CHAPTER 14

Mandated report: The impact of recent changes to the home health prospective payment system

CHAPTER 14

Mandated report: The impact of recent changes to the home health prospective payment system

Chapter summary

Before 2020, fee-for-service (FFS) Medicare's home health prospective payment system (PPS) paid for services using a 60-day episode as the unit of payment and applied a case-mix system that included the number of therapy visits as a payment factor, with more visits resulting in higher payments. The Commission and others raised concerns over many years that increasing payments based on the number of therapy visits created financial incentives that distorted provider decision-making about the types of cases admitted to home health care and the types of services provided. The Commission first recommended removing the number of therapy visits as a factor in payment in March 2011.

The Bipartisan Budget Act (BBA) of 2018 required CMS to shift to a 30-day period for payment and eliminate therapy visits from the case-mix adjustment. On January 1, 2020, CMS implemented these changes as part of a new case-mix model, the Patient-Driven Groupings Model (PDGM). The BBA of 2018 also mandated that the Commission assess the impact of the 30-day unit of payment in two reports: an interim report that we submitted in March 2022 and this final report due in March 2026.

For this report, the Commission assessed three domains: use of home health services, the quality of care received, and the payments and costs

In this chapter

for home health stays. Our analysis uses an interrupted time series (ITS) methodology that relies on pre-PDGM trends from 2016 to 2019 as a baseline to assess differences. We use the ITS model to produce two estimates: the "with PDGM" estimate, which reflects the observed postimplementation period, and the "without PDGM" estimate, which is a counterfactual of what would have happened in the absence of the policy changes. The difference between these two estimates, and its statistical significance, measures the estimated change associated with the PDGM. This analysis focuses on outcomes from 2023 to reduce the influence of the coronavirus pandemic on the results and to reflect the most recently available data on post-PDGM home health care trends. Our analysis examines outcomes for several categories of FFS Medicare beneficiaries, including demographic, socioeconomic, and other attributes.

The estimated effects presented in the analysis should be interpreted cautiously. While the ITS methodology attempts to isolate the PDGM's influence by comparing postimplementation outcomes with an estimate of what would have occurred under preexisting trends, it relies on the assumption that those trends would have continued unchanged if the PDGM had not been introduced. The model also assumes that our control variables have adequately adjusted for pandemic-related disruptions that persisted into 2023, but we cannot be certain of this assumption given the unprecedented scope of the event. Small changes are particularly difficult to interpret with confidence using this methodology. The estimates rely on the assumption that the adjusted trends before implementation of the PDGM would continue exactly, and small estimated effects may instead be related to other changes over time that are difficult to control for. Our report describes findings from this analysis as changes "associated with" the PDGM rather than "caused by" it, underscoring the need for cautious interpretation. Unless otherwise noted, the results we discuss are statistically significant at the 5 percent level.

***No substantial difference associated with the PDGM in FFS Medicare beneficiaries' probability of home health use or in the number of periods per user*—**Our analysis found that the probability of a FFS beneficiary using any home health care did not change substantially in 2023, with an 8.6 percent probability of any home care use with the PDGM and an 8.8 percent probability without the PDGM. The PDGM was also not associated with a substantial difference in the average number of 30-day periods received by home health users in 2023, with an average of 2.7 thirty-day periods per home health user with the PDGM compared with 2.6 thirty-day periods per home health user without the PDGM. These results suggest that the PDGM did not

impact the likelihood that a FFS Medicare beneficiary received home health or the duration of home health care.

Fewer home health visits per FFS stay associated with the PDGM, especially therapy visits—The PDGM was associated with fewer home health visits per stay in 2023. After adjusting for factors such as patient severity, the ITS models estimate an average of 15.9 visits under the PDGM compared with 18.8 visits without the PDGM—a difference of 2.9 visits, or about 15.3 percent fewer visits. That lower number of visits per stay in large part stemmed from a smaller number of therapy visits provided (2.4 fewer visits, on average).

While the removal of therapy visits from the case-mix system may account for some of the decline in therapy associated with the PDGM, given the limitations of our methods it is also possible that other factors—such as broader changes in the delivery system or shifts in care delivery practices—played a role in the reduction of therapy visits. For example, our results indicate that the PDGM was associated with 0.7 fewer skilled nursing visits per stay even though the PDGM did not change how the case-mix system paid for these services (under the PDGM and the predecessor case-mix system the number of nursing visits provided during home health care did not increase payments for most stays). It is not clear why skilled nursing visits would decline as a result of the PDGM, and our findings could reflect non-PDGM factors influencing care, such as staffing challenges or other effects from the disruption of the pandemic. Similarly, since many of the non-PDGM factors potentially impacting skilled nursing may affect other aspects of home health care, our reported results for the difference in therapy visits associated with the PDGM may, at least in part, similarly reflect non-PDGM factors.

It is also important to recognize that, prior to the implementation of the PDGM, the case-mix system used in the home health PPS was criticized for encouraging excessive therapy visits, and the PDGM's removal of therapy from the case-mix system was intended to correct this distortion. Although the provision of therapy is no longer a factor in determining payment for home health services, Medicare's coverage rules for therapy services remained unchanged under the PDGM, and CMS has emphasized that therapy should still be provided based on patient needs. The decline in therapy visits may reflect better alignment of home health care services with beneficiary needs.

No substantial difference associated with the PDGM in outcomes for most measures we examined—Our analysis found that beneficiary quality-of-care outcomes associated with the PDGM were not substantially different for most

measures in 2023. For all FFS beneficiaries who received home health care, we found that the rate of potentially preventable hospitalization during the home health stay was 2.1 percentage points lower relative to the 10.3 percent rate for potentially preventable hospitalizations without the PDGM; however, the limitations for our methods mentioned earlier require interpreting this finding with caution. The PDGM was associated with a slightly lower share of stays ending in discharge to the community. We found no substantial differences associated with the PDGM for self-care or mobility at discharge from home health, indicating that functional outcomes were similar after the implementation of the new system.

PDGM not associated with substantial difference in FFS Medicare margins— The PDGM was not associated with a substantial difference in overall FFS Medicare margins, with the results indicating a 0.6 percentage point lower FFS Medicare margin for home health stays associated with the PDGM in 2023 that was not statistically significant. The average FFS Medicare margin among all home health stays in 2023 was 24.1 percent, and almost all categories that we examined had margins over 20 percent, indicating that payments continued to exceed costs after the PDGM implementation. Given the many disruptions in the health care system during and after the pandemic, it is notable that FFS Medicare margins remained relatively high with no substantial difference associated with the PDGM in 2023.

The results for utilization, quality, and financial performance indicate that the implementation of the PDGM did not have an adverse impact on FFS Medicare beneficiaries and may have re-aligned therapy services to better reflect clinical need while maintaining quality of outcomes. Though the PDGM was associated with fewer visits per stay, and particularly therapy visits per stay, we did not observe worse quality of care. Looking ahead, the Commission plans to further analyze the PDGM's case-mix groups to assess their profitability under current utilization patterns and cost structures. Future studies may also explore factors such as agency size, geographic location, and ownership type to better understand variations in cost and payment outcomes across HHAs. ■

Medicare home health care services consist of skilled nursing, physical therapy, occupational therapy, speech therapy, aide services, and medical social work provided to beneficiaries in their homes. For home health care to be covered by Medicare, it must be required because the individual is homebound and needs skilled nursing care on an intermittent basis or physical or speech therapy or an ongoing need for occupational therapy.[1] In contrast to coverage for skilled nursing facility services, Medicare does not require a preceding hospital stay to qualify for home health care, nor are deductibles or copayments applied. In 2024, Medicare spent $16.0 billion on home health care services for about 2.7 million fee-for-service (FFS) Medicare beneficiaries using the benefit.

Before 2020, FFS Medicare's home health prospective payment system (PPS) paid for home health care services with a 60-day episode as the unit of payment and a case-mix system that included the number of therapy visits provided as a payment factor (with additional therapy visits yielding higher payments). The Balanced Budget Act (BBA) of 2018 required CMS to make two changes: to implement a 30-day period as the unit of payment and to eliminate the number of therapy visits provided during home health care as a payment factor in the case-mix system. On January 1, 2020, CMS implemented the Patient-Driven Groupings Model (PDGM), which implemented the required statutory changes and implemented a revised case-mix system with new measures of clinical and functional severity.

The BBA of 2018 requires that the Commission assess the application of the 30-day unit of payment for home health care (see text box on the congressional mandate, p. 554) and submit its findings in two reports. The Commission submitted an interim report in March 2022; this chapter satisfies a BBA of 2018 requirement for a final report by March 15, 2026.

This chapter begins by reviewing the policy history that led to the changes enacted in the BBA of 2018, summarizes how CMS implemented those changes in 2020, and reviews the findings from our interim report. We then outline the technical approach we applied to assess the trends in home health care associated with the BBA of 2018 reforms for our final report. Finally, we present findings assessing the effects on utilization, quality of care provided, and financial performance associated with the PDGM.

Background

In the years before the BBA of 2018, the Congress, the Commission, and CMS expressed concerns about the incentives embedded in the home health PPS. The case-mix system used before 2020 had a series of nine payment thresholds that increased payment as the number of therapy visits in an episode increased; in effect, providing more therapy visits increased payments.[2] The Commission raised concerns about the incentives of these thresholds in our 2010 report to the Congress and recommended eliminating the thresholds in 2011 (Medicare Payment Advisory Commission 2011, Medicare Payment Advisory Commission 2010). An investigation by the U.S. Senate Committee on Finance found that many home health agencies were providing therapy services based on financial incentives, and the committee called for Medicare to move away from using therapy visits as a payment factor (U.S. Senate Committee on Finance 2011).

A 2011 CMS-sponsored study of the home health PPS found that the average FFS Medicare margin (a measure of profitability) varied across the case-mix system's payment groups and that the margin for a 60-day episode was sometimes related to particular beneficiary characteristics (L & M Policy Research 2011). The report also found higher margins for 60-day episodes with more therapy.

Because of these concerns, CMS began a research effort that identified new clinical, functional, and service-use categories for a home health case-mix system that did not rely on the provision of therapy (Plotzke et al. 2016). These new categories were intended to better measure the case mix of home health care beneficiaries, minimize the potential for patient selection, and better align provision of services with patient needs. The research also found that dividing a 60-day episode into two 30-day periods would more accurately align payments with costs since the first 30 days of home health care had higher costs compared with the second 30 days. In June 2017, CMS proposed a new design for the home health PPS that included a 30-day unit of payment, revised case-mix

Mandate for the Commission to assess the impact of changes to the home health prospective payment system

Section 51001 of the Bipartisan Budget Act of 2018 (BBA of 2018):

the REPORTS.—

(1) INTERIM REPORT.—Not later than March 15, 2022, the Medicare Payment Advisory Commission shall submit to Congress an interim report on the application of a 30-day unit of service as the unit of service applied under section 1895(b)(2) of the Social Security Act (42 U.S.C. 1395fff(b)(2)), as amended by subsection (a), including an analysis of

- the level of payments provided to home health agencies as compared to the cost of delivering home health services, and
- any unintended consequences, including with respect to behavioral changes and quality.

