Understanding prospective vs. retrospective assignment in MSSP: Examining the assignment methodology for 2024 and beyond

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Medicare Shared Savings Program (MSSP) Accountable Care Organizations (ACOs) select between prospective and retrospective assignment of patients annually. This choice affects patient assignment and ACO operations, as well as benchmark, expenditures, and shared savings.

For agreement periods starting January 1, 2024, or later, regional expenditures are calculated under either prospective or retrospective attribution based on the ACO's selected alignment methodology (rather than always retrospective). This white paper explores the potential effects of prospective and retrospective assignment on key ACO metrics under the current MSSP rules.

How assignment choice affects key ACO metrics

Under prospective assignment, beneficiaries are assigned to an ACO based on services occurring prior to the performance year. Under retrospective assignment, beneficiaries are assigned to an ACO based on services occurring during the performance year. The effect of prospective versus retrospective assignment on key ACO metrics will differ by ACO. However, averages for Medicare fee-for-service (FFS) beneficiaries nationally can provide an understanding of how the two assignment methodologies generally affect results.

FIGURE 1: RATIO OF RETROSPECTIVE-TO-PROSPECTIVE ASSIGNMENT FOR KEY METRICS BY BENEFICIARY TYPE (PY2023)

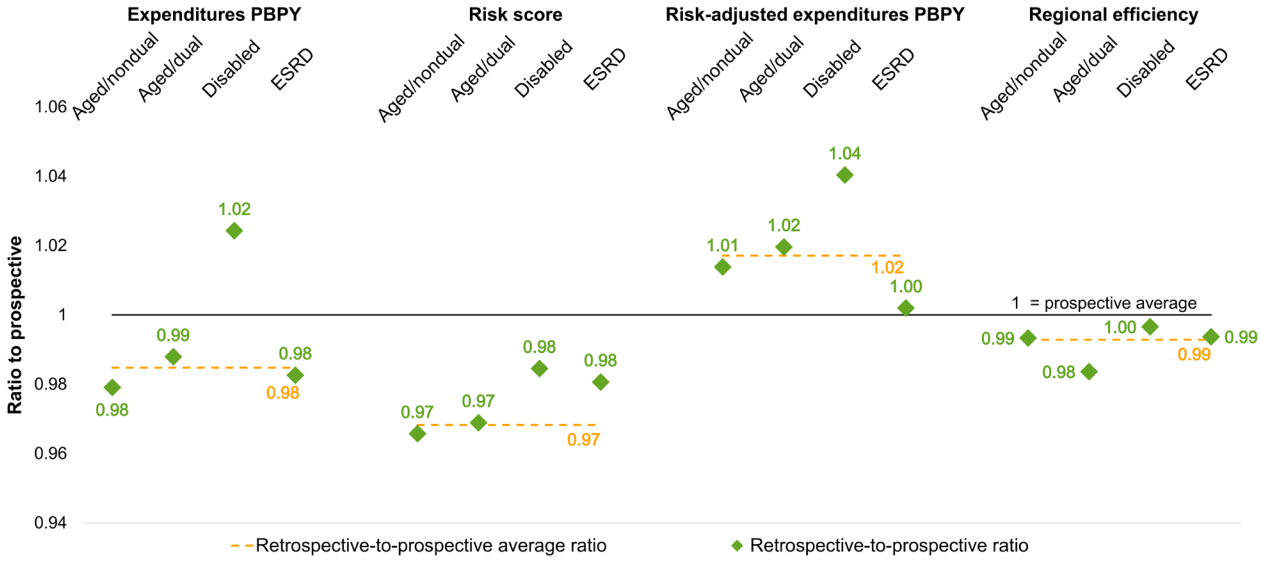


Figure 1 above shows the difference in key MSSP ACO metrics for performance year (PY) 2023, based upon our analysis of over 20 million Medicare beneficiaries using Milliman's ACO Builder. Values are calculated as the ratio of retrospective-to-prospective for each metric. Dashed lines represent the average across all four beneficiary types: aged/nondual, aged/dual, disabled, and end-stage renal disease (ESRD).

