

# Evaluating Per-Member-Per-Month Expenditure Benchmarks in Non-Oncology: Targeted Review in Canada

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## Background

In Canada, reimbursement recommendations play a critical role in determining access to publicly funded therapies. These recommendations are designed to inform federal, provincial, and territorial drug plans by evaluating comparative clinical effectiveness, safety and cost-effectiveness, guiding decisions on whether and under what conditions new therapies should be reimbursed.<sup>1</sup>

Despite their importance, the relationship between reimbursement recommendations and downstream economic outcomes, such as per-member-per-month (PMPM) expenditures, remains underexplored. Existing evidence suggests that positive health technology assessment (HTA) recommendations are associated with a higher likelihood of public coverage (78%) compared to therapies that received a negative recommendation.<sup>2</sup> However, a substantial proportion of therapies that received a negative recommendation resulted in successful pricing negotiations.<sup>2</sup>

To date, limited empirical research has examined whether therapies with positive versus negative reimbursement recommendations differ systematically in their budget impact at the population level, especially when measured using standardized metrics such as PMPM expenditures. Understanding these differences is critical for informing policy discussions on value-based decision-making, optimizing resource allocation, and ensuring equitable access across therapeutic areas

## Objectives

- The objective of this study is to assess the average and range of PMPM expenditures for non-oncology diseases in Canada in both positive and negative reimbursement decisions.

## Methods

### Canadian Drug Agency (CDA-AMC) Database

A targeted literature search was conducted of the Canada's Drug Agency (CDA-AMC) database to identify non-oncology drug submissions with a positive reimbursement and negative recommendation between January 2015 and December 2025 that reported budget impact results.

Where PMPM expenditures were not explicitly reported, PMPM values were derived by dividing the total monthly budget impact by the estimated number of eligible and publicly covered beneficiaries in Canada (excluding Quebec), in alignment with CDA-AMC and Patented Medicine Prices Review Board budget impact analysis guidelines.<sup>3,4</sup>

### Descriptive Statistics

Descriptive statistical analyses were conducted to estimate the mean, median and range of PMPM expenditures across disease categories over a three-year time horizon, consistent with the standard reporting framework used in Canadian budget impact analyses. All costs were reported in 2025 Canadian dollars and adjusted for inflation where applicable, using the Consumer Price Index (CPI) published by Statistics Canada.<sup>5</sup> Negative PMPM values were interpreted as cost savings to the healthcare system and were retained in all summary statistics.

In instances where only the three-year and not the disaggregated one, two and three-year budget impact was published in the reimbursement review, the PMPM could not be calculated and was not included in the analysis. Submissions were grouped by therapeutic area to explore heterogeneity in budget impact across disease categories.

All analyses were conducted using Microsoft Excel®.

## Results

### Positively Reimbursed Reviews

A total of 322 submissions were identified, of which 139 reported budget impact results and were eligible for inclusion. Majority of the submissions were from recent years when the guidelines were updated to mandatorily include the budget impact results.

Table 1. PMPM by disease category – positively reimbursed reviews

| Disease Category            | Average of Total PMPM | Min of Total PMPM | Max of Total PMPM | Count of Disease |
|-----------------------------|-----------------------|-------------------|-------------------|------------------|
| Autoimmune diseases         | \$0.06                | \$(0.01)          | \$0.48            | 15               |
| Cardiometabolic Disease     | \$1.64                | \$0.01            | \$4.62            | 3                |
| Cardiovascular disease      | \$0.12                | \$0.00            | \$0.37            | 5                |
| Dermatology                 | \$0.69                | \$(0.32)          | \$3.79            | 5                |
| Diabetes                    | \$0.03                | \$(0.02)          | \$0.08            | 3                |
| Gastroenterology Diseases   | \$0.06                | \$(0.01)          | \$0.20            | 8                |
| Gynecology / Women's Health | \$0.29                | \$(0.00)          | \$1.99            | 7                |
| Hematology                  | \$0.11                | \$0.00            | \$0.40            | 5                |
| Hepatology (Liver disease)  | \$0.79                | \$0.79            | \$0.79            | 1                |
| Hypertension                | \$0.31                | \$(0.03)          | \$0.65            | 2                |
| Infectious diseases         | \$0.09                | \$0.02            | \$0.18            | 4                |
| Nephrological diseases      | \$0.33                | \$0.32            | \$0.34            | 2                |
| Neurological disorder       | \$0.07                | \$(0.00)          | \$0.34            | 12               |
| Obesity                     | \$1.20                | \$1.20            | \$1.20            | 1                |
| Ocular disease              | \$(0.07)              | \$(0.36)          | \$0.17            | 8                |
| Psychotic disorders         | \$0.03                | \$(0.00)          | \$0.06            | 2                |
| Rare disease                | \$0.21                | \$(0.14)          | \$1.40            | 42               |
| Respiratory Diseases        | \$0.51                | \$(0.04)          | \$4.00            | 14               |
| <b>Total</b>                | <b>\$0.24</b>         | <b>\$(0.36)</b>   | <b>\$4.62</b>     | <b>139</b>       |

Abbreviations: Max, maximum; Min, minimum; PMPM, per-member-per-month

Of the submissions with available budget impact results, a substantial proportion were concentrated in rare diseases (30%), followed by autoimmune and respiratory diseases (each 10%), reflecting the growing focus of HTA submissions in these therapeutic areas. Incremental PMPM values demonstrated considerable variability across studies, ranging from -\$0.36 to \$4.62, indicating the presence of both cost-saving and cost-increasing interventions within the Canadian reimbursement landscape.

