

# **Colorectal cancer screening implementation in the Netherlands**

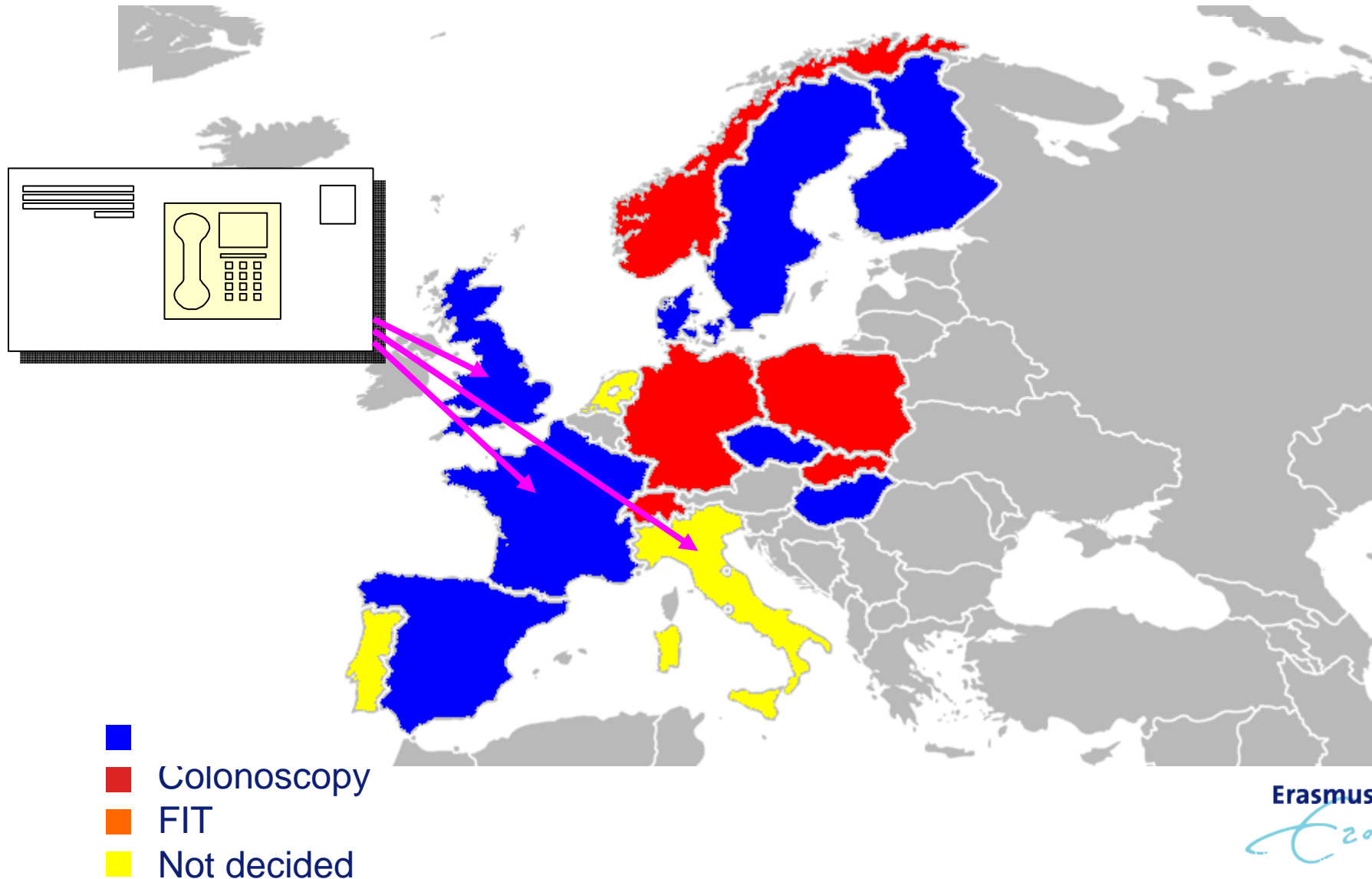
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# CRC Screening in Europe