(2) FINAL REPORT.—Not later than March 15, 2026, such Commission shall submit to Congress a final report on such application and any such consequences. ■

factors, and the elimination of therapy from the case-mix system for implementation in 2019. However, CMS withdrew this proposal in November 2017 (Centers for Medicare & Medicaid Services 2017).

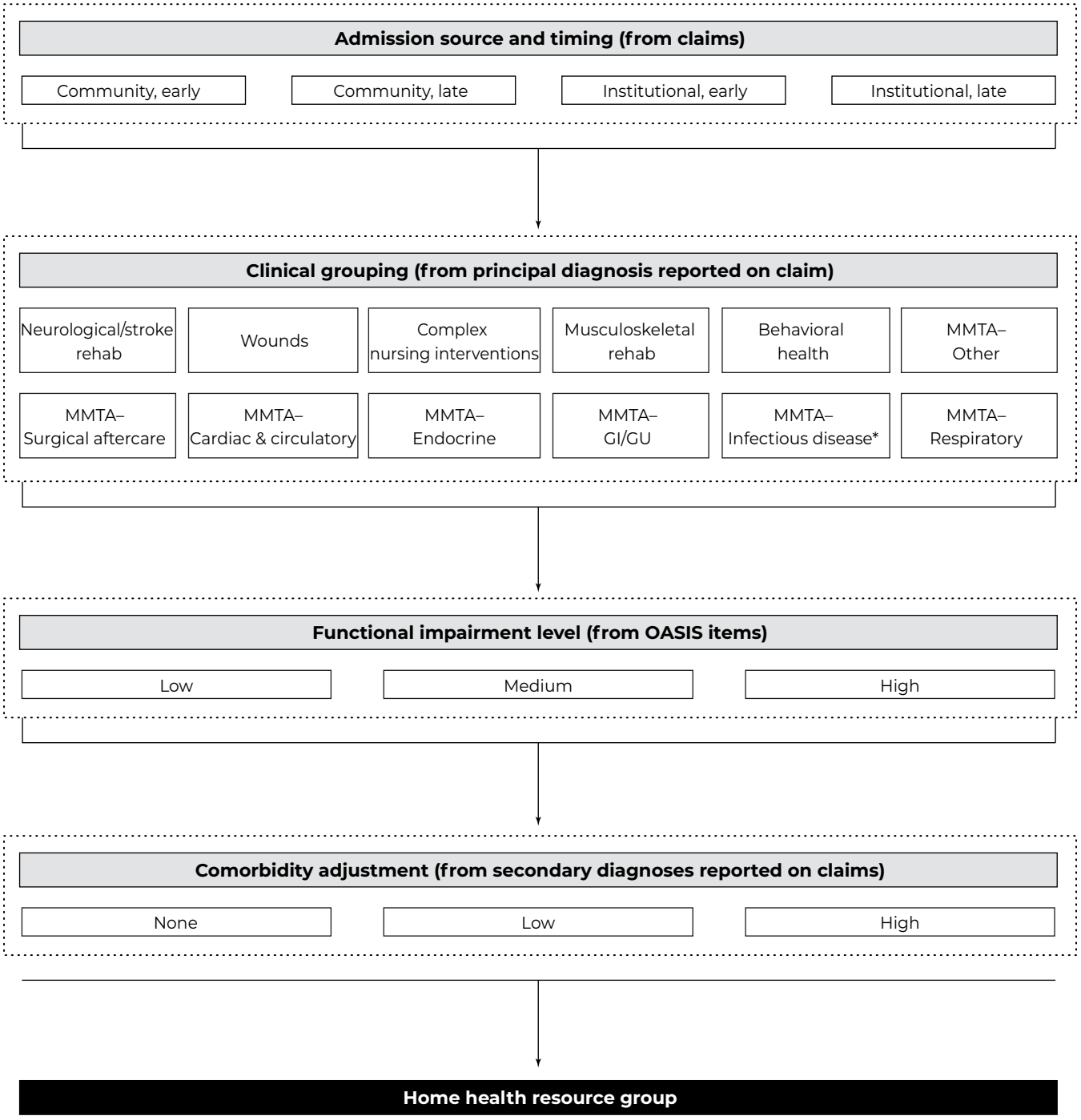
In February 2018, the Congress enacted the BBA of 2018 with a mandate to implement the 30-day unit of payment and remove the number of therapy visits as a factor in the case-mix system, policies similar to CMS's proposed revision from 2017. On January 1, 2020, CMS implemented the statutorily mandated changes along with the new case-mix factors for clinical and other patient attributes, similar to its 2017 proposal.

The PDGM categorizes periods into 432 payment groups based on the following characteristics (Figure 14-1):

- *Timing of the 30-day period*—Newly initiated home health services (those with no prior home health services) are classified as "early," while 30-day periods that follow an initial 30-day period are classified as "late." For example, if a beneficiary has four consecutive 30-day home health periods, the first 30-day period is classified as early, while the three subsequent 30-day periods are classified as late 30-day periods. Thirty-day periods initiated more than 60 days after the end of a previous 30-day period are classified as "early."
- *Beneficiary referral source*—Early 30-day periods that are preceded by a discharge from an inpatient hospital, long-term care hospital (LTCH), inpatient rehabilitation facility (IRF), inpatient psychiatric facility (IPF) or skilled nursing facility (SNF) are classified as institutional 30-day periods. Early 30-day periods that are not preceded by these services are classified as community-admitted 30-day periods. Late 30-day periods are classified as institutional when immediately preceded by an acute care hospital stay (stays at a SNF, IRF or LTCH do not result in an institutional classification for late 30-day periods, in contrast to early periods). Late 30-day periods without a prior acute care hospital stay are classified as community admitted.
- *Clinical grouping*—The PDGM has 12 clinical categories. The categories are defined by a primary diagnosis for selected medical conditions: need for musculoskeletal rehabilitation, neurological/stroke rehabilitation, wound care, behavioral health care, complex care, or one of seven medication management, teaching, and assessment (MMTA) categories: cardiac and circulatory conditions, endocrine conditions, infectious diseases,

FIGURE 14-1

Home health payment groups under the PDGM



Note: PDGM (Patient-Driven Groupings Model), MMTA (medication management, teaching, and assessment), GI/GU (gastrointestinal tract/genitourinary system), OASIS (Outcome and Assessment Information Set).
* Includes neoplasms and blood-forming diseases

Source: Centers for Medicare & Medicaid Services 2025.

respiratory conditions, gastrointestinal and genitourinary conditions, surgical aftercare, and other conditions.

- *Functional impairment level*—The PDGM classifies patients' cognitive and physical functioning using information from the Outcome and Assessment Information Set (OASIS) home health patient assessment.
- *Comorbidity adjustment*—The PDGM adjusts payments for comorbidities reported on home health care claims, with a two-tiered adjustment system for selected conditions that indicate greater severity.

MedPAC's March 2022 interim report found no negative impacts from the PDGM

The Commission's interim report on the impact of the changes to the home health PPS found that the disruption caused by the coronavirus pandemic limited our ability to assess the impact of the PDGM, though we determined that the PDGM itself did not substantially disrupt access to care for beneficiaries. Despite the onset of the coronavirus pandemic, the number of HHAs declined only slightly in 2020, and most beneficiaries continued to have access to multiple providers in their area. We noted that the BBA of 2018 did not require reductions to FFS Medicare's aggregate payments for home health care and, indeed, in 2020, the financial performance of HHAs remained strong, with the FFS Medicare margin increasing from 15.8 percent in 2019 to 20.2 percent in 2020. The total number of 30-day periods declined in the months immediately after the onset of the pandemic in March 2020. Though volume rebounded in July, overall home health utilization in 2020 was lower than in the prior year.

Most indicators of patient severity under the PDGM were unchanged. The distribution of 30-day periods in the beneficiary referral source groups and clinical groups in 2020 was similar to the distribution for these categories in 2019. The share of 30-day periods in higher-paying functional impairment groups and comorbidity groups did increase in 2020, but these measures may be more sensitive to HHA coding practices.

The Commission also assessed the CMS–hierarchical condition category (CMS–HCC) scores for beneficiaries who received home health care in 2019 and 2020. These scores are calculated by CMS for each beneficiary independent of clinical data provided by HHAs. The average CMS–HCC scores were about the same in 2019 and 2020, indicating that the average severity of illness of beneficiaries using home health care did not change significantly in the first year of the PDGM. This finding suggests that HHAs did not avoid higher-acuity beneficiaries in the first year of the PDGM.

After the Commission's interim report, Prusynski et al. reached similar findings that the PDGM did not negatively affect home health care access (Prusynski et al. 2025). The study assesses changes to skilled nursing facility and home health care using an interrupted time series model.[3] The model estimated changes in the monthly share of IPPS discharges to SNF and HHA in 2018 to 2021, and included controls for beneficiary clinical conditions, length and severity of the IPPS hospital stay, and county level COVID-19 rates during the study period (the study did not examine home health services for beneficiaries admitted from the community). Their findings indicated that the PDGM was associated with a 1.04 percentage point increase in home health use relative to the pre-pandemic trend. The study did not examine other aspects of home health utilization, quality, or financial performance, and did not examine changes for home health care services that were not preceded by a hospitalization.

Analytic framework for estimating the impact of the PDGM

For the Commission's final report on the impact of the PDGM, we have expanded on the analyses presented in our March 2022 interim report in several important ways. More data are available for analysis of the post-PDGM period, so we can examine years less likely to be directly affected by the coronavirus pandemic. For the final report, we also use trends from the pre-PDGM period (2016 to 2019) as a baseline for estimating the impact of the change. In addition, we measure a broader range of metrics, including quality of care outcomes, than we assessed in the March 2022

TABLE 14–1

Outcomes examined to assess the impact of the PDGM

Domain	Metric (FFS beneficiaries)
Utilization	Probability of receiving any home health care services in a year
	Probability of a postinstitutional home health stay in a year
	Probability of a community-admitted home health stay in a year
	Length of home health stay
	Average 30-day periods per user in a year
	Total visits per home health stay
	Skilled nursing visits per home health stay
	Therapy visits per home health stay
	Aide visits per home health stay
Quality	Potentially preventable hospitalization or observation stay during home health stay
	Discharge to community
	Change in mobility at discharge relative to admission based on six patient-assessment items (grooming, upper-body dressing, lower-body dressing, bathing, toilet hygiene, and eating)
	Change in self-care at home health discharge relative to admission based on three OASIS items (toilet transferring, bed transferring, and ambulation/locomotion)
Financial performance	FFS Medicare margin for home health stay

Note: PDGM (Patient-Driven Groupings Model), FFS (fee-for-service), OASIS (Outcome and Assessment Information Set).

Source: MedPAC.

interim report. We also examine outcomes for home health care services regardless of whether they were preceded by a hospitalization.

Data sources for this analysis

Our population includes FFS beneficiaries who were enrolled in Medicare Parts A and B for all twelve months of a given year (from 2016 through 2023) and for the six months prior to that year.[4] They did not need to meet this criterion for all eight years in our study—only for the specific year being analyzed. We use Medicare enrollment data, FFS claims, and OASIS data to construct utilization and quality measures discussed below. We use Medicare HHA cost reports to calculate FFS Medicare margins for each stay.

