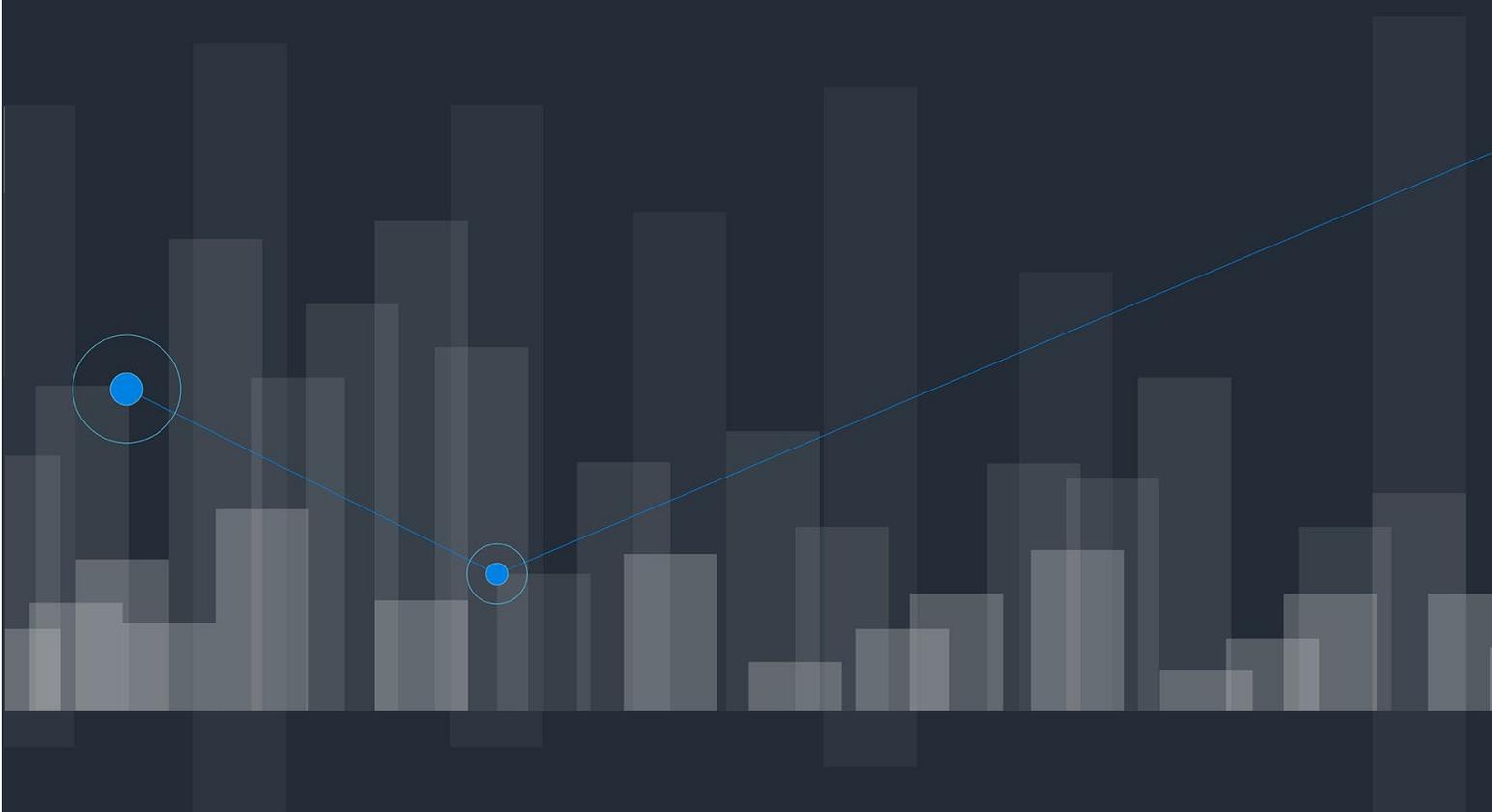


MILLIMAN MEDICARE SUGGEST

Case Study: Assessing Cost Savings with Informed Medicare Plan Shopping

Unlocking Savings Potential with
Milliman Medicare Suggest

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The landscape of healthcare is continuously evolving, demanding innovative solutions to achieve cost-effective and efficient healthcare outcomes. Milliman Medicare Suggest, an advanced application powered by machine learning, can help Medicare beneficiaries navigate the optimal coverage option based on their individualized data.