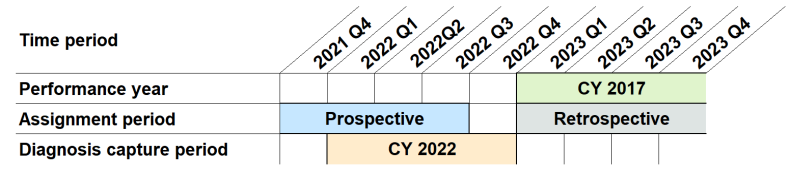
Expenditures per beneficiary per year (PBPY), risk scores, risk-adjusted expenditures PBPY, and regional efficiency[1] are key metrics used in the calculation of an MSSP ACO's financial settlement. For these, Figure 1 shows:

- **Expenditures PBPY:** On average, expenditures PBPY for retrospectively assigned beneficiaries are 2% *lower* than prospectively assigned beneficiaries. This relationship varied by beneficiary type.
- **Risk scores[2]:** Retrospectively assigned beneficiaries had risk scores that were approximately 3% *lower* than the prospectively assigned beneficiaries. This is likely because the Centers for Medicare and Medicaid Services (CMS) Hierarchical Condition Categories (HCC) risk scores are calculated using a prospective model and because the prospective assignment period overlaps closely with the diagnosis capture period. Because of this, prospectively assigned beneficiaries are likely to have at least one visit during the HCC risk score diagnosis capture period. See Figure 2.
- **Risk-adjusted expenditures PBPY:** Since the risk score difference is larger than the PBPY expenditures difference, the retrospectively assigned beneficiaries have approximately 2% *higher* average risk-adjusted expenditures PBPY.
- **Regional efficiency:** Retrospectively assigned beneficiaries' regional efficiency is 1% *lower* on average than prospectively assigned beneficiaries.[3] Retrospectively assigned beneficiaries' regional efficiency was lower for all four beneficiary types.

ASSIGNMENT PERIODS AND RISK ADJUSTMENT

Figure 2 shows the time periods for retrospective assignment, prospective assignment, and diagnosis collection for risk adjustment. Notably, the risk score diagnosis capture period overlaps with nine months of the prospective assignment period but is prior to the retrospective assignment period. This overlap means that prospectively assigned beneficiaries must be enrolled in Medicare FFS in the year preceding the performance year, making them likely to be eligible for a diagnosis-based risk score. In addition, these beneficiaries had a visit with an ACO during the assignment period.

FIGURE 2: TIME PERIODS FOR PY2023



While expenditures PBPY varies across beneficiary type between retrospective and prospective assignment, the relationships of risk scores, risk-adjusted expenditures PBPY, and regional efficiency are directionally consistent. For all four beneficiary types, average risk scores and regional efficiency are lower under retrospective assignment, while average risk-adjusted expenditures PBPY are higher for retrospectively assigned beneficiaries than for prospectively assigned beneficiaries.

1. Regional efficiency is the ratio of ACO expenditures to risk-adjusted regional expenditures. In general, lower regional efficiency in a performance year leads to greater shared savings.
2. Risk scores are calculated using the v28 CMS-HCC risk adjustment model.
3. Regional expenditures were calculated separately for retrospective assignment and prospective assignment using the assignment-eligible population by county. Said another way, the MSSP methodology that went into effect for agreement periods beginning in 2024 or later was used.

Understanding the relationship between retrospective and prospective assignment is important since this decision affects ACOs' financial settlement and ACOs can choose between retrospective and prospective assignment annually. The remainder of this paper discusses how these results vary across providers (represented by Tax Identification Number or TIN) and provider specialty. Using Milliman's ACO Builder®, ACO's can evaluate these differences for any provider (TIN), ACO, beneficiary type, and performance year.

Risk-adjusted expenditures PBPY and the regional efficiency are two key provider metrics that affect how a provider will impact an ACO's benchmark and shared savings under MSSP. Below, we explore how these two metrics vary under prospective and retrospective assignment for the 1,000 largest providers (TINs).

PROVIDER RISK-ADJUSTED EXPENDITURES

Risk-adjusted expenditures PBPY are the average expenditures for the provider's assigned beneficiaries divided by the average risk score for those beneficiaries. It is an important measure of provider performance, since the MSSP benchmark is risk-adjusted, so having lower risk-adjusted expenditures during the performance year is often associated with generating shared savings. Fully quantifying the effect of retrospective and prospective assignment on an ACO requires completing the full benchmark and shared savings calculations (e.g., using software like Milliman's ACO Builder®) due to the nuances of the MSSP benchmark and shared savings calculations.

