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Implementing Automated Patient Tracking and Engagement in General Practice to Improve Colorectal Cancer Screening: Workflow Evaluation Protocol

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Background and Objectives

Colorectal cancer (CRC) screening uptake in Latvia remains below national targets, with participation hindered by an overreliance on opportunistic offers during routine visits and manual recall processes in general practice. These conventional approaches are time-consuming for clinical staff, inconsistently applied across practices, and frequently fail to engage eligible but less frequent attenders. To address these gaps, we developed a digital patient-tracking and engagement tool designed to streamline end-to-end CRC screening workflows in primary care. The tool integrates with practice registers to identify age-eligible patients based on national guidelines, automates personalized invitations via SMS to collect a fecal immunochemical test (FIT) kit from the practice, and provides reminders at key intervals to support timely completion. It also offers real-time dashboards to monitor each patient's status (invited, kit collected, sample returned, result reported), flags delays or drop-off points, and prompts follow-up actions (e.g., repeat invitations or result communication).

This submission outlines the implementation plan and workflow evaluation protocol. The implementation plan details governance and stakeholder engagement, technical deployment (including data integration and role-based access), staff training, patient communication strategies, and phased rollout across participating practices.

Methods

The tool will automatically generate lists of eligible patients, send invitations and reminders (SMS), and provide staff with a dashboard displaying screening status (invited, kit collected, test completed, overdue). A before and after evaluation will be conducted across participating GP practices over 12 months. Data will be drawn from tool activity logs, and short staff surveys/time-logs. Primary workflow outcomes include: invitation coverage among eligible patients, staff time spent on recalls, proportion of patients with clearly documented screening status, and FIT kit pick-up and test completion rates. Qualitative interviews will explore staff experience and perceived workflow impact.

Results

We anticipate that automated invitations will substantially increase invitation coverage compared with usual practice, reduce administrative workload, improve visibility of patient status, and create a more systematic, reliable workflow for CRC screening. Improvements in kit collection and return rates are also expected. Initial deployment underscores that automation can reduce manual workload only when integrated into routine practice workflows and supported by staff training and clear governance. Preliminary results will be available by May 2026.

Conclusions/Implementation

This digital intervention supports more equitable, timely, and proactive preventive care by strengthening CRC screening processes in primary care. By reducing manual workload and increasing reach, it will promote digital innovation, sustainable health-promoting services, and improved access to prevention. Findings will inform future scale-up and integration with national screening programs.