By leveraging an individual's health history and demographic factors, Medicare Suggest offers personalized and precise suggestions for optimal Medicare Advantage (MA), Medicare Advantage-Prescription Drug (MAPD), Prescription Drug Plan (PDP), or Medicare Supplement Plans. These suggestions are determined based on factors such as projected out of pocket costs, inclusion of preferred providers, covered drugs, and the value of supplemental benefits.

Case Study

Medicare Suggest uses a beneficiary's personal health history and demographic factors to predict which Medicare plan is optimal for them using an algorithm that matches them to other beneficiaries who share similar characteristics. This methodology creates more predictive power in determining what the beneficiary's medical and prescription drug claims will look like the following year based on their current health history, which enables Medicare Suggest to make a better recommendation about the beneficiary's optimal plan.

To illustrate the predictive power of Medicare Suggest in recommending the optimal plan for each beneficiary, we prepared this case study, which compares what a Medicare beneficiary in our study paid in out of pocket costs under their chosen 2019 MAPD plan to what they would have paid under the plan suggested by Medicare Suggest based on their prior health history. Our study was limited to the costs of Medicare covered services, including Part D, and did not include non-Medicare covered supplemental benefits.

The primary focus of our analysis is on assessing the potential cost savings achievable by a beneficiary enrolling in the plan which Medicare Suggest recommends as the optimal plan for the beneficiary when trying to minimize out of pocket costs. We were further able to evaluate if the suggested plan was optimal by leveraging actual claims data for the following year.

By conducting these comprehensive comparisons, this case study aims to evaluate the impact and performance of Medicare Suggest, ultimately empowering beneficiaries and stakeholders with critical data to make informed healthcare coverage decisions in Medicare. The combination of Milliman's actuarial proficiency and advanced technological innovation ensures that the analysis is conducted with the highest standards of accuracy and excellence.

Results and Analysis

The results and analysis presented in this section offer a comprehensive evaluation of the impact on cost optimization and prediction accuracy when using data-driven solutions like Medicare Suggest to optimize the plan selection process for Medicare beneficiaries.

COST SAVINGS ASSESSMENT

To assess the potential out of pocket cost savings that can be achieved when a beneficiary selects the plan generated by Medicare Suggest, we conducted a detailed comparison of each beneficiary's out of pocket costs under their actual 2019 enrolled plan. We then derived out of pocket costs under the optimal plan that would have been suggested to them by Medicare Suggest using their prior health history. Out of pocket costs includes all beneficiary cost sharing and premiums. The full methodology is discussed later in this case study report.

For each beneficiary, we determined how much more or less the beneficiary would have spent annually on Medicare covered services had they enrolled in the MAPD plan which Medicare Suggest recommended as their optimal plan from their available choices. From there, the beneficiaries were grouped into two buckets; those who would have had lower out of pocket costs had they enrolled in the plan recommended by Medicare Suggest, and those who would have had a higher out of pocket costs. These amounts were calculated for each group, as well as over the entire result set.

The results in Tables 1 and 2 show that approximately 90% of the beneficiaries in our analysis would have spent less money out of pocket on Medicare covered services if they enrolled in the MAPD plan which Medicare Suggest recommended for 2019, with an average reduction in the amount spent of \$875 for CY 2019. The distribution of those amounts for this group shows that 25% of members in this group would have spent at least \$1,250 less for the year.

Similarly, we determined that approximately 10% of the members in our analysis would have spent more money out of pocket had they enrolled in the MAPD plan which Medicare Suggest recommended for 2019. The average additional amount spent for that cohort was \$979 for CY 2019. Looking at the distribution of those amounts, only 25% of members in this group would have spent greater than \$387 more for the year. Many of these beneficiaries had larger amounts spent as a result of adding new prescription drugs in 2019 that were not on the formulary of the recommended plan. We assume these prescriptions are paid entirely out of pocket. These beneficiaries may have been able to spend significantly less if they were able, or had the option, to switch to a different prescription drug.

