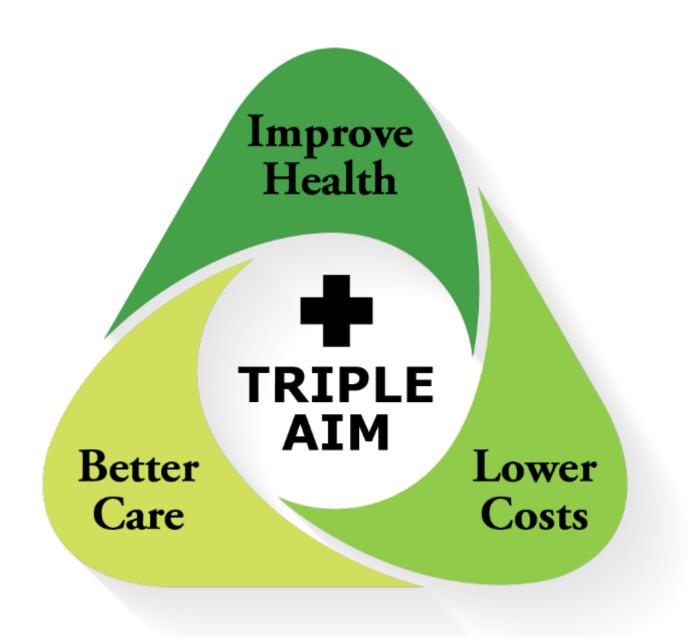
# **Teleretinal Diabetic Retinopathy Screening is Cost Saving in a Rural Accountable Care Organization**

## PURPOSE

- We hypothesize that annual teleretinal screening for diabetic retinopathy will be cost-effective compared to annual live exam using decision-tree and probabilistic sensitivity analysis
- The use of teleretinal screening (TRS) increases diabetic retinopathy (DR) screening adherence and reduces vision loss
- However, it is unclear if TRS is cost-effective when DR management includes expensive intravitreal anti-VEGF injections in an Accountable Care Organization (ACO) in which incentives for care are shifted



