Evaluating the 10-Year Impact of an Immunoglobulin Utilization Management and Dose Optimization Program in the Managed Care Setting

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Background

- There are various complexities associated with immunoglobulin (Ig) therapy (e.g., lack of consensus guidelines, pharmacokinetic variances among patients).
- Rising costs and off-label utilization of Ig therapy pose challenges for patients, providers and payers.
- For example, in 2023, the Ig category ranked among the top five medical pharmacy drugs by per member per month (PMPM) spend across all lines of business.[1]
- To optimize Ig management, pharmacist outreach can lead to impactful dose optimization (DO) interventions and prevent adverse effects (AEs) such as thrombosis, hemolysis, aseptic meningitis, and infusion related reactions resulting from overutilization.[2]
- As a leader in medical drug management, Prime Therapeutics implemented an Ig utilization management (UM) and DO program in 2014 to evaluate opportunities for DO in eligible patients when medical necessity is established.

Objective

To analyze and contextualize the 10-year clinical interventions and savings generated from an Ig UM and DO program at a health plan

Methods

- A retrospective review of an Ig program for a health plan with approximately 800,000 commercial, Medicare, and Medicaid lives was conducted. Data was collected from prior authorization (PA) reviews completed from March 1, 2014, to Dec. 31, 2023.
- Savings were derived from voluntary acceptance of pharmacist-driven interventions: weight-based dose adjustments for obese adult patients, vial rounding opportunities, or dose titration.
- Patients with savings outside of these intervention types, such as denied requests, were excluded from analysis.
- Savings were calculated based on approved PA with accepted DO recommendations as such: Savings ($) = (Total requested units per PA period x [average sales price (ASP) x index rate])– (Total approved units per PA period x [ASP x index rate]).
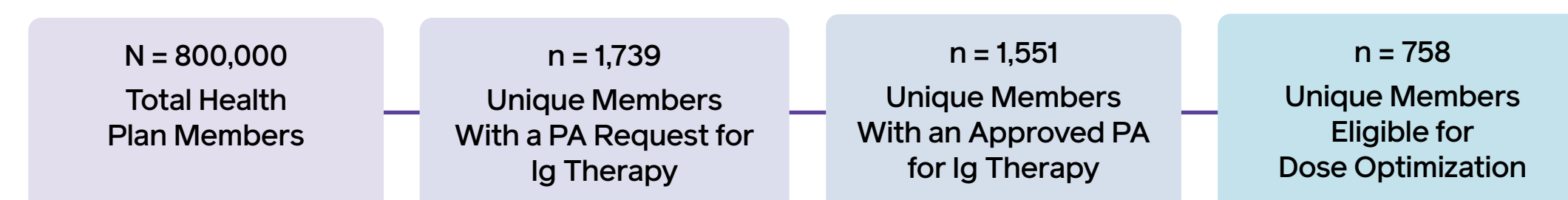
Figure 1
Study population*

| N = 800,000 Total Health Plan Members | → | n = 1,739 Unique Members With a PA Request for Ig Therapy | → | n = 1,551 Unique Members With an Approved PA for Ig Therapy | → | n = 758 Unique Members Eligible for Dose Optimization |

