Need to implement the screening strategy to advance HCV elimination in Italy: a cost-consequences analysis

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CEIS TOR VERGATA Economic Evaluation and HTA

A delay in HCV diagnosis in the general population from 1968 to 1948, yet not addressed for the HCV free of charge screening, will have important clinical and economic consequences in Italy.

It is necessary to guarantee dedicated funds and efficiency of the system for the screening of the whole 1948-1988 birth cohort indicated to be a cost-efficacious strategy in achieving the HCV elimination goals in Italy

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1 Introduction

Italy has the greatest burden of hepatitis C virus (HCV) infection in Western Europe. Screening strategy represents a crucial prevention tool to achieve HCV elimination in Italy.[1,2]

2 Aim

We evaluated the cost-consequences of different strategies for HCV active infection diagnosis depending on the coverage rates obtained in the next 5 years in Italy.

3 Method

We designed a probabilistic model to estimate the epidemiological, clinical and economic outcomes of different screening coverage uptakes, considering the direct costs of HCV management according to each disease stage (fibrosis stage) in the Italian context. The model starts with a decision probabilistic tree that simulates 5 years of HCV testing in the general population cohort born between the years 1948- 1967 with a coverage rate that depends on the scenarios considered (15,485,565 individuals to be tested). The model assumes a fibrosis distribution for the diagnosed patients through screening as it is reported in the study of Kondili et al. 2020[1] based on infection and disease burdens of yet to treat patient This first part of the model identified and categorized all HCV chronic patients potentially diagnosed by each screening option evaluated in this modelling analysis. A Markov model was considered for the additional 5 years of follow-up. We compared strategies in terms of the total costs of screening according to each screening strategies, coverage rate per year and treatment costs of an active HCV infection versus the disease costs of those not diagnosed over time.The simulations consider two alternative coverage rate and timing during the five simulated: 1) Incremental approach (coverage rates equal to 10%, 20%, 25%, 30% respectively at years 1, 2, 3 and 4) and 2) Fast approach (50% at years 1, 2, 3 and 4).

5 Conclusions

A delay in HCV diagnosis in the general population from 1968 to 1948, yet not addressed for the HCV free of charge screening, will have important clinical and economic consequences in Italy.

6 Acknowledgements

Authors wish to thank Gilead Science for the Unconditional Support for modelling design of this study to Center for Economic and International Studies Economic Evaluations and HTA of University of Tor Vergata Rome Italy