Domains examined to assess the impact of the PDGM

Our analysis examines the effects of the PDGM on outcomes in three domains: the use of home health care by FFS beneficiaries, the quality of the home health care received by FFS beneficiaries, and the profitability of FFS home health stays for HHAs (see Table 14-1, for the measures included in each domain).[5]

Other factors that could affect home health care during the study period

In assessing the effect of the PDGM on the outcomes listed in Table 14-1, we must recognize that the PDGM was implemented nationwide concurrent with a substantial shock to health care use and amid important longer-term shifts in the FFS Medicare landscape. These changes included:

- Reduced demand for home health care and other health care services during the coronavirus public health emergency. HHAs saw declines in the use of services due in part to beneficiaries' reluctance to allow HHA staff into their homes during the early months of the pandemic; although, the substantial reduction in SNF use during this time partially offset this decline as some beneficiaries who would

TABLE 14–2

Control variables that may have influenced FFS Medicare home health care use during 2016 to 2023 that were incorporated into the analysis

Type	Variable
Beneficiary demographic and health factors	Age
	Sex
	Race/ethnicity
	CMS–HCC indicators
	Low-income subsidy/Medicare and Medicaid dual-eligibility status
	Prior use of inpatient services (count)
	Prior use of outpatient hospital services (count)
	Prior use of SNF, IRF, or LTCH care (count)
	Prior physician office visit (count)
County-level supply and economic factors	Number of hospitals
	Number of SNFs
	Share of Medicare beneficiaries enrolled in Medicare Advantage
	Unemployment rate
	Per capita personal income
	Area Deprivation Index
	Elective service utilization per 1,000 enrolled beneficiaries
State level	Administrative actions in effect to prevent fraud and abuse

Note: FFS (fee-for-service), CMS–HCC (CMS hierarchical condition category), SNF (skilled nursing facility), IRF (inpatient rehabilitation facility), LTCH (long-term care hospital). Indicator variables for 79 CMS–HCCs were used in the model. Administrative actions to prevent fraud and abuse include two policies that were in effect for portions of 2016 to 2023: moratoriums on the enrollment of new home health agencies in certain areas and the pre–claims review demonstration that has been implemented in selected states. Stay-based outcomes include clinical groups and functional groups based on the PDGM to account for beneficiary acuity.

Source: MedPAC.

have been admitted to SNFs shifted toward home health care (Inloes et al. 2023, Office of Inspector General 2022).

- A continuing decline in the aggregate and per capita number of FFS Medicare hospital inpatient discharges. Hospital stays are common precursors to home health care (although not required to receive covered services), so a decline in hospital use would be expected to reduce demand for home health care.
- A growing share of Medicare beneficiaries enrolling in Medicare Advantage (MA). This shift may affect both the mix of beneficiaries in FFS Medicare and how HHAs provide care as they navigate MA plans' management of care.
- Workforce supply constraints (particularly nurses) reported by home health care agencies and other medical providers (National Alliance for Care at Home 2025, Office of Inspector General 2022). These constraints may have reduced the amount of 30-day periods or visits per stay for FFS Medicare beneficiaries.

As shown in Table 14-2, our analysis incorporates a wide range of beneficiary-level variables that are likely to affect home health care use, including demographics and health factors. Variables also include county-level supply and economic indicators, such as provider supply and the use of elective services, which may help account for some of the impact of the coronavirus pandemic (particularly in areas where elective procedures declined more sharply). Additionally,

TABLE 14–3 **Characteristics of FFS Medicare beneficiaries who used home health care in 2023**

Category	All FFS Medicare beneficiaries	FFS Medicare beneficiaries with at least one home health stay
Total (in millions)	24.1	2.1
Geography		
Urban	78.4%	82.8%
Nonfrontier rural	20.2	16.6
Frontier rural	1.4	0.6
Race		
White	84.5	85.1
Black	6.7	7.6
Other	8.8	7.3
Age		
80 or over	22.2	44.9
Under 80	77.8	55.1
LIS/dual-eligibility status		
LIS/dually eligible	15.5	20.7
Not LIS/dually eligible	84.5	79.3
Clinical condition group		
Knee	0.3	0.8
Dementia	4.7	14.4
Chronic obstructive pulmonary disease	4.6	7.5
Congestive heart failure	5.9	12.9
Diabetes	22.5	34.1
Stroke	1.2	2.3
Schizophrenia/major depressive	8.4	12.0
Neurodegenerative (Parkinson's/ALS/MS/muscular dystrophy)	1.6	4.1
None of the conditions above	59.7	35.9

Note: FFS (fee-for-service), LIS (low-income subsidy), ALS (amyotrophic lateral sclerosis), MS (multiple sclerosis). Components may not sum to totals due to rounding.

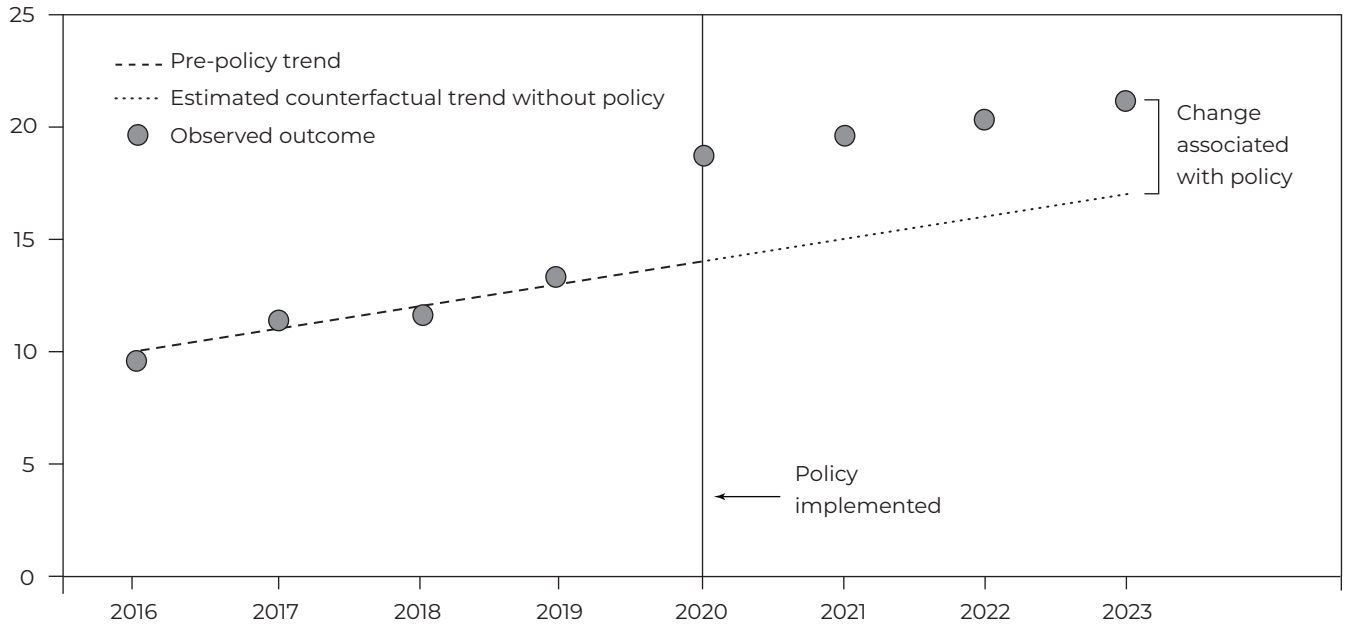
Source: Acumen analysis of 2023 data of CMS risk-score files and home health standard analytic file.

we control for annual changes in county-level MA enrollment to reflect shifts in the composition of the FFS population.

Assessing the impact for selected FFS populations

We identified subpopulations of beneficiaries to assess the effects of the PDGM across selected demographic, socioeconomic, and clinical characteristics. We selected patient groups based on characteristics that are common in home health care and cover different aspects of use (Table 14-3). For example, the geographic categories will capture differences in the PDGM effects for beneficiaries who reside in urban and rural counties, with the latter subdivided into frontier and nonfrontier areas (frontier counties

FIGURE 14–2 **Illustrative example of an interrupted time series measuring the impact of a policy**



Source: MedPAC.

have a population density of fewer than six people per square mile). Outcomes may also differ for beneficiaries depending on whether they were admitted to home health care from the hospital or from the community. Analyzing differences across these populations helps us understand how the PDGM impacted different beneficiary groups.

Methodology for assessing the association of the PDGM with measures of FFS Medicare home health care use, quality, and financial performance

We use an interrupted time series (ITS) approach to construct our estimates of the impact of the PDGM. An ITS is an appropriate methodology for evaluating the effect of the PDGM because it allows researchers to construct a counterfactual when no control group is available. In an ITS, the data from the period before a policy's implementation are used to estimate preexisting trends in the outcomes of interest. The approach generally assumes that those trends would have continued had the policy change not occurred (Figure 14-2). The estimated counterfactual trend can also be adjusted by including control variables in the model. The impact of the policy is then estimated as the difference between the actual outcomes in the period after the policy's implementation and the estimated counterfactual trend line. However, as discussed later in this section, caution is warranted in attributing the model-identified impacts to the implementation of the PDGM.

An ITS assumes that trends for the outcome from the pre-PDGM period (2016 to 2019) would have continued in 2020 and later years in the absence of the PDGM, after adjusting for available control variables. In other words, it assumes that any difference between the estimated counterfactual and the measured outcome identified in the post-PDGM period are due to the new payment system and not to other factors that we are unable to fully control for. Given the start of the coronavirus pandemic in 2020, we focus our assessment of the impact of the PDGM on the estimate for 2023 because it is less likely to be affected by the pandemic.

The base model specification is as follows. Each outcome y for beneficiary i in county j in year t is estimated using the following linear regression model with county fixed effects:

$$(y_{ijt}) = \beta_0 + \beta_1 T + \beta_2 X_{ijt} + \beta_3 P_{T=t} + \beta_4 P_{T=t} \times H_{ijt} + C_i$$

where

y: outcome of interest listed in Table 14-1 (p. 557)

T: year

X: beneficiary and county characteristics listed in Table 14-2 (p. 558)

H: Indicators for subgroups listed in Table 14-3 (p. 559) which are interacted with PDGM coefficients to allow for differing policy effects

P: a set of annual indicators that equal 1 for each year after the PDGM starts (2020 to 2023)

C: county fixed effect

We estimated a county fixed-effects linear regression to assess the association between the Patient-Driven Groupings Model (PDGM) and beneficiary outcomes (standard errors are clustered at the county level). For each beneficiary-year observation, the model relates outcomes listed in Table 14-1 to a set of post-PDGM year indicators (2020–2023), controlling for beneficiary and county characteristics. County fixed effects account for time-invariant differences across counties, while year indicators capture secular trends common across areas. To examine whether PDGM effects differ across populations, the post-PDGM indicators are interacted with subgroup indicators defined in Table 14-3, allowing the estimated policy effects to vary by beneficiary subgroup.[6] For each category, we estimated the mean outcome with and without PDGM in 2020 to 2023, and the magnitude and statistical significance of the difference in the means is our measure of the change attributable to the PDGM.

