COVID-19 and the Dutch national CRC screening program: Short-term outcomes and optimal strategies to mitigate long-term impact

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Key messages

• There was a decrease in colonoscopy capacity, which lead to a decrease in the number of FIT invitations sent

• Temporarily extending the screening interval has the smallest impact in the long-term

• If extra reduction in demand is necessary, increasing the cut-off value could be considered
Background

+- 2 million invitations per year;
1.5 million participants

60-70,000 Colonoscopies per year;
6% CRC, 30% AA

47 μg Hb/g feces;
positivity rate 4.3%

RIVM Monitor 2019:
https://www.rivm.nl/en/media/169811
Background
Screening capacity
FIT invitations

Number of FIT invitations sent per month

![Graph showing the number of FIT invitations sent per month for years 2018, 2019, and 2020. The graph displays the number of invitations on the y-axis and the months from January to November on the x-axis. The graph indicates fluctuations in the number of invitations sent throughout the year.]
FIT invitations

Backlog of invitations compared to average '18 and '19

Number of Invitations

Month

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov

-600,000 -400,000 -200,000 0 200,000
Participation

Participation to FIT per year

Month

Year 2018, 2019, 2020
Participation to pre-colonoscopy intake

- Participation rate
- Month
- Year: 2018, 2019, 2020

Graph showing participation rates over different months and years.
How to cope with disruption?

- Previous studies have shown that catch-up missed individuals could mitigate the long-term impact of increased CRC risk*
- New waves of the virus are occurring and suspected
- Pressure on health care increases
  → Lower colonoscopy capacity, while at the same time backlog needed to be caught up

*(de Jonge et al., 2021)
Dutch National Institute for Public Health and the Environment:

‘What would be the best strategy to temporarily decrease colonoscopy demand?’
Simulation Dutch CRC screening

MISCAN-Colon model compared different strategies for 30 months after restart:

1. Increasing FIT cut-off
2. Skipping age-groups
3. Extending screening interval

Outcomes of interest:
- Colonoscopy capacity in 2020 and 2021
- Life years lost between 2020 and 2050

→ 12 different strategies compared to a situation in which missed individuals are caught up and no colonoscopy restrictions
Impact colonoscopy capacity

Reduction in colonoscopy demand in 2020 and 2021

- Increasing cut-off to 60 µg Hb/g faeces
- Skipping 63- and 65-year-olds
- Extending screening interval to 30 months
Impact LYs lost

Life years lost (2020-2050)

- Increasing cut-off to 60 µg Hb/g feces
- Skipping 63- and 65-year-olds
- Extending screening interval to 30 months

Reduction in colonoscopy demand in 2020 and 2021

- Increasing cut-off to 60 µg Hb/g faeces
- Skipping 63- and 65-year-olds
- Extending screening interval to 30 months
Extending screening interval

Life years lost (2020-2050)

- 28 months
- 30 months
- 32 months
- 34 months
- 36 months
Extending screening and colonoscopy capacity

Reduction in colonoscopy demand

If extending to 36 months is not appropriate, increasing cut-off to 55 µg Hb/g feces resulted in 2,500 extra LYs lost.
Key messages

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- Temporarily extending the screening interval has the smallest impact in the long-term.
- If extra reduction in demand is necessary, increasing the cut-off value could be considered.
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