Interventions to ensure follow-up of positive FIT: An international survey of screening programs

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Conflicts of interest

- I have no commercial conflicts of interest
- I collaborate closely with CRC screening programs from the Canton of Vaud, Switzerland and Kaiser Permanente Northern California, USA
Interventions to ensure follow-up of positive fecal immunochemical tests: An international survey of screening programs

Kevin Selby, Carlo Senore, Martin Wong, Folasade P May, Samir Gupta and Peter S Liang

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Low rates of follow-up colonoscopy after positive fecal blood tests can be a problem

- Efficacy depends on colonoscopy follow-up of positive tests
- Meta-analysis: Follow-up 84% in clinical trials, but 62% in screening programs (82% in more recent publications)
- Patients are often reluctant, providers may not realize importance or appropriate next steps
- No specific guidelines exist regarding time to colonoscopy or how to ensure follow-up

UEG journal. 2019;7(3):424-448
Dis Colon Rectum. 2006;49:1002-10
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Colonoscopy delays lead to increased risk of advanced cancer...

Analysis of 70,000+ FIT-positive patients shows an increased risk of CRC, and specifically advanced-stage CRC, when time to colonoscopy is greater than 6 months.

...and even increased CRC mortality

Zorzi et al. Gut. In review
Seen another way

Modifiable Screening Failure Types and Risk of Death From Colorectal Cancer

Individual failure types

- Never screened: 34% (2.5)
- Screened, not up to date: 25% (2.4)
- Surveillance, not up to date: 33% (2.1)
- Failure of follow-up: 27% (7.3)

Legend

- CRC deaths
- CRC-free

†Compared with people who were up-to-date

Doubeni et al. *Gastroenterology* 2019

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Methods

• Cross-sectional electronic survey of screening programs
• E-mail to program leadership April 2019 with one reminder and additional requests for clarifications
• 20 questions:
  – Program type
  – FIT-positive follow-up goals and realization
  – Interventions used to increase FIT-positive follow-up
  – Results stratified by race and socio-economic status, if available

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Results

- 35 of 58 programs responded (60%)
- 28 organized, 7 opportunistic
- 20 national, 8 regional, 7 local programs
- 26 offer FIT/gFOBT only, 1 FIT+sig, 8 FIT+colo
- Size: 2,000 to 8.5 million

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Colonoscopy cost and targets

• Colonoscopy completion at 6 months ranged from 39% to 100%, mean 79% (SD 16%)
• Colonoscopy free of charge in 24 of 35 programs, cost varied from $10 to $200 in others
• Target for time from test result to colonoscopy:
  – Ranged from 2 weeks to ‘within fiscal year’ or none
  – 15/35 ≤1 month, 12 between 1 - 3 months, 3 between 3 - 6 months, 5 >6 months or no target

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Table 1. Interventions to improve the follow-up of positive tests and frequency of use (n = 35).

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Implemented (%)</th>
<th>Difference in means, a %</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient-level interventions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notifying patients of test results by mail</td>
<td>17 (49)</td>
<td>+5</td>
<td>0.34</td>
</tr>
<tr>
<td>Notifying patients of test results by telephone</td>
<td>10 (29)</td>
<td>+7</td>
<td>0.28</td>
</tr>
<tr>
<td>Providing default appointment for colonoscopy intake</td>
<td>8 (23)</td>
<td>+4</td>
<td>0.58</td>
</tr>
<tr>
<td>Patient navigators</td>
<td>20 (57)</td>
<td>+11</td>
<td>0.05</td>
</tr>
<tr>
<td>Providing diagnostic colonoscopy free of charge</td>
<td>24 (69)</td>
<td>+7</td>
<td>0.32</td>
</tr>
<tr>
<td>Other patient-level interventions(^b)</td>
<td>4 (11)</td>
<td>-2</td>
<td>0.86</td>
</tr>
<tr>
<td><strong>Provider-level interventions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notifying primary care provider of results</td>
<td>25 (71)</td>
<td>+4</td>
<td>0.52</td>
</tr>
<tr>
<td>Sending reminders to PCPs when no colonoscopy completed</td>
<td>16 (46)</td>
<td>+12</td>
<td>0.03</td>
</tr>
<tr>
<td>Giving providers performance data on colonoscopy completion</td>
<td>13 (37)</td>
<td>+4</td>
<td>0.49</td>
</tr>
<tr>
<td>Other provider-level interventions(^c)</td>
<td>4 (11)</td>
<td>0</td>
<td>0.99</td>
</tr>
<tr>
<td><strong>System-level interventions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automated referral to endoscopist</td>
<td>8 (23)</td>
<td>+5</td>
<td>0.42</td>
</tr>
<tr>
<td>Registry to track FIT-positive patients</td>
<td>22 (63)</td>
<td>+3</td>
<td>0.58</td>
</tr>
<tr>
<td>Other system-level interventions(^d)</td>
<td>4 (11)</td>
<td>+2</td>
<td>0.81</td>
</tr>
</tbody>
</table>