FIGURE 3: RISK-ADJUSTED EXPENDITURES PBPY FOR LARGE PROVIDERS UNDER PROSPECTIVE AND RETROSPECTIVE (PY2023)[4]

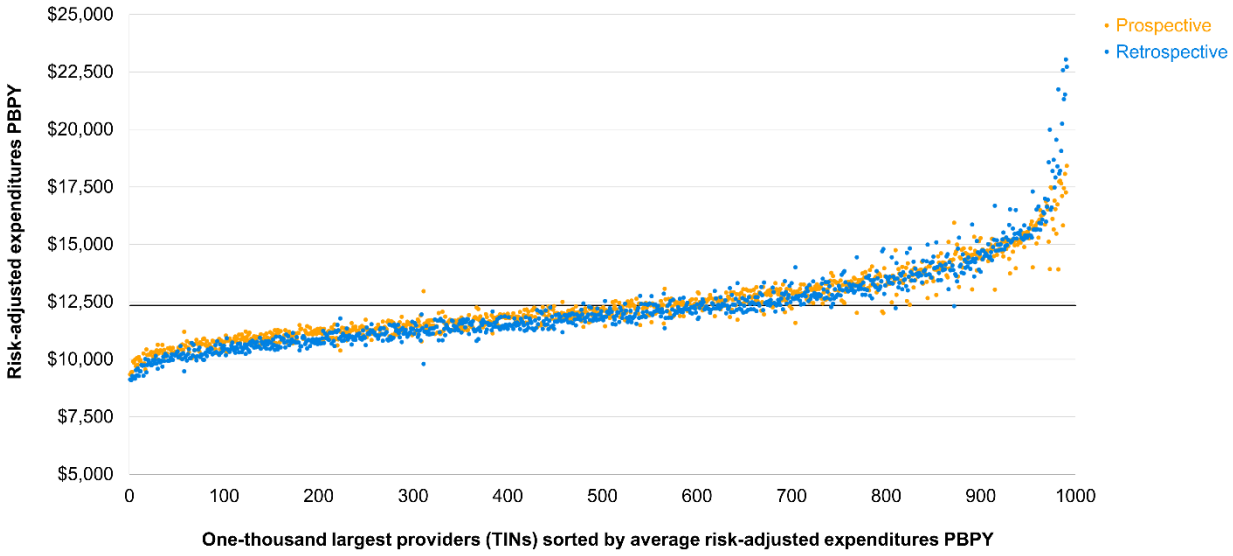


Figure 3 above shows that:

- Providers with *low average risk-adjusted expenditures PBPY* generally had lower risk-adjusted expenditures PBPY under retrospective assignment.
- Providers with *high average risk-adjusted expenditures PBPY* generally had higher risk-adjusted expenditures PBPY under retrospective assignment.
- Said another way, risk-adjusted expenditures were more consistent with prospective assignment (**orange dots**) than retrospective assignment (**blue dots**) — under retrospective assignment, lower expenditure providers also had relatively low risk-adjusted expenditures, and high-expenditure providers had relatively high risk-adjusted expenditures.
- The average risk-adjusted expenditure (**black line**) is approximately at the 60th percentile; that is, about 60% of providers have below-average risk-adjusted expenditures.

4. Four providers had greater than $25,000 of risk-adjusted expenditures PBPY under retrospective assignment. These providers had their observations under both assignment methodologies removed from the chart for readability.

REGIONAL EFFICIENCY

Regional efficiency is the ratio of the expenditures for the provider's assigned beneficiaries divided by the regional benchmark expenditures. The regional benchmark expenditures are adjusted to the risk score of the provider's assigned beneficiaries. Therefore, the regional efficiency metric is similar to risk-adjusted expenditures in that the comparison is risk-adjusted, but regional efficiency also accounts for the expenditure levels in the provider's region.

Regional expenditures are a component of the MSSP financial benchmark, and ACOs that generate shared savings tend to have lower regional efficiency (i.e., low expenditures relative to the region on a risk-adjusted basis).[5]

FIGURE 4: REGIONAL EFFICIENCY FOR LARGE PROVIDERS UNDER PROSPECTIVE AND RETROSPECTIVE (PY2023)[6]

