

COST TRENDS OF POTENTIALLY INAPPROPRIATE MEDICATIONS

among older adults between 2012 and 2021 in Quebec : A population-based repeated cross-sectional study

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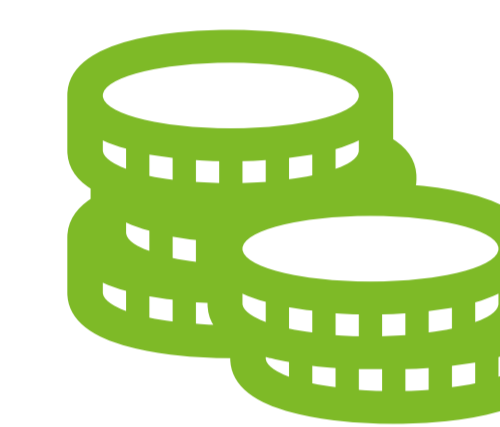
Background



Potentially inappropriate medications (**PIMs**) are defined as medications that pose more risks than benefits when used among older adults, leading to adverse effects and hospitalizations¹⁻⁴.



Nearly **1/2** of Canada's older population is estimated to use at least one PIM, with a higher prevalence among women than men (2021-2022)⁴⁻⁵.



\$419 Millions were estimated for PIM costs in Canada (2013)⁶.

- ✓ Various initiatives promoting appropriate prescribing and deprescribing have been implemented in the past decade⁷⁻⁸.
- ✓ Real direct PIM costs trends remain unknown.

Methods

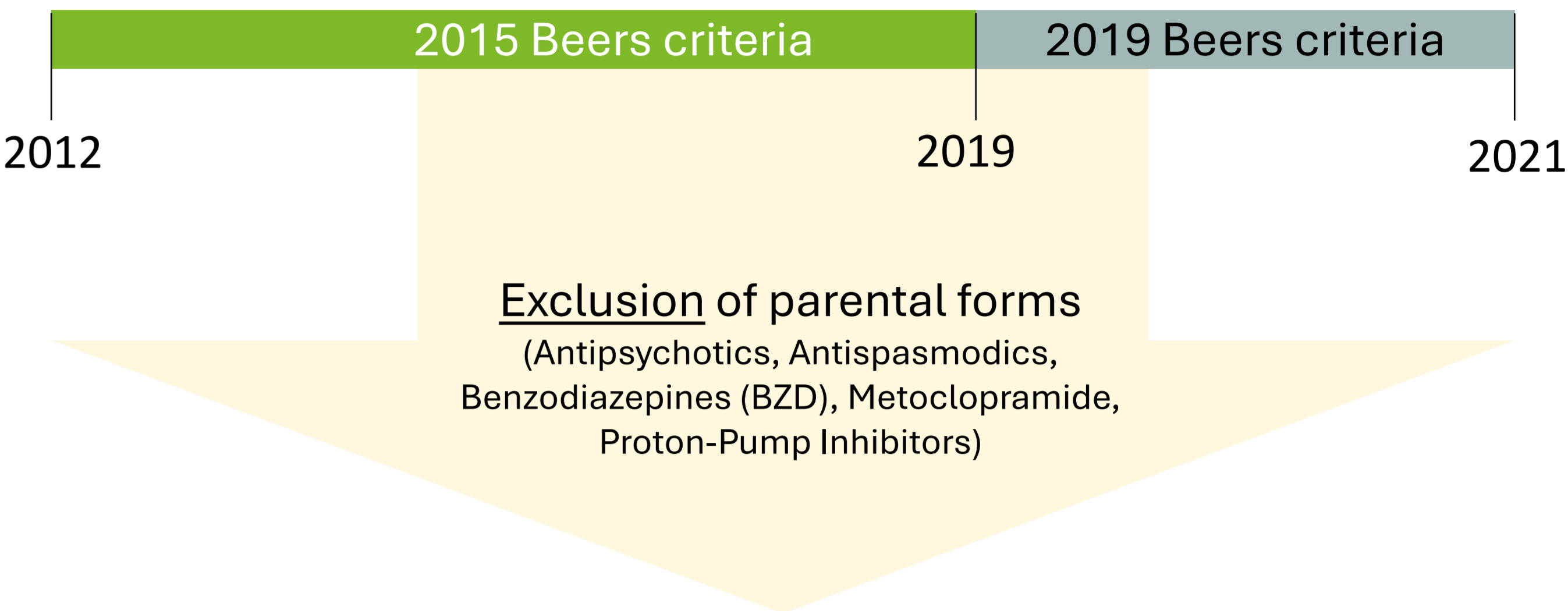
Using medico-administrative data, we assessed costs of PIMs claimed by adults ≥65 years covered by Quebec public drug plan. Data were extracted by sex and age groups (65-74, 75-84 and ≥ 85) for each year of the study, from 2012 to 2021.

