Cost-Effectiveness of Implementing Spirometry Screening for COPD in Primary Care in Russia

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OBJECTIVE

This study aimed to assess the clinical and economic results of implementing organized spirometry screening in primary care settings in Russia among high-risk patients.

METHOD

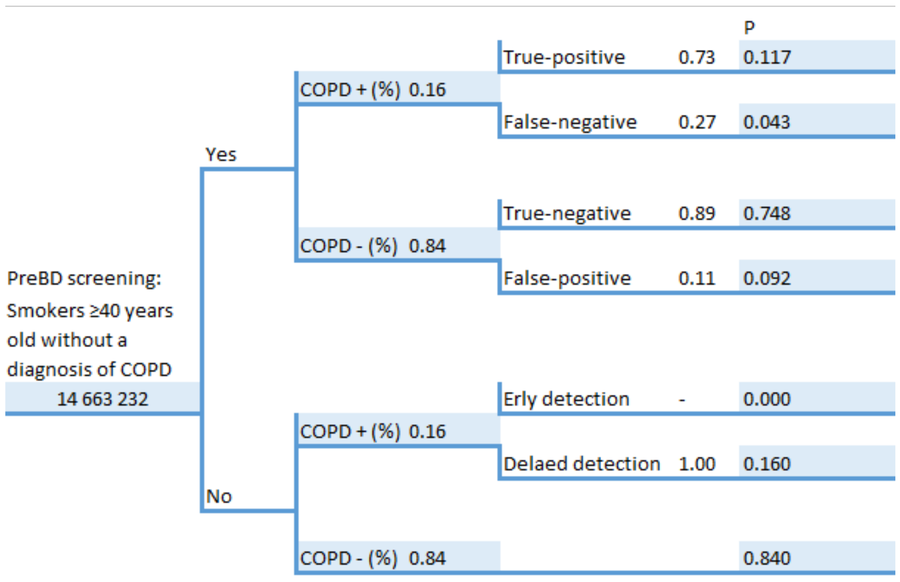
A decision tree combined with the Markov model was developed to compare the absence of an organized COPD screening program with a scenario involving prebronchodilator portable spirometry screening for individuals aged > 40 with a smoking history. The model was based on Russian epidemiological data, the ARCTIC study data, and national healthcare tariffs. The costs included: the cost of the portable spirometer, the cost of COPD verification, the cost of exacerbation treatment, and production losses. The costs of COPD-supporting therapy and other patient costs were not considered. The time horizon of the research was 10 years. The costs were discounted by 5% annually. The friction cost method was used for the calculation of production losses. Key outcomes included the number of additional diagnosed cases, the number of COPD exacerbations, LYGs. The analysis was conducted from the healthcare perspective and additionally considered the production losses. One-way sensitivity analysis was performed.

RESULTS

Over 10 years, the spirometry screening program is expected to:

- increase the number of diagnosed COPD cases in Russia from 800,000 to 3 million
- prevent 7 million new exacerbations
- save over 450,000 person-years
- reduce healthcare costs by 11 billion RUB, productivity losses by 31.4 billion RUB, and total costs by 42.4 billion RUB

ICER was not estimated because the program is a dominant strategy.