## Screening Strategy



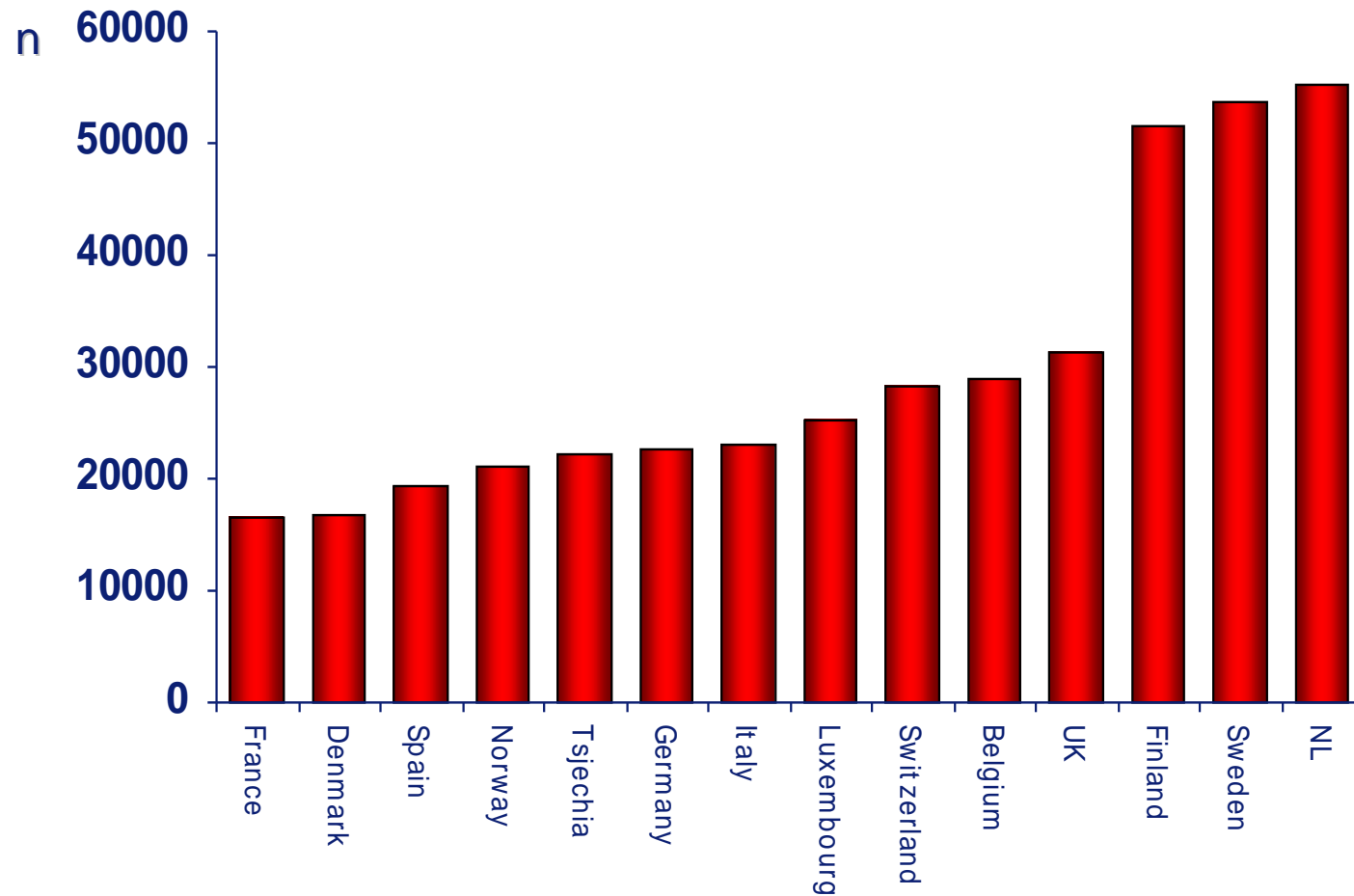
# Attitude towards screening in Netherlands

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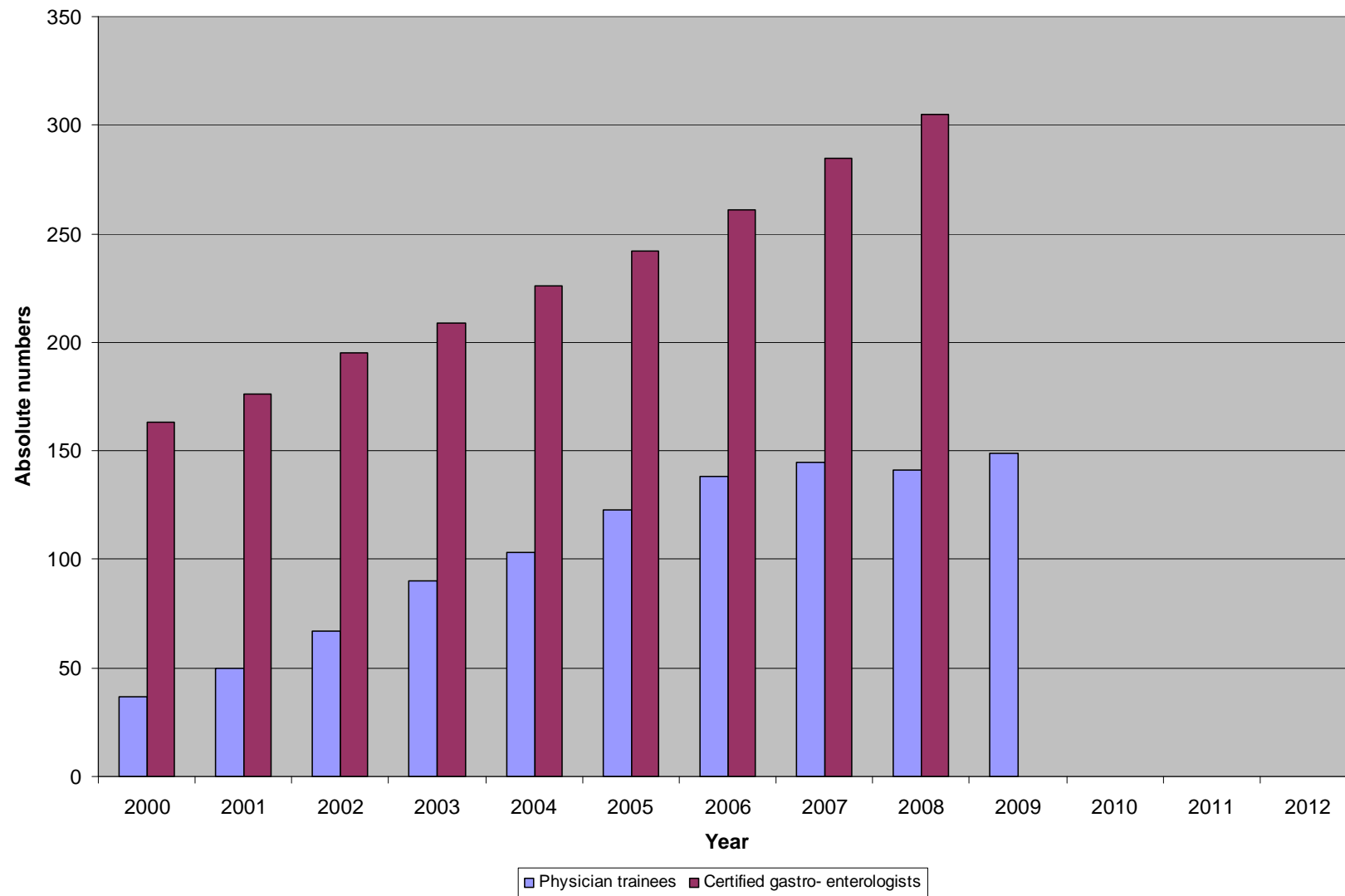
- High uptake of screening within existing programs (breast / cervical cancer)
- Scepticism among health authorities with respect to introduction new screening programs
  - Population uptake
  - Impact on disease incidence and mortality
  - Side effects
  - Cost effectiveness
- Confusion about optimal CRC screening strategy
  - Public health: gFOBT because prospectively assessed
  - Gastroenterologists: colonoscopy as gold standard
  - Radiologists: CT colonography for sensitivity and burden
  - Pathologists: molecular tests about to come...