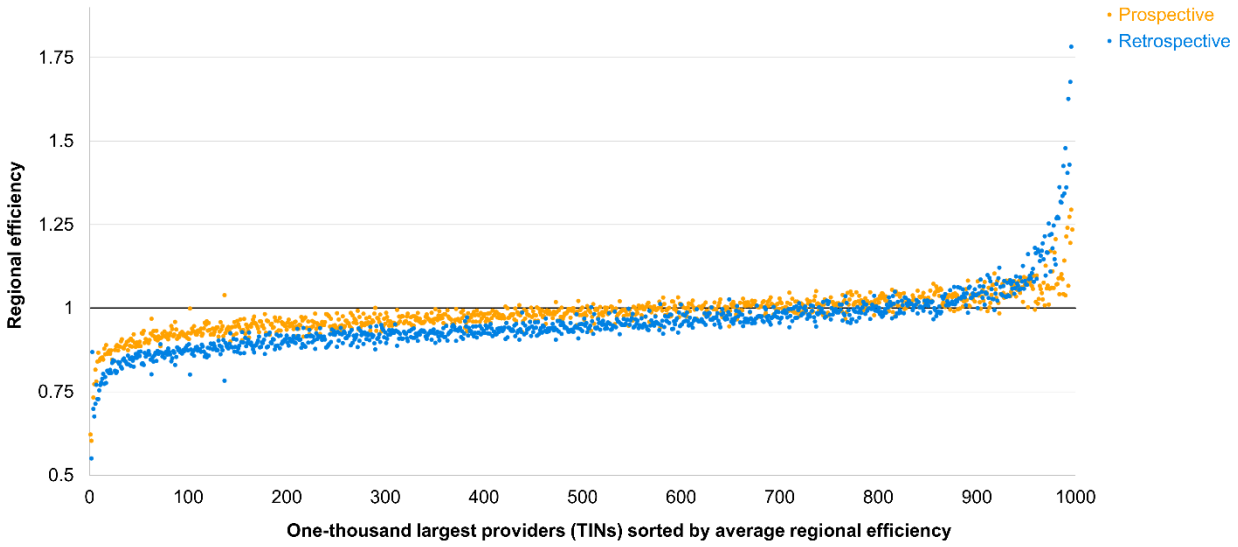


Figure 4 above uses the regional efficiency metric and shows a similar pattern as Figure 3. However, there is greater separation in Figure 4 between the prospective (**orange dots**) and retrospective (**blue dots**). A result below 1.0 indicates expenditures are below the regional average, and a result above 1.0 indicates expenditures are above the regional average. The key results of Figure 4 include:

- Providers with low expenditures relative to their region tended to have lower regional efficiency under retrospective assignment than prospective assignment.
- Providers with high expenditures relative to their region (right quadrant of Figure 4) had a lower regional efficiency score under prospective assignment.
- The 1.0 regional efficiency score (**black line**) is approximately at the 75th percentile; that is, approximately 75% of providers have expenditures below the regional average.
- Providers that are more efficient than the region (the 75% of providers with a regional efficiency at or below 1.0) have lower expenditures relative to their region under retrospective assignment.
- Providers that are the least efficient relative to their region (the 10% of providers with the highest regional efficiency) perform significantly worse, 19% on average, under retrospective than under prospective assignment.

5. Regional efficiency has been identified as a key predictor of ACO performance. Larson, A., Gusland, C., Kennedy, A., & Chromy, H. (April 5, 2024). Using machine learning to identify the key drivers of MSSP results: Performance year 2022 update. Milliman report. Retrieved July 14, 2025, from https://www.milliman.com/en/insight/using-machine-learning-key-mssp-results-performance-year-2022.

6. One provider had a regional efficiency greater than 1.9 under retrospective assignment. This provider had their observations under both assignment methodologies removed from the chart for readability.

