

# The Value of Pharmacy Benefit Integration: A Retrospective Comparison of Health Care Costs and Utilization, 2022-2023

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## Background

- Pharmacy benefits may be delivered as part of a total health plan (integrated) or administered by an external pharmacy benefit manager (PBM; nonintegrated).
- Integrated PBMs have the advantage of coordinated care to ensure actions to lower pharmacy benefit costs are not unintentionally increasing medical benefit costs and to enhance chronic disease and specialty pharmacy care management services for which optimized drug therapy is associated with medical event and cost avoidance.
- Evidence has shown that members in plans with integrated benefits tend to have lower health care spending than members with nonintegrated benefits.
- For example, a recent analysis from Blue Cross and Blue Shield of Minnesota found that members with integrated benefits had 9% lower medical costs, or \$422 per member per year (PMPY), compared to nonintegrated.<sup>1</sup> Similarly, a Cambia study reported 4% (\$192 PMPY) lower costs for integrated versus nonintegrated members.<sup>2</sup>

## Objective

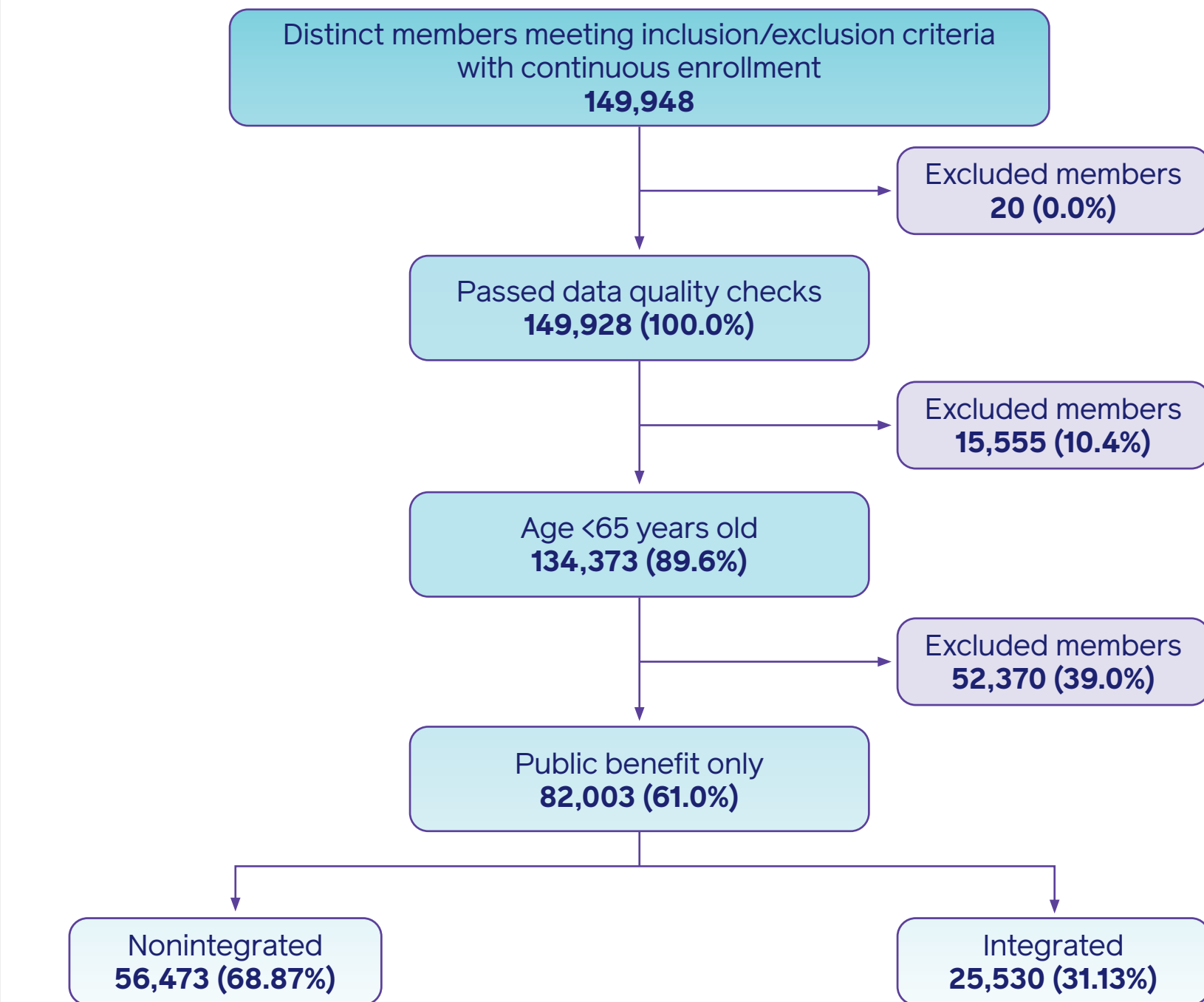
Our objective is to evaluate differences in medical costs and health care resource utilization (HCRU) between commercially insured members with integrated pharmacy benefits compared to those with nonintegrated pharmacy benefits.

