

Drug Funding Price Negotiations: Towards Achieving a Balance Between Individual and Societal Gains in Health Benefits

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INTRODUCTION

- Drug funding price negotiations is a recognized approach to improve health care opportunities for the greater population in Canada.
- Negotiating drug prices to a defined cost-effectiveness threshold (λ) can generate savings in quality-adjusted life-years (QALY) or monetary benefits, that can then be applied to funding for other sectors of the health care system.
- In oncology, drug funding price negotiations is of particular importance given the significant increase in the number and cost of oncology drugs.¹
- However, concerns for drug funding price negotiations exist given a speculated loss in health benefits due to the time required for price negotiations.²
- To date, there is limited evidence evaluating the potential benefits of coordinated drug price negotiation efforts.

Objective:

- To evaluate the impact of drug price negotiations through an assessment of the incremental net health benefit (INHB) and incremental net monetary benefit (INMB) of pan-Canadian Oncology Drug Review (pCODR) recommended drugs for Ontario, Canada, in the absence of drug funding negotiations.

METHODS

- Oncology drug indications for inclusions were identified through a review of pCODR drug reviews from July 13, 2011 to September 25, 2018.
- Reviews were excluded if: a) no publicly available Final Economic Guidance report or Provincial Summary File; b) did not provide manufacturer submitted or pCODR re-analyzed lower- (LL) and upper-limit (UL) best estimates of economic values; c) manufacturer re-submissions (to avoid duplication).
- Extracted data include cancer type, intent, route of administration and economic values [incremental cost-effectiveness ratio (ICER), incremental cost (ΔC), incremental effectiveness (ΔE)].
- Numbers of new cases for each drug funded in Ontario for 2017-18 was obtained from the New Drug Funding Program (NDFP) and Ontario Drug Benefit (ODB) databases.
- For each included drug indication, the annual gain in QALY per drug was determined by:
Annual QALY gain (QALY) = $\Delta E(\text{QALY}) \times \text{new cases}$
- INHB was used to assess population QALY gain/loss for each indication in Ontario³:
Annual INHB (QALY) = $[\Delta E(\text{QALY}) - (\Delta C(\$)/\lambda(\$/\text{QALY}))] \times \text{new cases}$
- INMB was used to assess population monetary gain/loss for each indication in Ontario⁴:
Annual INMB (\$) = $[\Delta E(\text{QALY}) \times \lambda(\$/\text{QALY}) - \Delta C(\$)] \times \text{new cases}$
- Both INHB and INMB was assessed using the manufacturer submitted, pCODR LL and UL re-analyzed estimates at thresholds of \$50,000/QALY, \$100,000/QALY, \$150,000/QALY.

TABLE 1. Characteristics of Included Drug Reviews

Variable	Number of Reviews (N=34)	Number of New Cases 2017/18 (N=4,629)
Route of Administration (%)		
Oral	8 (24)	484 (10)
Intravenous	26 (76)	4,145 (90)
Cancer Type (%)		
Breast	3 (9)	378 (8)
Gastrointestinal	3 (9)	1,120 (24)
Genitourinary	1 (3)	172 (4)
Gynecology	2 (6)	157 (3)
Leukemia/Lymphoma	10 (29)	928 (20)
Lung	5 (15)	1,107 (24)
Myeloma	1 (3)	153 (3)
Melanoma	6 (18)	552 (12)
Other	3 (9)	62 (1)
Indication (%)		
First Line	18 (53)	2,629 (57)
Second Line or beyond	14 (44)	1,997 (43)

