest-income counties had the lowest level of full engagement with their AWVs and the highest percentage of nonengagement. Notably, the percentage of enrollees that were not engaged with their AWVs drops from 55 percent in the lowest-income counties to 42 percent in the highest-income counties.

Figure 7. Engagement by County Median Household Income



Considering that some barriers to AWV use may be driven by physician shortages, we also examined the rate of primary care physicians per 10,000 population at the county level. Enrollees who lived in counties with the lowest rate of primary care physicians had the lowest level of full engagement and the highest level of nonengagement.

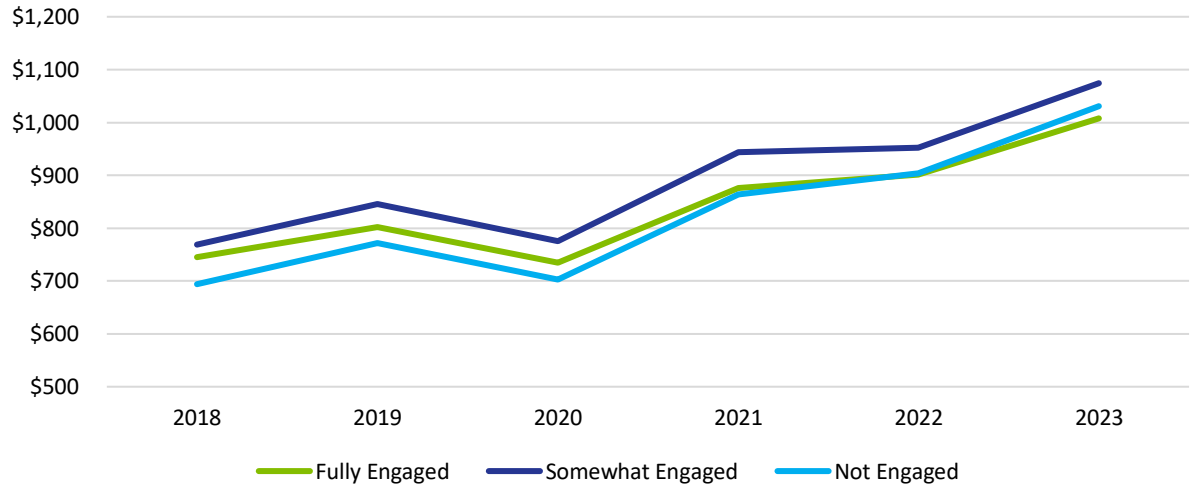
Figure 8. Engagement by Primary Care Physicians per 10,000 Population



AWV and Cost of Care

Risk-adjusted TCOC was found to be similar across AWV engagement groups, as observed by their trends on a per member per month (PMPM) basis. The annualized trend from 2021 to 2023 (the last three years of the study period) was 4.8 percent for the fully engaged group, 4.4 percent for the somewhat engaged group, and the highest, 6.1 percent, for the disengaged group.

Figure 9. Total Cost of Care PMPM



We further examined risk-adjusted costs at the service category level for primary care,[4] ED, and inpatient services (refer to the **Appendix**). Fully engaged enrollees had considerably lower costs for inpatient and emergency services; however, they had higher primary care costs across the study period. We also examined total Part B services, for which fully engaged enrollees had considerably higher costs than those not engaged with their AWVs. It is likely that enrollees that are engaged with their AWVs have higher costs for outpatient services (i.e., additional tests, labs, treatments, and diagnostic services), representing more proactive care. On average, these cost trend differences make risk-adjusted TCOC similar across groups, with slower growth for fully engaged enrollees.

[4] Primary care was defined by CPT codes related to preventive care, evaluation and management (E/M), care management, assessment and screenings, care coordination/integration, transitional care, advanced care planning, and home visits.

Marginal Impact of an AWV on Costs

From the regression model, we estimated the effect on an AWV on TCOC and found that, on average, enrollees with an AWV in a given year lowered their TCOC by $885 ($p<0.05$) on a per member per year basis compared with years when they did not have an AWV. These results came after controlling for dual status, risk score, primary care physician rate, number of primary care visit days, year effects, and individual time constant characteristics (via fixed effects model). In other words, an AWV was associated with reducing enrollee's TCOC by about $74 per month as compared with years when the enrollee did not receive an AWV. Although these results do not represent a causal relationship, they show a statistically significant association between AWVs and TCOC. Regression model results are shown in the **Appendix**.

Conclusion

This analysis demonstrates that AWVs can be an important tool in controlling costs among Medicare enrollees. Providers may consider strategies to increase member engagement with AWVs, especially in the context of alternative value-based payment models. While TCOC was similar across engagement groups, costs grew at a slower pace for beneficiaries who fully engage in AWVs. Within individual changes—specifically an individual having an AWV compared to not having one—could lead to considerable reductions in TCOC. In practice, as more individuals have access to an AWV, opportunities to reduce costs would increase. Future analyses should examine the impact of AWVs on end-of-life costs and enrollee longevity, as well as the effects of value-based care models on AWV utilization and operational strategies to inform approaches for increasing engagement.