*Members could be eligible for multiple intervention categories over the span of the program.
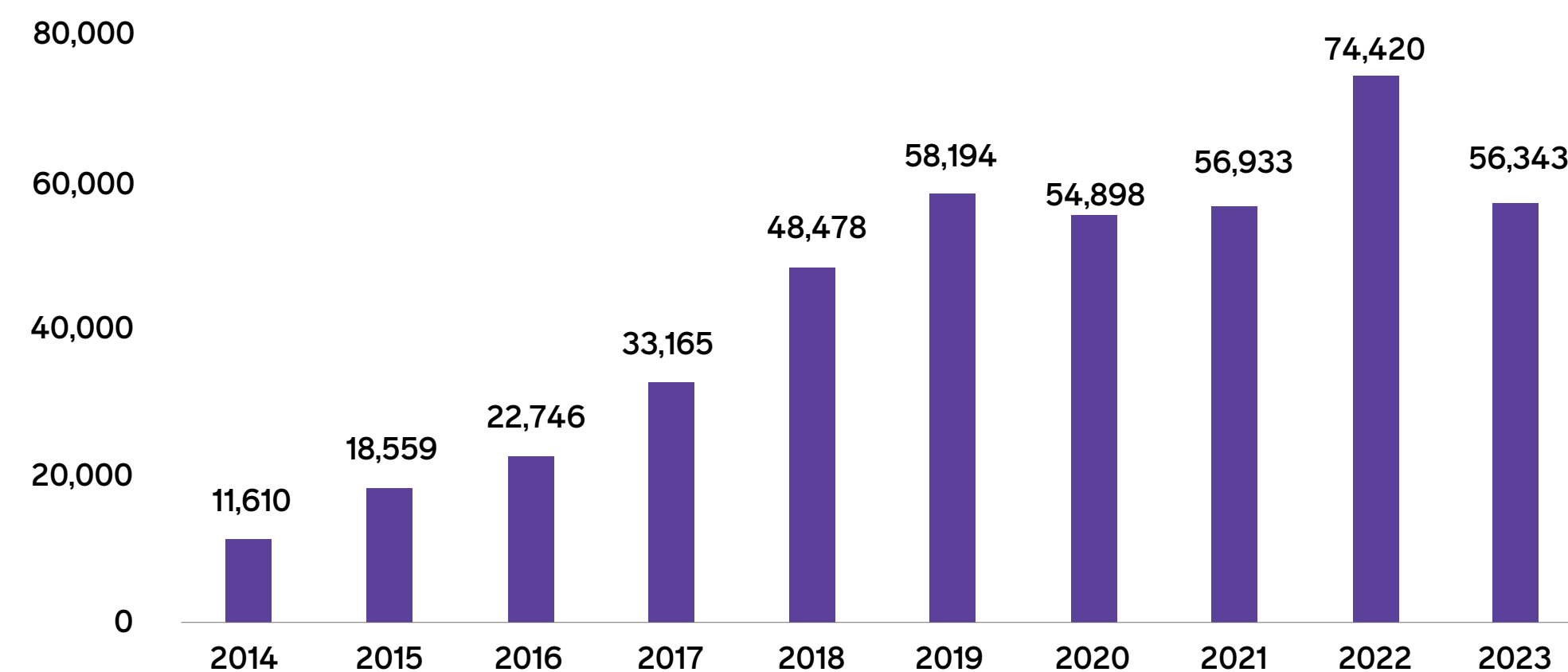
Figure 2
Unit savings by year

Year	Units
2014	11,610
2015	18,559
2016	22,746
2017	33,165
2018	48,478
2019	58,194
2020	54,898
2021	56,933
2022	74,420
2023	56,343

Figure 3
Total savings by the year

Year	Savings
2014	$430,997
2015	$673,318
2016	$897,904
2017	$1,130,622
2018	$1,617,969
2019	$2,057,649
2020	$1,721,053
2021	$1,923,286
2022	$2,432,559
2023	$2,249,371