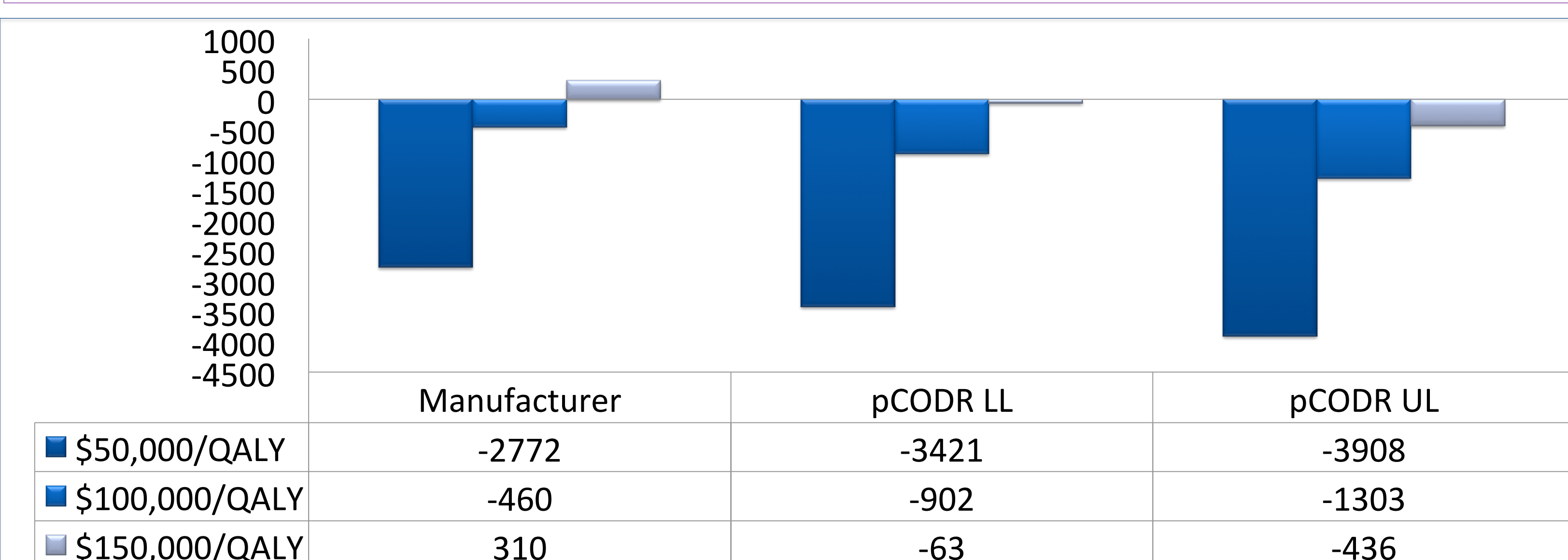


Figure Legend. Annual Net Gain/Loss in QALY for Ontario, Canada in fiscal 2017-18, using manufacturer submitted, pCODR LL, pCODR UL for \$50,000/QALY, \$100,000/QALY and \$150,000/QALY thresholds.

