

Economic evaluation of mailing self-sampling qFIT kits to non-participants in colorectal cancer screening in the Czech Republic

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Objectives

• Czech colorectal cancer screening programme

- Colorectal cancer (CRC) screening programme was initiated in 2000.
- Programme with personal invitations was set up in 2014.
- Men and women aged over 50 years have the option to select either a quantitative faecal immunochemical test (qFIT) biennially OR a screening colonoscopy every 10 years.

• Pilot study of mailing self-sampling qFIT kits

- Study was conducted to **increase participation by mailed self-sampling qFIT kits directly to men or women not participating in screening.**
- This study aimed to perform an **economic model-based evaluation of the costs and benefits** of this screening strategy.

Methods

Study participants

- Men and women aged 50–70 years without recent participation in the CRC screening programme.
- No previous treatment associated with colorectal lesions or cancer.
- Meet other criteria for personal invitation.
- The study recruited 9,962 eligible persons through a health insurance company (General Health Insurance Company of the Czech Republic; the scheme is described below).

Data sources for statistical analysis

- Patient-level data from National registries of the Czech National Health Information System (Czech National Cancer Registry, National Registry of Reimbursed Health Services), pilot study and Registry of Preventive Colonoscopies were used for data analysis.

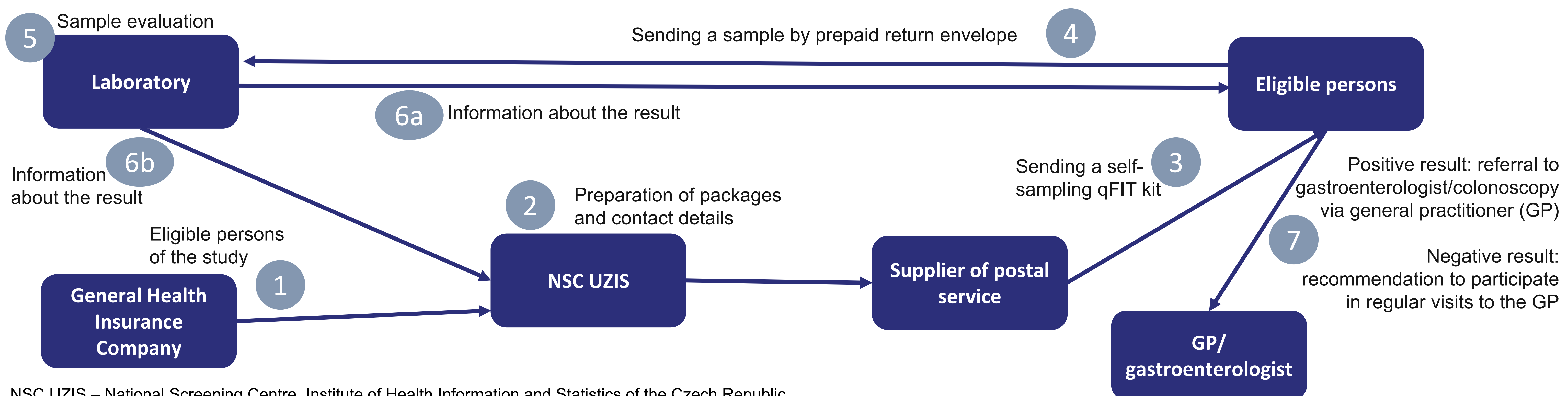
Estimating the lifetime costs of colorectal cancer treatment

- Average annual costs of treatment (according phases of the disease – initial, continuous, terminal) were estimated by comparing the cost of all health care for cases and controls (persons with/without CRC).
- Using the overall survival of patients with CRC, the lifetime cost of cancer treatment was estimated (with an annual discount factor of 3%).