## Methods

- This study used medical claims and enrollment data from public sector employers provided by a single, large, regional health insurer covering 2022 and 2023.
- Inclusion/Exclusion criteria included:
  - Age <65
  - Two years of continuous enrollment in 2022 and 2023
  - No change in major benefit, insured product type, or pharmacy coverage
  - Not enrolled in a government program
  - Public sector (e.g., school district, city, or county) benefit only
- Integration was defined as enrollment at any point during a given calendar year with pharmacy benefits from the insurer's integrated PBM partner.
- Internal medical claims data were used to calculate total medical spending, or allowed amounts, including all payments made to providers, such as plan paid, member paid, and coordinated benefits.
- The plan paid to total paid ratio was calculated and used as a proxy for the group benefit generosity, also known as the "actuarial value."
- Integrated members were 1:1 matched to nonintegrated members with replacement using exact and propensity score matching on: gender, age, care management program enrollment, benefit generosity, state of residence, fully insured vs. self-insured status, group size, and chronic disease indicators for asthma, coronary artery disease (CAD), congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD), depression, diabetes mellitus (DM), multiple sclerosis (MS), or rheumatoid arthritis (RA).
- A generalized linear model with gamma log-link was used to assess the difference in PMPY spending among the integrated cohort compared to nonintegrated.
- For HCRU, members with ≥1 inpatient hospitalization or ≥1 emergency department (ED) visit in the 2-year period (2022-2023) were identified, and logistic regressions were used to estimate the 2-year odds of a hospitalization or ED visit.
- A sensitivity analysis was conducted, capping member medical costs at \$250,000 to explore the impact of extremely expensive members at a customary stop-loss threshold.