# Numbers of inhabitants covered by each gastroenterologist within EU countries

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**Certified gastro- enterologists and physician trainees  
2000 - 2012**



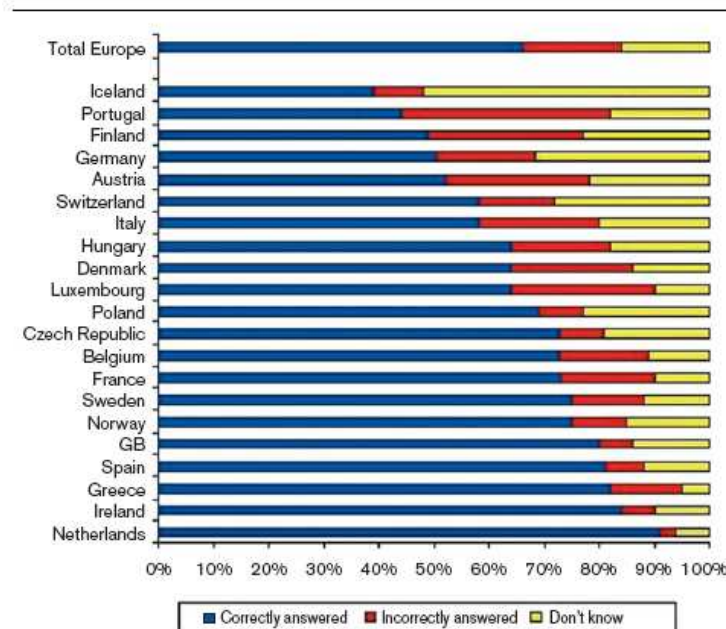
## Current Dutch situation

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- Dutch Society of Gastroenterologists
  - 98% of gastroenterologists member
  - Active QA and guidelines committees
  - Nationwide web-based complication registry
  - 5-year QA site visits, close to introduction of annual site QA program
  - Accreditation for endoscopic procedures
- 475.000 GI endoscopies / year
  - 80% + done by gastroenterologists
  - 95% hospital located, few stand-alone endoscopy units

# Awareness on colorectal cancer screening in Europe

- 20.710 inhabitants from 21 European countries interviewed
- 'Awareness on CRC is low and educational programs will be essential to achieve high screening attendance rates'



Percentages of people who answered question 10 (about awareness of an early screening procedure for CRC) correctly, incorrectly or with 'don't know'.

# **European Guidelines for Quality Assurance in Colorectal Cancer Screening**



**European Commission**



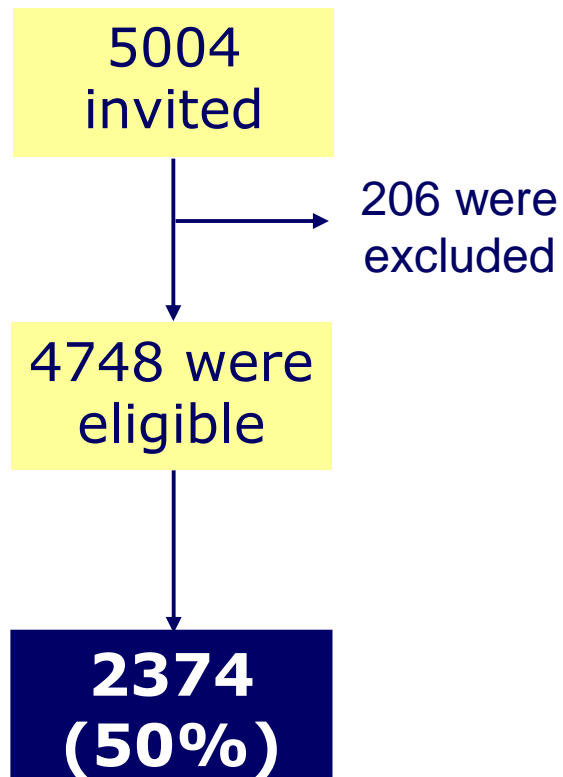
## Recommendation Dutch National Health Council 2001

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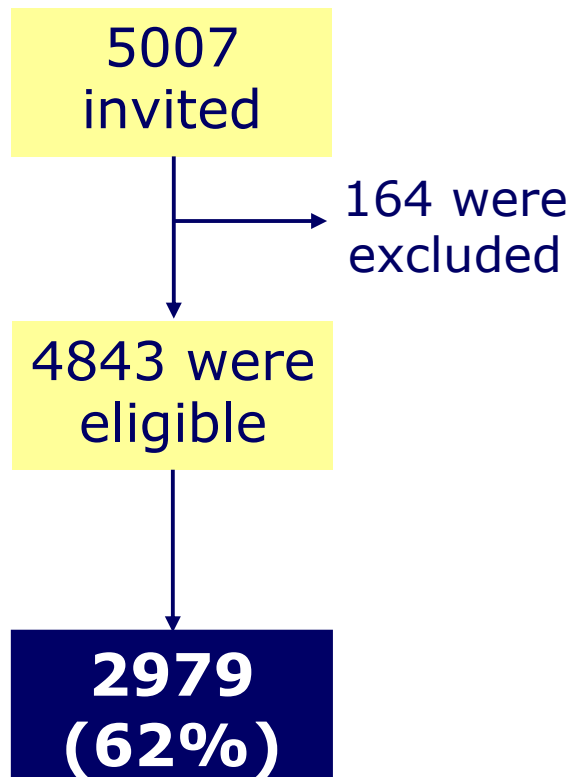
- ‘ The introduction of a nationwide CRC screening program deserves to be seriously considered’
- ...but first we need answers to a range of questions including;
  - optimal screening-strategy
  - level of participation
  - organisational set-up
  - role family doctor
  - quality assurance measures

