



National Institute for Public Health  
and the Environment  
*Ministry of Health, Welfare and Sport*

# How to increase participation rates in CRC screening?

Iris Seriese  
Program Manager Dutch CRC Screening



# Introduction

41.543 km<sup>2</sup>

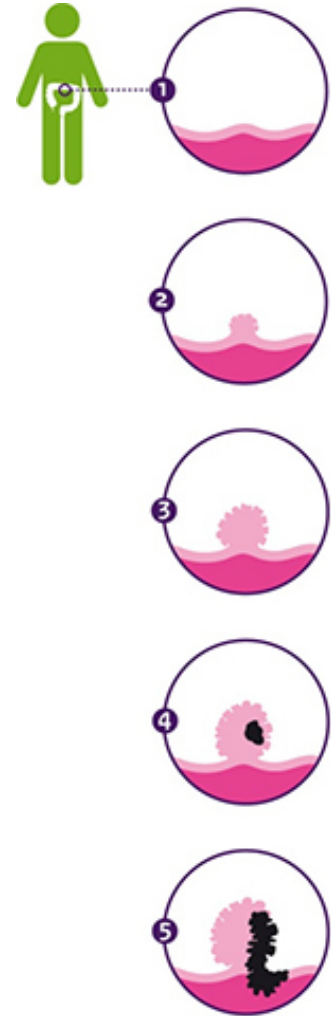
17,3 million people





# 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





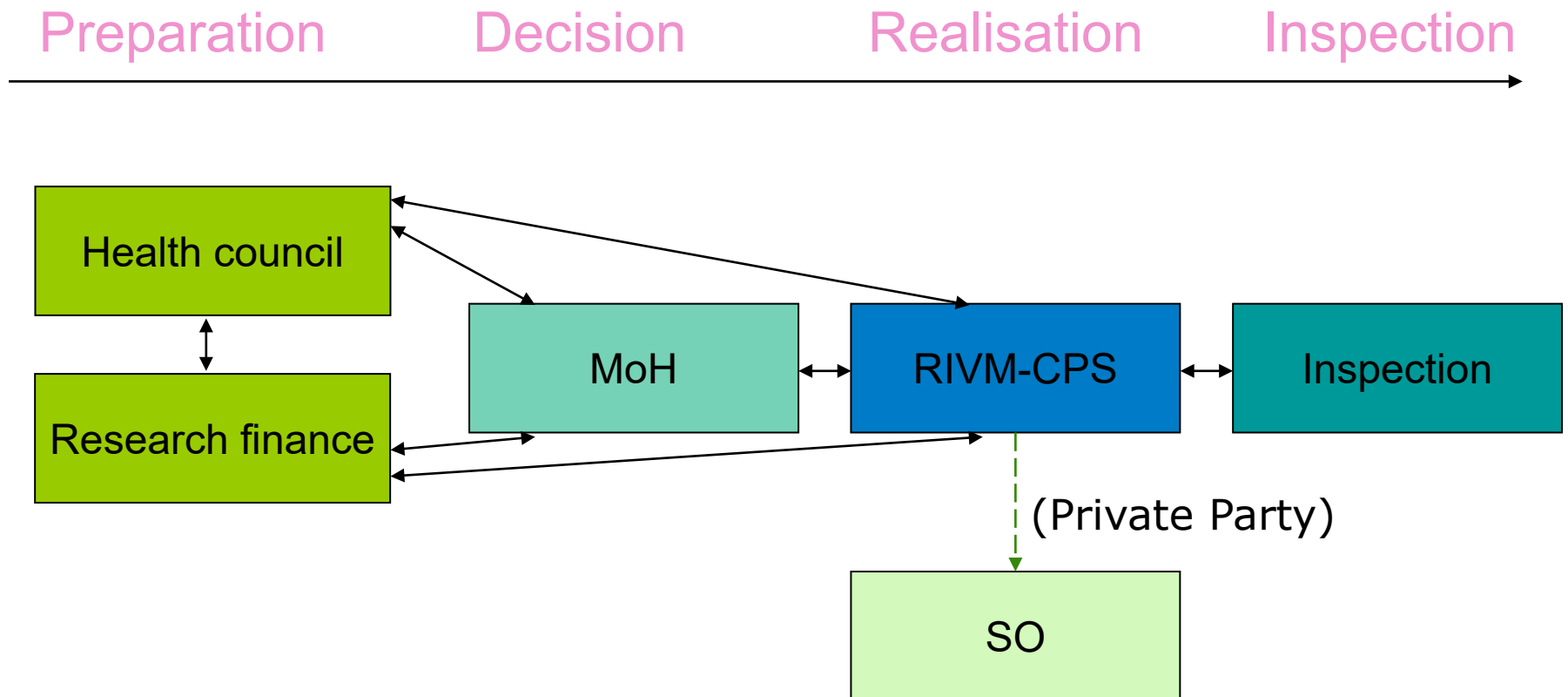
# Lead-up to the colorectal cancer screening program

