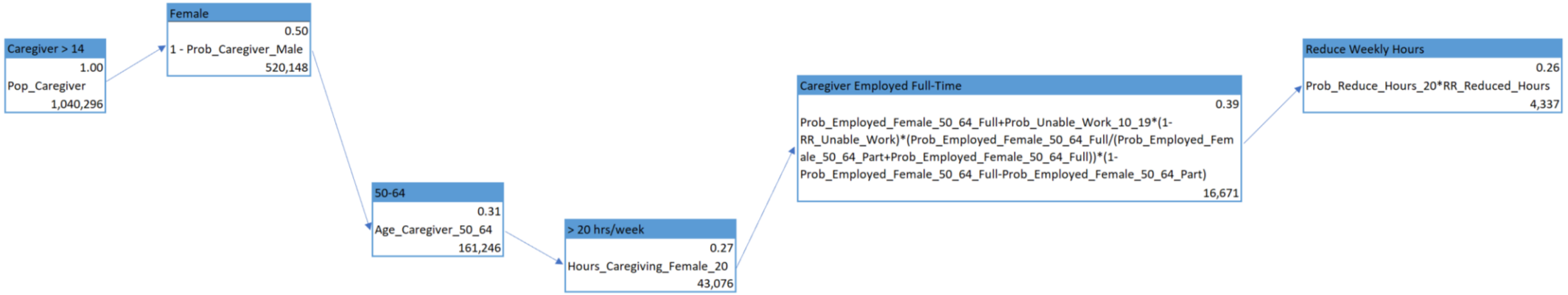
Working Paper:

Health Economic Model of Team CarePal in the Support of Caregivers and Their Loved Ones

The Model

- The model seeks to quantify potential health benefits and cost-savings to various stakeholders and payers.
- Based on cost-effectiveness methods used in health technology assessment (HTA).
- Uses existing research to parameterize the model.
- Finds the total “headroom” for caregivers in terms of cost and reduced health and makes reasonable assumptions about Team CarePal’s ability to alleviate them.

Example Model Pathway



Caregiver Reported St	Caregiver Reported Healt	Caregiver Burnout	Caregiver CHD	Caregiver Mortality	Caregiver Health Utility
0.50	0.37	0.19	0.01	0.00	0.81
Stressed_Caregiving_20*RR_Stress	Health_Loss_Caregiving_20*RR_Health_Loss	Inc_Caregiver_Burden_20*RR_Caregiver_Burden	Inc_CHD_Female_50_64*RR_CHD_Caregiver_50_64*RR_CHD + (1-RR_CHD)*Inc_CHD_Female_50_64	Mort_Female_50_64	(HU_Female_50_64+HU_Dec_Stress*(Stressed_Caregiving_20*RR_Stress)+0.5*HU_Dec_CHD*Inc_CHD_Female_50_64*RR_CHD_Caregiver_50_64*RR_CHD + (1-RR_CHD)*Inc_CHD_Female_50_64) - 0.5*Mort_Female_50_64*(HU_Female_50_64+HU_Dec_Stress*(Stressed_Caregiving_20*RR_Stress)+HU_Dec_CHD*Inc_CHD_Female_50_64*RR_CHD_Caregiver_50_64*RR_CHD + (1-RR_CHD)*Inc_CHD_Female_50_64) + 0.5*((Prob_Patient_LTC_Current*RR_LTC+Prob_Patient_LTC_Potential*(1-RR_LTC))+(Mort_Male_65*Prop_Caree_Male+Mort_Female_65*(1-Prop_Caree_Male)))*(HU_Female_50_64+HU_Dec_CHD*Inc_CHD_Female_50_64*RR_CHD_Caregiver_50_64*RR_CHD + (1-RR_CHD)*Inc_CHD_Female_50_64)
2,164	1,592	826	24	4	3,515

Results

- The results here make reasonable assumptions about the potential of Team CarePal to improve caregiver health and well-being, as well as the effect of these improvements on costs and economic outcomes.
- Reflect costs and benefits over a 1-year period.
- Costs in Canadian $ inflated to 2022. Health Benefit measured in quality adjusted life years (QALYs) and valued at $50,000 per QALY.
- The full model explanation, calculations, and research are contained in the full report: “Health Economic Model of Team CarePal in the Support of Caregivers and Their Loved Ones”.