**Figure 1**

### Cohort Attrition



**Table 1**

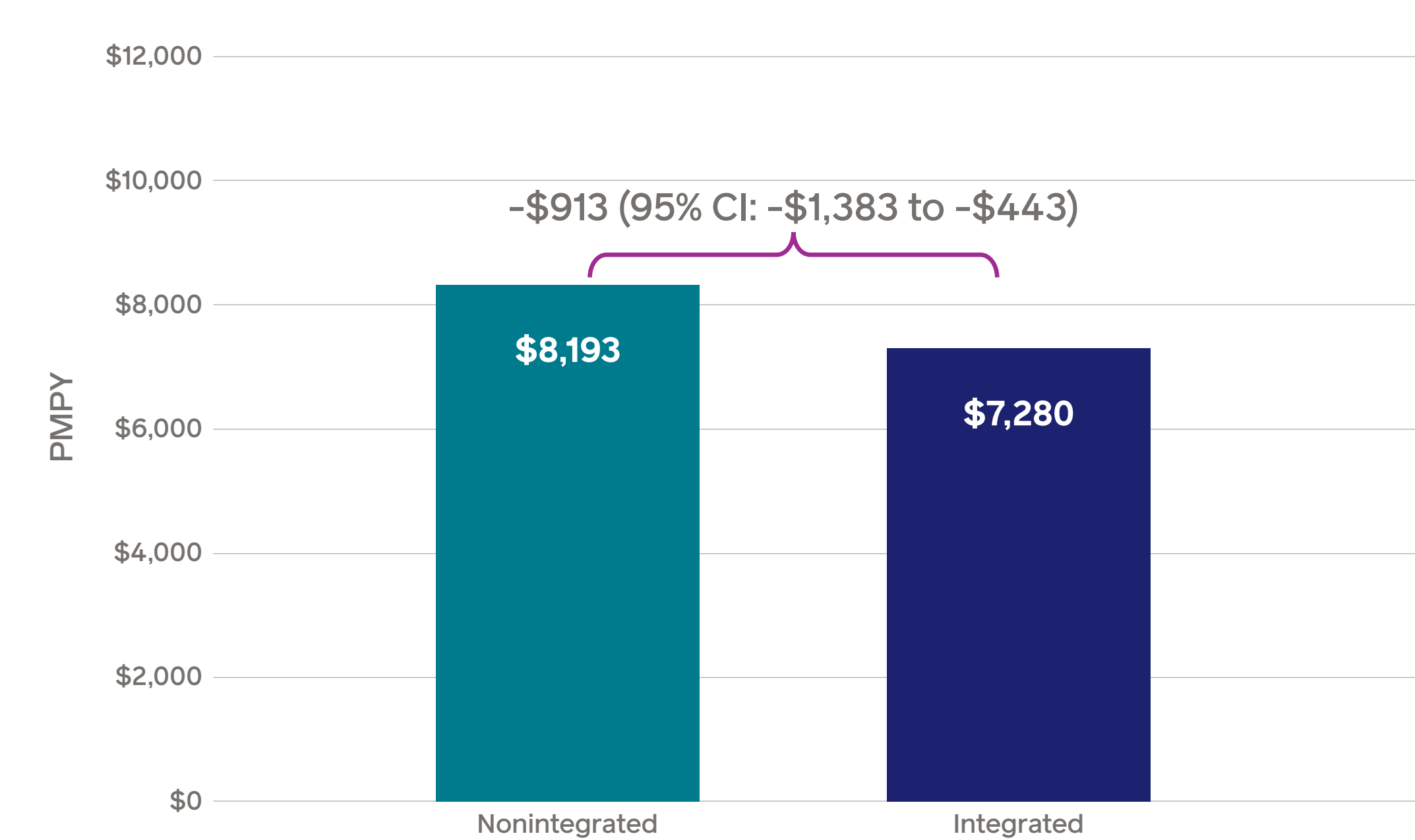
### Patient Characteristics After Matching

	Nonintegrated (N=24,766)	Integrated (N=24,766)	SMD	P Value
Gender—Female, N (%)	13,046 (52.7%)	13,046 (52.7%)	0	1
Age group, mean (SD)	34.2 (18.2)	34.1 (18.3)	0.003	0.76
0-17	6,474 (26.1%)	6,474 (26.1%)	0	1
18-26	3,830 (15.5%)	3,830 (15.5%)		
27-34	1,570 (6.3%)	1,570 (6.3%)		
35-44	4,174 (16.9%)	4,174 (16.9%)		
45-54	4,932 (19.9%)	4,932 (19.9%)		
55-64	3,786 (15.3%)	3,786 (15.3%)		
Plan paid ratio*, mean (SD)	0.9 (0.17)	0.91 (0.17)	0.024	0.007
0-0.909	6,491 (26.2%)	6,205 (25.1%)	0.051	<0.001
0.91-0.956	6,501 (26.2%)	6,239 (25.2%)		
0.957-0.98	6,084 (24.6%)	6,139 (24.8%)		
0.981-1	5,690 (23.0%)	6,183 (25.0%)		
Any chronic condition, N (%)	4,294 (17.3%)	4,294 (17.3%)	0	1

SMD = standardized mean difference; SD = standard deviation  
\*Plan paid to total paid ratio is a proxy for the members' medical benefit actuarial value (i.e., benefit generosity).