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





## 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

RIVM-CPS





# Dutch CRC screening programme

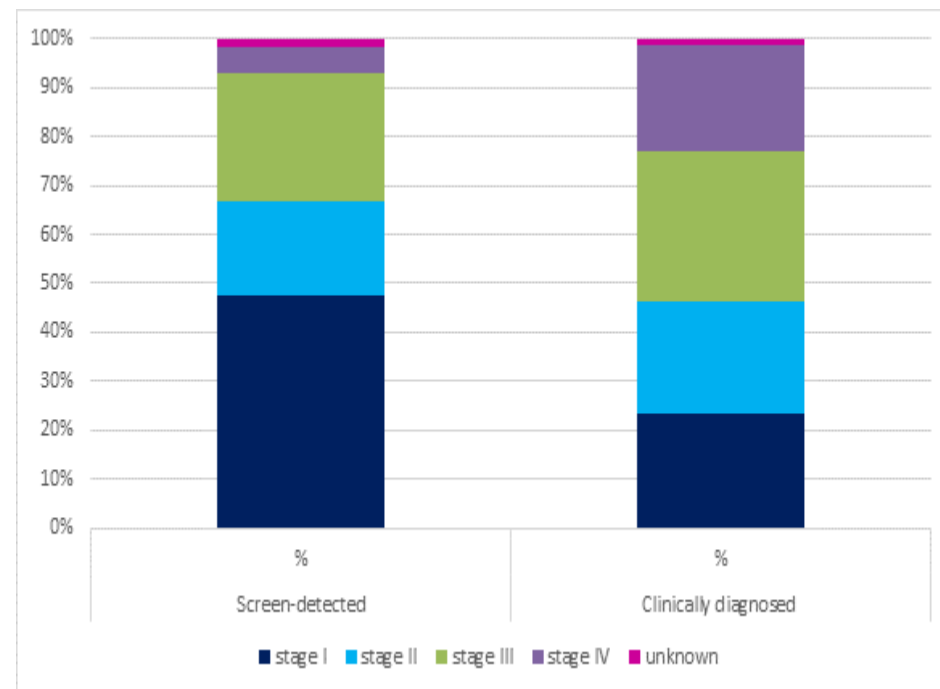
- FIT cut-off level 47  $\mu\text{g}$  Hb/g feces (started with 15  $\mu\text{g}$ )
- Age 55 to 75 years
- Men and women
- Personal invitation letter including FIT by postal mail
- Every two years
- Follow-up colonoscopy