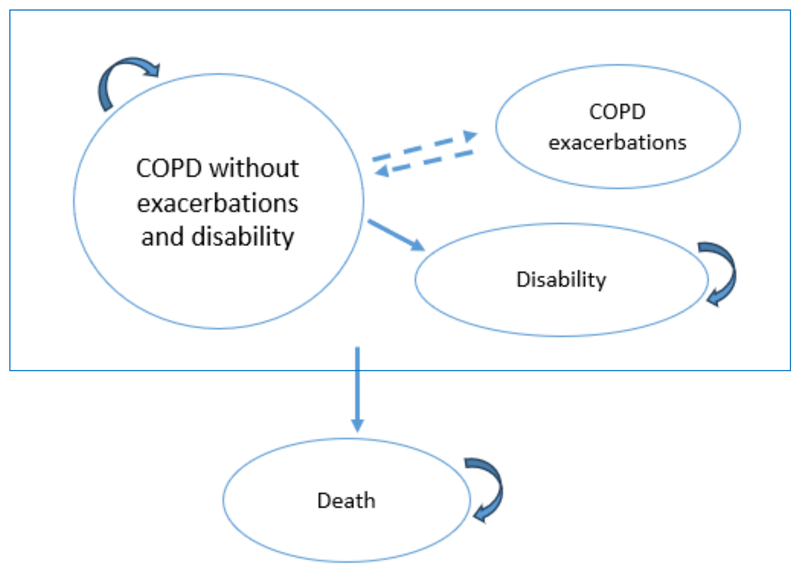


Figure 1 – Decision tree and Markov model for assessing the clinical and economic effectiveness of implementing COPD screening in the Russian Federation compared to the current situation of the lack of organized COPD screening

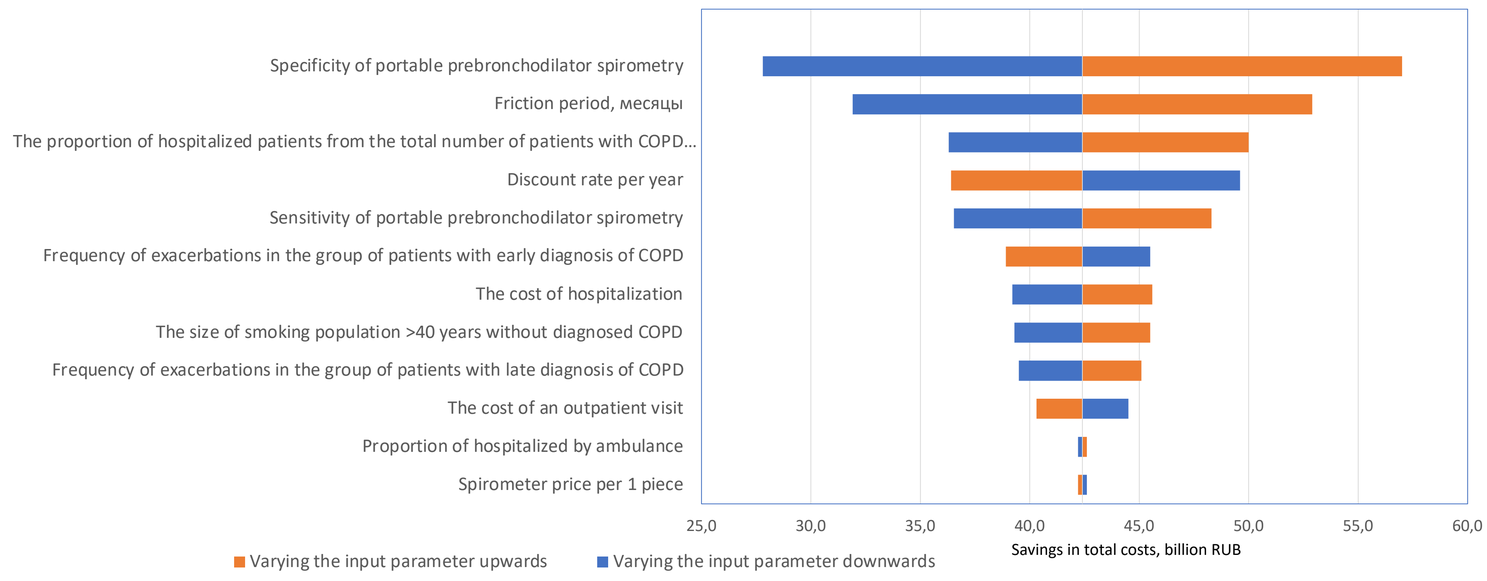


Figure 2 – Sensitivity analysis

LIMITATIONS

Only the healthcare costs and the production losses were considered. The costs associated with maintenance drug therapy were not taken into account, as they relate to the costs of patients and their families.

CONCLUSIONS

Organized spirometry screening in Russian primary care settings is a cost-saving strategy to improve early detection of COPD in the high-risk population.

CONTACT INFORMATION

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