Case Study: A Mid-Sized Company

When applied to a company with 500 employees with an average age of 45, 60% of whom are female:

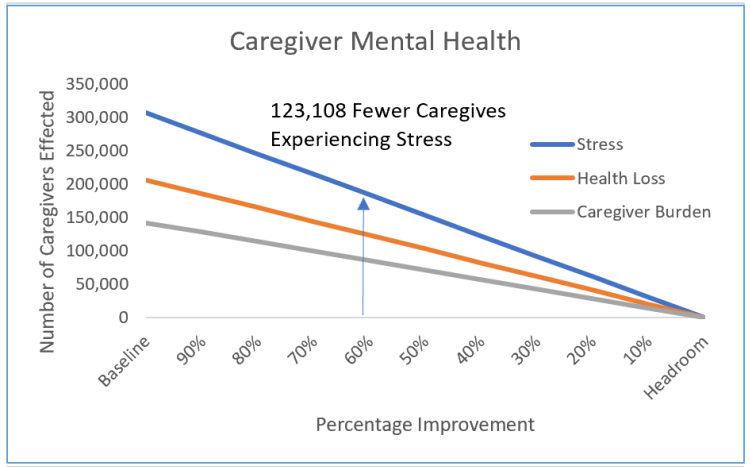
- 26 fewer employees will experience significant stress due to caregiving and 18 fewer employees will experience a health loss.
- The health system saves $6,429 in caregiver health costs and $72,676 in LTC costs for the caree. The QALY gain is worth $103,280.
- The employer and employees gain 11,161 hours of work that would have been missed due to caregiving, worth $563,545 based on the average wage in Alberta.

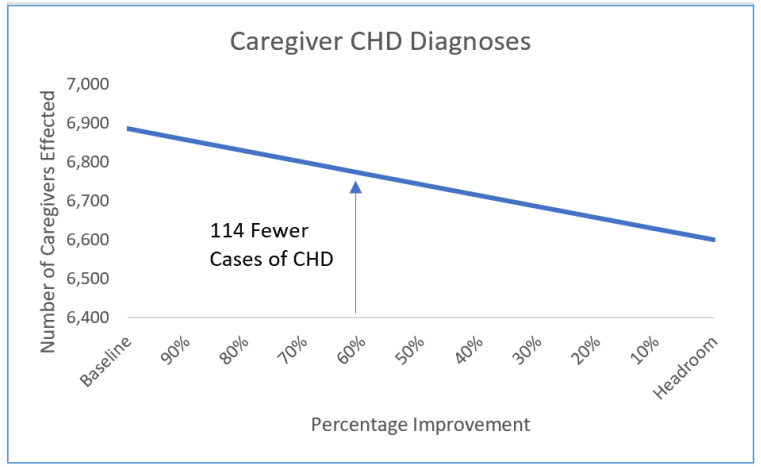
Case Study: A Caregiver Support Organization

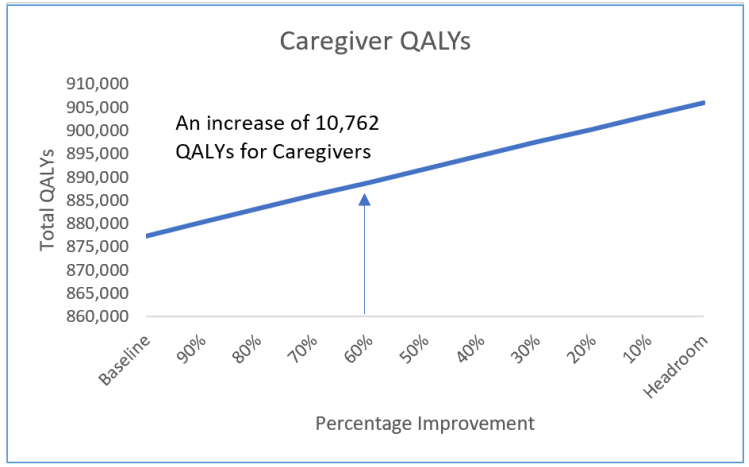
When applied to an organization supporting 1,000 caregivers in Alberta:

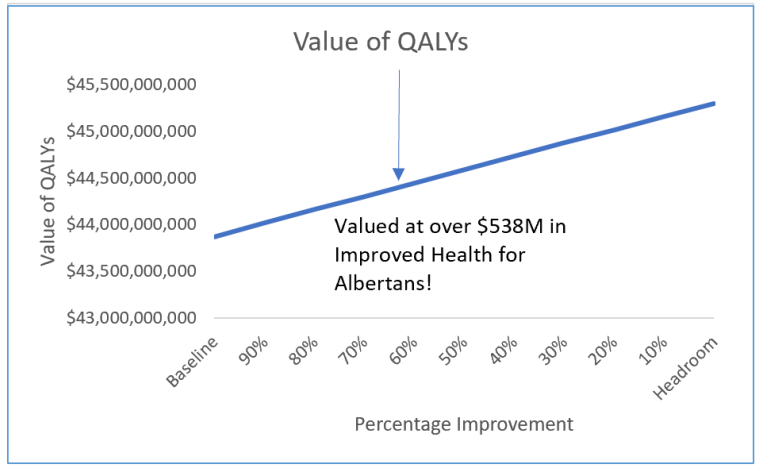
- 118 fewer caregivers will experience significant stress and 80 fewer caregivers will experience a health loss.
- The health system saves $29,435 in caregiver health costs and $332,767 in LTC costs for the caree. The QALY gain is worth $517,244.
- The caregivers gain 43,965 hours of work that would have been missed due to caregiving, worth $2.5M based on the average wage in Alberta.