Sensitivity analyses

We estimated several alternative specifications to assess the sensitivity of our estimates. We first estimated a base model that included only the year trend T and annual indicators for the post-PDGM years P, and then we estimated four additional specifications that sequentially added the control variables and county fixed effects. We also estimated a version of the full model omitting data from 2020 and 2021, the years in which the pandemic would be expected to have affected the outcomes the most. We conducted these sensitivity analyses for four outcomes: the probability of any home health care use, the probability of any postinstitutional home health care use, the probability of any community-admitted home health care use, and the average number of visits per stay. Lastly, we also tested whether using a linear versus binary logit specification changed results for the probability of any home health care use. In each case, the estimates of the PDGM's impact on those outcomes in 2022 and 2023 under the alternative specifications were broadly consistent with our main specification.

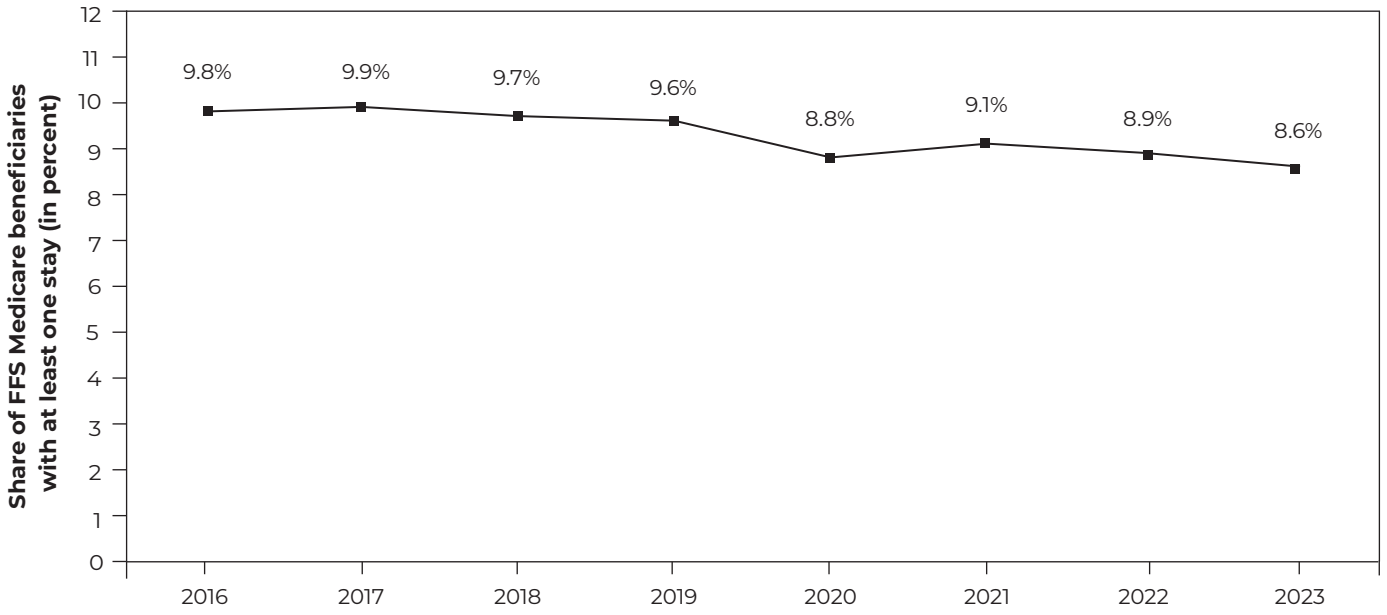
Appropriate caution in interpreting the estimates from the ITS models

We urge caution in interpreting the effects estimated in this analysis as solely the causal effects of the PDGM on the use of home health care, quality of care, and financial performance. Our ITS regressions use preexisting trends in home health outcomes and controls for certain time-varying factors to estimate the impact of the PDGM. The key assumption is that the preexisting trend, after adjusting for available control variables, would have continued had the PDGM not been implemented in 2020. However, since the coronavirus pandemic coincided with the implementation of the PDGM and because widespread changes to the health care landscape occurred following the start of the pandemic, our methods cannot fully account for all relevant changes that occurred since the start of the PDGM. As discussed above, we apply some techniques (such as controlling for local-market employment factors and the rate of elective procedures) to control for other factors that were changing in the post-PDGM period. However, those control variables are unlikely to fully capture non-PDGM changes to the health care system after the pandemic.

As a result, the effects attributed to the PDGM by our models could be due, at least in part, to other factors, resulting in conflated results. If our control variables do not fully account for the ongoing effects of the pandemic on utilization, our estimates may incorrectly attribute to the PDGM a decrease or increase in the probability or the amount of home health care services that beneficiaries receive. To minimize the impact of the disruptions associated with the coronavirus

FIGURE 14–3

Share of FFS Medicare beneficiaries with at least one home health stay has declined since 2016



Note: FFS (fee-for-service). Data include Medicare beneficiaries enrolled in FFS Medicare for the 12 months of a calendar year and the 6 months preceding it. Home health stays are constructed by linking consecutive home health claims with less than or equal to 60 days between the end of an initial claim and the beginning of the next claim.

Source: Acumen analysis of home health claims, 2016–2023.

pandemic, we report results from the model for 2023 as our measure of the changes in home health care use associated with the PDGM. By 2023, the PDGM had been in place for four years, and observed utilization patterns likely reflect how HHAs have adapted to the incentives of the new payment system. However, even in 2023, some impacts of the pandemic may persist; stakeholders have raised concerns about tight labor markets after the pandemic, and a lack of staff could also impact home health care use and outcomes (LeadingAge 2025). As a result, the results we report for post-2020 years may, in part, reflect other factors.

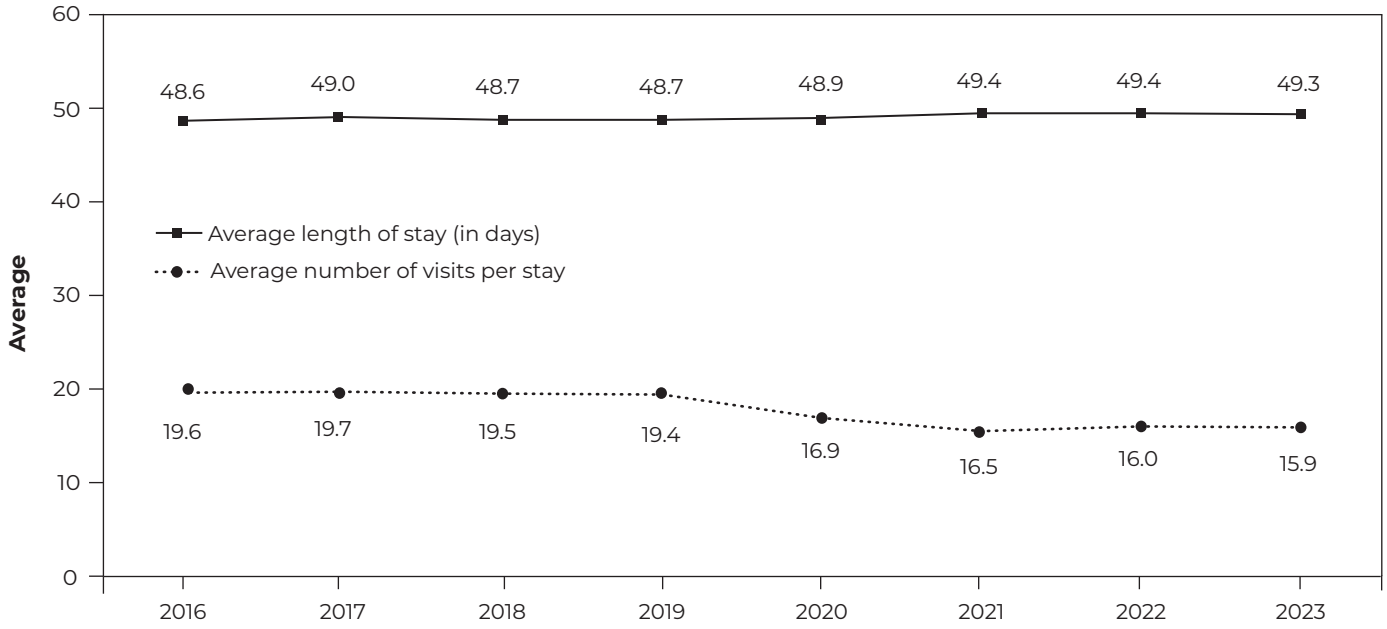
Given these limitations, in this analysis we describe the differences identified by our models as the change in outcomes associated with the PDGM, rather than the change caused by it. This distinction is critical since the impact of the PDGM on the outcomes these models estimate may reflect other factors. Small estimated effects are particularly difficult to attribute to the causal effect of the PDGM, even when they are statistically significant. Small estimated effects may primarily reflect other changes over time that are difficult to control for in our models.

PDGM not associated with a substantial difference in probability of FFS home health care use

Before applying the ITS methodology to assess the impact of the PDGM, we first examined unadjusted trends in home health care utilization before and after the policy's implementation. The figures below examine the annual trends for three of our measures: the share of FFS Medicare beneficiaries with at least one stay (Figure 14-3), the average visits per stay (Figure 14-4), and the average length of a home health stay (Figure 14-4).

FIGURE 14–4

Average length of FFS home health stays did not change substantially, while the average number of visits per FFS stay decreased, 2016–2023



Note: FFS (fee-for-service). Data include Medicare beneficiaries enrolled in FFS Medicare for the 12 months of a calendar year and the 6 months preceding it. Home health stays are constructed by linking consecutive home health claims with less than 60 days between the end of an initial claim and the beginning of the next claim.

Source: Acumen analysis of home health claims, 2016–2023.

Between 2016 and 2023, the proportion of FFS Medicare beneficiaries with at least one home health stay declined from 9.8 percent to 8.6 percent (Figure 14-3). In the same period, the average number of visits per stay fell from 19.6 to 15.9—a decrease of nearly 20 percent (Figure 14-4). The sharpest annual drop occurred in 2020, when the share of beneficiaries with a home health stay fell from 9.6 percent in 2019 to 8.8 percent, and the average number of visits declined from 19.4 to 16.9. By contrast, the average length of stay remained relatively stable at about 49 days (Figure 14-4).

Assessing differences in FFS home health care use associated with the PDGM

To identify differences in use associated with the PDGM, we apply the ITS methodology described above. We use the ITS models to produce two sets of estimates. The with-PDGM estimate reflects what actually occurred during each year of the postimplementation period.[7] The without-PDGM estimate is a counterfactual of what would have happened in the absence of the changes. The tables in this report focus on the difference between the with-PDGM values and without-PDGM values in 2023, the most recently available year of data. (Unless otherwise noted, effects discussed in text are statistically significant at $p < .05$.)