## 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%







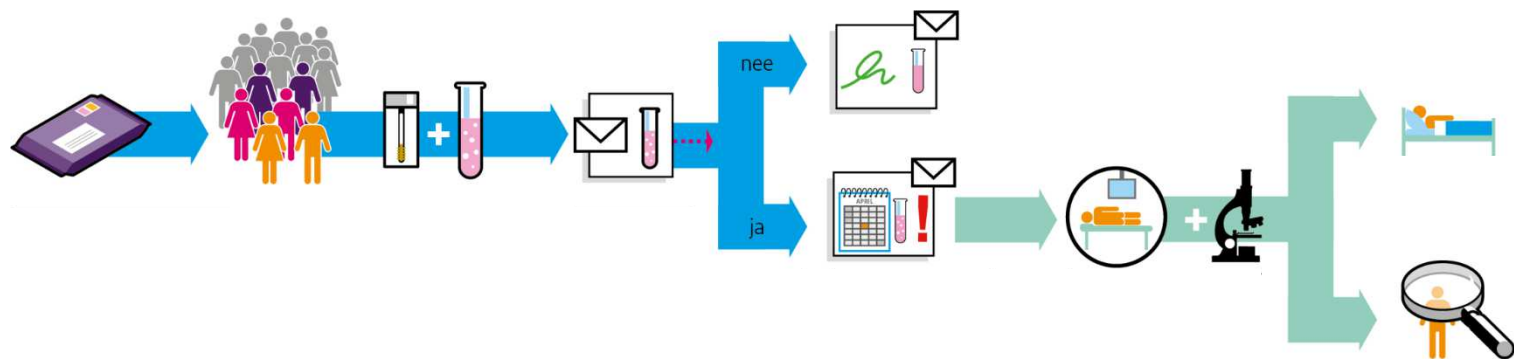
National Institute for Public Health  
and the Environment  
*Ministry of Health, Welfare and Sport*

How do we get 72%  
response rate?



# Multiple factors contribute

- Creating consensus
- Piloting
- Careful planning
- Invitation structure





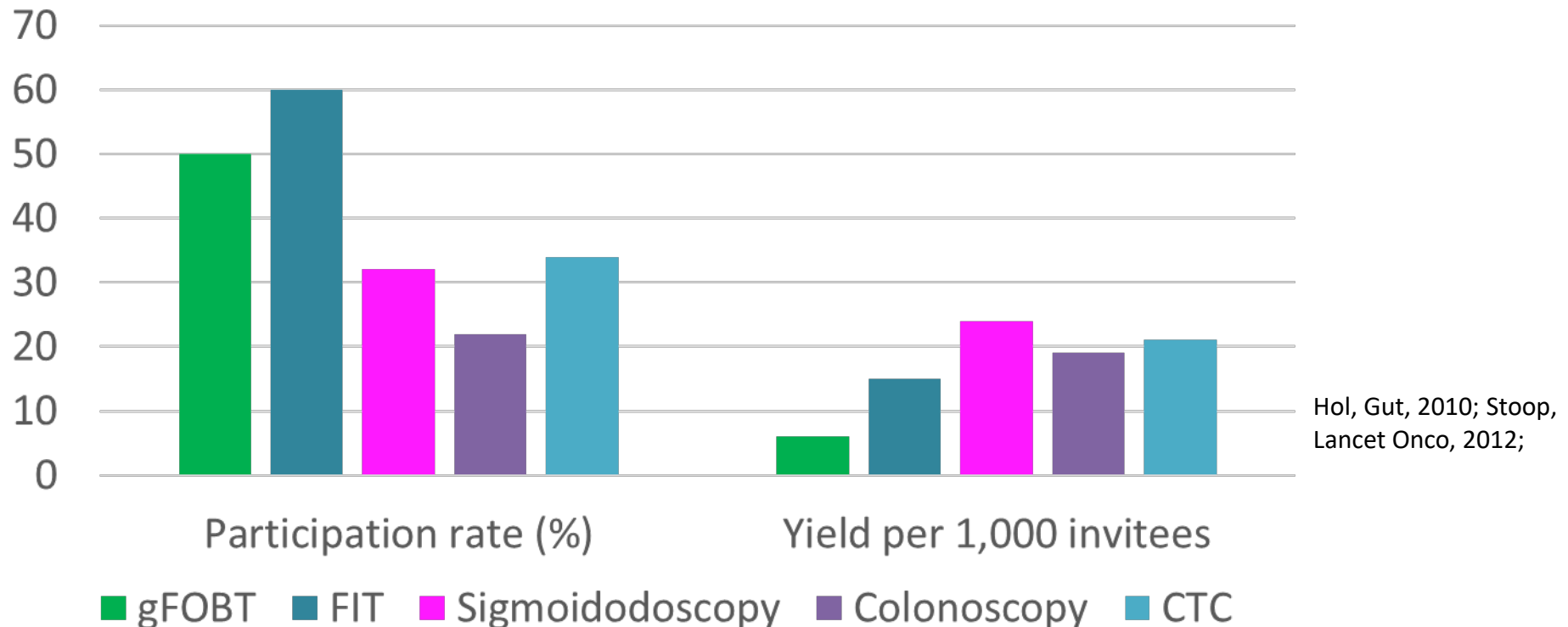
## Creating consensus

- 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)





