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Value for Money: Evaluating the Economic Benefit of a Hypothetical Disease Modifying Therapy for Alzheimer's Disease From Canadian Payer and Societal Perspectives

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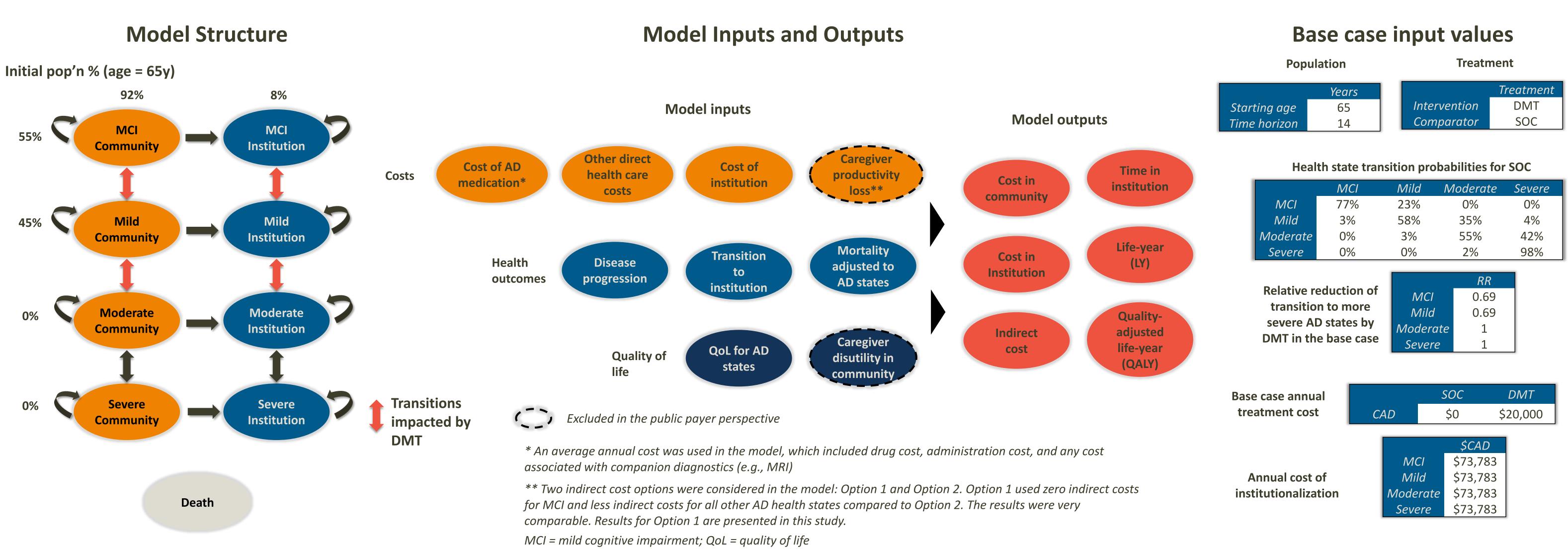
## Background

Promising clinical trials for disease-modifying therapies (DMTs) for Alzheimer's disease (AD) have recently been completed or are nearing completion and preparing for market authorization and reimbursement approvals in Canada. These DMTs are frequently regarded as cost-saving to the healthcare system as they have the potential to delay the progression of AD and thereby prevent the need for institutionalization.

# Objective

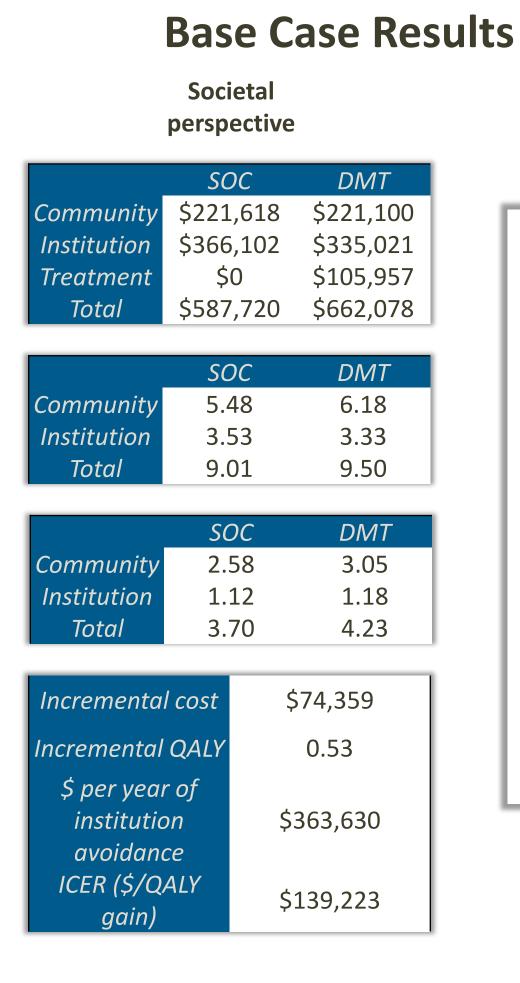
The objective of this study is to evaluate how varying annual treatment cost and the level of treatment effectiveness for a hypothetical AD DMT in Canada can impact the annual cost of preventing institutionalization and the incremental cost-effectiveness ratio (ICER) when compared to the current standard of care (SoC) in an economic analysis.