FFS Medicare beneficiaries' probability of home health care use was not substantially affected

Overall, the results in Table 14-4 (p. 564) indicate that the PDGM was not associated with a substantial difference in the probability of home health use in 2023 for most categories. Among all FFS Medicare beneficiaries, the probability of having at least one home health stay in 2023 was 8.6 percent under the with PDGM estimate compared with the 8.8 percent counterfactual without the PDGM, a difference of -0.2 percentage points, or –2.0 percent (Table 14-4).

TABLE 14–4

No substantial difference associated with the PDGM in probability of home health use in 2023

Category	Probability of any home health use		Percentage point difference	Percent difference (difference as a share of without PDGM)
	With PDGM	Without PDGM		
Any home health care during year (all referral sources)	8.6%	8.8%	−0.2	−2.0%
By source of referral				
Postinstitutional stay starting in 2023	4.7	4.5	0.3	6.0
Community admitted stay starting in 2023	3.0	3.9	−0.8	−21.8
Any home health stay during year by beneficiary characteristics:				
Geography				
Urban	9.0	9.2	−0.2	−2.4
Nonfrontier rural	7.1	7.1	<0.1	−0.1
Frontier rural	3.9	3.6	0.3	7.0
Race				
White	8.7	8.8	−0.1	−1.4
Black	9.7	10.8	−1.2	−10.8
Other	7.2	7.1	0.1	0.8
Age				
80 or over	17.4	15.2	2.2	14.4
Under 80	6.1	6.9	−0.8	−12.3
LIS/dual-eligibility status				
LIS/dually eligible	11.5	11.7	−0.2	−1.9
Not LIS/dually eligible	8.1	8.2	−0.2	−2.0
Clinical condition group				
Knee	24.2	24.7	−0.4	−1.8
Dementia	26.2	27.1	−0.9	−3.2
Chronic obstructive pulmonary disease	14.1	14.9	−0.8	−5.2
Congestive heart failure	18.7	19.9	−1.1	−5.7
Diabetes	13.0	13.9	−0.9	−6.4
Stroke	17.4	18.6	−1.2	−6.4
Schizophrenia/major depressive	12.3	12.5	−0.2	−1.9
Neurodegenerative (Parkinson's/ALS/MS/muscular dystrophy)	22.7	23.7	−1.0	−4.3
None of the conditions above	5.2	5.0	0.2	3.2

Note: PDGM (Patient-Driven Groupings Model), FFS (fee-for-service), LIS (low-income subsidy), ALS (amyotrophic lateral sclerosis), MS (multiple sclerosis). Shaded cells are statistically significant at $p < .05$.

Source: Acumen analysis of 2023 data of CMS hierarchical condition category files, Medicare Provider Analysis and Review, census data, CMS market-saturation and utilization file, and the standard analytic files for outpatient hospitals, physician services, home health, skilled nursing facilities, and inpatient rehabilitation facilities.

There were small differences in results for FFS Medicare beneficiaries by the geographic classification for their county (urban, nonfrontier rural, and frontier rural). Among beneficiaries in frontier rural counties, the probability of at least one home health stay in 2023 was 3.9 percent with the PDGM, compared

with 3.6 percent without the PDGM, a difference of 0.3 percentage points, or 7.0 percent (Table 14-4). For FFS Medicare beneficiaries in urban counties, the probability with the PDGM was 0.2 percentage points lower, on par with the difference for all home health users. The PDGM was not associated with any difference in the probability of use for FFS Medicare beneficiaries in nonfrontier rural counties, as the difference between the with-PDGM values and without-PDGM values was less than 0.1 percentage point and not statistically significant.

The PDGM was associated with greater differences in the probability of home health use for certain groups of beneficiaries. Among Black FFS Medicare beneficiaries, the PDGM was associated with a 10.8 percent lower probability of home health use (Table 14-4). Black FFS Medicare beneficiaries experienced a higher probability of a postinstitutional 30-day period under the PDGM, but this was offset by a lower probability of community-admitted 30-day periods (data not shown). Differences for the other racial groups were relatively small and not statistically significant. For FFS Medicare beneficiaries ages 80 and over, there was a 14.4 percent higher probability of home health use associated with the PDGM, while for those under the age of 80 the PDGM was associated with a 12.3 percent lower probability of use. The PDGM policy was associated with a 0.2 percentage point lower probability of service use for beneficiaries who were not dually eligible or enrolled in the low-income subsidy (LIS).

The PDGM was associated with different patterns of likelihood of use for postinstitutional and community-admitted stays in 2023: The PDGM was associated with a 0.3 percentage point higher likelihood of a postinstitutional stay and a 0.8 percentage point lower likelihood of a community-admitted stay.[8] The effects associated with the PDGM are small, and as noted earlier, our model may not be fully accounting for all the factors influencing home health utilization during this period, but the increase in the likelihood of postinstitutional stays may reflect other factors, such as stronger demand for home health care services after hospitalization compared with demand from community referral sources. HHAs can be an important alternative to other more costly sites of post-acute care, and this may encourage the post-hospital use of home health. Our finding of higher postinstitutional use is consistent with that of Prusynski et al., who found slightly higher shares of IPPS discharges to HHAs after the implementation of the PDGM (Prusynski et al. 2025).

No substantial difference associated with the PDGM in the number of 30-day periods per FFS home health user in 2023 Medicare's FFS payment systems can create incentives for higher volume, and shifting the payment unit from 60 days to 30 days raised concerns that HHAs might add extra 30-day periods. If this occurred, we would expect an increase in the number of 30-day periods per home health user. However, the PDGM was not linked to a substantial increase: In 2023, users averaged 2.7 30-day periods under the PDGM compared with 2.6 without the PDGM (Table 14-5, p. 566). This small, statistically significant difference does not suggest a material difference in volume. Across beneficiary categories, effects associated with the PDGM were small—generally 0.1 periods per year or less—with the largest difference being 0.3 periods for LIS/dually eligible beneficiaries.

The PDGM was not associated with a substantial change in FFS length of stays across beneficiary groups The PDGM was associated with limited differences in average length of stay across nearly all beneficiary groups. In 2023, the average length of stay under the PDGM was 2.1 days longer than it would have been without the PDGM, a 4.4 percent difference (Table 14-6, p. 567). Across stay categories, the differences in the lengths of stay for the with the PDGM and the without the PDGM estimates were not substantial, ranging from 1.0 to 4.2 days. Slightly larger percentage differences were observed among FFS Medicare beneficiaries who were LIS or dually eligible, ages 80 and over, and in the "other" racial category, for whom the PDGM was associated with somewhat longer lengths of stay. Average lengths of stay for both postinstitutional and community-admitted stays were longer by 2.1 days, corresponding to differences of 4.9 percent and 3.8 percent, respectively.

Fewer visits per FFS stay associated with the PDGM

Overall, we found that the PDGM was associated with fewer home health visits per stay in 2023, stemming in large part from a lower number of therapy visits. The

TABLE 14–5

No substantial change associated with the PDGM in 30-day periods per FFS home health user in 2023

Category	30-day periods per FFS user: With PDGM	30-day periods per FFS user: Without PDGM	Difference	Percent difference (difference as a share of without PDGM)
Any home health stay during year	2.7	2.6	0.1	4.7%
Any home health stay during year by beneficiary characteristics:				
Geography				
Urban	2.7	2.6	0.1	5.1
Nonfrontier rural	2.9	2.9	0.1	3.3
Frontier rural	2.9	2.8	0.1	2.6
Race				
White	2.7	2.5	0.1	4.8
Black	3.2	3.2	0.0	0.2
Other	3.2	2.9	0.3	9.1
Age				
80 or over	2.9	2.7	0.2	6.9
Under 80	2.6	2.5	0.1	2.8
LIS/dual-eligibility status				
LIS/dually eligible	3.7	3.4	0.3	7.3
Not LIS/dually eligible	2.5	2.4	0.1	3.8
Clinical condition group				
Knee	2.6	2.5	0.1	4.4
Dementia	3.4	3.3	0.1	3.9
Chronic obstructive pulmonary disease	2.9	2.8	0.1	1.9
Congestive heart failure	3.1	3.0	>0.1	1.5
Diabetes	3.1	3.0	0.1	2.9
Stroke	3.0	2.9	0.1	2.7
Schizophrenia/major depressive	3.0	2.8	0.1	4.7
Neurodegenerative (Parkinson's/ALS/MS/muscular dystrophy)	3.4	3.4	0.1	2.4
None of the conditions above	2.3	2.1	0.2	7.9

Note: PDGM (Patient-Driven Groupings Model), FFS (fee-for-service), LIS (low-income subsidy), ALS (amyotrophic lateral sclerosis), MS (multiple sclerosis). Shaded cells are statistically significant at $p < .05$.

Source: Acumen analysis of 2023 data of CMS hierarchical condition category files, Medicare Provider Analysis and Review, census data, CMS market-saturation and utilization file, and the standard analytic files for outpatient hospitals, physician services, home health, skilled nursing facilities, and inpatient rehabilitation facilities.

difference in visits was roughly proportionate across most of the categories we examined, indicating that the drop in visits was, on a percentage basis, similar for most groups. To the extent that the case-mix system prior to the PDGM increased payment when additional therapy visits were provided, the difference in visits under the PDGM could, at least in part, be a correction that reflects plans of care under the PDGM better reflecting clinical needs. However, it is notable that even though the payment methodology for skilled

TABLE 14–6

No substantial change associated with the PDGM in average length of stay per FFS home health user in 2023

Category	Average length of stay (in days)		Difference	Percent difference (difference as a share of without PDGM)
	With PDGM	Without PDGM		
All FFS stays	49.3	47.2	2.1	4.4%
Stay by source of home health referral:				
Postinstitutional	44.5	42.5	2.1	4.9
Community admitted	56.5	54.5	2.1	3.8
Any home health stay during year by beneficiary characteristics:				
Geography				
Urban	48.7	46.6	2.1	4.6
Nonfrontier rural	52.2	50.4	1.8	3.5
Frontier rural	51.2	49.3	1.8	3.7
Race				
White	48.4	46.5	2.0	4.3
Black	53.7	52.7	1.0	1.9
Other	53.9	49.7	4.2	8.4
Age				
80 or over	52.6	49.3	3.3	6.8
Under 80	46.5	45.4	1.0	2.3
LIS/dual-eligibility status				
LIS/dually eligible	59.1	55.5	3.7	6.6
Not LIS/dually eligible	46.6	45.0	1.6	3.7
Clinical condition group				
Knee	46.8	45.3	1.6	3.5
Dementia	55.5	52.4	3.1	6.0
Chronic obstructive pulmonary disease	51.0	49.1	1.9	3.8
Congestive heart failure	52.0	50.2	1.9	3.7
Diabetes	53.0	50.5	2.5	4.9
Stroke	52.3	50.2	2.0	4.1
Schizophrenia/major depressive	51.7	49.4	2.3	4.6
Neurodegenerative (Parkinson's/ALS/MS/muscular dystrophy)	55.8	53.5	2.3	4.4
None of the conditions above	44.6	42.9	1.7	4.0

Note: PDGM (Patient-Driven Groupings Model), FFS (fee-for-service), LIS (low-income subsidy), ALS (amyotrophic lateral sclerosis), MS (multiple sclerosis). A postinstitutional stay occurs when a FFS Medicare beneficiary had a hospitalization or skilled nursing facility, inpatient rehabilitation facility, or long-term care hospital stay within the 14 days before the start of the current stay; a community-admitted stay is not preceded by these services in the 14 days before the start of the current stay. Home health stays are constructed by linking consecutive home health claims with less than or equal to 60 days between the end of an initial claim and the beginning of the next claim. Shaded cells are statistically significant at $p < .05$. Absolute and relative change values have been rounded to the nearest tenth.