ABOUT THE AUTHORS

Hunter Schouweiler, MS, HSM
Senior Consultant II
Hunter.schouweiler@wakely.com

Luis Arzaluz Angulo, MS
Consultant I
Luis.arzaluz@wakely.com

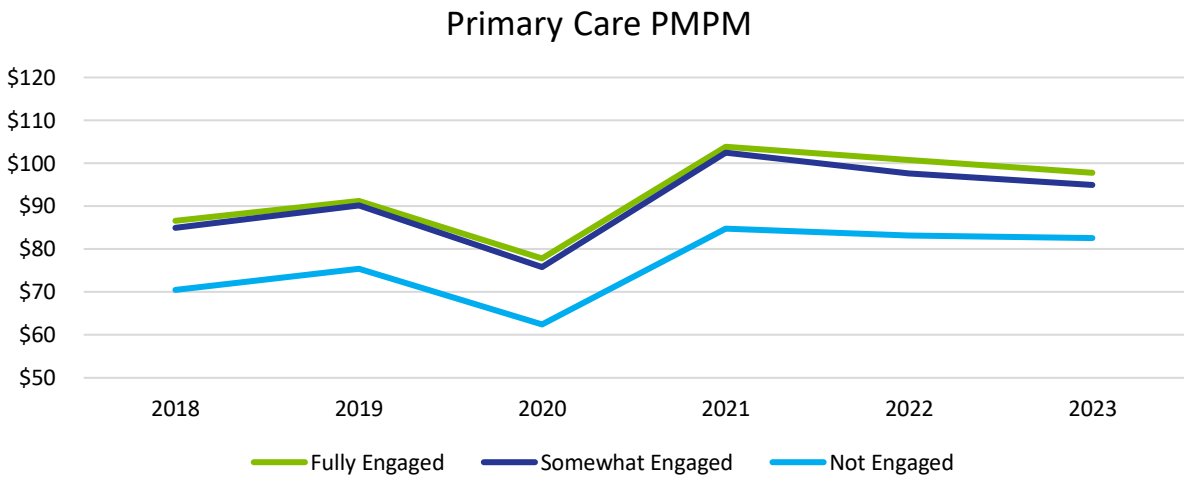
Stephen Gates, ASA, MAAA, MBA
Consulting Actuary
stephen.gates@wakely.com

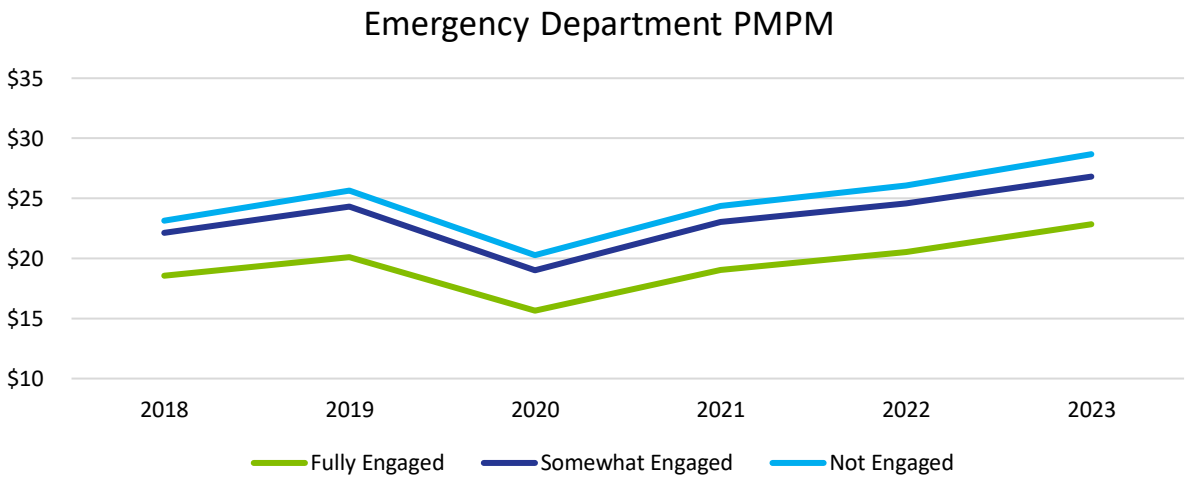
Luke Barnes
Actuarial Analyst
luke.barnes@wakely.com