PIMs were identified using the 2015 and 2019 versions of American Geriatrics Society's Beers criteria¹⁻² (adapted to the Canadian context).

- ✓ Total and average costs per enrollee for all PIM classes were estimated for each year and stratified by sex and age.
- ✓ Average costs per enrollee and prevalences were computed for the 5 most expensive classes (★), further stratified by sex and age from 2012 to 2021.

$$\text{Average cost per enrollee} = \frac{\text{Total PIM costs for one fiscal year}}{\text{Full - time equivalent population for the corresponding calendar year}^9}$$

We performed univariate linear regression to estimate PIM cost trends, with 95% confidence intervals.



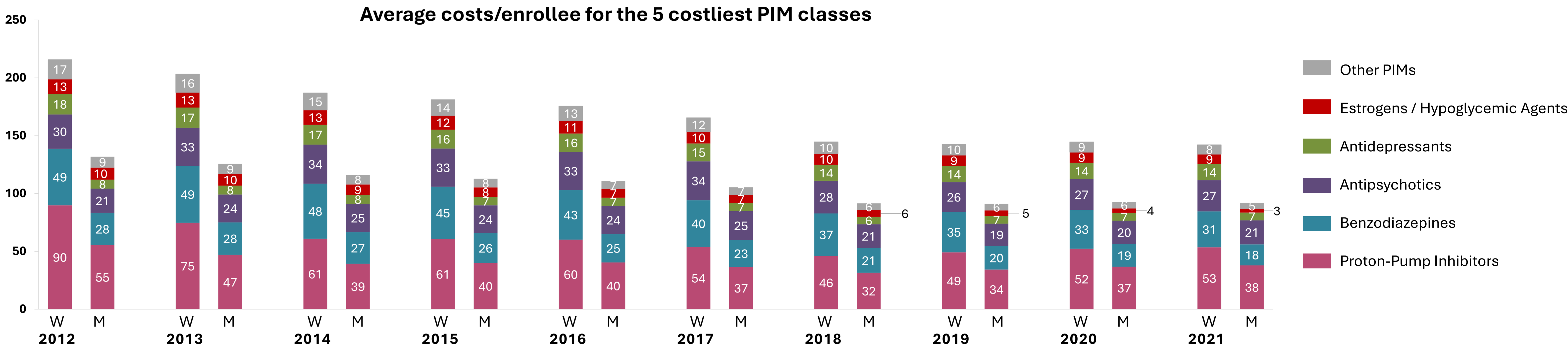
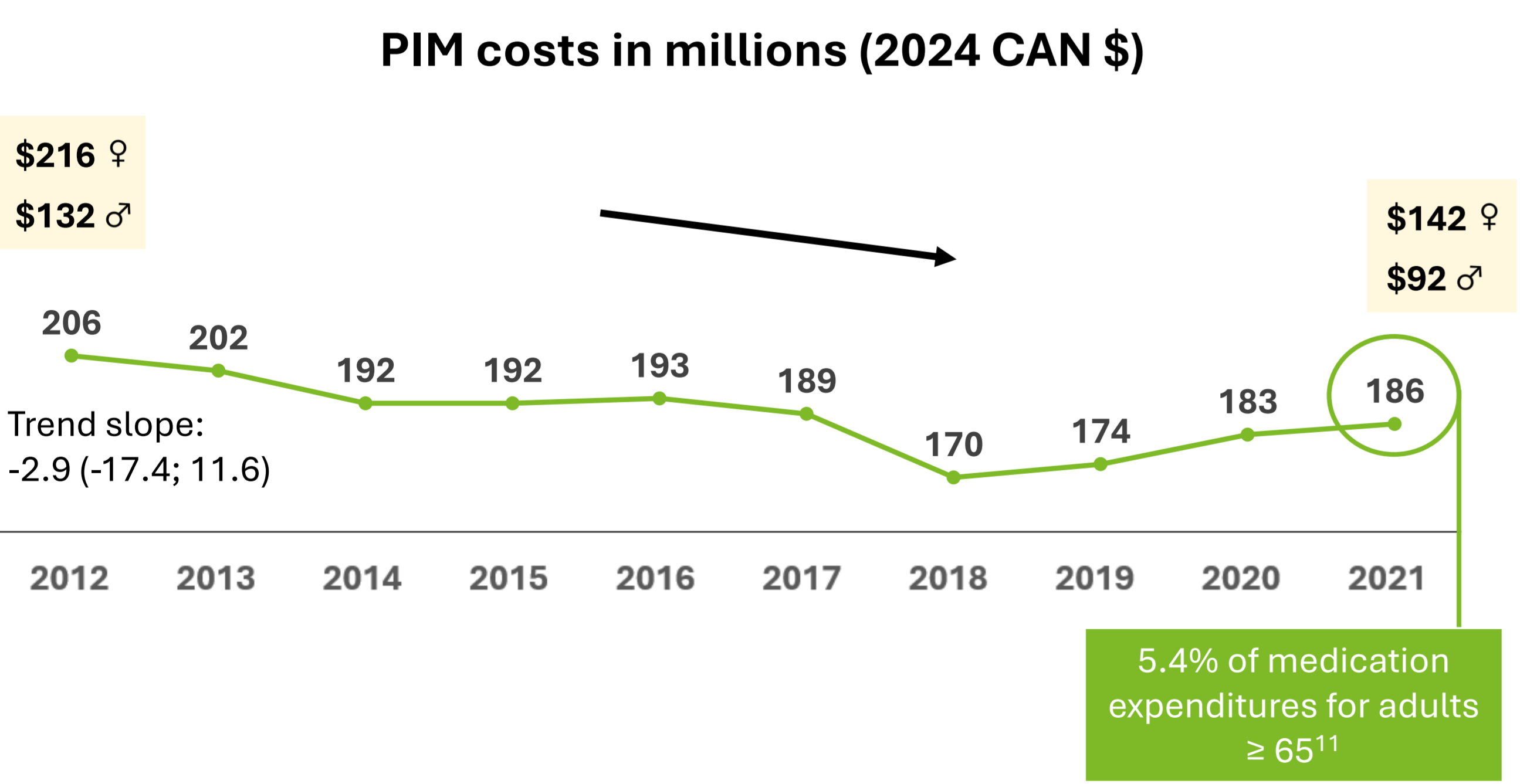
16 PIM classes			
Analgesic Agents	★ Antidepressants	Antiparkinsonian Drugs	★ Antipsychotics
Antispasmodics	Barbiturates	★ BZD	Cardiovascular Drugs
★ Estrogens	1st-Generation Antihistamines	★ Hypoglycemic Agents	Muscle Relaxants
Non-BZD Hypnotics	Oral NSAIDs	Other Gastrointestinal Drugs	★ Proton-Pump Inhibitors

NSAIDs : Nonsteroidal Anti-Inflammatory Drugs
Note: No claim for other central nervous system drugs and desiccated thyroid drugs

Objective: To estimate trends in the direct costs of PIMs over a 10-year period (2012-2021) among women and men aged ≥ 65 covered by the public drug plan, from the public payor perspective.

Results

PIM costs experienced a 9.7% relative decrease from 2012 to 2021, revealing a non-statistically significant downward trend.



- ✓ Annual total costs : ♀ > ♂
- ✓ More pronounced decrease in total PIM costs for women than men across all age groups.
- ✓ More pronounced decrease in average costs per enrollee than the total costs (non-statistically significant).
- ✓ Average costs per enrollee for the 5 costliest PIM classes remained consistently high and contributed to a mean of 93% of the total average cost/enrollee for all PIMs.

Conclusion

PIM costs among older women and men in Quebec slightly decreased over 10 years. Optimizing prescribing practices and actively implementing effective deprescribing strategies are essential for reducing PIM costs, improving individuals' health and reducing indirect PIM costs.

These findings emphasize the need of ongoing monitoring and evaluation of PIM costs to better assess the effectiveness of deprescribing initiatives and other regulatory measures.

References

