

# The Potential Effect of Future Medical Cost Changes on the Net Cost of Multi-Cancer Early Detection Testing

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## INTRODUCTION

- Multi-cancer early detection (MCED) testing has been developed to simultaneously screen for multiple types of cancer and to shift detection of cancers to earlier stages when compared with standard of care (SoC).
- MCED testing has been projected to improve survival outcomes and lower treatment costs when used with SoC screening.<sup>1</sup>
- Spending on cancer therapeutics in the US is projected to increase >10% annually over the next 5 years, while cost of lab testing has generally remained flat or decreased over time.<sup>2,3</sup>

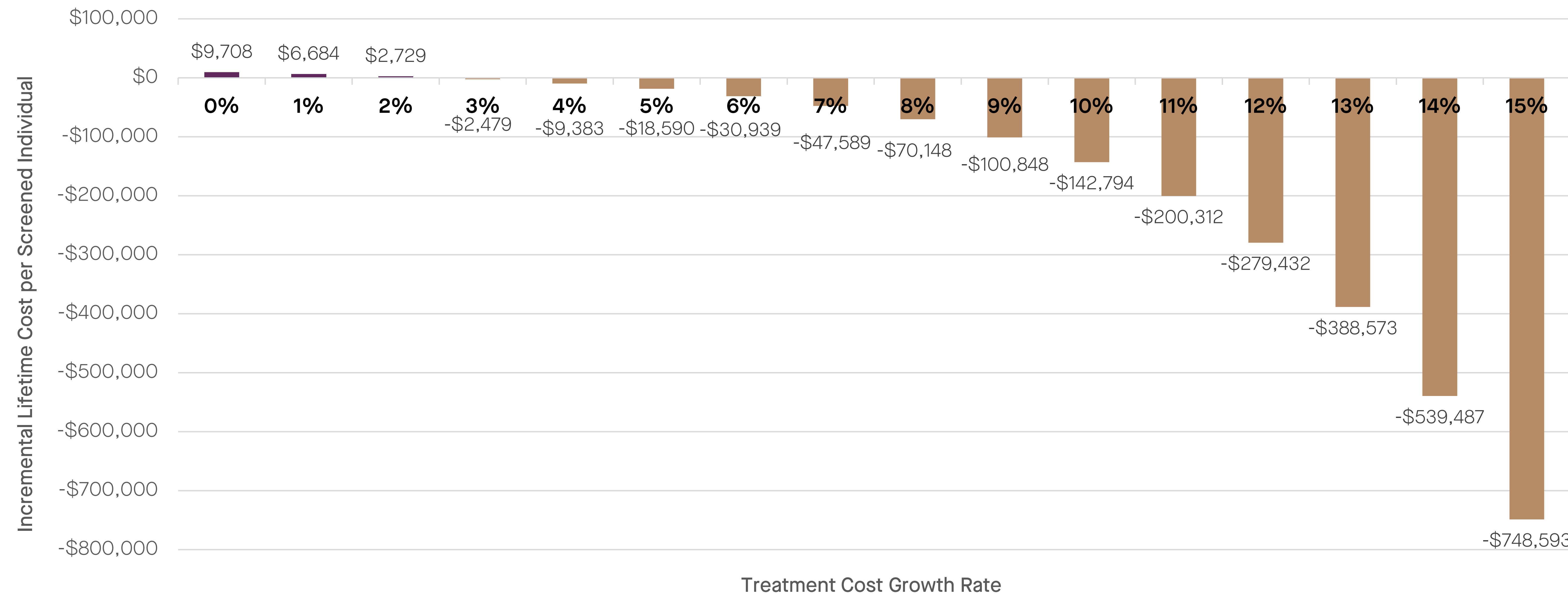
## OBJECTIVE

- This study explores the effect of the differential in future cost changes between cancer treatment and MCED testing on the economic impact of MCED testing.

## KEY RESULTS

- At a MCED cost of \$949, MCED plus SoC and SoC alone were cost-neutral at a cost growth rate of 2.6% in a commercial population. Above this growth rate, total lifetime costs were lower for individuals receiving MCED plus SoC screening as compared to those individuals receiving screening with SoC alone (**Figure 1**).
- If future growth of cancer treatment costs falls to match the historical annual inflation rate (i.e., 3.1%) for overall medical costs, MCED plus SoC and SoC alone are cost neutral at a \$1,091 MCED test cost.<sup>4</sup>

Figure 1. Incremental Lifetime Costs per Screened Individual by Different Cost Growth Rates



Abbreviations: MCED = multi-cancer early detection

## CONCLUSIONS

MCED testing may achieve cost-neutrality or saving along with improved survival if future cancer treatment costs are increasing at a rate as low as the historical inflation rate for overall medical costs.