# Trial profile

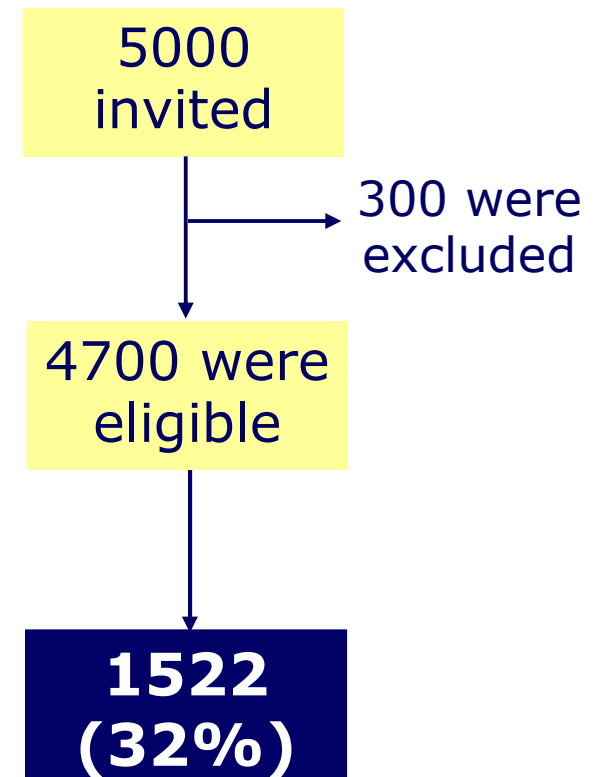
## gFOBT



## FIT



## FS



## 2006 – current; range of pilot screening studies

### Main conclusions

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1. Adherence for FIT > gFOBT > sigmoidoscopy = CT colonography > colonoscopy
2. FIT outperforms gFOBT in terms of yield
1. Low cut-off FIT screening is most efficient for every interval and age range assessed
2. The choice for 1- or 2-FIT screening depends on resources.
3. Variation in FIT screening interval between 1 and 3 years does not affect adherence nor yield in the 2<sup>nd</sup> round.

# Darmkanker

.. HET LAATSTE NIEUWS & DE FEITEN .....

## libelle<sub>9</sub>

### DIKKE-DARMKANKERSCREENING

FOBT is een ontlastingstest, er zijn twee vormen:

- gFOBT: ontlasting moet op een kaartje worden gesmeerd en worden opgestuurd
- iFOBT: ontlasting wordt met een soort mascara-rolletje verzameld en opgestuurd



Ontlasting



Opsturen naar lab

### Endoscopie

Dit is een kijkonderzoek in de dikke darm. Via de anus wordt een slang ingebracht waaraan een kleine camera is bevestigd. Als poliepen worden gevonden kunnen die meteen worden weggehaald.

• Bij een colonoscopie wordt de

**Bevolkingsonderzoek** Darmscreening voor 50-plussers moet zo snel mogelijk worden ingevoerd, vinden onderzoekers

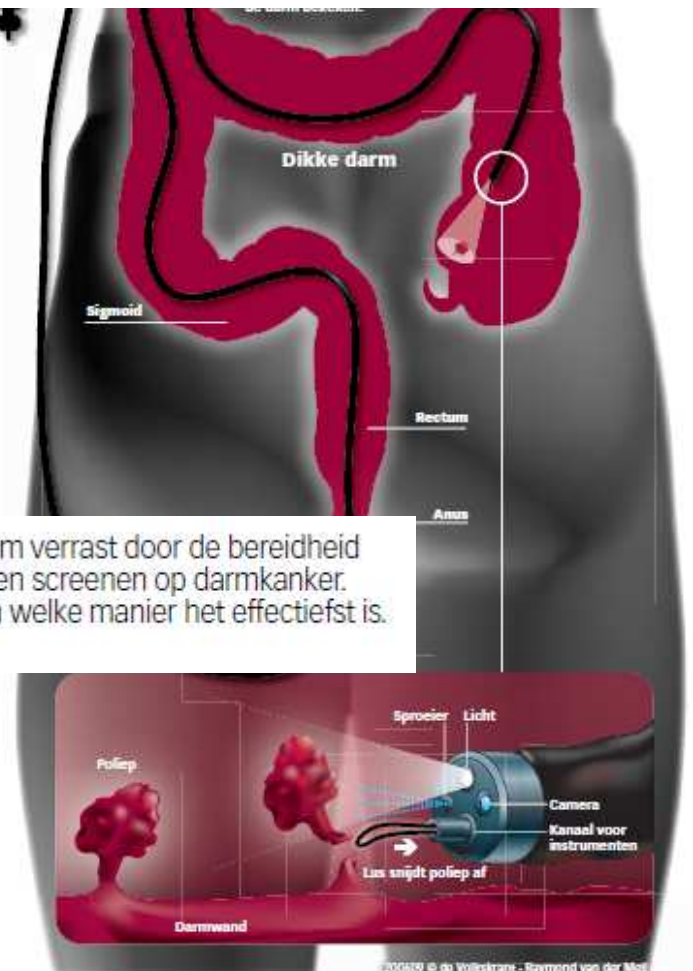
Wel of niet meedoen aan e  
bevolkingsond

# Darmkank betrapt

## Dikkedarmkanker

Specialisten zijn aangenaam verrast door de bereidheid van 50-plussers zich te laten screenen op darmkanker. Binnenkort wordt besloten welke manier het effectiefst is.