**Figure 2**

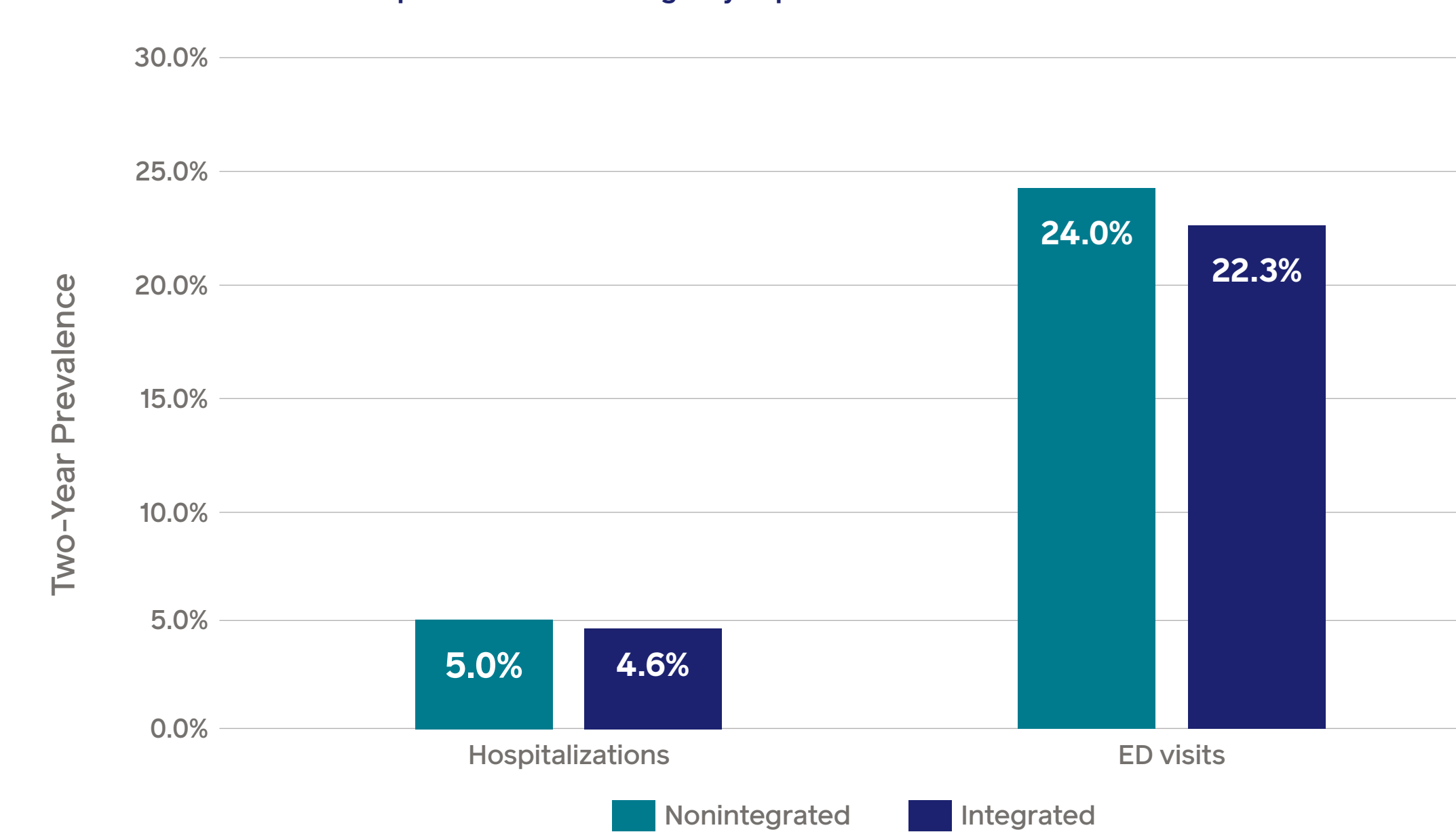
### Mean Per Member Per Year Medical Costs After Matching