Source: Acumen analysis of 2023 data of CMS hierarchical condition category files, Medicare Provider Analysis and Review, census data, CMS market-saturation and utilization file, and the standard analytic files for outpatient hospitals, physician services, home health, skilled nursing facilities, and inpatient rehabilitation facilities.

TABLE 14–7

PDGM was associated with fewer total visits per FFS stay across all categories of beneficiaries, 2023

Category	Total visits per stay: With PDGM	Total visits per stay: Without PDGM	Difference	Percent difference (difference as a share of without PDGM)
All FFS stays	15.9	18.8	–2.9	–15.3%
Stay by source of home health referral:				
Postinstitutional	15.6	18.3	–2.7	–14.7
Community admitted	16.4	19.6	–3.1	–16.1
Any home health stay during year by beneficiary characteristics:				
Geography				
Urban	15.8	18.7	–2.8	–15.2
Nonfrontier rural	16.4	19.4	–3.0	–15.6
Frontier rural	16.8	19.2	–2.4	–12.6
Race				
White	15.8	18.8	–2.9	–15.6
Black	16.2	19.5	–3.2	–16.7
Other	16.4	18.4	–2.0	–10.8
Age				
80 or over	17.1	20.0	–2.9	–14.6
Under 80	15.0	17.8	–2.8	–15.9
LIS/dual-eligibility status				
LIS/dually eligible	17.5	19.8	–2.3	–11.6
Not LIS/dually eligible	15.5	18.5	–3.0	–16.4
Clinical condition group				
Knee	16.5	20.4	–3.9	–19.1
Dementia	18.1	21.5	–3.5	–16.0
Chronic obstructive pulmonary disease	15.9	18.8	–2.9	–15.4
Congestive heart failure	16.8	19.9	–3.1	–15.6
Diabetes	17.1	20.0	–2.9	–14.3
Stroke	17.8	21.8	–4.0	–18.2
Schizophrenia/major depressive	16.5	19.6	–3.2	–16.1
Neurodegenerative (Parkinson's/ALS/MS/muscular dystrophy)	18.8	22.9	–4.1	–18.1
None of the conditions above	14.4	17.0	–2.6	–15.4

Note: PDGM (Patient-Driven Groupings Model), FFS (fee-for-service), LIS (low-income subsidy), ALS (amyotrophic lateral sclerosis), MS (multiple sclerosis). A postinstitutional stay occurs when a FFS Medicare beneficiary had a hospitalization or skilled nursing facility, inpatient rehabilitation facility, or long-term care hospital stay within the 14 days before the start of the current stay; a community-admitted stay is not preceded by these services in the 14 days before the start of the current stay. Home health stays are constructed by linking consecutive home health claims with less than or equal to 60 days between the end of an initial claim and the beginning of the next claim. Shaded cells are statistically significant at $p < .05$. Values have been rounded to the nearest tenth.

Source: Acumen analysis of 2023 data of CMS hierarchical condition category files, Medicare Provider Analysis and Review, census data, CMS market-saturation and utilization file, and the standard analytic files for outpatient hospitals, physician services, home health, skilled nursing facilities, and inpatient rehabilitation facilities.

TABLE 14–8

Change associated with the PDGM was largest for FFS therapy visits, 2023

Visit discipline	Visits per FFS stay: With PDGM	Visits per FFS stay: Without PDGM	Difference	Percent difference (difference as a share of without PDGM)
Nursing	6.4	7.1	−0.7	−9.8%
Therapy	8.8	11.2	−2.4	−21.3
Home health aide	0.6	0.3	0.2	75.6

Note: PDGM (Patient-Driven Groupings Model), FFS (fee-for-service). Home health stays are constructed by linking consecutive home health claims with less than or equal to 60 days between the end of an initial claim and the beginning of the next claim. Shaded cells are statistically significant at $p < .05$. Values have been rounded to the nearest tenth of a percent.

Source: Acumen analysis of 2023 data of CMS hierarchical condition category files, Medicare Provider Analysis and Review, census data, CMS market-saturation and utilization file, and the standard analytic files for outpatient hospitals, physician services, home health, skilled nursing facilities, and inpatient rehabilitation facilities.

nursing services did not change, there were also fewer visits for these services associated with the PDGM – which raises questions as to whether other factors account for some of the difference in therapy visits that the model attributed to the PDGM.

Table 14-7 shows the with-PDGM and without-PDGM estimates of the average number of visits per stay for FFS Medicare beneficiaries in 2023. Overall, the number of visits per stay averaged 15.9 with the PDGM compared with 18.8 without the PDGM, a difference of 2.9 visits or 15.3 percent. The relative difference in total visits per stay associated with the PDGM was generally of the same magnitude across beneficiary groups and sources of referral, with percentage differences for most categories in the –10.8 percent to –19.1 percent range, all statistically significant.

The difference in visits associated with the PDGM in 2023 appeared to be smaller for beneficiaries with lower incomes than for other beneficiaries. The PDGM was associated with 11.6 percent fewer visits among beneficiaries who were dually eligible or who had the LIS, compared with 16.4 percent fewer visits for other beneficiaries. The impact associated with the PDGM was about the same for stays regardless of referral source: The PDGM was associated with 14.7 percent fewer visits per stay for postinstitutional stays and 16.1 percent fewer visits per stay for community-admitted stays.

PDGM associated with 2.4 fewer therapy visits per FFS stay

Table 14-8 compares the average number of visits per stay by visit discipline (nursing, therapy, or home health aide) for the with-PDGM group and the without-PDGM group. The PDGM was associated with 0.7 fewer nursing visit per stay, a difference of –9.8 percent, and 2.4 (or 21.3 percent) fewer therapy visits per stay. At the same time, the PDGM was associated with 0.2 more home health aide visits per stay, but this finding is hard to interpret because of the low frequency of home health aide visits.[9] Because the PDGM implementation coincided with the pandemic and other systemic changes, our results may not fully account for all non-PDGM factors influencing utilization. Even in 2023, lingering effects such as staffing shortages could contribute to the differences in visits per stay for nursing and therapy. As a result, the changes associated with the PDGM in Table 14-8, as with other results in this evaluation, should be interpreted cautiously.

The fewer therapy visits observed under the PDGM is directionally consistent with the removal of therapy volume as a payment factor, and may, in part, reflect changes in agency behavior in response to the new payment system. However, given the limitations of the analysis, it is also possible that broader changes in the health care system or shifts in care delivery

practices influenced these results. As mentioned earlier, if our control variables do not fully account for reduced utilization during the pandemic and subsequent changes to health care delivery, the models could incorrectly measure the change associated with the PDGM.

Although the PDGM removed therapy volume as a payment factor and was expected to reduce incentives to provide therapy based on financial considerations, the fewer visits associated with the PDGM was not limited to therapy services. We also found 0.7 fewer visits per stay in skilled nursing visits per stay associated with the PDGM, even though the PDGM did not change how nursing services are paid; under both the prior case-mix system and the PDGM, payments for nursing were based on patient clinical and functional characteristics rather than visit counts. The absence of a clear incentive in the PDGM for reduced nursing visits suggests that broader, non-PDGM factors—such as labor market pressures or post-pandemic operational changes—may have influenced visit intensity for skilled nursing, and it is reasonable to expect that therapy also could have been affected. Accordingly, while the PDGM may have contributed to the decline in therapy visits, the concurrent decline in nursing visits suggests that not all of the observed reduction in therapy can be attributed solely to the payment model's incentive changes.

The lower amount of therapy visits per stay associated with the PDGM may also reflect HHAs better aligning therapy regimens with beneficiaries' clinical needs. As noted earlier, there were concerns that the previous case-mix system incentivized higher therapy volumes, potentially distorting the services delivered and beneficiaries served. Removing therapy from the case-mix system was viewed as correcting a distortion in the home health PPS (Centers for Medicare and Medicaid Services 2019). Medicare's coverage rules and other criteria for therapy were not changed with the implementation of the PDGM (Centers for Medicare & Medicaid Services 2021). The PDGM was designed to more accurately align payment with patient characteristics, thereby encouraging providers to deliver care based on patient needs, not financial incentives. CMS has cautioned against inappropriate reductions in therapy services.

The change in therapy visits per stay associated with the PDGM in 2023 was relatively uniform across the categories, varying from 17.2 percent to 24.0 percent (Table 14-9). In relative terms, the difference appeared to be smaller for beneficiaries in frontier rural areas and for those age 80 and over. The PDGM was associated with 17.2 percent fewer therapy visits among beneficiaries living in frontier rural areas, compared with about 21 percent fewer therapy visits for beneficiaries living in other areas; and the PDGM was associated with 19.5 percent fewer therapy visits among beneficiaries who were age 80 and over compared with 23.0 percent fewer therapy visits for younger beneficiaries. By contrast, the association between the PDGM on therapy visits appeared to be greater for community-admitted stays than for postinstitutional stays (24.0 percent fewer therapy visits vs. 19.5 percent fewer therapy visits). The effect associated with the PDGM on therapy visits also appeared to be marginally greater for LIS/dually eligible beneficiaries than for other beneficiaries (23.9 percent fewer therapy visits vs. 20.7 percent fewer therapy visits).

PDGM not associated with a substantial difference in measures of FFS quality

Measuring differences in home health care quality associated with the PDGM is important because it provides an assessment of how the quality of care delivered to FFS beneficiaries may have been affected by the PDGM. Further, the lower visits per stay associated with the PDGM, particularly for therapy visits, may raise concerns about stinting on care. However, for most of our quality measures the differences associated with the PDGM were small in 2023 (Table 14-10).

