How to increase participation rates in CRC screening?

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Introduction

41.543 km²
17.3 million people
Colorectal cancer in the Netherlands

- 12,871 new cases in 2019
- 82,800 total cases on January 1st, 2019
- 46,000 male, 36,800 female
- 80% of cases older than 60 years
- 5 year survival rate:
  - stadium IV: <5%
  - stadium I: ~90 %
- Mortality: ~5000 deaths per year
Lead-up to the colorectal cancer screening program

2006: Start of pilot screening program
2009: Advisory report issued by the Health Council of the Netherlands
2011: Feasibility study conducted by RIVM
June 2011: Ministerial decision
September 2013: Start of pilot
January 2014: National launch
2019: Roll out complete
The governmental partners for screening

Preparation  Decision  Realisation  Inspection

Health council  MoH  RIVM-CPS  Inspection

Research finance

SO

(Private Party)
Center for population based screening (CPS)

- National coordination and directing stakeholders in the programs
- Financing and directing regional screening organizations
- Setting quality standards
- Monitoring and evaluation
- Organize uniform information to the public and to involved professionals
- Development and improvement of programs
- Advise and inform MoH
Dutch CRC screening programme

- FIT cut-off level 47 µg Hb/g feces (started with 15 µg)
- Age 55 to 75 years
- Men and women
- Personal invitation letter including FIT by postal mail
- Every two years
- Follow-up colonoscopy
Results 2019

- 2,2 ml people invited
- 72% participates (1.568.511)
- 68,8% men vs. 74,1% women
- 67.000 referrals after positive FIT
  - 5,2% of participating men
  - 3,5% of participating women
- 85% went for colonoscopy
  - 3.086 (5%) Colorectal cancer
  - 18.054 (31%) advanced adenomas
- Sensitivity FIT test ~85%

Source: monitor IKNL 2018 & monitoring en evaluatie 2014–2017, LECO
How do we get 72% response rate?
Multiple factors contribute

- Creating consensus
- Piloting
- Careful planning
- Invitation structure
Creating consensus

- Early 2000s: three separate reports urging for colorectal cancer screening from different leading institutes in the Netherlands
  - Dutch Cancer Society
  - ZonMw
  - Dutch Health Council

- 2005: Consensus meeting involving all stakeholders to evaluate fulfilment of requirements for implementation of FOBT screening

- 2006: Pilot studies comparing participation and yield of FIT, gFOBT and sigmoidoscopy
Pilot studies: determining the optimal CRC screening method for the Dutch population

- Trials in three large cities: Amsterdam, Rotterdam and Nijmegen (2009-2014)

![Diagram showing participation rate and yield per 1,000 invitees for different screening methods: gFOBT, FIT, Sigmoidoscopy, Colonoscopy, CTC.](image)

Hol, Gut, 2010; Stoop, Lancet Onco, 2012;
Conclusion of the piloting phase

- Highest uptake with FIT > 60%
- Good uptake during repeated invitations
- Already after two rounds FIT outperformed all test in detection of advanced neoplasia (per 1,000 invitees)
- FIT most cost-effective

Careful planning

Important steps during the planning phase:

- Public tenders for test, laboratories, packaging etc.
- Quality assurance and accreditation programmes for endoscopy, pathology, labs, etc.
- Organizing the IT infrastructure

- **ScreenIT codes Open Source!**
- **See factsheets!**
Organisational structure: invitation procedure

- Active invitation of target population
- Pre-invitation letter – 3 weeks in advance
- Invitation letter including the FIT sample kit by postal mail
- Reminder letter – 6 weeks after invitation

- All automatically generated by the national information system
Organisational structure: Follow-up procedure

- Letter by postal mail with the result (positive/negative test)
- Positives receive an invitation for an intake interview
- All automatically generated by the national information system
- Intake interview can be rescheduled online or by phone

- At intake interview persons scheduled for colonoscopy (if appropriate)
Is it just because we are Dutch?
Participation in selected organised programmes

- Netherlands: 80%
- Flanders: 50%
- France: 20%
Participation in selected organised programmes

- Netherlands: 80%
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- France: 20%
- Basque country (Spain): 70%
Participation in selected organised programmes

- Netherlands: 80%
- Flanders: 50%
- France: 20%
- Basque country (Spain): 80%
- Basque departamento (France): 10%
Secret to high participation in Dutch CRC programme

- High participation in Dutch programme can be attributed to multiple factors of which the Dutch culture is probably the least important one.

- To achieve high participation it is important to:
  - Create consensus
  - Carefully pilot and plan
  - Have well-organised invitation procedure
Remember...
Remaining challenges

- Reach Low-socioeconomic status (SES) & city vs. rural
- Reach more men
- Exclude participants not eligible for screening/colonoscopy
- Sample taking can be better
- Sustainability
- Risk Stratification
- Lowering age group
- Etc etc etc...
QUESTIONS?

ScreenIT Open Source: https://github.com/FSB-Source
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