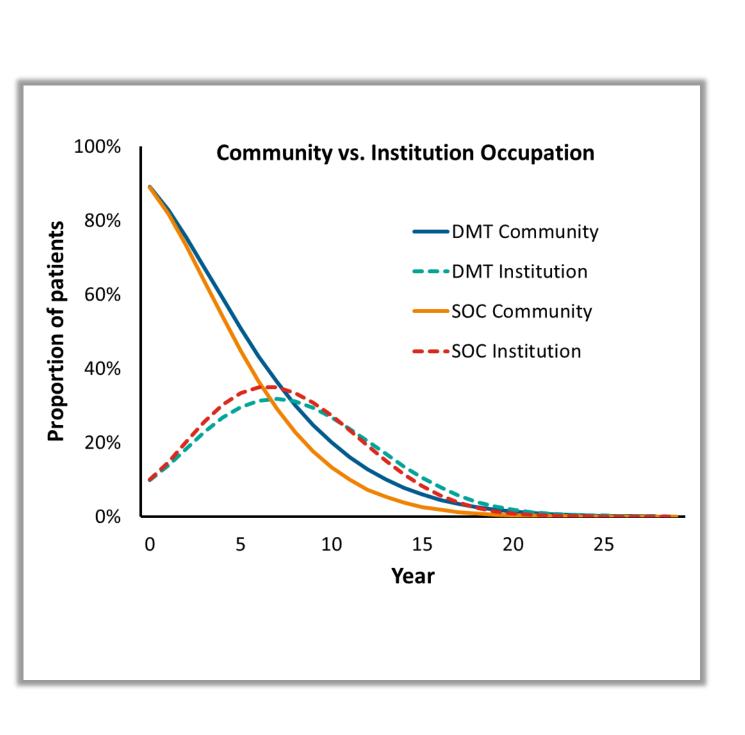
# Methods and Inputs



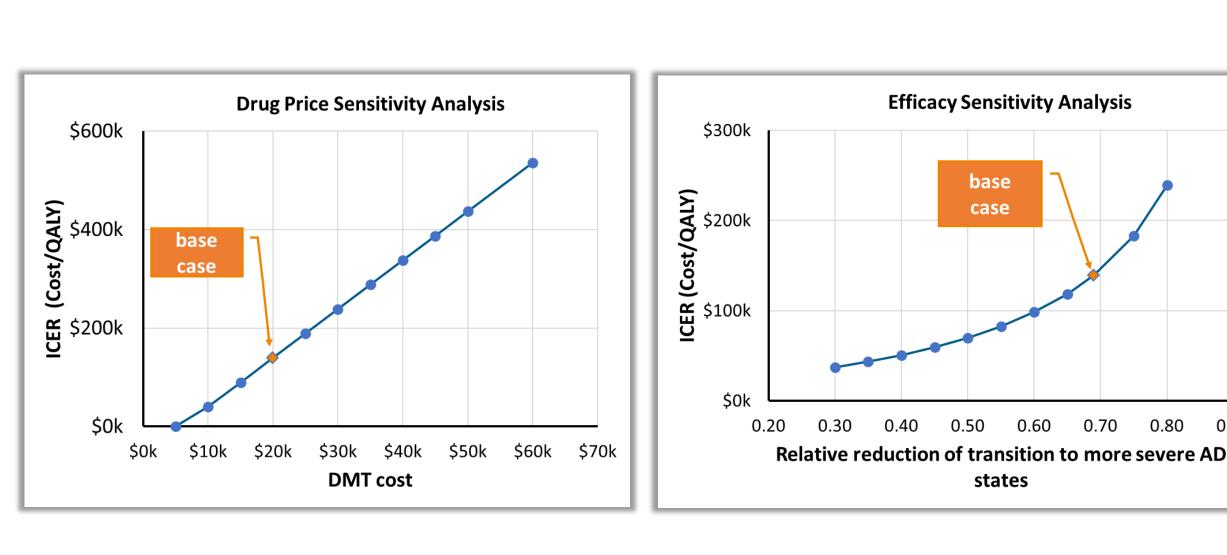
#### Results







#### Sensitivity Analysis (Societal Perspective)



- Keeping other inputs in the base case constant, an annual DMT treatment cost of \$11,000 and \$16,000 will lead to a \$50K/QALY and \$100K/QALY, respectively (societal perspective).
- Keeping other inputs in the base case constant, the risk of disease progression under treatment DMT has to be 40% and 60% of that of the natural progression (i.e., when treated with SoC without a DMT) to achieve an ICER of \$50K/QALY and \$100K/QALY, respectively (societal perspective).

### Conclusion

- Using a basic economic model, a cost-utility analysis for a hypothetical DMT vs. the current standard of care (SoC) that does not include a DMT for the treatment of patients with AD in Canada was conducted. At an annual treatment cost of \$20,000 (drug + administration + monitoring) and an efficacy of 69% relative risk of disease progression compared to the SoC, the base case analysis resulted in an ICER of \$139K/QALY and a cost of \$363K per year of institutionalization avoidance.
- The study highlights that a DMT with an efficacy of 69% relative risk, such as that observed for lecanemab, does not offset the drug cost by delaying costly institutionalization (~\$74K/Y) and results in ICERs above standard willingness-to-pay thresholds.
- The value for these drugs must be captured from a broader perspective, such as social equity, caregivers' health, avoiding caregivers' burnout, and opportunity costs for long-term care space.

#### References

*Model, base case efficacy, utility and direct cost multiplier inputs*: Lecanemab for Early Alzheimer's Disease, Evidence Report, Institute for Clinical and Economic Review. March 1, 2023. *Direct cost*: nhex-series-E1-2022-en, National Health Expenditure Trend, 2020, Canadian Institute for Health Information. *Cost of institutionalization*: Long-Term Care Overview: Funding and Staffing, Ontario, Sep 2020. *Cost of care in community*: Herrmann et al. The Relation Between Disease Severity and Cost of Caring for Patients With Alzheimer Disease in Canada Can J Psychiatry. 2010;55(12):768–775.