Door **Ellen de Visser**



KWF  
KANKER  
BESTRIJDING



# Recommendation of the Dutch National Health Council on Colorectal Cancer Screening

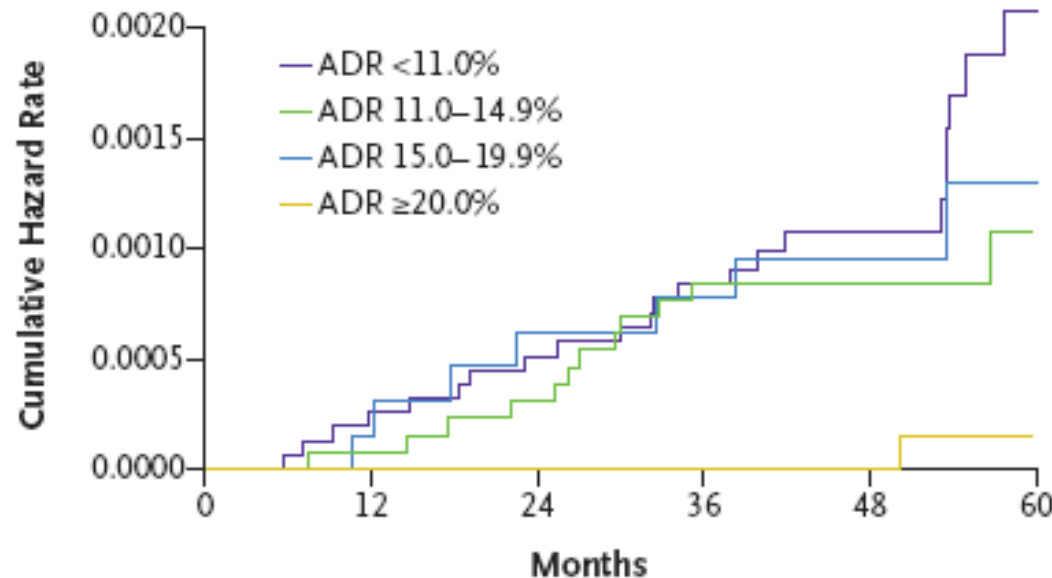
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- Introduction of a nationwide population-based screening program using bi-annual FIT<sup>75</sup>
  - First targeted at men and women of 55 – 75 yrs
  - Later expansion to 50 – 75 yrs
  - 5 year roll-out to complete coverage of target group
  - Requires annual 79.000 colonoscopies on target population of 3.5 million (i.e. 50% increase)
  - Screening program led by National Health Institute
  - Gastroenterologists in charge of regional programs

## Gradual invitation of subsequent birth cohorts

	Gefaseerde invoering in jaren					Alle leeftijds- categorieën geïncludeerd
	1	2	3	4	5	6
	2013	2014	2015	2016	2017	2018
Geboortjaar	Leeftijd bij oproep voor het bevolkingsonderzoek					
1964						
1963						55
1962						
1961						57
1960					57	
1959						59
1958					59	
1957				59		61
1956					61	
1955				61		63
1954			61		63	
1953				63		65
1952			63		65	
1951		63		65		67
1950			65		67	
1949		65		67		69
1948	65		67		69	
1947		67		69		71
1946			69		71	
1945				71		73
1944					73	
1943						75
1942					75	
1941				75		
1940			75			
1939		75				
1938	75					

# The incidence of interval cancer after screening colonoscopy depends on adenoma detection rates



ORs for interval cancer with  
ADR < 20% vs ADR  $\geq$  20%:  
10.9 – 12.5

## No. at Risk

ADR <11.0%	15,883	15,805	15,744	15,669	9355	4717
ADR 11.0–14.9%	13,281	13,223	13,182	13,120	7571	4003
ADR 15.0–19.9%	6,607	6,582	6,562	6,539	4022	2529
ADR $\geq$ 20.0%	9,255	9,235	9,202	9,166	7155	5548

# Colorectal cancer screening in Europe

Annals of Internal Medicine

ARTICLE

## Association of Colonoscopy and Death From Colorectal Cancer

Nancy N. Baxter, MD, PhD; Meredith A. Goldwasser, ScD; Lawrence F. Paszat, MD, MS; Refik Saskin, MSc; David R. Urbach, MD, MSc; and Linda Rabeneck, MD, MPH

## Protection From Right- and Left-Sided Colorectal Neoplasms After Colonoscopy: Population-Based Study

Hermann Brenner, Michael Hoffmeister, Volker Arndt, Christa Stegmaier, Lutz Altenhofen, Ulrike Haug

Manuscript received April 16, 2009; revised October 19, 2009; accepted October 27, 2009.

Correspondence to: Hermann Brenner, MD, MPH, Division of Clinical Epidemiology and Aging Research, German Cancer Research Center, Bergheimer Str. 20, D-69115 Heidelberg, Germany (e-mail: h.brenner@dkfz-heidelberg.de).