When including all beneficiaries, we found that the average beneficiary would have spent a total of \$691 less in CY 2019 had they enrolled in the plan recommended by Medicare Suggest. Table 4 summarizes the average total out of pocket cost per beneficiary in 2019 with and without enrolling in the recommended plan by Medicare Suggest.

TABLE 1: BENEFICIARIES INCLUDED IN STUDY

Cohort	Count
<i>Beneficiaries who would have spent less money</i>	73,537
<i>Beneficiaries who would have spent more money</i>	8,060
Total Beneficiaries After Data Cleansing	81,597

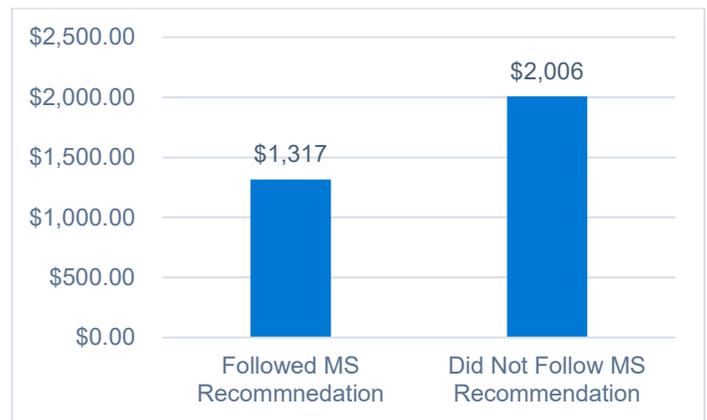
TABLE 2: AVERAGE ANNUAL AMOUNT BY BENEFICIARY COHORT



TABLE 3: DISTRIBUTION OF RESULTS BY PERCENTILE



TABLE 4: AVERAGE ANNUAL SPEND



Methodology

We integrated sound data collection and preparation practices to ensure a robust and comprehensive methodology for evaluating the cost savings and prediction accuracy with Medicare Suggest. The methodology set the stage for data-driven insights that would inform decision-making and enhance the healthcare shopping experience for Medicare beneficiaries.

DATA COLLECTION

1. **Acquisition of 2018 and 2019 Claims Data.** The project started by obtaining the necessary claims data elements for the analysis. Specifically, we collected 2018 and 2019 pharmacy and medical claims data from Milliman’s vast research databases for beneficiaries enrolled in Medicare Advantage plans in both years. In total, we used data for over 80,000 Medicare beneficiaries in 13 states.

DATA CLEANING AND PREPARATION

2. **Data Cleaning.** To ensure the accuracy and reliability of the analysis, a rigorous data cleaning process was performed on the acquired claims data. The data cleaning process involved the following:
 - a. Removing all beneficiaries under the age of 65.
 - b. Removing any beneficiary enrolled in a Dual Eligible Special Needs Plan (DSNP) in either year due to the unique benefit structure of these plans.
 - c. Removing any missing or erroneous data points and any duplicate records.
 - d. Removing any beneficiaries who did not have both medical and pharmacy claims for 2018.
 - e. Removing any beneficiaries who were enrolled in a non-general enrollment 2019 MAPD plan (e.g., Employer Group Waiver Plan), Medicare Supplement and / or PDP plans).
3. **Data Validation and Quality Checks.** After the data cleaning process, data validation and quality checks were conducted to verify the consistency and integrity of the cleaned dataset. These checks helped ensure that the data was reliable and suitable for further analysis.
4. **Data Transformation.** The claims data was then transformed into a format compatible with the Medicare Suggest model. The transformed data was then ready for plan suggestion generation using the Medicare Suggest platform.