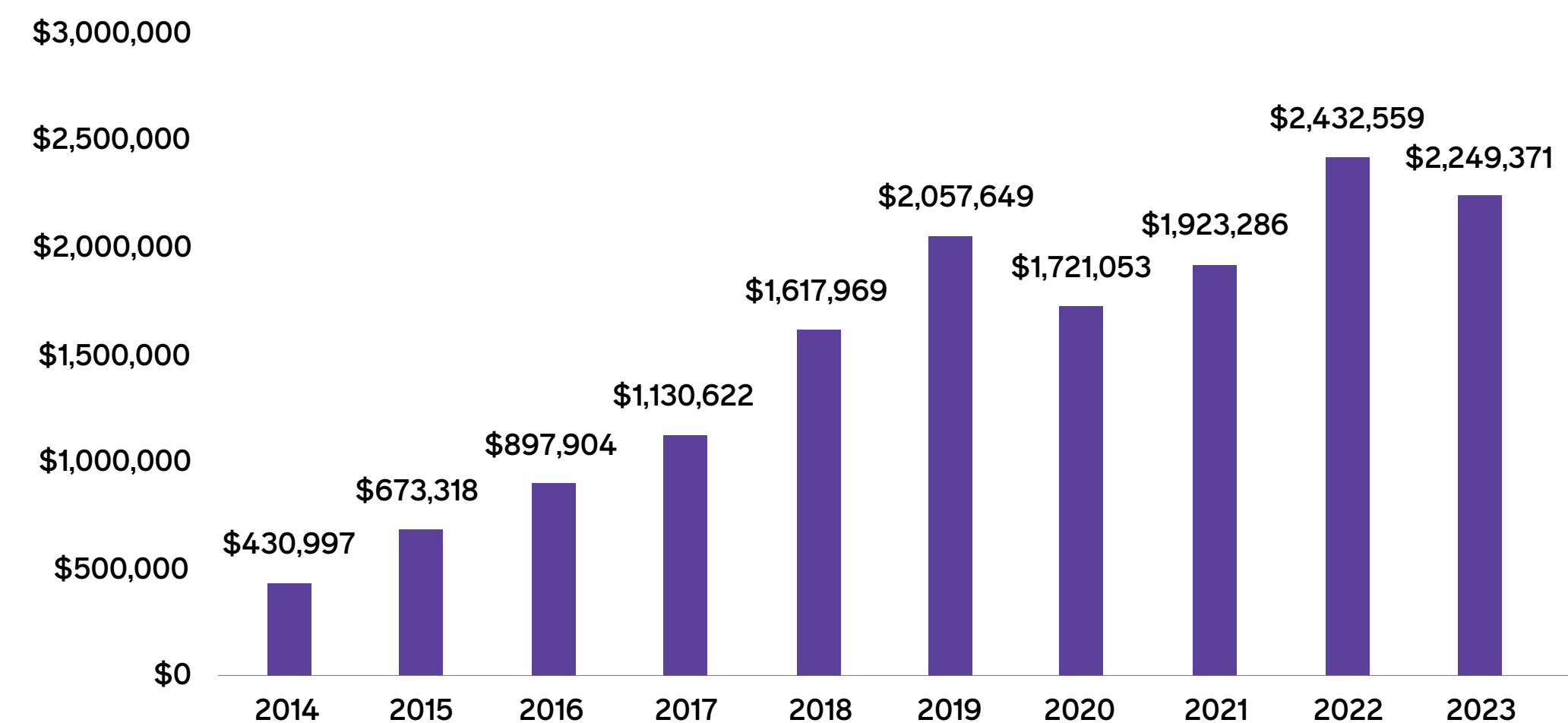## Figure 4
Overview of unit savings (2014 – 2023)

	Total Requested Units	Total Approved Units	Unit Difference	Percent Difference
Total Units Saved	6,647,747	6,212,401	435,346	–6.5%

Figure 5
Overview of total savings (2014 – 2023)

	Total Cost of Requested Units	Total Cost of Approved Units	Total Cost Savings	Total Spend Reduction
Total Savings	$201,261,212	$186,126,484	$15,134,728	7.5%

Figure 6
Weight-based dosing opportunities (n = 519)