FIGURE 1. Annual Net Population QALY Gain/Loss

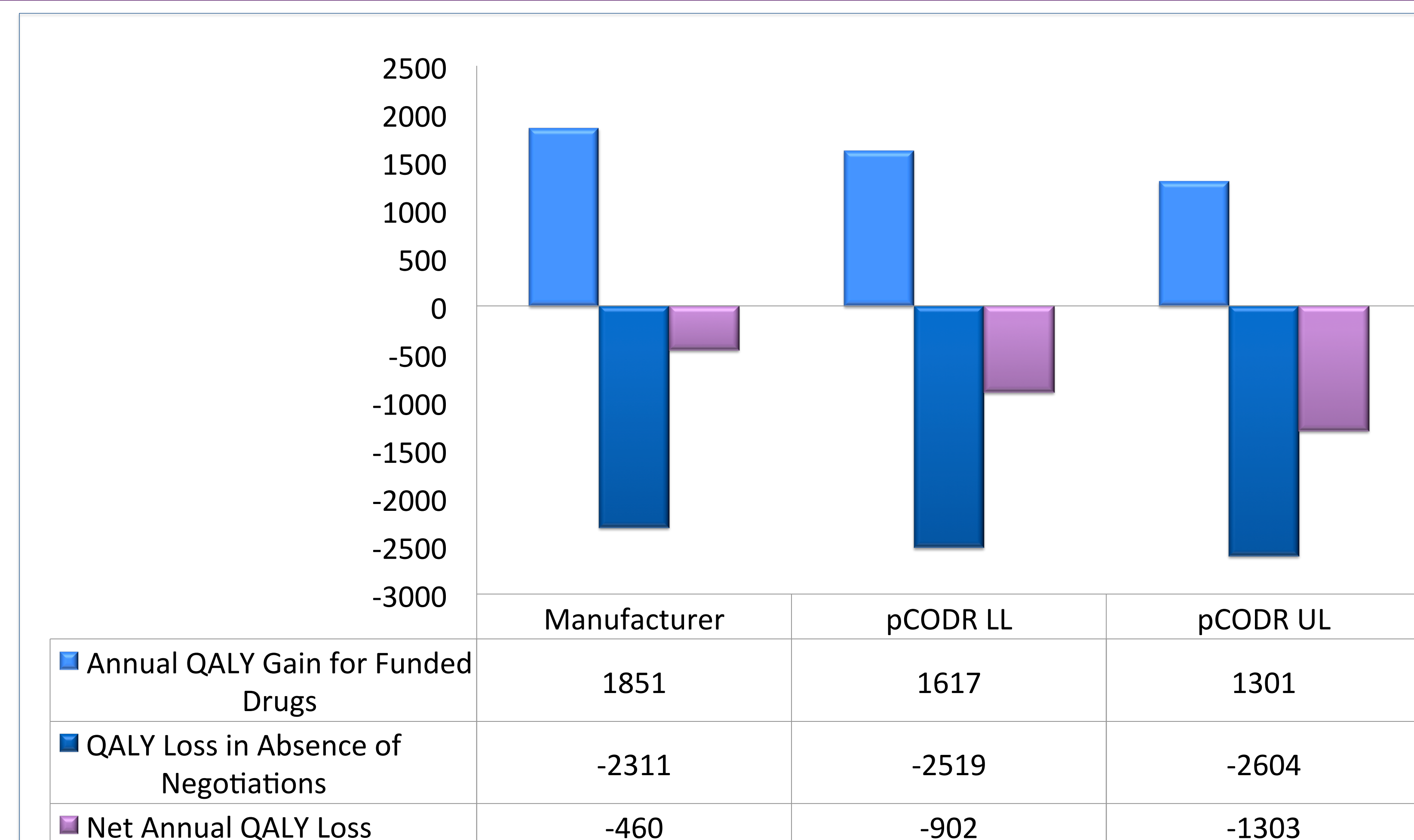


Figure Legend. Graphical representation of the net annual loss in QALY in the absence of price negotiations. Although QALY gains are demonstrated for funded drugs, the notable costs associated with drugs will lead to population QALY losses, in the absence of price negotiations to λ of \$100,000/QALY.

FIGURE 2. QALY Gain/Loss at Threshold of \$100,000/QALY

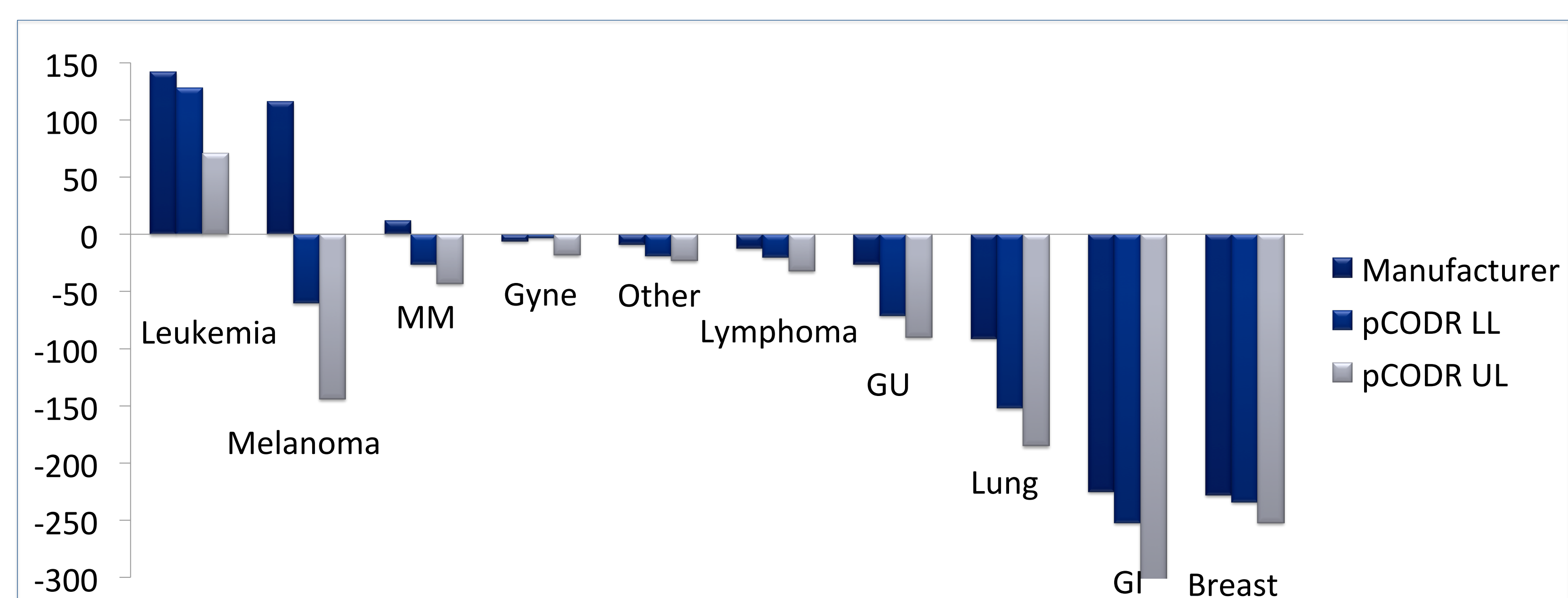


Figure Legend. Annual Net Gain/Loss in QALY per cancer indication for Ontario, Canada in fiscal 2017-18 at a threshold of \$100,000/QALY. MM: multiple myeloma; Other: includes head and neck & endocrine; Gyne: gynecology; GU: genitourinary; GI: gastroenterology.