### **METHODS**

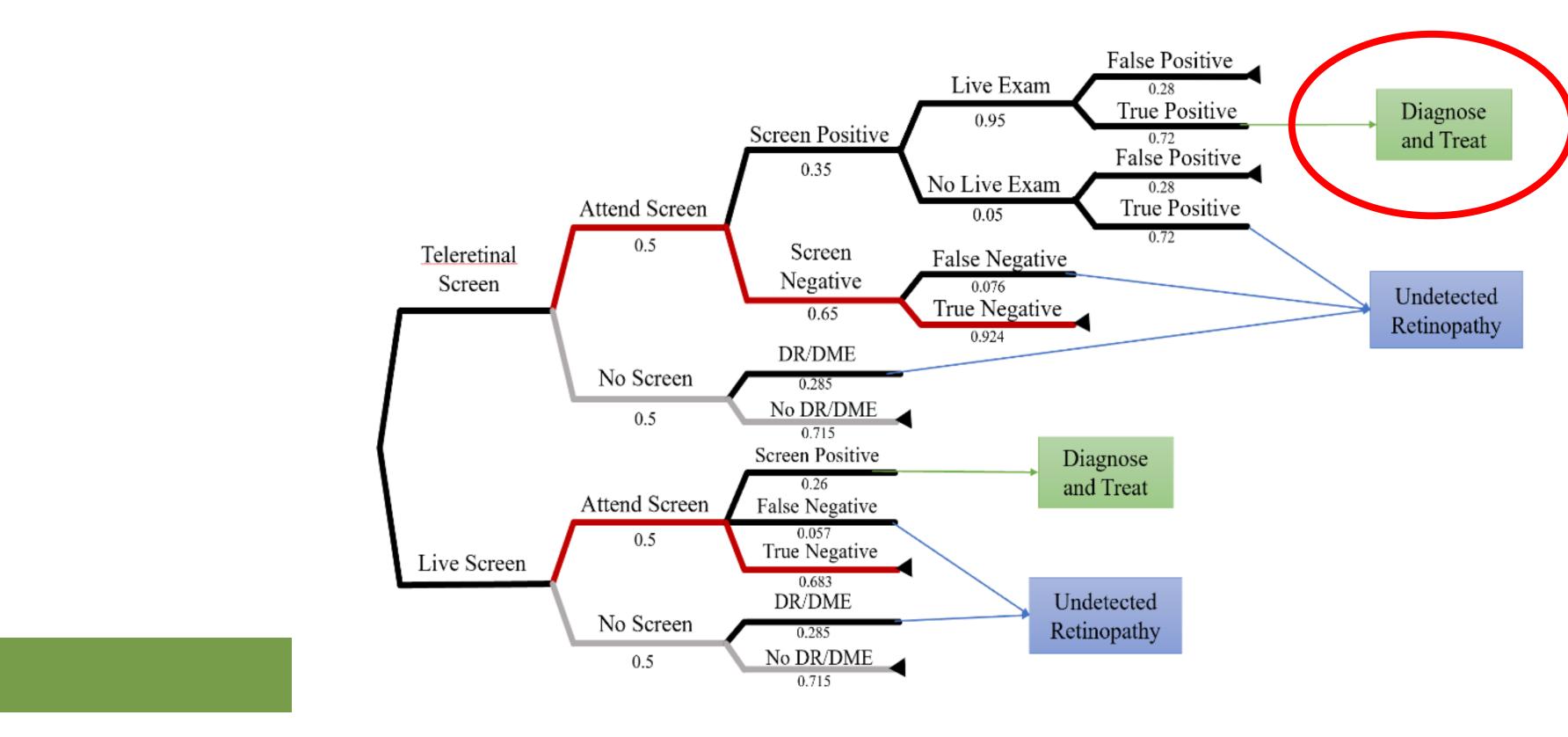
- TRS and live screening were compared using decision-tree analysis with TreeAge Pro software
- The disability weight (DW) of vision impairment and the oneyear direct medical costs of managing patients who screen positive were considered, based on epidemiologic studies, Medicare allowable costs, clinical trials listing DR treatment costs, and other decision-tree analyses
- Probabilistic sensitivity analysis with Monte Carlo simulation for 100,000 trials was used to account for the uncertainty. Outcomes include average incremental costs (\$) and DW and the probability that TRS is cost-saving and more effective
- One-way sensitivity analysis was used to determine the impact of varying TRS costs