Cardiometabolic diseases were associated with the highest mean total PMPM costs, suggesting a relatively greater budget impact in this category compared to other therapeutic areas. In contrast, the majority of submissions targeting ocular diseases were associated with cost savings, with a mean PMPM of -\$0.07, highlighting potential efficiency gains or offsets in downstream healthcare utilization. Within the rare disease subgroup, PMPM estimates varied widely (-\$0.14 to \$1.40), underscoring the heterogeneity in both treatment costs and target population sizes characteristic of these conditions.

Overall, the mean total PMPM cost across all included submissions was \$0.24, reflecting a modest average budget impact at the population level, albeit with notable variation across disease areas and individual interventions.

### Negatively Reimbursed Reviews

A total of 67 submissions were identified, of which 33 reported budget impact results and were eligible for inclusion. Similarly to the positively reimbursed reviews, the majority of the submissions were from recent years when the guidelines were updated to mandatorily include the budget impact results. This may skew the overall results.

## Results (cont.)

Table 2. PMPM by disease category – negatively reimbursed reviews

| Disease Category        | Average of Total PMPM | Min of Total PMPM | Max of Total PMPM | Count of Disease |
|-------------------------|-----------------------|-------------------|-------------------|------------------|
| Cardiometabolic Disease | \$2.61                | \$0.01            | \$5.72            | 4                |
| Cardiovascular disease  | \$0.12                | \$0.12            | \$0.12            | 1                |
| Dermatology             | \$0.65                | \$(0.07)          | \$4.43            | 7                |
| Diabetes                | \$0.50                | \$(0.01)          | \$1.01            | 2                |
| Hematology              | \$0.17                | \$0.13            | \$0.23            | 3                |
| Neurological disorder   | \$1.25                | \$0.01            | \$6.51            | 6                |
| Obesity                 | \$1.31                | \$0.42            | \$2.56            | 4                |
| Psychotic disorders     | \$0.06                | \$0.04            | \$0.07            | 2                |
| Rare disease            | \$0.16                | \$0.06            | \$0.35            | 3                |
| Respiratory diseases    | \$0.02                | \$0.02            | \$0.02            | 1                |
| <b>Total</b>            | <b>\$0.91</b>         | <b>\$(0.07)</b>   | <b>\$6.51</b>     | <b>33</b>        |

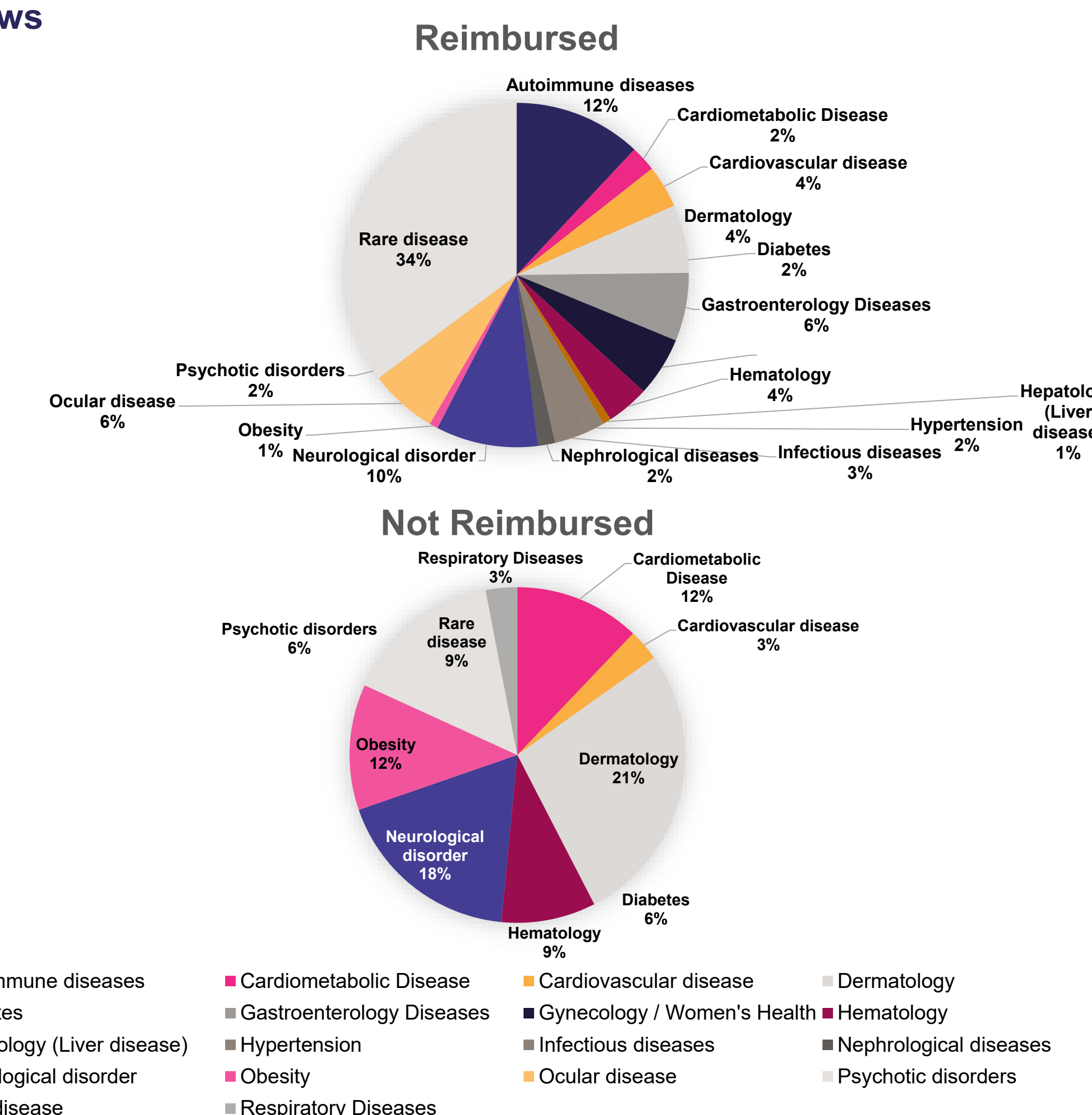
Abbreviations: Max, maximum; Min, minimum; PMPM, per-member-per-month