Our analysis of two claims-based quality measures under the PDGM shows mixed results. For FFS beneficiaries receiving home health care, the rate of potentially preventable hospitalizations during the home health stay was about 2.1 percentage points lower with the PDGM, indicating better outcomes. By contrast, the PDGM was associated with a slightly lower share of stays ending in discharge to the community, suggesting slightly more transitions to hospitals or other post-acute care settings after home health. As mentioned earlier, these findings should be interpreted cautiously due to methodological limitations that restrict the ability to establish a causal association between the PDGM and the observed

TABLE 14–9

Change in FFS therapy visits associated with the PDGM was relatively uniform across stay categories, 2023

Category	Therapy visits per stay: With PDGM	Therapy visits per stay: Without PDGM	Difference	Percent difference (difference as a share of without PDGM)
All FFS stays	8.8	11.2	–2.4	–21.3%
Stay by source of home health referral:				
Postinstitutional	8.9	11.1	–2.2	–19.5
Community admitted	8.7	11.4	–2.7	–24.0
Any home health stay during year by beneficiary characteristics:				
Geography				
Urban	8.8	11.2	–2.4	–21.3
Nonfrontier rural	9.0	11.4	–2.4	–21.1
Frontier rural	8.8	10.7	–1.8	–17.2
Race				
White	9.0	11.4	–2.4	–21.2
Black	8.6	11.0	–2.3	–21.3
Other	7.6	9.9	–2.3	–23.0
Age				
80 or over	9.8	12.2	–2.4	–19.5
Under 80	8.0	10.4	–2.4	–23.0
LIS/dual-eligibility status				
LIS/dually eligible	7.6	10.0	–2.4	–23.9
Not LIS/dually eligible	9.2	11.5	–2.4	–20.7
Clinical condition group				
Knee	11.4	14.7	–3.4	–22.9
Dementia	10.6	13.5	–2.9	–21.6
Chronic obstructive pulmonary disease	8.5	10.9	–2.4	–21.9
Congestive heart failure	9.0	11.4	–2.4	–20.7
Diabetes	8.8	11.2	–2.4	–21.4
Stroke	11.4	14.7	–3.3	–22.3
Schizophrenia/major depressive	9.6	12.3	–2.6	–21.6
Neurodegenerative (Parkinson's/ALS/MS/muscular dystrophy)	12.4	15.5	–3.1	–19.9
None of the conditions above	8.2	10.4	–2.2	–21.4

Note: PDGM (Patient-Driven Groupings Model), FFS (fee-for-service), LIS (low-income subsidy), ALS (amyotrophic lateral sclerosis), MS (multiple sclerosis). A prior-hospital stay occurs when a FFS Medicare beneficiary had a skilled nursing facility, inpatient rehabilitation facility, or long-term care hospital stay within the 14 days before the start of the current stay; a community-admitted stay is not preceded by these services in the 14 days before the start of the current stay. Home health stays are constructed by linking consecutive home health claims with less than or equal to 60 days between the end of an initial claim and the beginning of the next claim. Shaded cells are statistically significant at $p < .05$. Values have been rounded to the nearest tenth.

Source: Acumen analysis of 2023 data of CMS hierarchical condition category files, Medicare Provider Analysis and Review, census data, CMS market-saturation and utilization file, and the standard analytic files for outpatient hospitals, physician services, home health, skilled nursing facilities, and inpatient rehabilitation facilities.

TABLE 14–10

Changes in FFS quality outcomes associated with the PDGM were small for most measures, 2023

Measure	With PDGM	Without PDGM	Difference	Percent difference (difference as a share of without PDGM)
Rate of potentially preventable hospitalization during home health stay (percent)	8.2%	10.3%	–2.1	–20.0%
Rate of stays discharged to the community after home health care (percent)	82.8	85.2	–2.5	–2.9
Change in composite mobility at discharge	0.89	0.86	0.03	3.7
Change in composite self-care at discharge	2.50	2.46	0.04	1.6

Note: FFS (fee-for-service), PDGM (Patient-Driven Groupings Model). Functional quality measures measure care through episodes that begin with an Outcome and Assessment Information Set (OASIS) start-of-care assessment and end with an OASIS end-of-care assessment. Rate of discharge to the community measures care in the period after a home health claim indicating discharge. Changes in the composite measures of function show how much function improved by discharge, with higher values meaning greater improvement. Shaded cells are statistically significant at $p < .05$. Values have been rounded to the nearest tenth of a percent.

Source: Acumen analysis of 2023 data of CMS hierarchical condition category files, Medicare Provider Analysis and Review, census data, CMS market-saturation and utilization file, and the standard analytic files for outpatient hospitals, physician services, home health, skilled nursing facilities, and inpatient rehabilitation facilities.

2023 outcomes. Overall, the estimates suggest that the PDGM was associated with fewer preventable hospitalizations but slightly worsened post-stay outcomes for home health users.

FFS beneficiaries had slightly higher rates of improvement in functional status under the PDGM, though data considerations limit analysis

We assessed differences in patient functional status using two measures developed by CMS: change in mobility and change in self-care (Centers for Medicare & Medicaid Services 2022). An important consideration for functional measures is that they are based on patient-assessment data, which may be influenced by agency coding practices. For example, the Commission has found discrepancies in functional status reporting between discharge and admission across post-acute care settings, often favoring higher payments (Medicare Payment Advisory Commission 2023, Medicare Payment Advisory Commission 2019). A study by the Department of Health and Human Services Office of Inspector General documented underreporting of falls with major injuries in the patient assessments completed by HHAs (Office of Inspector General 2023). Since the change in self-care and change in mobility measures use patient-assessment data that may have inaccuracies, the results in Table 14-10 should be interpreted cautiously.

The PDGM was associated with slightly higher improvement in patient functional status at discharge compared with the without-PDGM estimate for both self-care and mobility (Table 14-10). Though these differences were statistically significant, the magnitudes of the effect associated with the PDGM represent small amounts of function gain.

The result for improvement in self-care at discharge provides an example of the small difference associated with the PDGM. For this measure, beneficiaries are assessed on a scale that measures self-care ability from a range of –6 (lowest function) to +6 (highest function) at admission and discharge from home health care. For a patient admitted with a self-care score of 0, the estimated average improvement translates to self-care

score at discharge of 2.46 without the PDGM versus 2.50 with the PDGM—a difference that is small relative to the 13-point functional scale (Table 14-10).

PDGM not associated with a substantial difference in FFS Medicare margins

Assessing profitability of home health stays, measured by aggregate FFS margin at the level of the home health stay, is essential for understanding how financial incentives may influence home health care utilization and outcomes. A shift in the margin can signal whether providers are being paid more or less generously relative to their costs.[10] The PDGM was not associated with a substantial change in financial performance, with a 0.6 percentage point decrease in the FFS Medicare margin in 2023 that was not statistically significant (Table 14-11, p. 574). Overall FFS Medicare profitability was 24.1 percent, with almost all categories having margins over 20 percent, indicating that payments continued to exceed costs after the PDGM implementation.

Comparing the changes by source of admission, the community-admitted stays were 2.1 percent lower under the PDGM, while postinstitutional stays were slightly higher (though not statistically significant). The difference between the margins for community-admitted stays and postinstitutional was smaller for the with the PDGM estimate, indicating that the PDGM was associated with narrowing the difference in profitability between these two categories. Even with the profitability changes associated with the PDGM, margins for community-admitted stays were over 24 percent.

The findings likely reflect the myriad of factors that can affect costs and payments that determine financial margins. For example, in the post-PDGM era HHAs could have expanded their use of lower-cost staff, such as by using licensed practical nurses or therapy assistants in the place of registered nurses or physical, occupational and speech therapists, respectively. In addition, FFS Medicare's payment policies are updated annually, reflecting the market basket and other policies that can affect the average payment per stay. However, given the many disruptions influencing the sector during this period, it is notable that FFS Medicare margins remained relatively high with no substantial change associated with the PDGM.

Discussion

Assessing the impact of the PDGM on access and quality of care is important for Medicare, but interpretation of these findings requires caution because our methods cannot fully account for all factors that may affect these measures. In addition to the factors mentioned previously, the high payment levels under the PDGM are important context for interpreting our results. The BBA of 2018 was not designed to reduce FFS Medicare's payments for home health care services, which have substantially exceeded costs since the PPS was implemented in 2001. The high payment levels before and after the implementation may have been a stabilizing factor during the pandemic and the implementation of the PDGM (Figure 14-5, p. 575). The BBA of 2018 required that the base rate for the PDGM be set at a level that was budget neutral relative to 2019, a year when the Commission reported high FFS Medicare margins (over 15 percent) for freestanding agencies. FFS Medicare margins for HHAs were high before and after the implementation of the PDGM, equaling 19.8 percent in 2023. Though there is variation across providers in average FFS Medicare margins, the Commission has generally found that they are substantially above cost, and FFS Medicare margins in 2024 were 21.2 percent for freestanding HHAs (see Chapter 8). This analysis also found that the FFS Medicare margins for home health payments under the PDGM were well in excess of cost (Table 14-11, p. 574).

Within these limitations, our findings suggest that the PDGM did not substantially affect overall access to home health care, the duration of care, or the profitability of home health stays for fee-for-service beneficiaries. Measures of home health use and length of stay were largely stable, quality of care outcomes were generally similar or better, and FFS Medicare margins remained high and well above costs. These results indicate that the transition to a 30-day unit of payment and revised case-mix system did not result in adverse effects on beneficiaries. Importantly, despite fewer visits per stay, the quality-of-care outcomes were generally stable or potentially improved with the PDGM, suggesting that agencies were able

TABLE 14–11

No substantial change associated with the PDGM in average FFS Medicare margin per home health stay, 2023

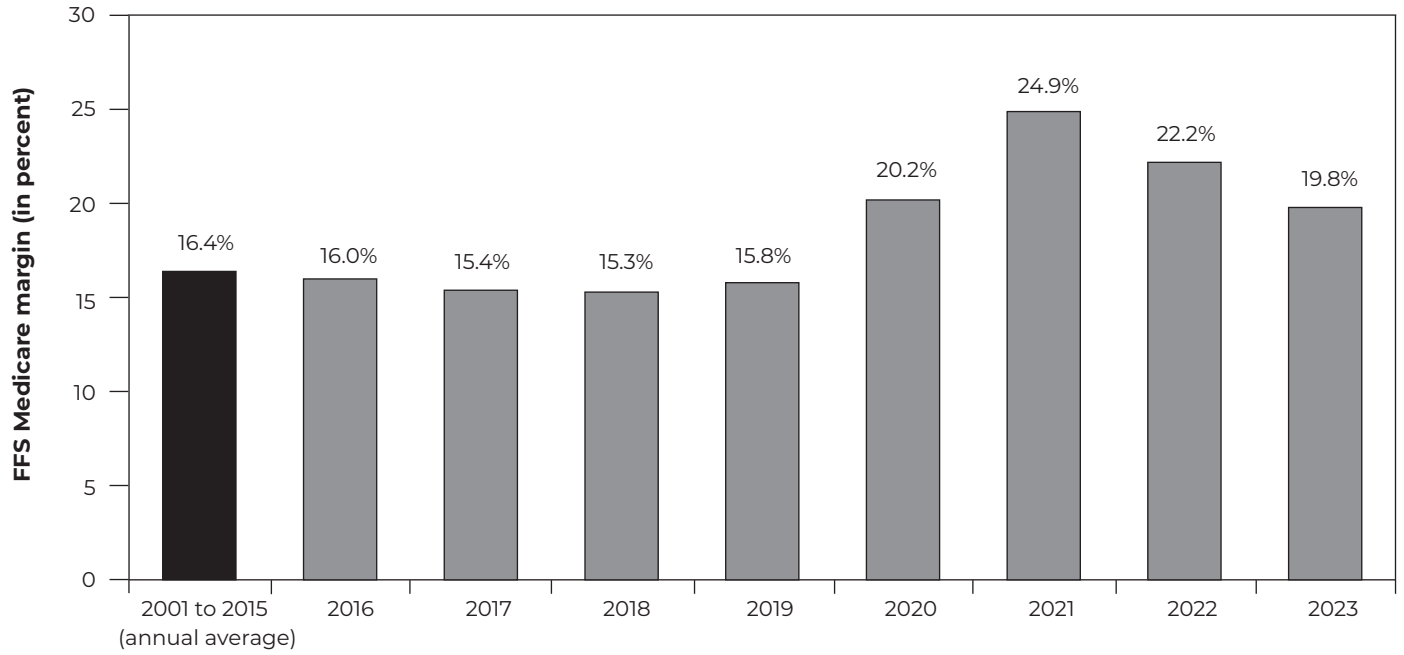
Category	With PDGM	Without PDGM	Percent difference
All FFS stays	24.1%	24.7%	–0.6%
Stay by source of home health referral:			
Postinstitutional	23.9	23.6	0.3
Community admitted	24.5	26.6	–2.1
Any home health stay during year by beneficiary characteristics:			
Geography			
Urban	24.7	25.4	–0.7
Nonfrontier rural	20.4	20.6	–0.2
Frontier rural	14.3	18.3	–4.0
Race			
White	23.9	24.8	–0.9
Black	25.8	23.7	2.1
Other	24.6	24.6	–0.1
Age			
80 or over	22.1	23.6	–1.5
Under 80	25.8	25.6	0.2
LIS/dual-eligibility status			
LIS/dually eligible	24.9	22.8	2.1
Not LIS/dually eligible	23.9	25.1	–1.2
Clinical condition group			
Knee	20.1	25.8	–5.7
Dementia	22.2	22.8	–0.7
Chronic obstructive pulmonary disease	22.9	23.4	–0.6
Congestive heart failure	22.0	21.3	0.6
Diabetes	23.7	22.6	1.1
Stroke	20.9	24.4	–3.6
Schizophrenia/major depressive	23.7	24.9	–1.2
Neurodegenerative (Parkinson's/ALS/MS/muscular dystrophy)	23.2	24.6	–1.3
None of the conditions above	25.4	26.8	–1.4