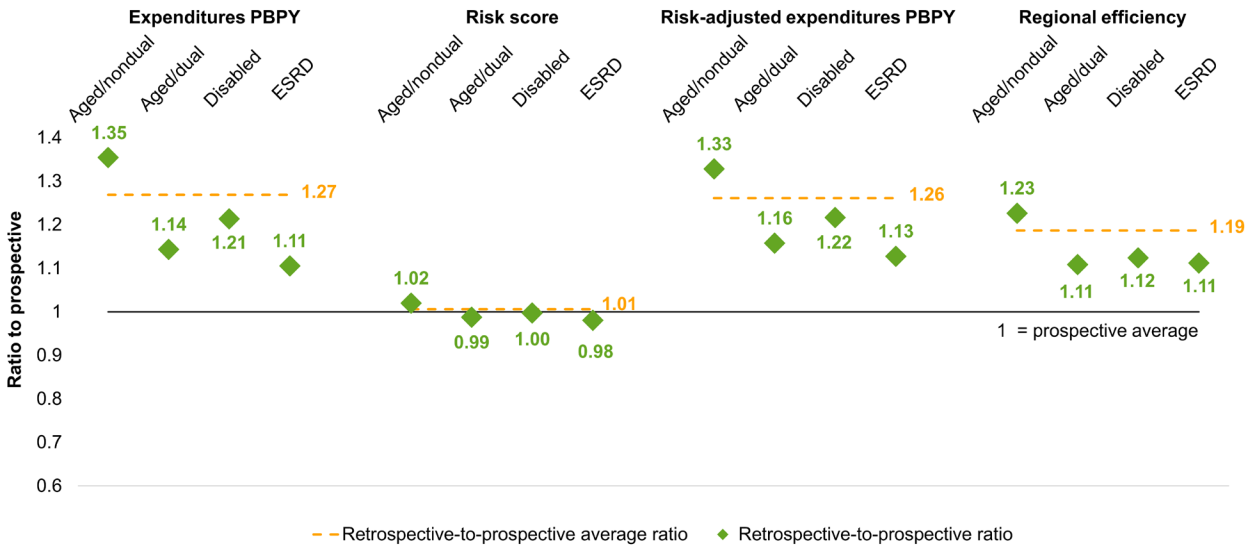
SEGMENTING PROVIDERS BASED ON REGIONAL EFFICIENCY

Figures 5, 6, and 7 below show the same key metrics as Figure 1 but are limited to a subset of providers based on their regional efficiency:

- Figure 5 is limited to the 10% most inefficient providers.
- Figure 6 is limited to the highest 10% to 20% regional efficiency providers.
- Figure 7 is limited to the 80% most efficient providers.

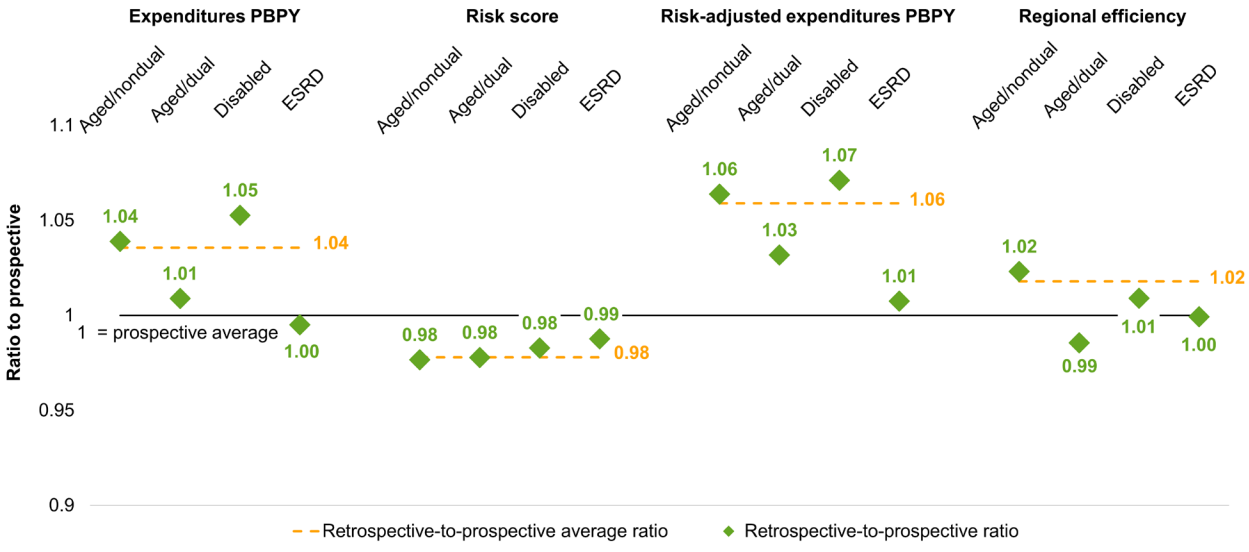
All figures are limited to TINs with at least 50 person years under each assignment methodology.