Of the submissions with available budget impact results, neurological disorders (18%), dermatological conditions (21%), and cardiometabolic diseases (12%) represented a substantial proportion of included disease areas. Incremental PMPM values across all submissions ranged from -\$0.07 to \$6.51. Neurological disorders reported the highest mean total PMPM cost (\$1.25), driven largely by high-cost therapies such as those for AChR antibody-positive generalized myasthenia gravis, whereas several dermatology and diabetes-related submissions demonstrated cost savings, with minimum PMPM values reaching -\$0.07 and -\$0.01, respectively.

Cardiometabolic diseases exhibited the highest mean PMPM among broader chronic disease categories (\$2.61), with considerable variation across indications (range: \$0.01 to \$5.72). Obesity-related submissions also demonstrated relatively high PMPM costs (mean: \$1.31; range: \$0.42 to \$2.56), while hematologic and rare disease indications showed more modest but consistent budget impacts (means: \$0.17 and \$0.16, respectively). Within the rare disease subgroup, PMPM costs ranged from \$0.06 to \$0.35.

Overall, the average total PMPM cost across all included submissions was \$0.91, highlighting substantial heterogeneity in budget impact across non-oncology therapeutic areas, with both cost-increasing and cost-saving interventions observed.

Figure 1. Comparison between positively and negatively reimbursed reviews



### All Reviews Comparison

When stratified by reimbursement status, submissions receiving positive recommendations generally demonstrated higher and more variable PMPM expenditures compared with those receiving negative recommendations, although overlap between groups was observed. Notably, rare disease submissions represented one of the largest and highest-cost categories among reimbursed therapies, whereas they were among the least represented, and associated with lower PMPM values, among submissions that did not receive reimbursement recommendations. This divergence likely reflects the greater weighting of unmet need, disease severity, and limited treatment alternatives in HTA decision-making for rare conditions, even in the context of higher per-patient or population-level costs.

These findings are consistent with the broader HTA literature, which shows that reimbursement decisions are not determined by budget impact, but rather by a multidimensional assessment of clinical benefit, cost-effectiveness, and contextual factors. While therapies with negative reimbursement recommendations tended to cluster around lower or cost-saving PMPM estimates, this did not uniformly translate into positive funding decisions, reinforcing that lower budget impact alone is insufficient in the absence of strong supporting evidence. Overall, the observed patterns align with prior evidence highlighting the value-based nature of Canadian reimbursement decisions and the nuanced role of budget impact across therapeutic areas.

## Conclusions

While PMPM costs provide a standardized metric that enables comparison of budget impact results across diverse indications and supports more consistent decision-making by public drug plans, the observed variability in PMPM estimates should be interpreted with caution. Differences in underlying disease epidemiology, eligible population size, treatment uptake, and clinical practice patterns can substantially influence these estimates across therapeutic areas.

To our knowledge, this represents the first targeted review to systematically evaluate PMPM across non-oncology submissions in the Canadian HTA context. The findings highlight that PMPM values are highly context-dependent and should not be interpreted in isolation. In particular, drug acquisition costs and assumptions related to market share and uptake emerge as key drivers of PMPM estimates, alongside factors such as treatment duration. As such, careful consideration of these underlying drivers is essential when interpreting and comparing PMPM results across disease areas and reimbursement decisions.

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## Disclosures and acknowledgements

The study was investigator initiated. All authors are employees of Cytel, Inc.