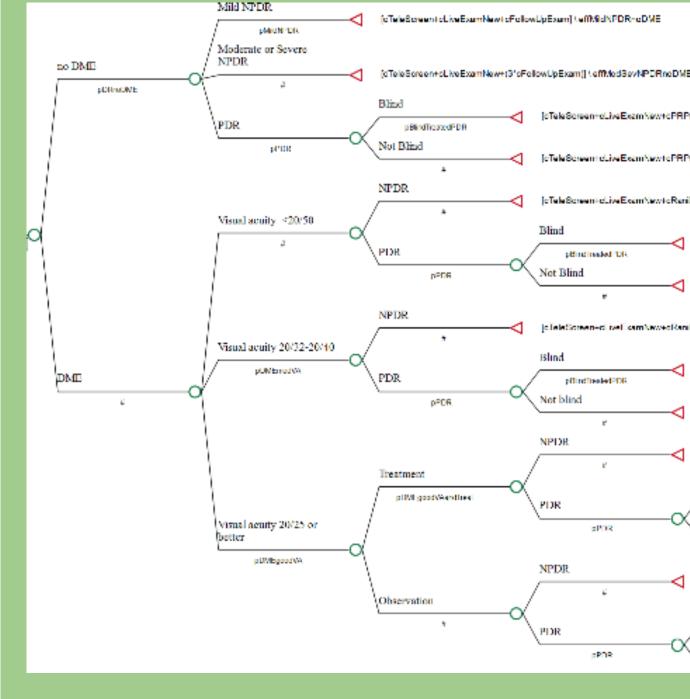
University of Vermont HEALTHNETWORK

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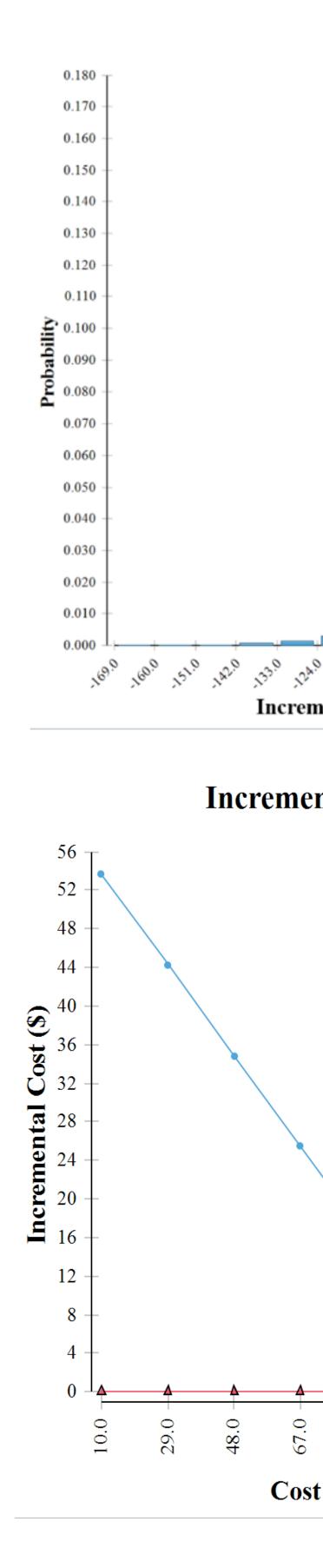
### RESULTS

- Including all potential outcomes and treatments, the average cost/person is \$230 in the TRS intervention and \$292 in the live screen intervention
- On average, TRS saves \$62 compared to live screening and is cost-saving 98.4% of the time
- The average DW outcome is 0.001 for both groups, with TRS resulting in a lower DW 55.9% of the time
- When all other variables are constant, the TRS group has a lower average cost/person when the cost of screening is less than \$160