FIGURE 5: KEY METRICS FOR THE 10% HIGHEST REGIONAL EFFICIENCY PROVIDERS (PY2023)



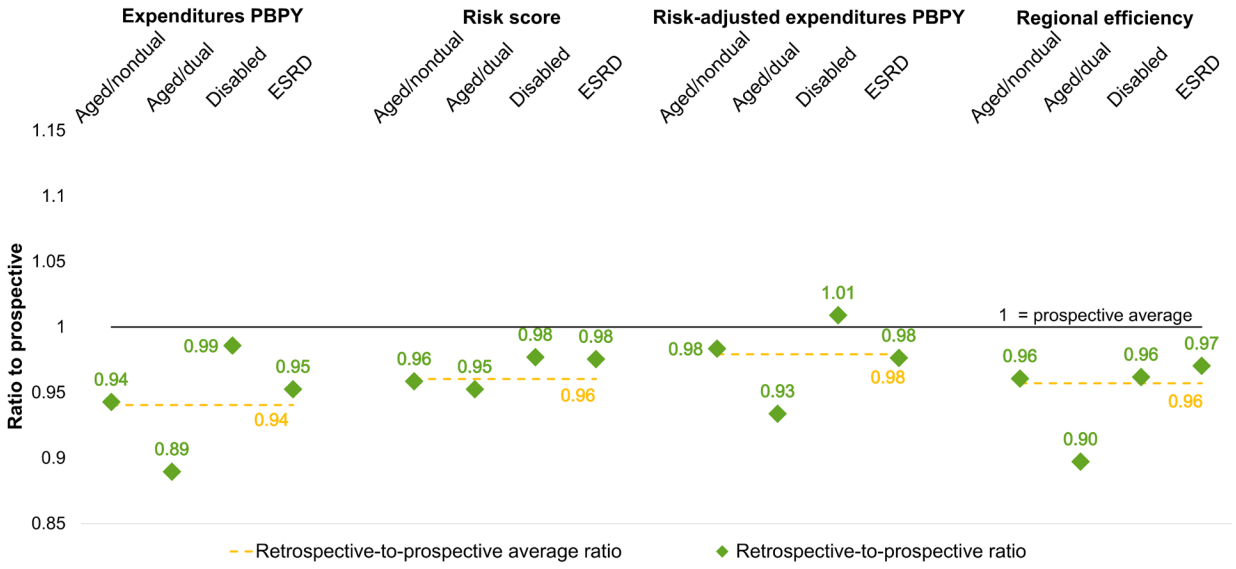
As shown above in Figure 5, the 10% highest regional efficiency providers have a **significant disadvantage** under retrospective assignment relative to prospective assignment for expenditures PBPY, risk-adjusted expenditures PBPY, and regional efficiency.

FIGURE 6: KEY METRICS FOR THE 10% TO 20% HIGHEST REGIONAL EFFICIENCY PROVIDERS (PY2023)



As shown above in Figure 6, the 10% to 20% highest regional efficiency providers have a 2% *disadvantage* under retrospective assignment relative to prospective assignment for regional efficiency with higher expenditures PBPY, lower risk scores, and higher risk-adjusted expenditures PBPY. This is directionally consistent with the 10% highest regional efficiency providers.

FIGURE 7: KEY METRICS FOR THE 80% LOWEST REGIONAL EFFICIENCY PROVIDERS (PY2023)



As shown above in Figure 7, the 80% lowest regional efficiency providers have a 4% *advantage* under retrospective assignment relative to prospective assignment for regional efficiency, with lower expenditures PBPY, risk scores, and risk-adjusted expenditures PBPY.

Consistent with Figure 4, we see that while most providers do better under retrospective assignment relative to prospective assignment (Figure 7), providers with the highest regional efficiencies (Figures 5 and 6) do poorly under retrospective assignment (i.e., have higher expenditures relative to the regional average). The 10% of providers with the highest regional efficiency had risk-adjusted expenditures PBPY that were on average 26% higher and regional efficiency scores that were on average 19% higher under retrospective assignment. The poor performance for the next highest 10% of providers under retrospective assignment was not as significant but still material, with risk-adjusted expenditures PBPY that were on average 6% higher and regional efficiency scores that were on average 2% higher. Meanwhile, the 80% of providers that were the most efficient performed better under retrospective assignment, with risk-adjusted expenditures PBPY that were 2% lower and an average regional efficiency that was 4% lower under retrospective assignment relative to prospective assignment.