7 References

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4 Results

The overall estimated number of HCV active infections to be diagnosed in the target population was 106,200. The incremental approach scenario estimated 62% of the target population diagnosed vs 94% in the fast approach scenario. An increase in total costs was observed in the fast approach scenario up to the year 5, but at year 6 the overall cost starts to decrease due to a higher number of diagnosed patients versus the incremental approach in which the costs continue to increase. (Figure 1). At ten years' time-horizon, the model estimated a cumulative reduction of 5,406 persons living in the HCC health state, 4,614 in decompensated cirrhosis and 11,081 liver-related deaths. Cost reduction of € 74 million was estimated if a fast approach was adopted versus the incremental one.
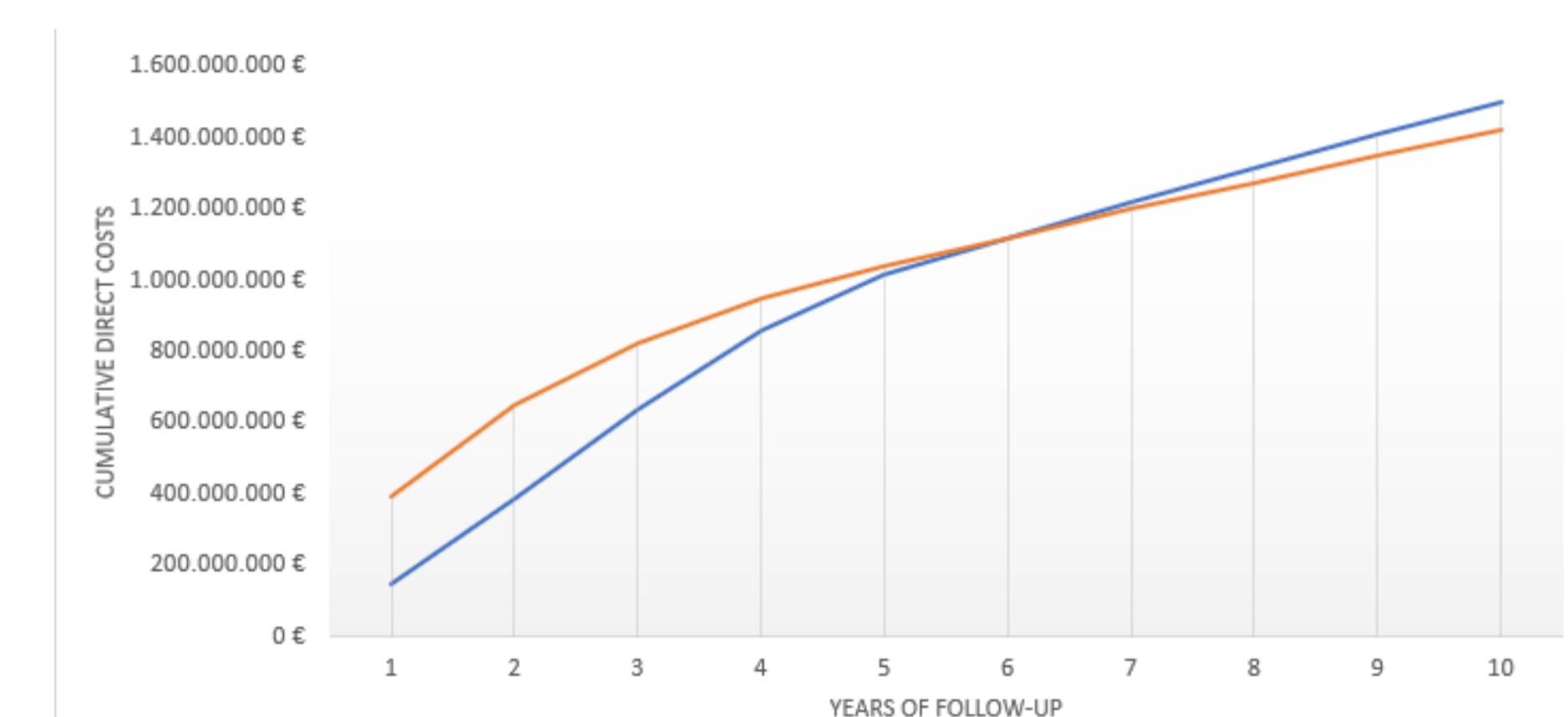
Cumulative diagnosed patients at each year of simulation