Costs and estimated benefits of the intervention

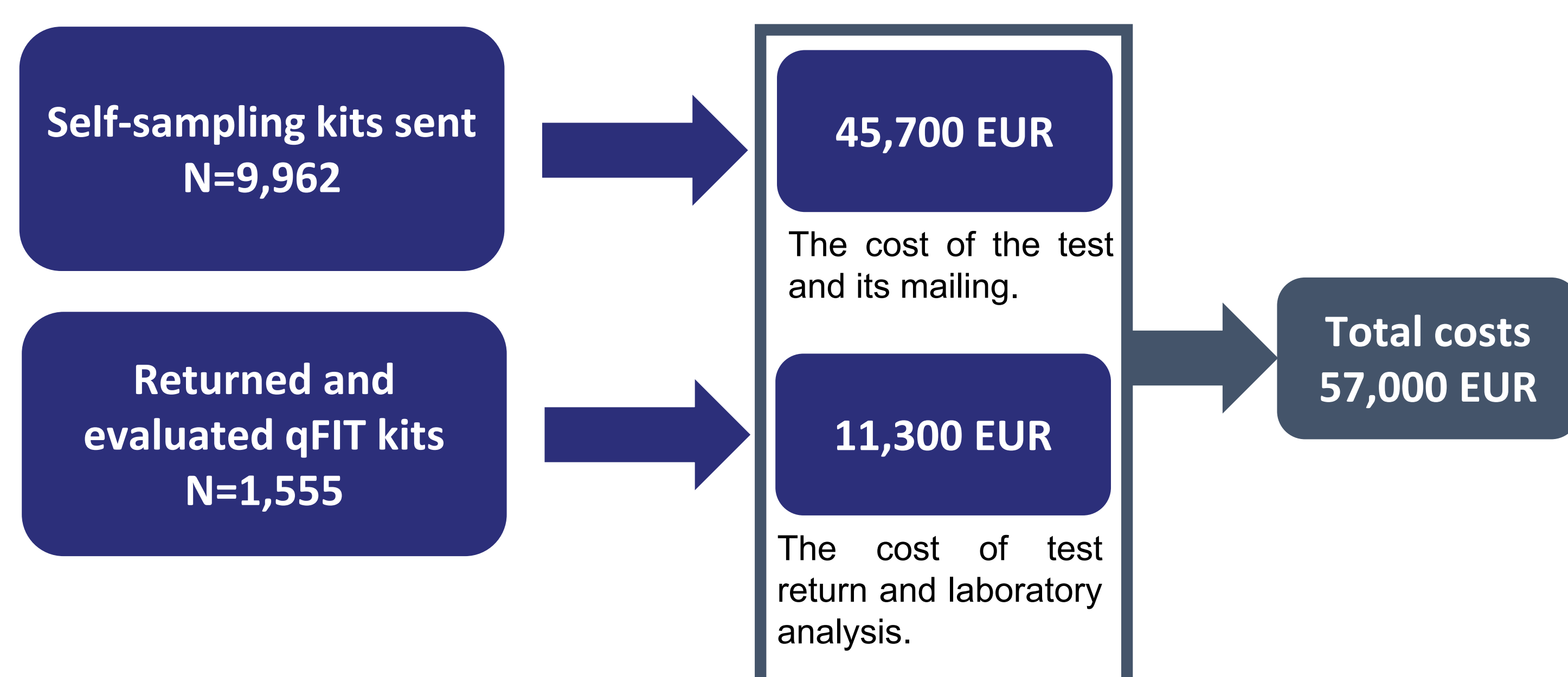
- The total cost for mailing and evaluating the kits was calculated from the pilot study data.
- Based on results from the pilot study, nation-specific data and the literature, a simplified natural history of the disease was modelled.
- Number of avoided (treatment costs saved) colorectal cancers due to the study intervention were estimated and discussed in relation to total costs.