Prospective vs. retrospective assignment

SHORT PRIMER

An ACO's choice between prospective and retrospective assignment is the choice of the time period (the assignment window) used to assign beneficiaries to the ACO. MSSP assigns beneficiaries to ACOs based on having a plurality of evaluation and management (E&M) services during the assignment window, with preference given to primary care providers over specialists. Additionally, beneficiaries can designate a primary care provider as responsible for coordinating their overall care. This voluntary alignment occurs prospectively and must occur by October 31 to be effective for the following performance year.[7]

7. In our experience, voluntary alignment has little impact on MSSP ACO assignment.

ELIGIBILITY FOR ASSIGNMENT

To be eligible for assignment, beneficiaries must meet the conditions outlined in Figure 8 during the assignment window. Additionally, for prospective assignment, beneficiaries must also meet the requirements in the performance year.

FIGURE 8: ELIGIBILITY REQUIREMENTS FOR MSSP CLAIMS-BASED ASSIGNMENT[8]

Must have at least one month of Part A and Part B enrollment and no months of Part A only or Part B only coverage
Must not have any months of Medicare group (private) health plan enrollment (i.e., may not be enrolled in a Medicare Advantage plan)
Must reside in the United States or a U.S. territory or possession
Must not be assigned to any other Medicare shared savings initiatives
Must have at least one primary care service from a primary care provider or provider whose specialty is included in the list of assignable provider types
Must not die prior to the performance year (impacts prospective assignment only)

PROSPECTIVE ASSIGNMENT WINDOW: THE 12-MONTH PERIOD ENDING SEPTEMBER 30 PRIOR TO THE PERFORMANCE YEAR

If an ACO selects prospective assignment, then services performed during the 12-month period ending September 30 prior to the performance year are used for assignment. Under prospective assignment, each ACO's assigned beneficiaries are known at the start of the performance year, with limited exceptions (e.g., beneficiaries who sign up later for a Medicare Advantage plan will be removed from the final list of assigned beneficiaries).

RETROSPECTIVE ASSIGNMENT WINDOW: THE 12-MONTH PERFORMANCE YEAR

If an ACO selects retrospective assignment, then services performed during the performance year (i.e., January 1 to December 31 of the performance year) are used for assignment. CMS provides the ACO with ongoing snapshots of its assigned beneficiaries based on emerging experience, but the final list of assigned beneficiaries is not known until after the performance year is complete.

ADVANTAGES OF EACH ASSIGNMENT METHODOLOGY

Prospective assignment advantages include:

- **Assignment is known in advance:** Prospective assignment allows the ACO to know which patients it is managing at the start of the performance year.
- **Priority over retrospective assignment:** Prospective assignment has priority over retrospective assignment, so prospectively assigned beneficiaries cannot be retrospectively assigned to another ACO during the performance year. Note that voluntary alignment takes precedence over both prospective and retrospective assignment.[9]

8. CMS. (December 2024). Table 1: Criteria and other factors used to determine a beneficiary's eligibility to be assigned to an ACO. Medicare Shared Savings Program: Shared savings and losses, assignment and quality performance standard methodology, p. 13. Retrieved July 14, 2025, from https://www.cms.gov/files/document/medicare-shared-savings-program-shared-savings-and-losses-and-assignment-methodology-specifications.pdf-3.

9. Under MSSP, voluntary alignment is always applied prospectively regardless of the ACO's selection of prospective or retrospective claim-based assignment. Beneficiaries' selected primary clinician as of October 31 prior to the performance year is used.

Retrospective assignment advantages include:

- **ACO provider visit during the performance year:** Retrospective assignment ensures that the ACO providers are seeing the patients assigned to the ACO during the performance year.
- **Larger pool of assigned beneficiaries:** Retrospective assignment generally results in a larger number of assigned beneficiaries because beneficiaries are only required to be eligible during the performance year, while under prospective assignment, beneficiaries require eligibility under both the performance year and the assignment period (i.e., the 12-month assignment period, plus the three-month gap, plus at least one month of eligibility in the performance year).

DIFFERENCES IN ASSIGNED POPULATIONS

Retrospective assignment includes all beneficiaries in a given calendar year that satisfy conditions 1 through 5 in Figure 8.

Prospective assignment starts with the same conditions in the assignment window and has the following additional beneficiary requirements:

- Survive to the start of the performance year
- Do not have any months of Part A only, Part B only, or Medicare Advantage enrollment during the performance year

Therefore, the total beneficiaries remaining eligible for prospective assignment in the following year are a subset of those eligible for retrospective assignment in any given year, as seen in Figures 9 and 10.