Erasmus MC

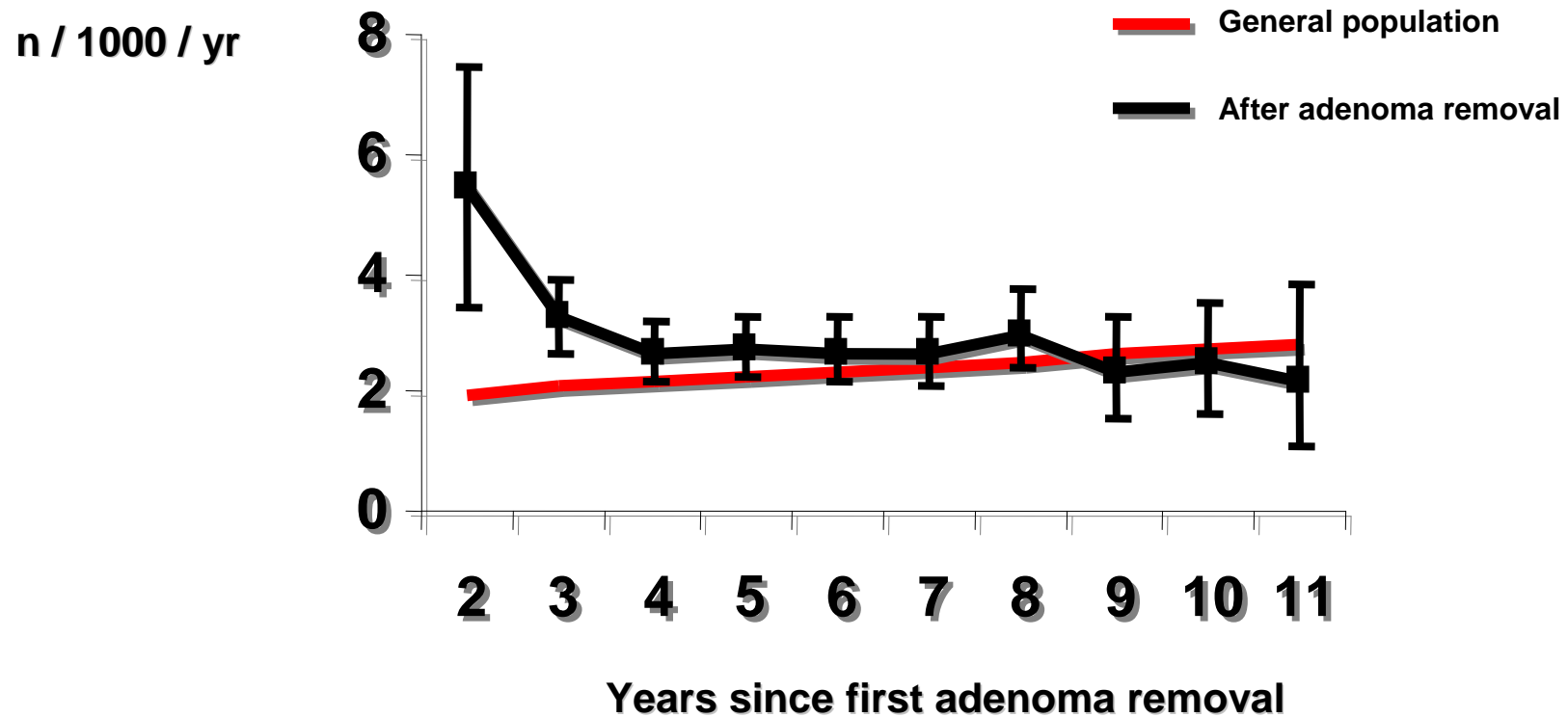


Baxter et al. Ann Intern Med 2009,  
Brenner et al. JNCI 2010



## Observed Colorectal Cancer Incidence Per 1000 Person Years $\geq 1$ Year After First Adenoma Removal Versus Incidence In The Age And Sex Matched General Population

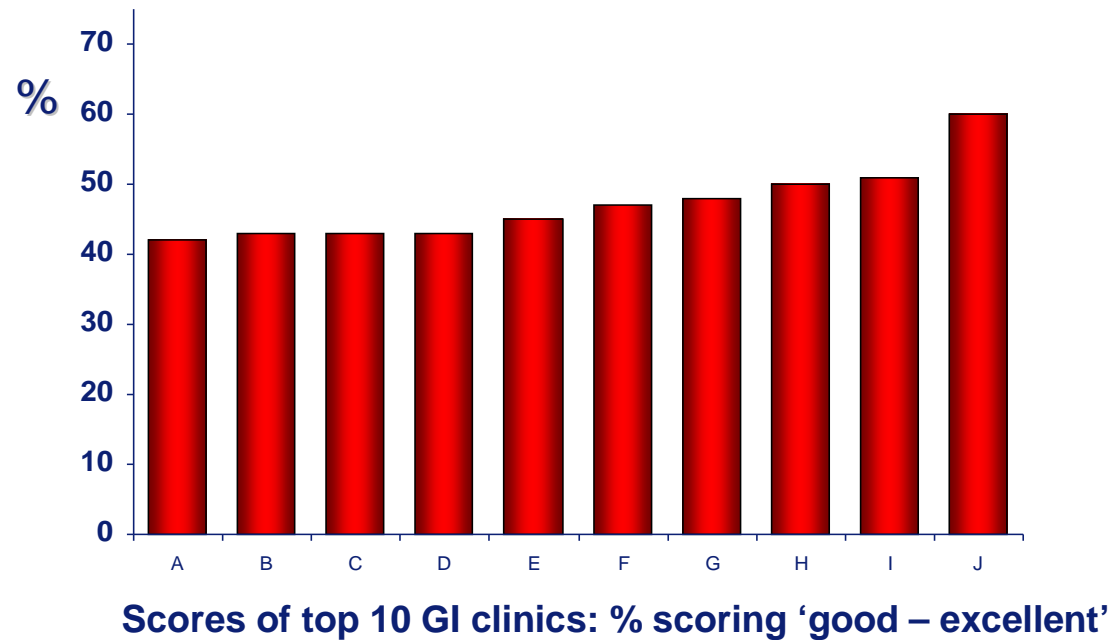
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# Performance of Dutch GI hospital departments, nationwide survey 2009 among colleagues

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- Annual survey for performance of hospital groups
- Based on questionnaire, sent to family physicians, medical specialists, nursing personnel, department chairs, and hospital managers and directors