Incremental Scenario | Fast Scenario
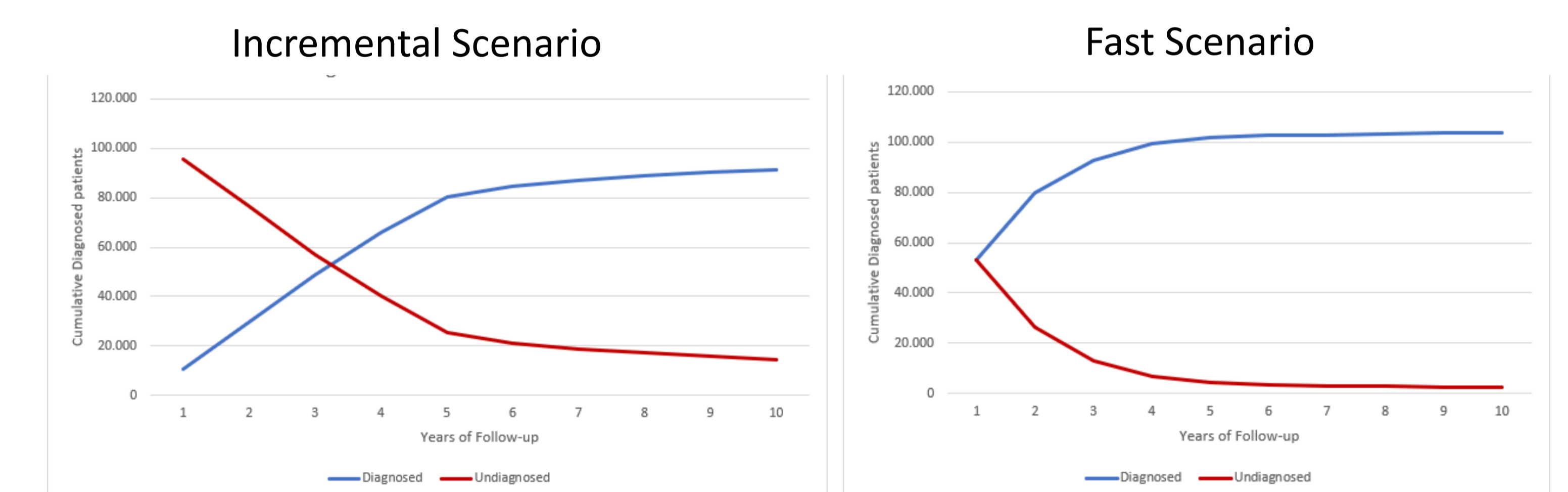
Decision Tree model scheme
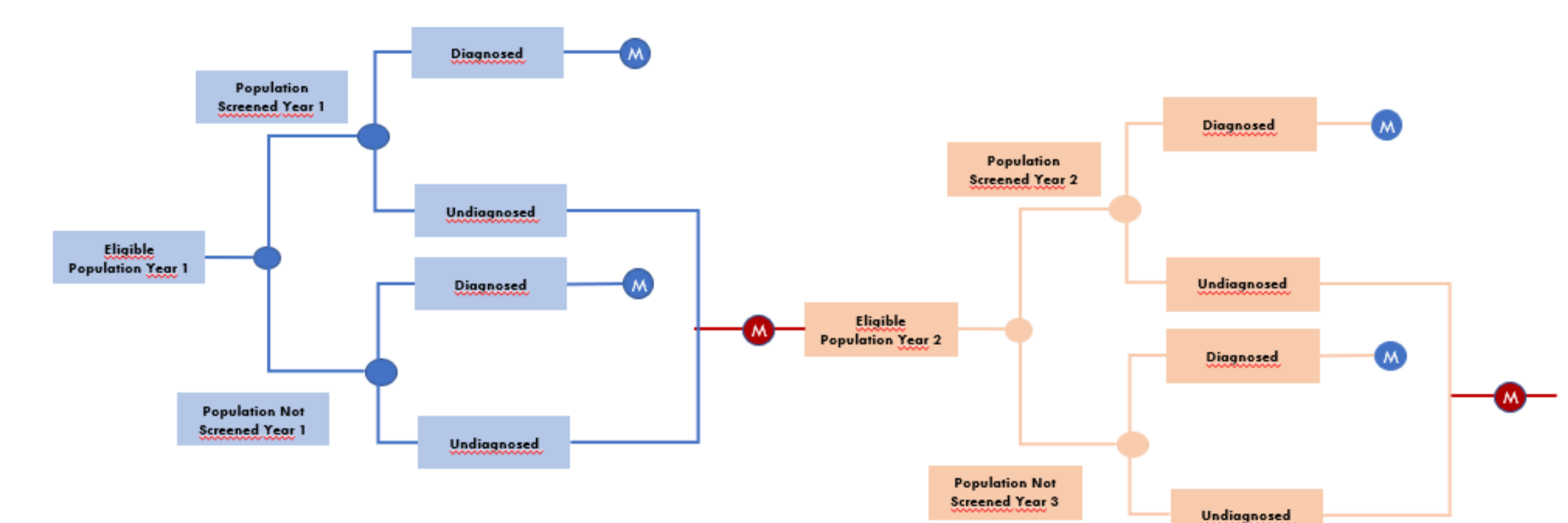
Costs for each Scenario

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