\(^a\)Comparison of mean colonoscopy completion at six months in programs with and without implementation of intervention.
\(^b\)Other patient-level: Repeat notification in place of re-invitation at two years after positive test; Reminder text messages; Program individually contacts and reminds participants without a primary care provider.
\(^c\)Other provider-level: Primary Care Provider notified of refusals; Information provided to regional commissioners; Training program for providers.
\(^d\)Other system-level: All patients are assessed by a navigator nurse prior to colonoscopy; Gastroenterology clinics are responsible for colonoscopy follow-up for those living in their geographic area and receive specific financial allocations for meeting performance targets; Central registry tracks colonoscopy quality.

Note: Values in bold are statistically significant to \(\leq 0.05\).
How does this look in practice?

- A small program: Canton of Vaud
- A big program: Kaiser Permanente Northern California
Primary care provider notified

Referral made

GI receives referral or accesses FIT positive patient list

2 to 4 attempts to contact patient

Certified letter if no phone or secure-mail contact

Patient given result and appointment scheduled

Colonoscopy logistics, risks and preparation explained

Colonoscopy completed

<table>
<thead>
<tr>
<th>Implementation dates</th>
<th>Organizational supports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing</td>
<td>Goal of colonoscopy follow-up within 30 days of positive result</td>
</tr>
<tr>
<td>2006-08</td>
<td>Adequate colonoscopy capacity (staff and endoscopy suites)</td>
</tr>
<tr>
<td>2009-12</td>
<td>Registry of FIT-positive patients with real-time updates</td>
</tr>
<tr>
<td>2013-16</td>
<td>Gastroenterology staff member designated responsible (NP, PA or MA)</td>
</tr>
<tr>
<td></td>
<td>Financial reward to medical center for attaining colonoscopy access targets</td>
</tr>
</tbody>
</table>


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Vaud, Switzerland

- About 225 positive FIT in 2019
- Target follow-up: 3 months
- 82% colonoscopy completion at 6 months, >90% at 12 months
- Patients and providers notified of result by mail
- Patients included via GP → GP responsibility for positive tests
- Central registry maintained to remind GP
- Program assumes ultimate responsibility
Findings

• Non-adherence with colonoscopy after a FIT-positive has important clinical consequences
• Interventions associated with higher compliance:
  – Use of primary care provider reminders,
  – Patient navigators, and,
  – A greater overall number of interventions.
• Implementation of these interventions looks very different depending on the size and complexity of a program
Implications

• The proportion of FIT-positive patients who get a colonoscopy is an important quality metric for programs

• Reasonable targets seem to be:
  – ‘Most’ colonoscopies within 3 months
  – >80% colonoscopy completion at 6 months
  – >90% colonoscopy completion at 9 months
  – Pragmatically we probably can’t target 100% compliance

• Additional research is needed to:
  – Better define best practices for ‘patient navigators’
  – Improve messaging for providers

Selby 2020
Thank you

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