Note: PDGM (Patient-Driven Groupings Model), FFS (fee-for-service), LIS (low-income subsidy), ALS (amyotrophic lateral sclerosis), MS (multiple sclerosis). A postinstitutional stay occurs when a Medicare beneficiary had a skilled nursing facility, inpatient rehabilitation facility, or long-term care hospital stay within the 14 days before the start of the current stay; a community-admitted stay is not preceded by these services in the 14 days before the start of the current stay. Home health stays are constructed by linking consecutive home health claims with less than or equal to 60 days between the end of an initial claim and the beginning of the next claim. Shaded cells are statistically significant at $p < .05$. Values have been rounded to the nearest tenth.

Source: Acumen analysis of 2023 data of CMS hierarchical condition category files, Medicare Provider Analysis and Review, census data, CMS market-saturation and utilization file, and the standard analytic files for outpatient hospitals, physician services, home health, skilled nursing facilities, and inpatient rehabilitation facilities.

FIGURE 14–5

FFS Medicare margins for freestanding home health agencies were high before, during, and after the implementation of the PDGM in 2020



Note: FFS (fee-for-service), PDGM (Patient-Driven Groupings Model).

Source: MedPAC analysis of Medicare home health cost-report files, 2001 to 2023.

to maintain or improve outcomes under the new payment structure.

We did observe fewer therapy visits per stay associated with the PDGM, which is directionally consistent with the PDGM's removal of number of therapy visits as a payment factor and with longstanding concerns that the prior payment system encouraged therapy provision based on financial incentives rather than patient need. To the extent that the PDGM reduced these incentives, the fewer therapy visits observed may reflect a correction of a distortion in the prior system and a closer alignment of therapy use with clinical need. At the same time, the fewer skilled nursing visits observed—despite no comparable change in payment incentives for nursing—also suggests that broader factors, such as pandemic-related workforce challenges and operational adjustments, also influenced service delivery, including therapy visits.

Taken together, these findings indicate that the PDGM did not negatively affect FFS Medicare beneficiaries, but continued monitoring is warranted. Future Commission work will examine the PDGM payment groups to assess their relative profitability under current utilization patterns and costs, and to better understand how agency characteristics, labor mix, and other factors interact with the payment system over time. ■

Endnotes

1 Medicare has two criteria for homebound status. In the first, the beneficiary must have difficulty leaving the home unassisted because of an illness or injury, or leaving the home is medically contraindicated. In addition, a beneficiary must have "a normal inability to leave the home" and leaving must require "considerable and taxing effort." Absences from the home for medical treatment, attendance at adult day care centers, and other absences that are infrequent or for relatively short duration are generally excepted when applying the criteria.

2 The therapy thresholds in the home health PPS evolved over time. From October 1, 2000, to December 31, 2007, the PPS had a threshold at 10 therapy visits, with 60-day periods that had 10 or more therapy visits qualifying for higher payment. In 2008, CMS implemented a revised case-mix system that had nine thresholds, which remained in effect until the PDGM went into effect in January 1, 2020.

3 In October 2019 the SNF PPS implemented the Patient-Driven Payment Model, which eliminated the use of therapy services from the case-mix model.

4 This population definition differs from the population used in the March report to the Congress on payment adequacy in home health. We require beneficiaries to have Part A and Part B continuously in the calendar year and the six months prior so that we have adequate data for our regression models (discussed further below).

5 For utilization metrics, home health stays are calculated as claims separated by no more than 60 days. This definition was used to promote comparability between 60-day payment episodes and 30-day payment periods before and after the PDGM. For the claims-based quality measures (preventable hospitalizations and discharge to community), stays were composed of claims separated by no more than three days (per CMS specifications of these measures). The change in self-care and change in mobility measures are based on patient-assessment data collected at the beginning and end of home health care.

6 Our stay-level models also included additional variables to examine the changes associated with the PDGM for the postinstitutional and community-admitted stays.

7 More precisely, the with-PDGM estimates are predicted values from the ITS regression models, meaning that they reflect the observed values in 2023 after adjusting for the control variables included in the model. Those with-PDGM predicted values are very close to the unadjusted observed values in 2023 (data not shown).

8 A postinstitutional stay occurs when a Medicare beneficiary had a hospitalization or institutional post-acute care stay within the 14 days before the start of the current stay; a community-admitted stay does not have these services in the 14 days before the start of the current stay.

9 The PDGM did not alter the payment methodology for home health aide services, so it is unclear why use of the model would increase or decrease the provision of home health aide visits. The costs of aide visits are included in the case-mix-adjusted base rate, and the number of visits provided does not affect payment. But aide visits are infrequently provided, which may make them harder to model accurately.

10 The FFS Medicare margins for 2023 in this chapter reflect the stays for FFS Medicare beneficiaries that met our inclusion criteria for this evaluation. As a result, the overall average we report in this chapter does not match the margins we report for freestanding HHAs in 2023 in Chapter 8 of this report. These FFS Medicare margins are computed at the stay level, not the provider level as in our payment adequacy work. In addition, the provider margins are weighted by agency payments in Chapter 8; the margins reported in this chapter are not weighted.

References

Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2025. Medicare and Medicaid programs; calendar year 2026 home health prospective payment system (HH PPS) rate update; requirements for the HH Quality Reporting Program and the HH Value-Based Purchasing Expanded Model; DMEPOS Competitive Bidding Program updates; DMEPOS accreditation requirements; provider enrollment; and other Medicare and Medicaid policies. Final rule. *Federal Register* 90, no. 229 (December 2): 55342–55620.

Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2022. *Expanded home health value-based purchasing (HHVBP) model: Calculating the total normalized composite (TNC) change measures*. Washington, DC: CMS. https://www.cms.gov/priorities/innovation/media/document/hhvbp-exp-comp-meas-calc-steps.

Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2021. *The role of therapy under the Home Health Patient-Driven Groupings Model (PDGM).* MLN Matters number SE20005. Baltimore, MD: CMS.

Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2019. Medicare and Medicaid programs; CY 2020 home health prospective payment system rate update; Home Health Value-Based Purchasing Model; home health quality reporting requirements; and home infusion therapy requirements. Final rule with comment period. *Federal Register* 84, no. 217 (November 8): 60478–60646.

Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2017. Medicare and Medicaid programs; CY 2018 home health prospective payment system rate update and proposed CY 2019 case-mix adjustment methodology refinements; home health value-based purchasing model; and home health quality reporting requirements. Final rule. *Federal Register* 82, no. 214 (November 7): 51676–51752.

Inloes, J. B., A. Brown, Z. Rettell, et al. 2023. Home-based care provider perspectives on care refusal during the COVID-19 pandemic. *Journal of Gerontological Nursing* 49, no. 1 (January): 35–41.

L & M Policy Research. 2011. *Home health care study and report: Appendix*. Report prepared by L & M Policy Research LLC, Avalere Health, Mathematica Policy Research, and Social & Scientific Systems for the Center for Medicare & Medicaid Innovation. Washington, DC: L & M Policy Research LLC, Avalere Health, Mathematica Policy Research, and Social & Scientific Systems. https://innovation.cms.gov/files/reports/pioneeraco-finalevalrpt.pdf.

LeadingAge. 2025. Comment letter to the Centers for Medicare & Medicaid Services on the proposed CY 2026 home health prospective payment system rate update. August 28.

Medicare Payment Advisory Commission. 2023. *Report to the Congress: Medicare payment policy*. Washington, DC: MedPAC.

Medicare Payment Advisory Commission. 2019. *Report to the Congress: Medicare and the health care delivery system.* Washington, DC: MedPAC.

Medicare Payment Advisory Commission. 2011. *Report to the Congress: Medicare payment policy*. Washington, DC: MedPAC.

Medicare Payment Advisory Commission. 2010. *Report to the Congress: Medicare payment policy*. Washington, DC: MedPAC.

National Alliance for Care at Home. 2025. *Comment letter regarding CMS–1828–P: Medicare program; calendar year (CY) 2026 home health prospective payment system rate and durable medical equipment, prosthetics, orthotics, and supplies competitive bidding program updates.* Washington, DC.

Office of Inspector General, Department of Health and Human Services. 2023. *Home health agencies failed to report over half of falls with major injury and hospitalization among their Medicare patients*. OEI–05–22–00290. Washington, DC: OIG.

Office of Inspector General, Department of Health and Human Services. 2022. *Home health agencies used multiple strategies to respond to the COVID-19 pandemic, although some challenges persist*. OEI–01–21–00110. Washington, DC: OIG.

Plotzke, M., T. Christian, and B. Fout. 2016. *Medicare home health prospective payment system: case-mix refinements: Overview of the home health groupings model.* Cambridge, MA: Abt Associates.

Prusynski, R. A., N. E. Leland, A. Humbert, et al. 2025. Changes in skilled nursing and home health admissions associated with Medicare payment reforms and the COVID-19 pandemic. *Journal of the American Geriatrics Society* 73, no. 2 (February): 592–601.

U. S. Senate Committee on Finance. 2011. *Staff report on home health and the Medicare therapy threshold*. Washington, DC: Government Printing Office.