## 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

Hol, Gut, 2010; van Rossum, 2008, Gastroenterology; Stoop, Lancet Onco, 2012; Wilschut, Gastroenterology, 2011; Wilschut, JNCI, 2011; van Roon, Gut, 2012; de Goede, GUT, 2012

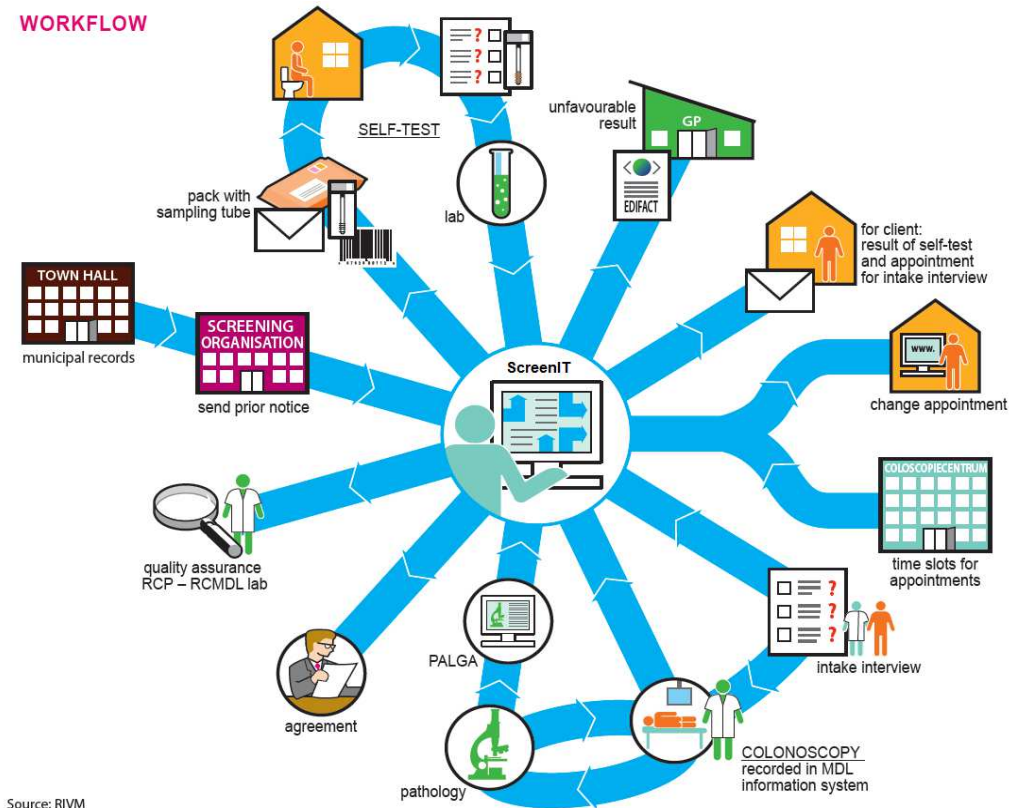