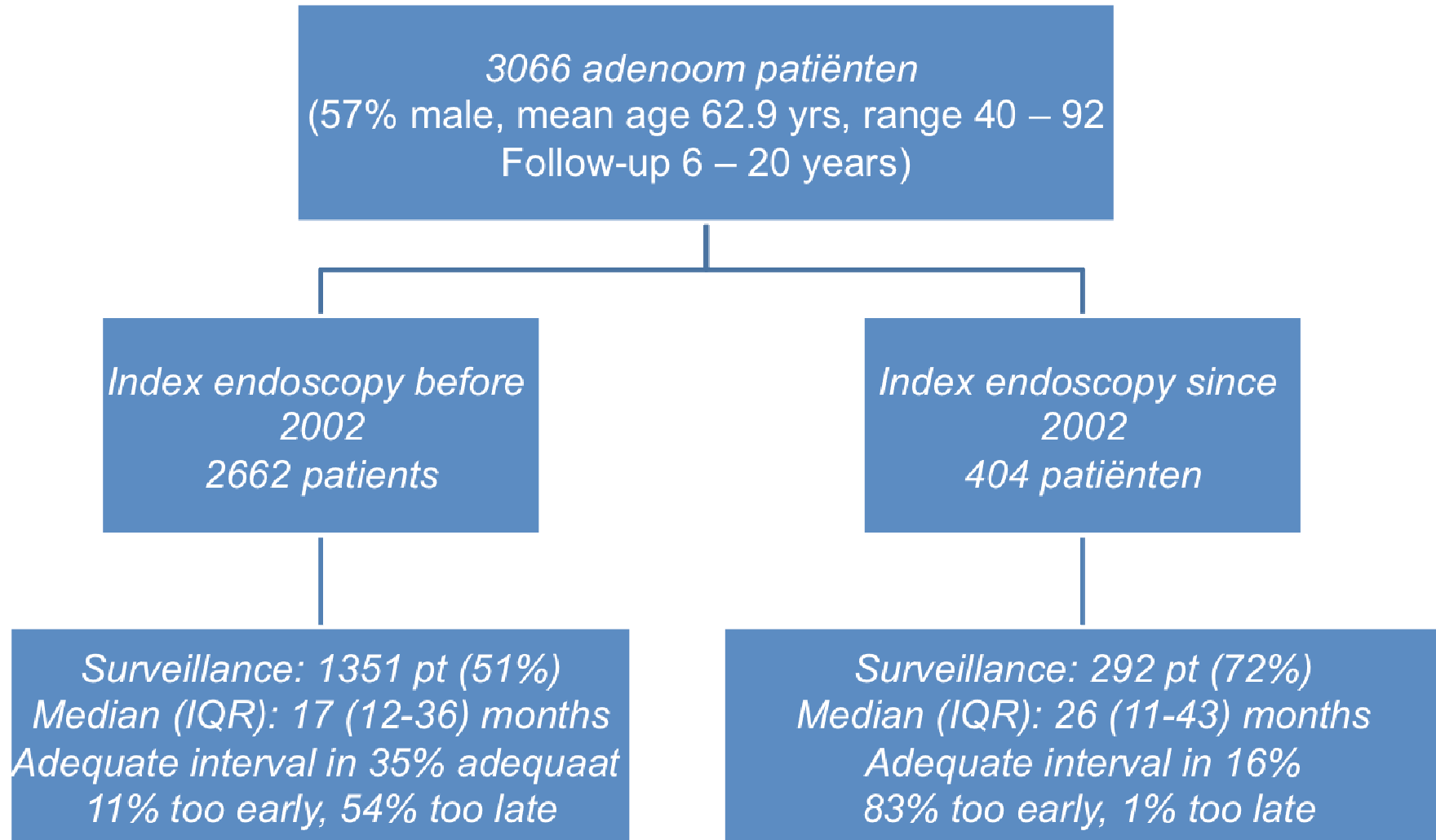


# **CRC miss rates in Dutch GI clinic ranked first in 2009 Elsevier survey**

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- **Single center retrospective study**
  - 566 patients diagnosed with CRC in 7 year period (1999 – 2005)
  - 91 cases (16%) had had previous (in-)complete colonoscopy
  - Reasons for failed prevention: tumor missed, site not visualized, poor bowel prep, no surveillance, ..
  - “Our results are comparable to the literature”

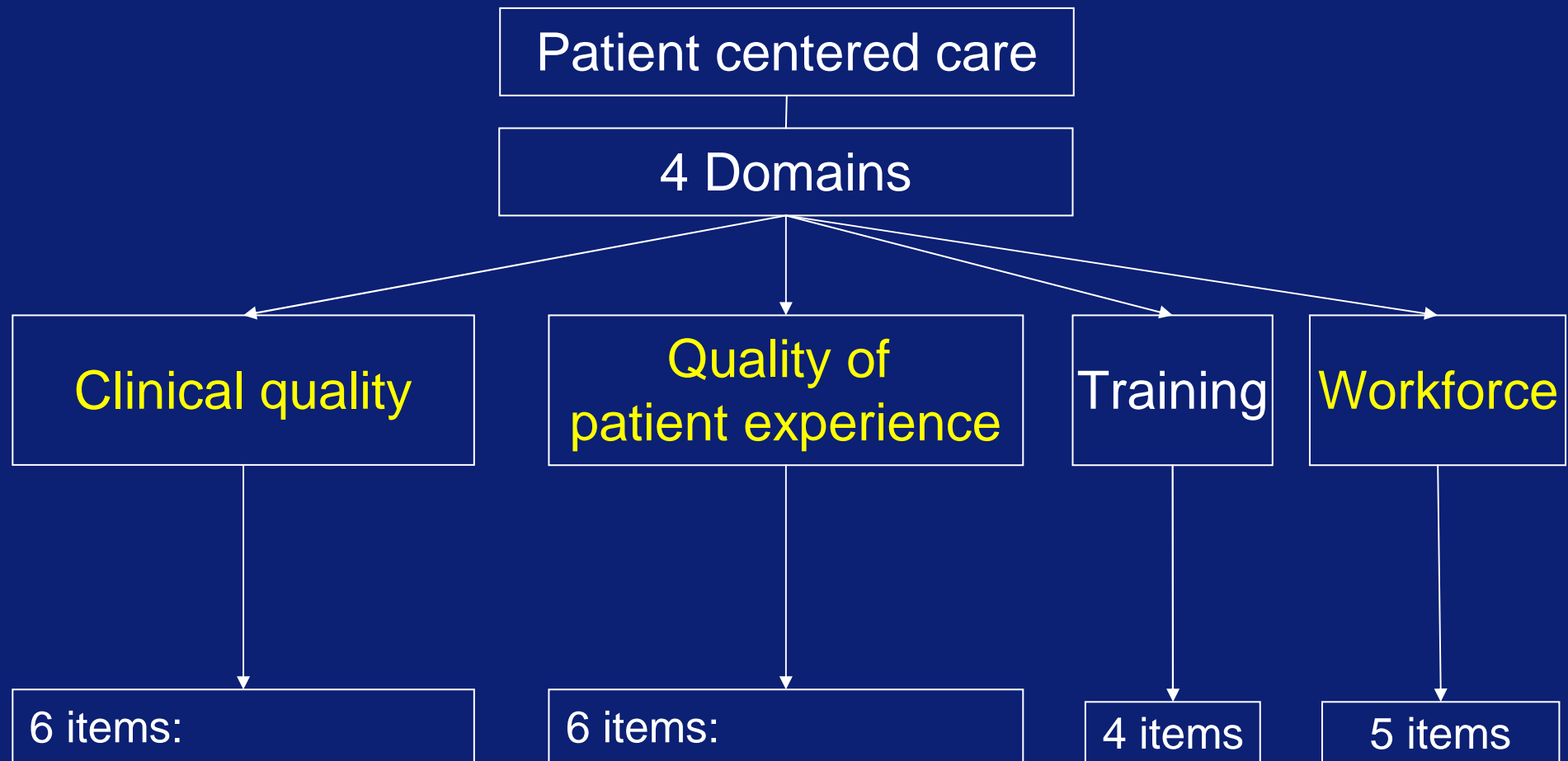
## Surveillance after removal of colorectal adenoma