FIGURE 9: MEDICARE BENEFICIARIES ELIGIBLE UNDER RETROSPECTIVE ASSIGNMENT

JANUARY 2023 – DECEMBER 2023	PERSON YEARS (M)	% OF MEDICARE FFS
FFS population	35.5	100.0%
Part A only or Part B only	7.0	19.8%
Non-U.S. residence	1.3	3.7%
Physician requirement not met/other[a]	4.1	11.6%
MSSP assignable population	23.0[b]	64.9%

a. Indicates no Primary Care Qualified Evaluation and Management (PQEM) service in alignment period, disqualifying COVID stay, or no risk score information.

b. Our processing of 100% Medicare FFS claims results in a slightly different assignable population control total than what is reported in 2023 Annual Expenditure and Utilization report (AEXPU).

FIGURE 10: MEDICARE BENEFICIARIES ELIGIBLE UNDER PROSPECTIVE ASSIGNMENT

OCTOBER 2021 – SEPTEMBER 2022	PERSON YEARS (M)	% OF MEDICARE FFS
FFS population	36.8	100.0%
Beneficiaries disqualified in 2022 Q4 (died)	1.3	3.6%
Beneficiaries disqualified in 2022 Q4 (non-U.S. resident by end of Q4)	0.6	1.7%
Beneficiaries remaining as of 2022 Q4 (alive and U.S. resident by end of Q4)	34.8	94.8%
JANUARY 2023 – DECEMBER 2023		
Joined Medicare Advantage in 2023	2.7	7.4%
Medicare FFS population in 2023	32.1	87.4%
FFS population	32.1	87.4%
Part A only or Part B only	5.1	14.0%
Non-U.S. resident	0.6	1.5%
Physician requirement not met/other[a]	5.4	14.6%
MSSP assignable population	21.1[b]	57.4%

a. Indicates no PQEM service in alignment period, disqualifying COVID stay, or no risk score information.

b. Our processing of 100% Medicare FFS claims results in a slightly different assignable population control total than what is reported in 2023 AEXPU.

Using the full Medicare beneficiary eligibility data, we can calculate how many beneficiaries were eligible for assignment to an ACO during a particular performance year. Figures 9 and 10 show what percentage of the assignment period Medicare FFS population is part of the performance year MSSP assignable population, as well as the portion of Medicare FFS beneficiaries who became ineligible for MSSP assignment under retrospective and prospective assignment. In this example, we use 2023 MSSP assignment. However, retrospective and prospective assignment have a different starting population: Prospective assignment starts with the eligible population from October 1, 2021, through September 30, 2022.

As shown in Figures 9 and 10, prospective assignment results in approximately 12% fewer assignment-eligible beneficiaries than retrospective assignment. This is expected since prospective assignment has a longer time period over which beneficiaries can lose assignment eligibility.

When looking at the results for a specific ACO, the relationship between retrospectively and prospectively assigned beneficiaries becomes more complicated. For one, prospective assignment takes precedence over retrospective assignment, so any beneficiaries assigned to a different ACO prospectively during the prior period will not be eligible for retrospective assignment to a given ACO. Additionally, beneficiaries that had the plurality of their primary care services with a specific ACO in a given year may not necessarily behave the same way the following year, leading to differences between the retrospectively and prospectively assigned beneficiary lists.

FINANCIAL IMPLICATIONS

While the populations assigned under prospective and retrospective assignment do overlap, there are some beneficiaries who are assigned under prospective assignment who are not assigned under retrospective assignment and vice versa. Therefore, the choice between these assignment methodologies can have subtle effects on the ACO's overall benchmark, risk score, and performance year expenditures. Note that the choice of assignment methodology not only affects the performance year but also affects the historical baseline (i.e., the financial benchmark). For example, if an ACO decides to switch to prospective assignment for its second performance year, the historical benchmark will be restated to also use prospective assignment.

Conclusion

Under the Pathways to Success rule, MSSP ACOs have the choice of prospective or retrospective assignment. The updates made to MSSP for agreement periods starting in 2024 or later affected the financial dynamics between retrospective and prospective assignment. At a nationwide level, ACOs have had lower risk-adjusted expenditures PBPY under prospective assignment. However, high-performing providers, in terms of regional efficiency and risk-adjusted expenditures PBPY, generally had more favorable overall results under retrospective assignment in PY2023, while low-performing providers performed significantly worse under retrospective assignment. This sensitivity suggests that the best assignment methodology will be ACO-specific and should be evaluated for both the baseline years and emerging performance years, as well as in conjunction with the operational differences between the two assignment methodologies. Please reach out to your Milliman consultant if you need any assistance in this evaluation for your ACO.

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