- Accepted — 78%
- Not accepted — 22%
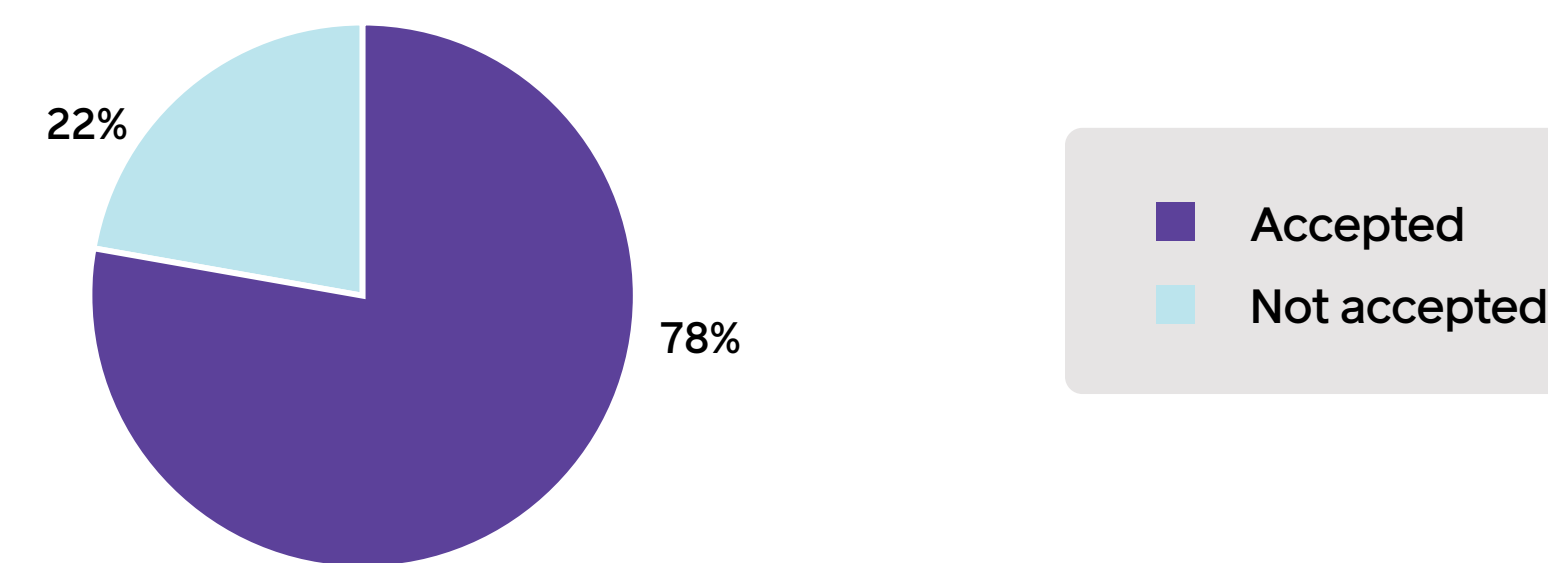
Figure 7
Dose optimization opportunities (n = 1,551)