Scheme of the mailing of self-sampling qFIT kits



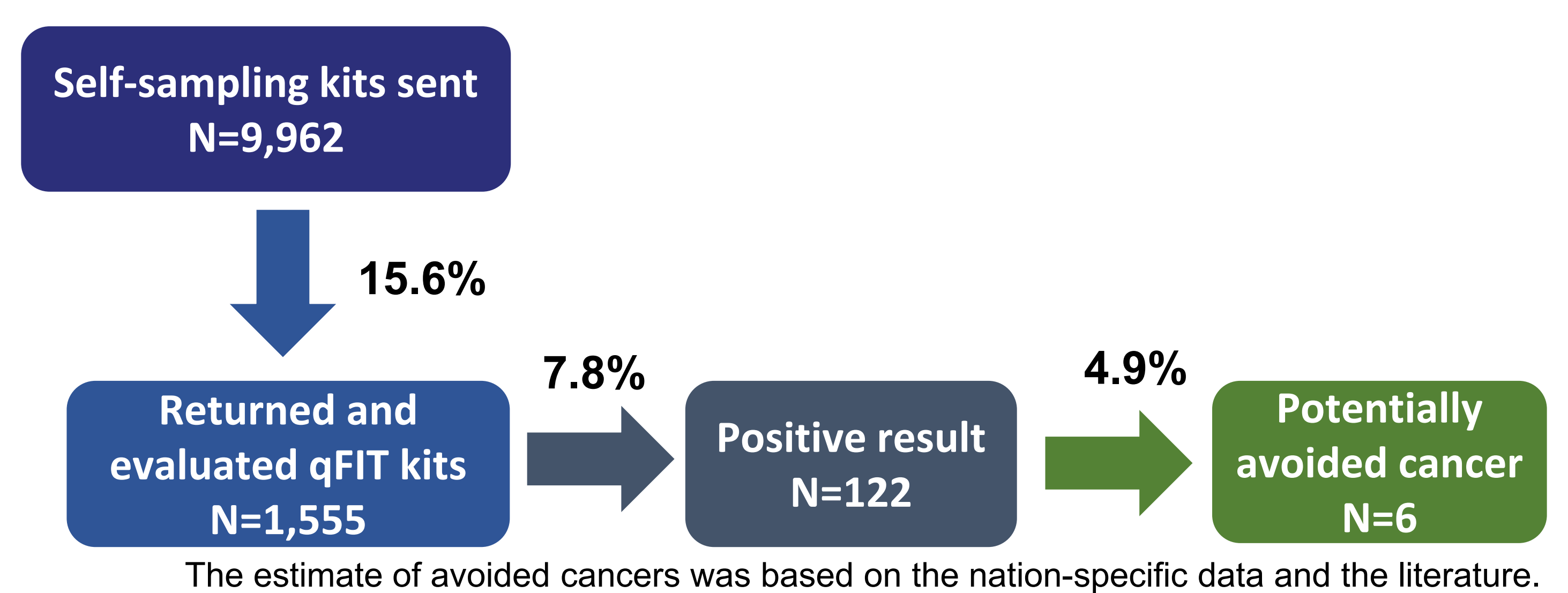
Estimated costs of intervention and treatment of cancer

- The total cost for mailing and evaluating the kits from the pilot study data:



- Estimated average annual treatment costs for CRC patients were approximately 17,000 EUR for the initial phase, 2,000 EUR for the continuous phase, and 19,000 EUR for the terminal phase. Using the overall survival of patients with CRC, the total model-estimated lifetime cost of CRC treatment was 32,500 EUR.

Estimated benefits in the context of costs



- The total costs of the direct mailing qFIT kits within the pilot study was 57,000 EUR. Thus, from the model evaluation, approximately 9,500 EUR was spent per one prevented CRC.
- Through mailing qFIT kits, colorectal cancers and precancers were prevented, and the total estimated savings per treatment for participants in the pilot study was approximately 195,000 EUR. When comparing the total cost of the screening process and the potential cost savings from prevented cancer treatment, this screening approach appears to be cost-saving.

Conclusion

- The direct mailing of self-sampling qFIT kits have the potential to be a cost-saving method. Further research is needed to validate these findings.

- Self-sampling qFIT kit is a potentially feasible method of reaching persons not participating in screening.

Thanks to the numerous collaborators and stakeholders, including general practitioners, laboratory specialists, and gastroenterologists, for their invaluable contributions.