### References

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### Disclosures

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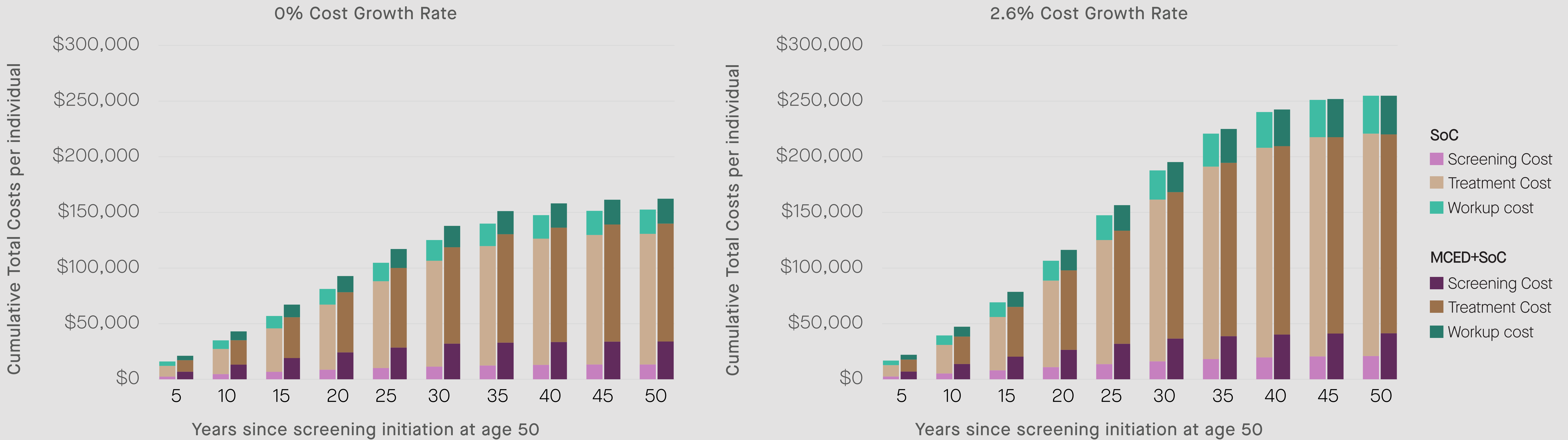
## METHODS

- A state-transition model compared annual MCED testing for ages 50-79 plus SoC with SoC alone over their lifetime; all outcomes were undiscounted. Nineteen solid cancer groupings representing 80% of cancer incidence were considered.<sup>5,6</sup>
- To account for earlier diagnosis, the model stage and time shifted individuals detected by MCED testing to be diagnosed at an earlier stage and age compared with SoC screening alone. Further details of the model approach have been described previously.<sup>1</sup>
- Medical costs, including treatment, workup, and SoC screening costs, were accrued at constant annual cost growth rates. MCED cost was assumed to remain constant over time.
- The analysis estimated the cost growth rate which yielded cost-neutrality over the individuals' lifetime between testing with MCED plus SoC vs. SoC alone in a commercial population.

## RESULTS

- Over the model time horizon (50 years), the overall direction was treatment costs increased and screening and workup costs decreased as a proportion of cumulative total costs per individual at a 0% and 2.6% cost growth rate and a MCED test price of \$949 (**Figure 2**).
- For example, year five yielded \$10,749 (49%) in treatment costs, \$6,973 (32%) in screening costs and \$4,289 (19%) in workup costs (\$22,011 total costs) per individual as compared to year 50 yielding \$178,649 (70%) in treatment costs, \$41,397 (16%) in screening costs and \$34,795 (14%) in workup costs (\$254,841 total costs) per individual at a 2.6% cost growth rate.

Figure 2. Cumulative Total Screening, Treatment, and Workup Costs per Individual Over Lifetime for MCED+SoC and SoC Arms (for 0% vs. 2.6% Cost Growth Rate)



Abbreviations: MCED = multi-cancer early detection; SoC = standard of care

Note: Results are based on an MCED price of \$949. Cumulative cost data are reported every 5 years over the model time horizon. Individuals stop receiving MCED testing after age 79 years, so screening costs included after that time are for SoC screening tests only.