Budget Impact Analysis: Health Benefits

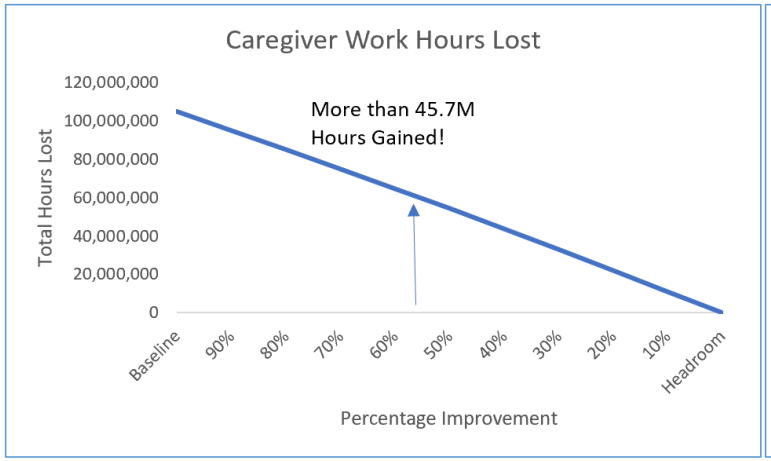


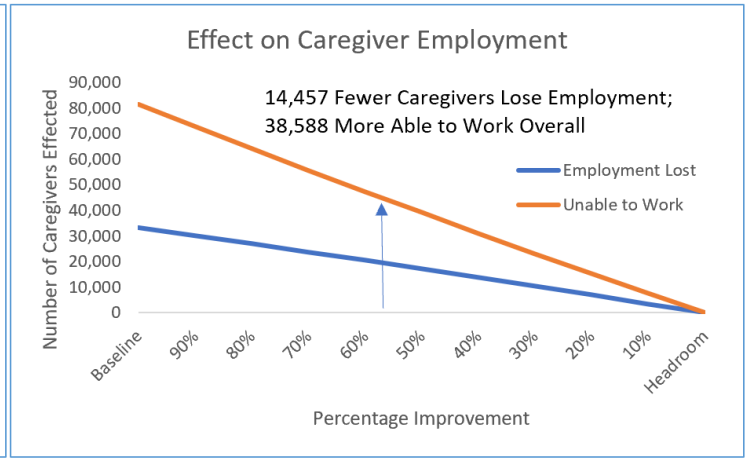


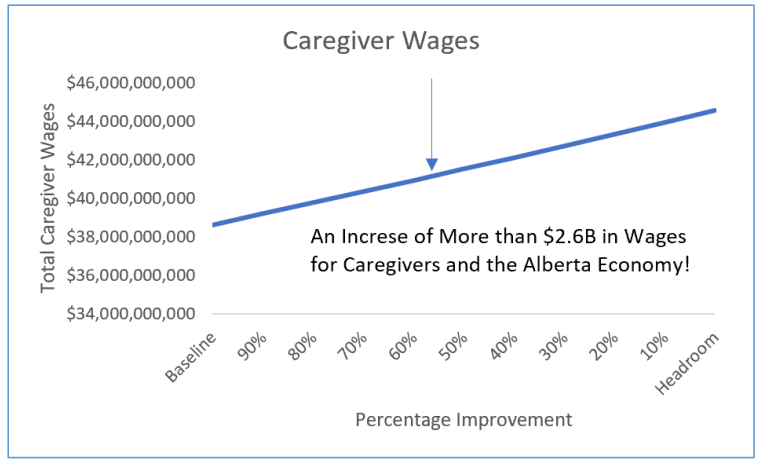




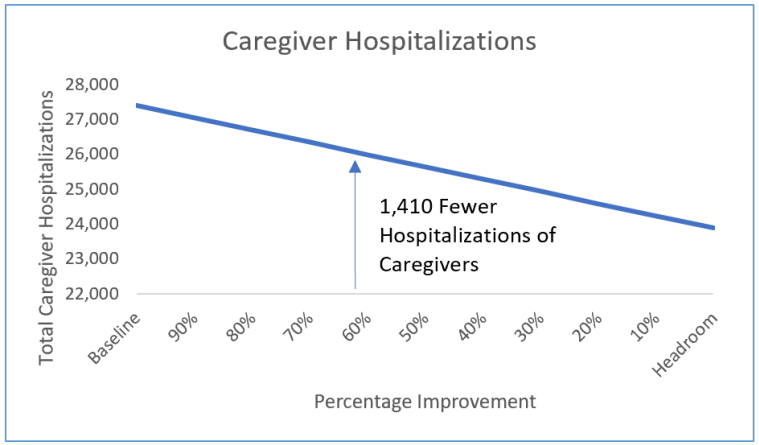
+ Economic Benefits

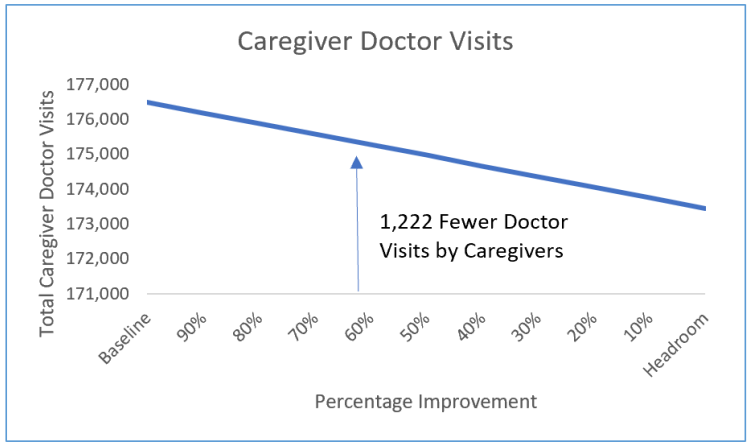


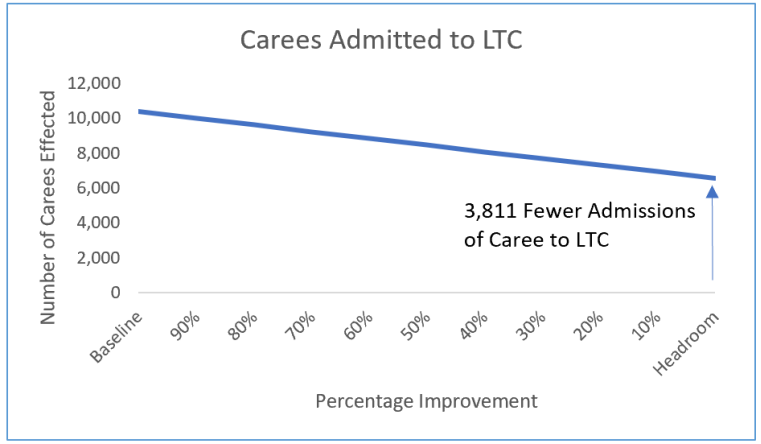


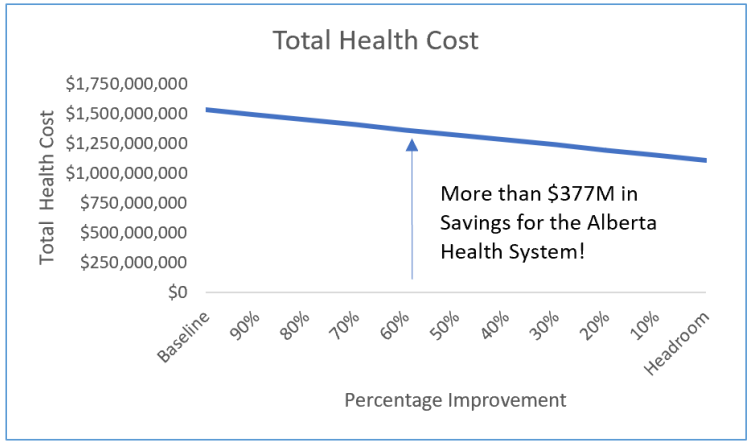


+ Cost Savings

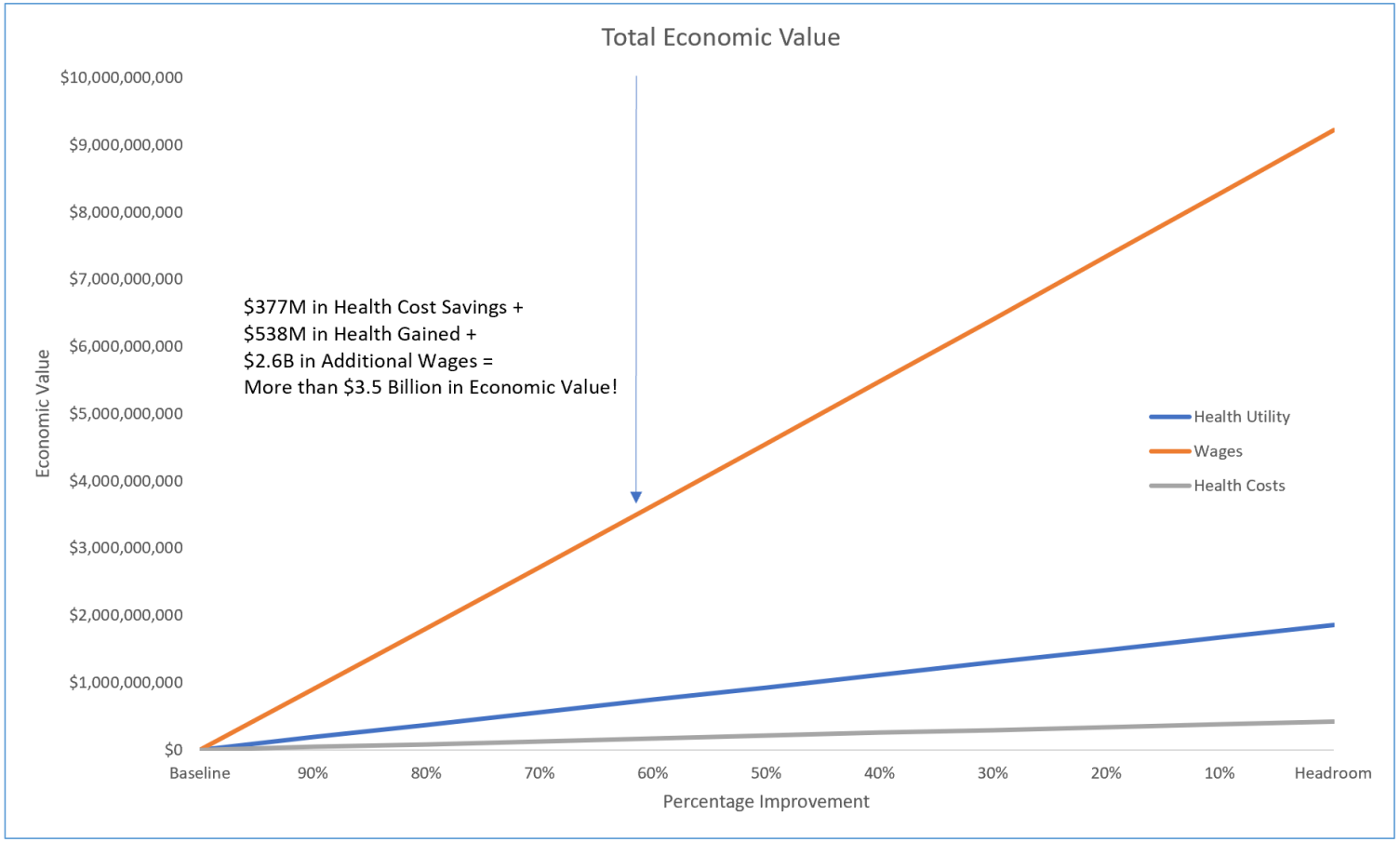








= Significant Monetary Value!



Value per User and Pricing

These values assume that LTC costs are split evenly between individuals and the health system and that earnings are taxed at 30%.

- The total value per user of Team CarePal in this scenario is $3,389 per year. This can be applied to potential payers with $1,449 accrued by the health system, $1,916 by the caregiver, and $2,509 by the employer.
- These values represent the theoretical maximum price that Team CarePal can charge these users and remain cost-effective. Pricing below these levels represents a net-benefit to the health system and caregivers.

A Few Notes

- The model does not capture all the possible benefits of the app, it focuses on a few important aspects of health and costs. It is not meant to be an exhaustive review of potential outcomes but a concise, evidence-based analysis of Team CarePal's main value drivers.
- The model is a working representation of Team CarePal's potential to increase health and save costs. It can be updated with new parameters and effectiveness scenarios as data become available.
- See the report for full methods and calculations.

Thank you!

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