PMPY = per member per year  
The modeled mean was PMPY, for 2022 to 2023, from the generalized linear model in the matched cohorts.

**Figure 3**

### Two-Year Prevalence of ≥1 Hospitalization or ≥1 Emergency Department Visit



ED = emergency department  
The odds ratios comparing integrated to nonintegrated members were 0.929 (95% CI: 0.84 to 1.03; P=0.17) for ≥1 hospitalization in 2022 to 2023 and 0.92 (95% CI: 0.86 to 0.96; P<0.001) for ≥1 ED visit.

## Results

- Of the 82,003 members who met all inclusion/exclusion criteria (Figure 1), the final matched population consisted of 49,532, with 24,766 in each cohort.
- In total, 52.7% were female, and the mean age was 35.2 (standard deviation [SD] 18.0) years in the integrated population and 35.3 (SD 18.0) in the nonintegrated (Table 1).
- Integrated members had 10.5% (P<0.001; 95% confidence interval [CI]: 5.8%-15.0%) lower PMPY spending compared to nonintegrated, equating to \$913 (95%CI: \$442-\$1,383) PMPY less on average (\$7,280 integrated vs. \$8,193 nonintegrated).
- Integrated members were found to have 10.6% (P=0.03; 95% CI: 0.8%-19.4%) lower odds of an inpatient hospitalization and 8.9% (P<0.001; 95% CI: 4.0%-13.4%) lower odds of an ED visit.
- The odds ratios (OR) comparing integrated to nonintegrated members were 0.929 (95% CI: 0.838, 1.031) for ≥1 hospitalization and 0.909 (95% CI: 0.862, 0.96) for ≥1 ED visit, or 7.1% lower odds of hospitalization and 9.1% lower odds of ED visits in the integrated group compared to nonintegrated. The percentage of members with ≥1 ED visit significantly differed between the 2 groups, but hospitalizations did not.
- Capping high-cost members resulted in a reduced medical cost difference; however, medical costs remained significantly lower in the integrated group (\$7,044 vs. \$7,855 for nonintegrated members), resulting in 10.3% (or \$811) lower PMPY.

## Limitations

- The analysis was limited to commercial members in the public sector, and findings may not be generalizable to other subpopulations or types of insurance.
- Because pharmacy data were unavailable for the nonintegrated group, differences in pharmacy and total cost of care could not be assessed.
- Matching was used to adjust for baseline cohort differences, but potential bias may still exist due to unmeasured or uncontrolled confounders.
- Claims data is subject to coding error, but it is assumed that any errors would be equally distributed across medical claims and independent of integrated or nonintegrated benefit design.

## Conclusions

- Consistent with prior assessments, this large regional study found that integrated pharmacy benefits were associated with 11.1% lower PMPY medical costs at \$913 PMPY, 7.1% lower odds of a hospitalization event, and 9.1% lower odds of an ED visit over the 2 study years.
- This study demonstrated a higher difference in average spending compared to prior analyses,<sup>1,2</sup> which may reflect the focus on public sector employers only, who generally have greater benefit generosity (represented by plan paid ratio) compared to other employers.
- Health plan members enrolled in integrated pharmacy benefits had significantly lower medical costs and HCRU compared to nonintegrated members, suggesting potential advantages of integrating pharmacy and medical coverage, such as improved care management and coordination.

## References

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