# Careful planning

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!**

## WORKFLOW



Source: RIVM



## 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)

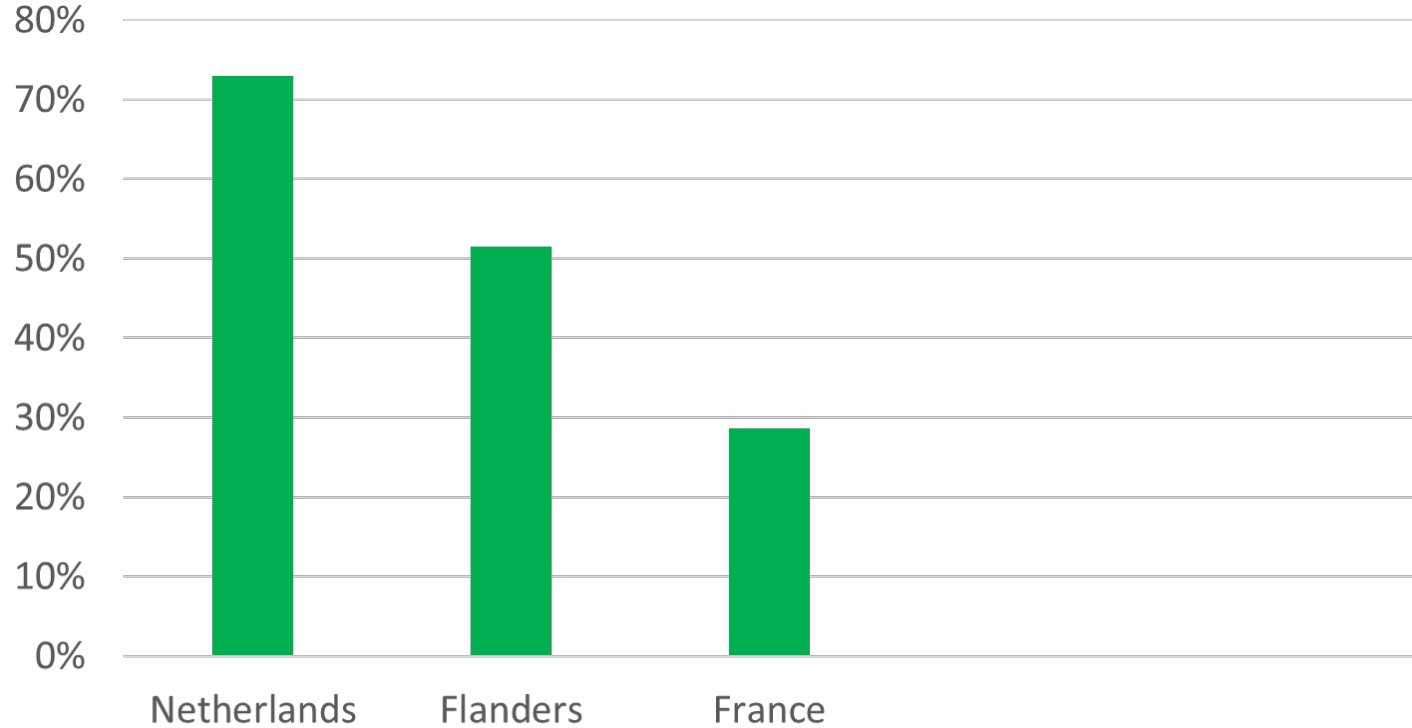


National Institute for Public Health  
and the Environment  
*Ministry of Health, Welfare and Sport*

Is it just because we  
are Dutch?