PLAN SUGGESTION GENERATION

5. **Generate the Optimal 2019 Plan for each beneficiary using Medicare Suggest.** We processed the 2018 claims data for each beneficiary through Medicare Suggest to generate the 2019 top-ranked MAPD plan suggestion based on projected out of pocket costs. Medicare Suggest uses the following logic to develop the out of pocket cost estimates used in the plan ranking:
 - a. Matches the beneficiary to 100 beneficiaries who “look like them” in Milliman’s vast research database containing millions of beneficiaries using over 500 datapoints (e.g., age, gender, area, procedure codes, prescription drug history).
 - b. Adjudicates the 100 beneficiary’s claims data for the following year (2019) through each Medicare plan available to that beneficiary in their county. This gives us detailed insight into the likely future claims of the beneficiary and avoids the recency bias of simply re-pricing current claims. Medicare Suggest includes adjudication for all Medicare plan types including MAPD, Medicare Supplement, and PDP. However, for this Case Study, we focused only on MAPD recommendations.
 - c. Averages the projected out of pocket costs for the 100 beneficiaries to estimate the projected 2019 out of pocket costs for the beneficiary.
 - i. Note, projected pharmacy costs from Medicare Suggest can be developed in one of two ways: assuming the beneficiary stays on the current prescription drugs or projected pharmacy out of pocket costs using the “matching” mechanism. For this study, we developed pharmacy out of pocket costs using the matching mechanism.

CALCULATE IMPACT OF CHOOSING THE OPTIMAL PLAN VS SELECTED PLAN

6. **Generate Actual Out of Pocket Costs for the Optimal Plan for Each Beneficiary.** Since we had actual 2019 medical and pharmacy claims for each of these beneficiaries for 2019, we then adjudicated the beneficiary's actual claims through the 2019 top-ranked suggested plan generated by Medicare Suggest for each beneficiary. This produces an estimate of what the beneficiary would have actually paid had they enrolled in the MAPD plan which Medicare Suggest recommended.
 - a. Calculates the pharmacy and medical costs. Premiums for the applicable plan are also added to determine the total patient pay for each member.
7. **Summarize Actual Out of Pocket Costs for the Selected Plan for Each Member.** Using the 2019 claims data for each beneficiary, we summarized the out of pocket costs for the plan they originally had selected.
 - a. Calculates the pharmacy and medical costs. Premiums for the applicable plan are also added to determine the total patient pay for each member.
8. **Develop results.** Finally, we calculated the out of pocket cost difference between the plan Medicare Suggest generated and the plan the beneficiary selected on their own to develop the results shown above.

Suggest. If beneficiaries used an out-of-network doctor, the results of our analysis would be different as out-of-network cost sharing may differ from in-network cost sharing.

3. **Supplemental benefits:** Nearly all MAPD plans offer some form of supplemental benefits (e.g., dental, vision, hearing, OTC) in their overall plan benefit package. Medicare Suggest does include an estimated value of these benefits in its standard output, but was not considered here, since this is more of a qualitative measure. In particular, robust actual claims utilization data for supplemental benefits was not available. It may be possible that utilization of supplemental benefits could change the results of the study.

Additional Considerations

Shopping for a Medicare plan is complex, and many things need to be taken into consideration when a beneficiary selects their optimal plan. To that extent, here are a few considerations we identified and our comments on how they were handled for purposes of this study.

1. **Out of Pocket Cost.** Out of pocket costs were the primary comparator for our study. Out of pocket cost includes all beneficiary cost sharing and premiums, Some available plans include Part B premium buy-downs or MSA deposits although those amounts were not considered for this analysis.
2. **Providers:** Selecting Medicare plans that include a beneficiary's preferred providers is an important consideration. We do not have a nationwide database of providers by Medicare organization, and thus could not confirm that all providers in a beneficiary's claims data were in-network in the plans suggested by Medicare

Caveats and Limitations

Andy Mueller, Principal and Consulting Actuary with Milliman, Inc., is a member of the American Academy of Actuaries, and meets the qualification standards of the Academy to render the actuarial opinion contained herein. To the best of his knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices.

This report should be reviewed in its entirety. The information in this report is intended to provide an analysis on using beneficiary's health histories, as well as advanced statistical methods when shopping for Medicare plan options. It may not be appropriate and should not be used for other purposes. We do not intend this information to benefit, or create a legal liability to, any third party, even if we permit the distribution of our work product to such third party.

We summarize information for the beneficiaries for which the required information to process through Medicare Suggest was available. Results may differ for other populations and, more importantly, individual beneficiaries. Therefore, extrapolation of these results to a different population should be limited.

Our assessment is formed based on information available in claims data provided by third parties. We accepted this information without audit but reviewed thoroughly for general reasonability and consistency. If the underlying data or information is inaccurate or incomplete, the contents of this report, along with many of our conclusions, may likewise be inaccurate or incomplete.



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