FIGURE 3. Annual Net QALY Gain/Loss by Cancer Indication

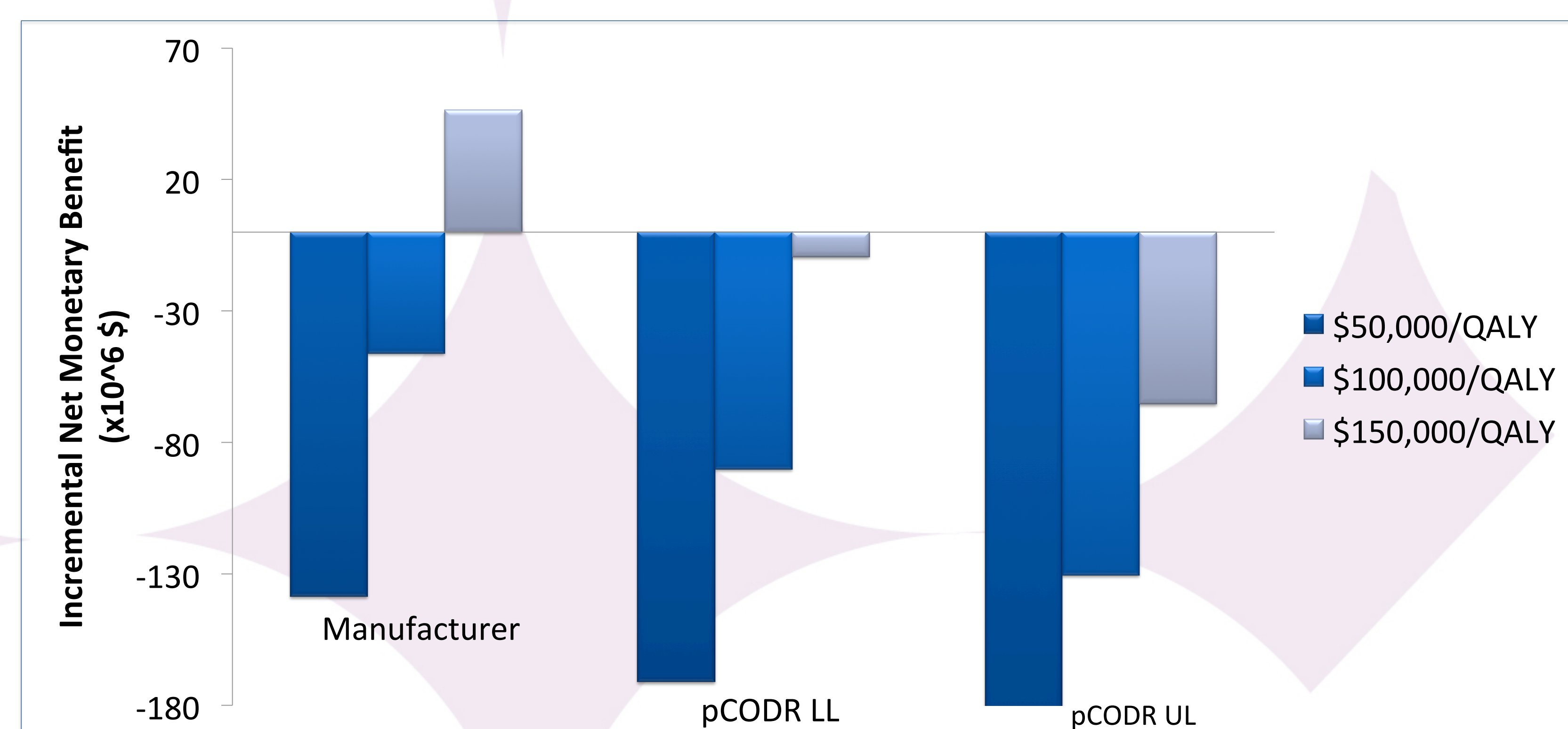


Figure Legend. Graphical representation of the net annual gain/loss of monetary benefits in the absence of negotiations to cost-effectiveness thresholds of \$50,000/QALY, \$100,000/QALY and \$150,000/QALY.

FIGURE 4. Annual Net Population INMB

CONCLUSIONS

- Although an annual gain in QALY with funded drug indications was demonstrated, in the absence of drug price negotiations there was an annual net QALY loss for the population.
- Thus, contrary to the speculated loss of QALY for the time required for drug price negotiations, the results of this study demonstrate significant losses in QALY in the absence of drug price negotiations.
- Accordingly, drug price negotiations for funding decisions is a viable option towards the generation of population gains in health.

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