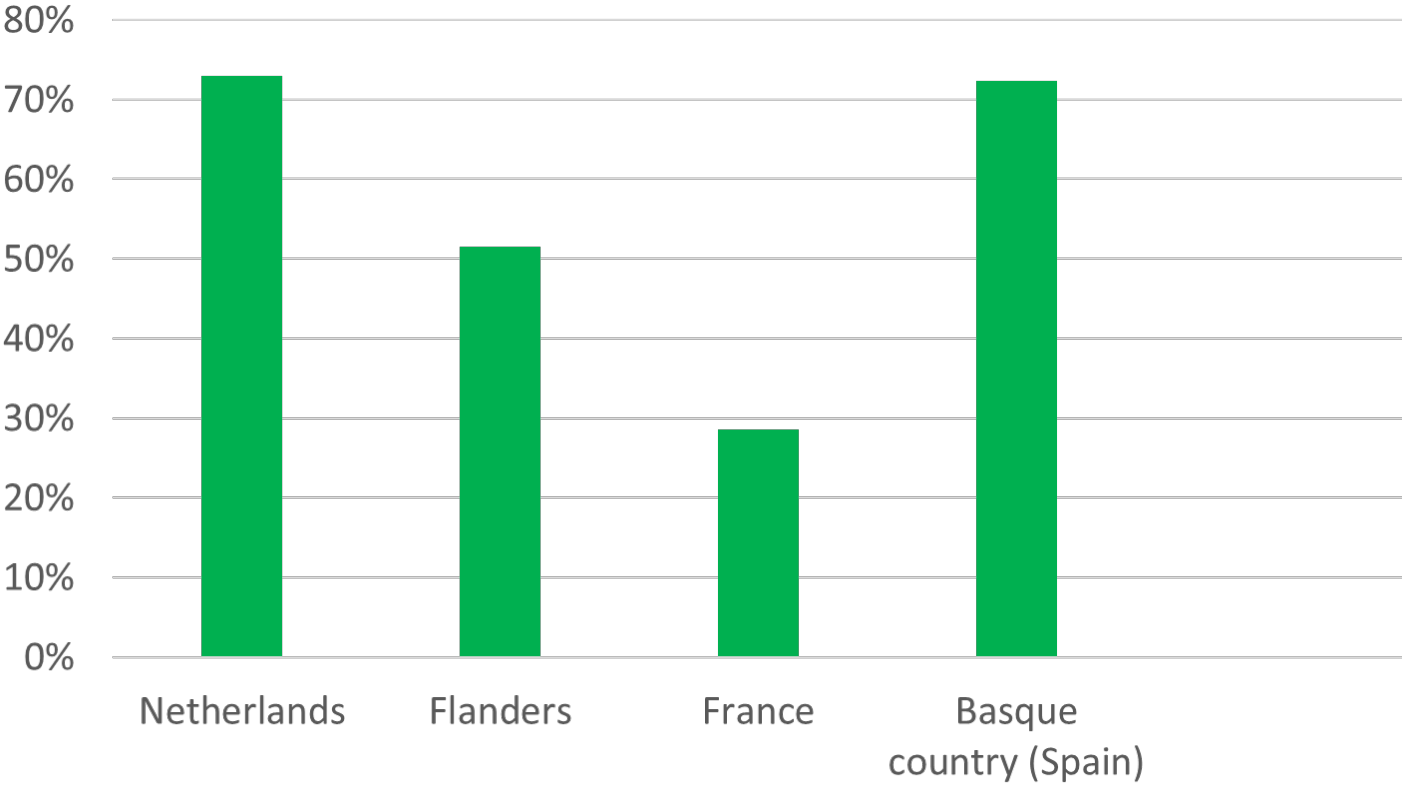


# Participation in selected organised programmes



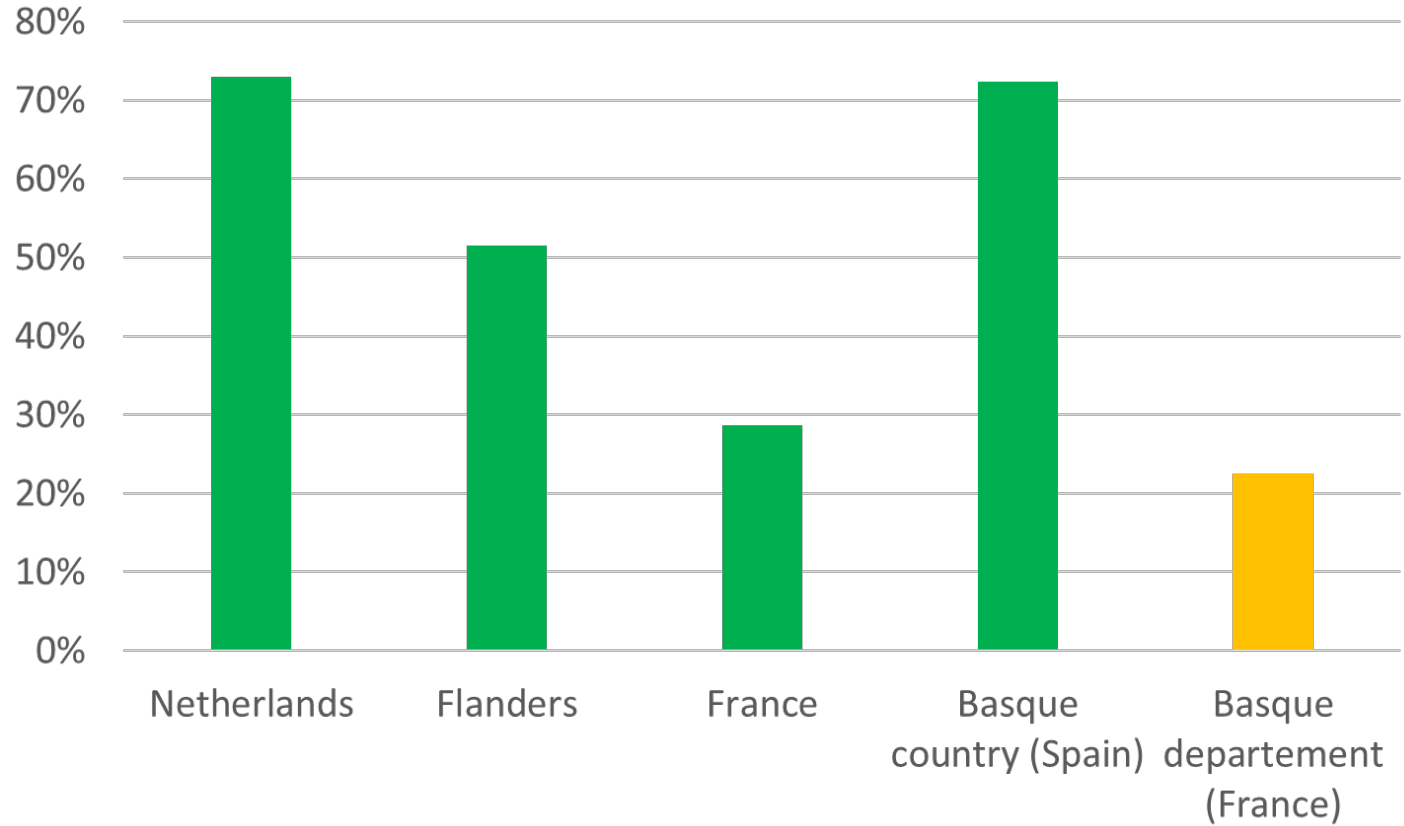


# Participation in selected organised programmes





# Participation in selected organised programmes





## 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...



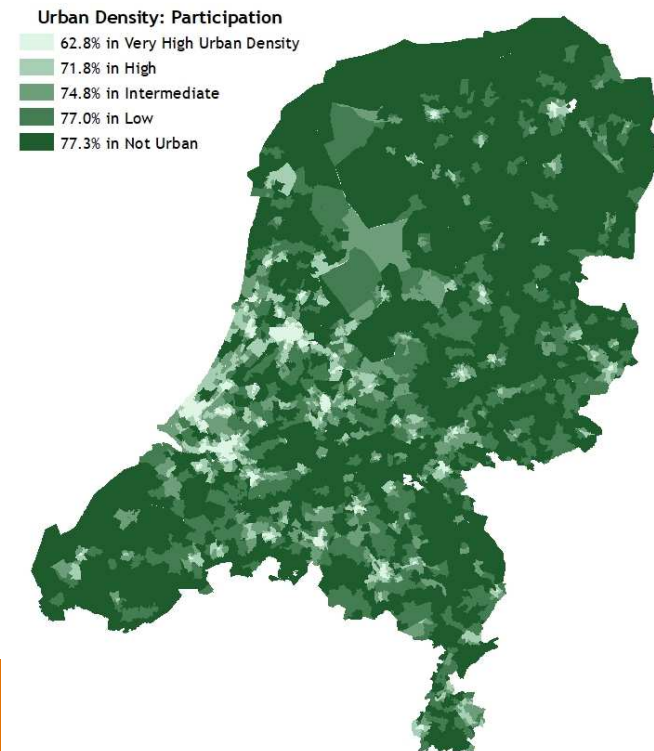




## Remaining challenges

- 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...

FIT Participation per Urban Density Level, 2018





# QUESTIONS?

Factsheets: <https://www.rivm.nl/documenten/factsheet-lessons-learned-from-introduction-of-colorectal-cancer-screening-programme>

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

E-mail: [Iris.Seriese@rivm.nl](mailto:Iris.Seriese@rivm.nl)

## Acknowledgements

Ministry of Health, Screening Organisations, all professional societies and stakeholders involved in the Dutch CRC screening programme, colleagues of our institute. Special thanks to Iris Lansdorp of the Erasmus University Rotterdam.