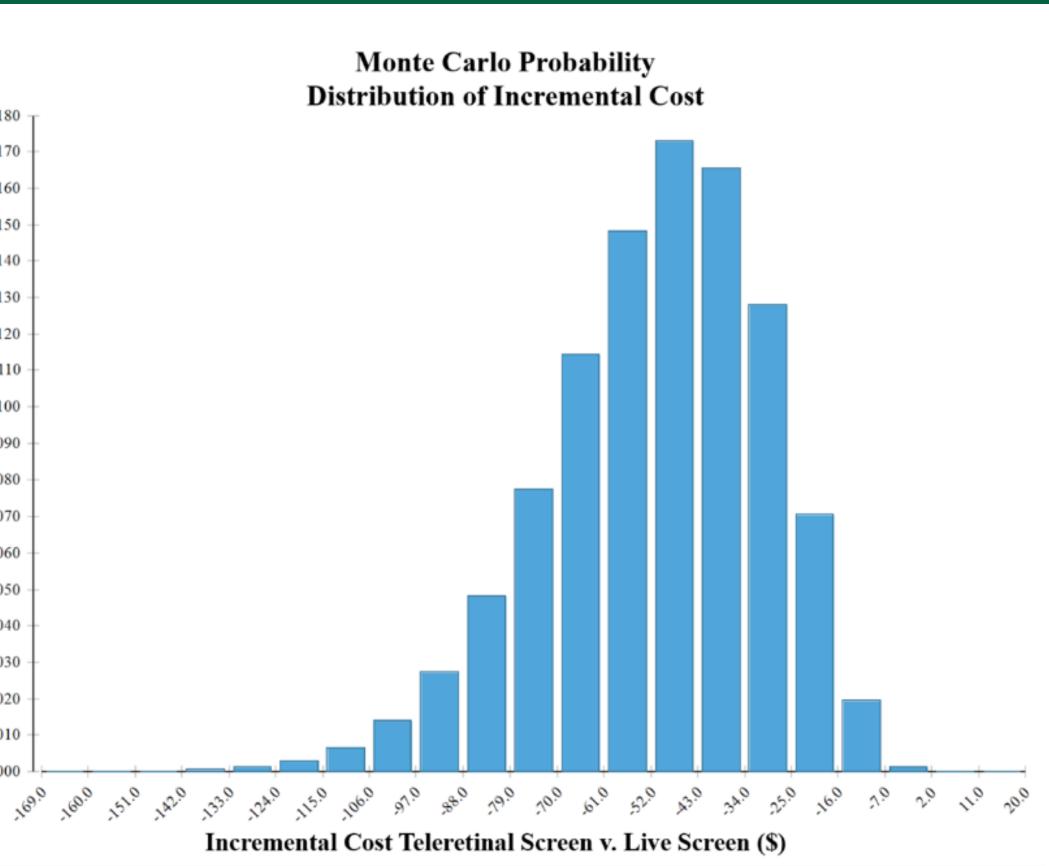




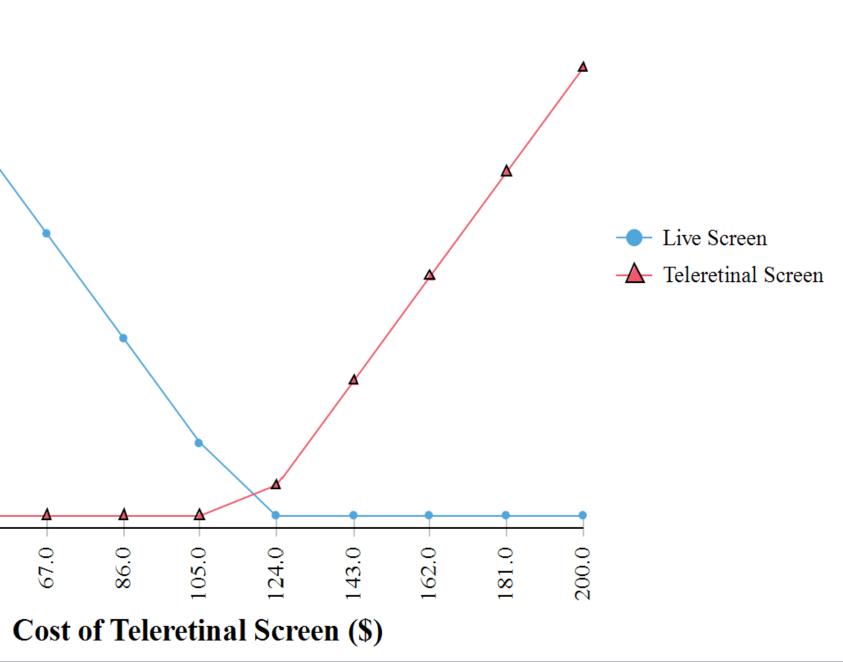
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- the TRS encounter
- decision tree analysis



**Incremental Cost vs. Cost of Teleretinal Screen** 



# CONCLUSIONS

• Based on this model, TRS was cost-saving and equally effective compared to live screening, largely driven by the lower cost of

• An ACO is also responsible for the patient experience of care, which is likely improved by TRS, but difficult to quantify in

Future work needs to be done, however, to characterize the indirect and long-term costs of TRS for DR