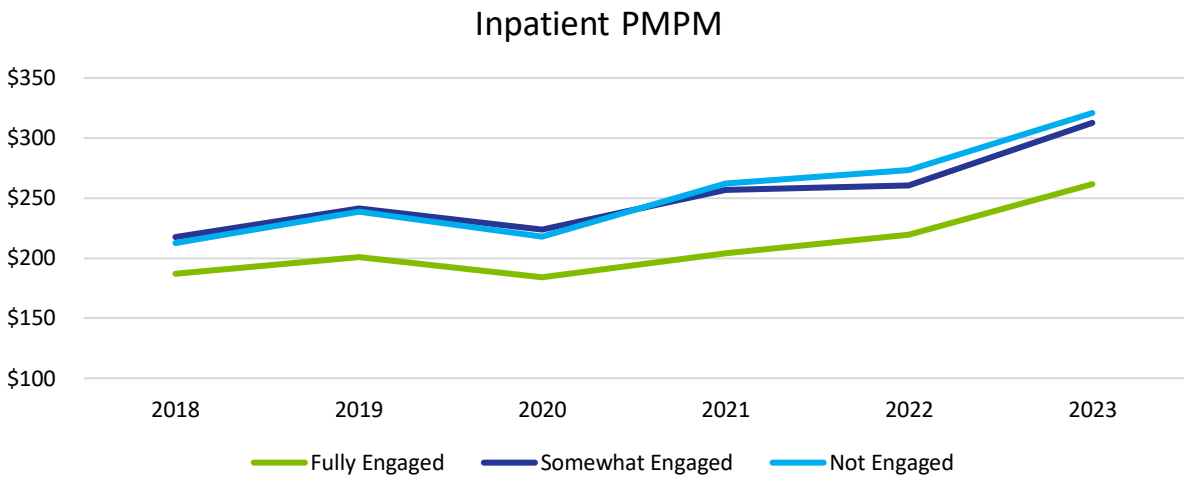
ABOUT WAKELY

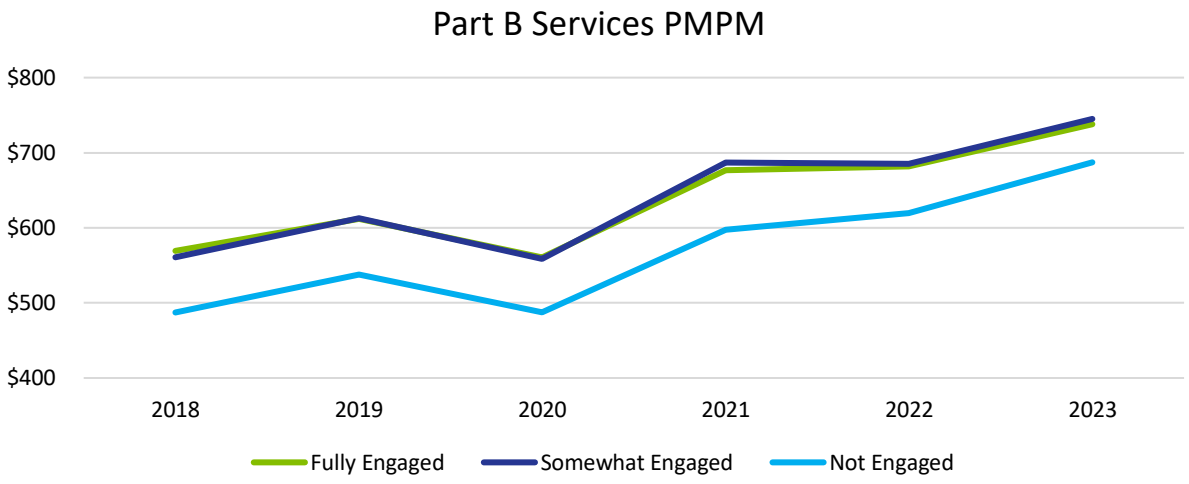
Founded in 1999, Wakely Consulting Group, an HMA Company, is well known for its top-tier healthcare actuarial consulting services. With nine locations nationwide, Wakely boasts deep expertise in Medicare Advantage, Medicaid managed care, risk adjustment and rate setting, market analyses, forecasting, and strategy development. The firm's actuaries bring extensive experience across all sectors of the healthcare industry, collaborating with payers, providers, and government agencies.

APPENDIX


Primary Care PMPM
$120
$110
$100
$90
$80
$70
$60
$50
2018
2019
2020
2021
2022
2023
Fully Engaged
Somewhat Engaged
Not Engaged


Emergency Department PMPM
$35
$30
$25
$20
$15
$10
2018
2019
2020
2021
2022
2023
Fully Engaged
Somewhat Engaged
Not Engaged


Inpatient PMPM
$350
$300
$250
$200
$150
$100
2018
2019
2020
2021
2022
2023
Fully Engaged
Somewhat Engaged
Not Engaged


Part B Services PMPM
$800
$700
$600
$500
$400
2018
2019
2020
2021
2022
2023
Fully Engaged
Somewhat Engaged
Not Engaged

Estimated Regression Coefficients, Model R-Square:.1945, n= 4,370,100				
Parameter	**Estimate**	**Standard Error**	**t Value**	**Pr > |t|**
Intercept	-$1,221	11.6	-105.4	<.0001
Risk Score	-$423	22.1	-19.2	<.0001
Dual Flag	$1,164	117.1	9.9	<.0001
AWV Flag	-$885	17.2	-51.4	<.0001
Physician Rate per 10,000	-$8	6.9	-1.1	0.2723
Primary Care Visit Days	$1,373	2.9	481.0	<.0001
2019	$330	16.2	20.3	<.0001
2020	$876	17.3	50.5	<.0001
2021	$1,246	18.5	67.4	<.0001
2022	$1,744	19.5	89.3	<.0001
2023	$3,131	21.4	146.4	<.0001
2018	0	0	.	.