- Dose titration accepted — 8%
- Vial rounding accepted — 9%
- Not eligible or accepted — 83%
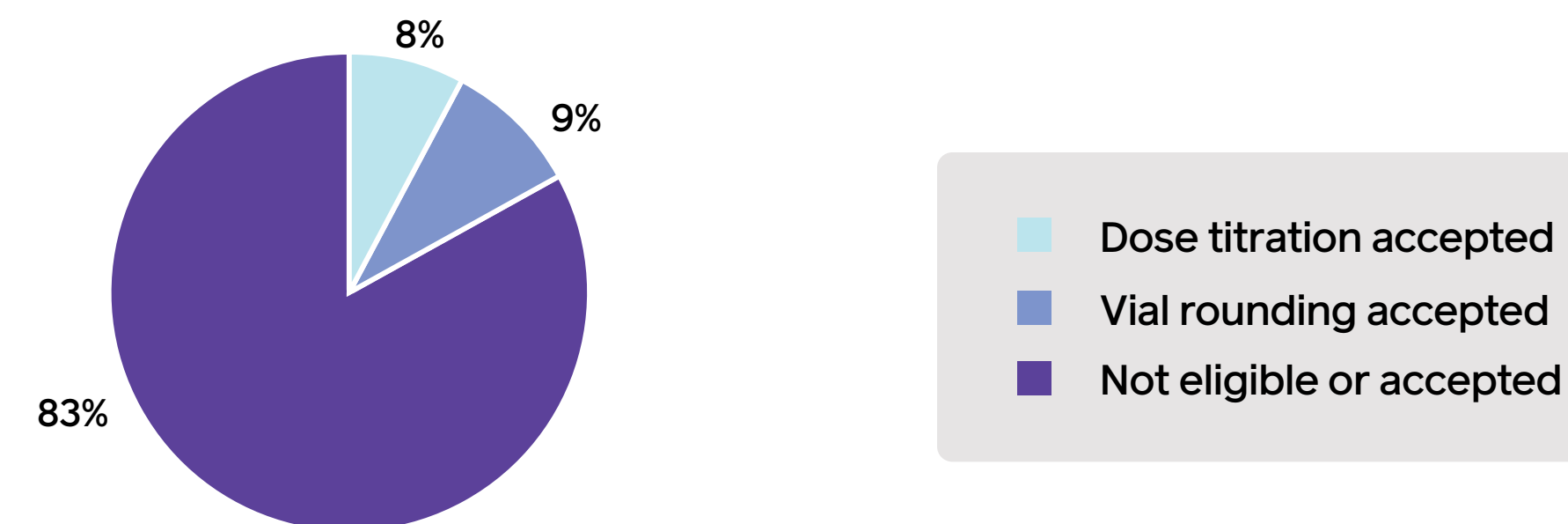
Discussion

- Of the 5,790 Ig PAs approved for 1,551 unique patients from March 2014 to December 2023, 49% (n=758) of patients were eligible for DO.
- Of the 519 patients eligible for weight-based dosing, 78% (n=406) of these recommendations were accepted. Dose titration and vial rounding recommendations were accepted for 8% (n=127) and 9% (n=147) of total patients, respectively.
- Clinical benchmark thresholds were established based on internally derived baseline results and were used to track and compare program outcomes. These benchmarks are as follows: weight-based dosing recommended (32%), weight-based dosing accepted (58%), dose titration accepted (5%), and vial rounding accepted (4%).
- Over 10 years, program interventions resulted in 435,346 Ig units saved, equating to $15,134,728 in savings. The average annual savings per patient was $4,256.
- Weight-based dosing interventions accounted for the majority of savings (67%).
- Of the patients eligible for weight-based dosing recommendations, the percentage of accepted recommendations increased from 63% (2014) to 85% (2023), likely due to increased provider collaboration through the program over time.
- From 2014 to 2023, the average number of Ig units saved, and the savings per patient year over year, increased by 7% and 9%, respectively.
- Fluctuations in ASP and shortages of several Ig products as well as a global pandemic resulted in a slight decrease in annual savings in 2020.

Limitations

- PA data are from a single health plan. Expanding the study population in future analyses may inform additional insights into the impact of an Ig management program.
- Medical claims were not available for review to confirm that all accepted dose optimization recommendations were implemented. Savings for accepted recommendations were carried forward over time based on presumed prescriber behavior change for requests with unchanged dosing.

Conclusions

- Implementation of an Ig UM and DO program resulted in decreased spend and utilization of Ig therapy.
- Program results showed higher acceptance rates of DO recommendations when compared to clinical benchmarks.
- The program likely influenced prescriber behavior, with a 22% increase in accepted weight-based dosing recommendations from Year 1 to Year 10.
- Ultimately, the program's clinical interventions reduced overutilization of Ig, which may have reduced AEs and contributed to overall savings.

References

1. Prime Therapeutics/Magellan Rx Management. Medical Pharmacy Trend Report. Published 2023. Accessed September 10, 2024. https://www1.magellanrx.com/read-watch-listen/read/our-publications/medical-pharmacy-trend-report/
2. Guo Y, Tian X, Wang X, Xiao Z. Adverse effects of immunoglobulin therapy. Front Immunol. 2018;9. doi:10.3389/fimmu.2018.01299