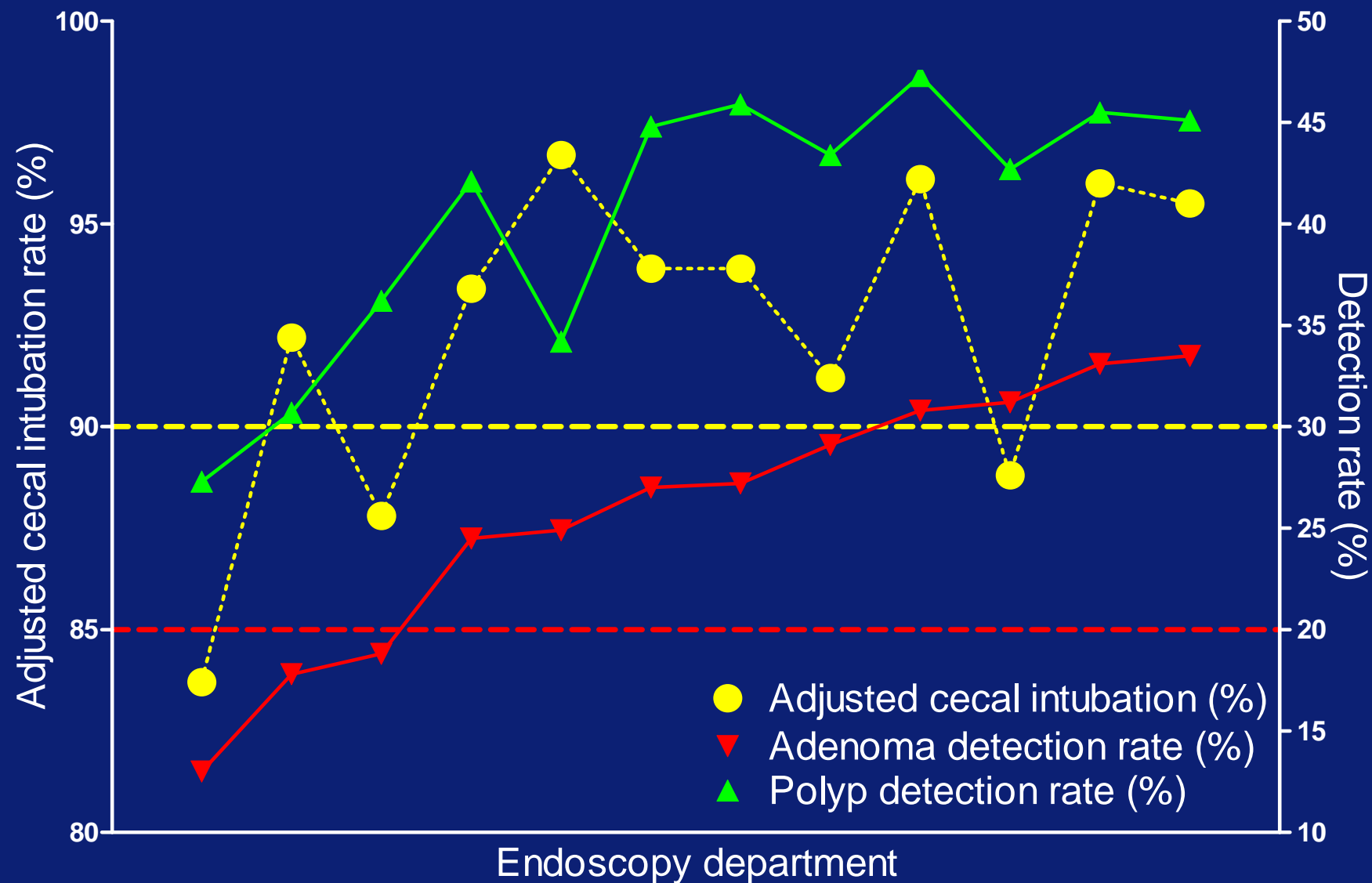
# Colonoscopy: quality and safety

	<b>High quality</b>	<b>Low quality</b>
Completion	>95%	<90%
Perforation rate	<1:5000	>1:1000
Cancer miss rate	1%	10%
Completeness of polyp excision	complete	often incomplete
Serious polypectomy complications	<1:200	>1:100
Patient experience	usually good	often bad
Appropriateness of repeats	yes	often no

# Global Rating Scale



# Clinical quality of screening colonoscopy



# Colorectal Cancer Screening in the Netherlands; conclusions

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- Introduction of a nationwide population-based screening program using bi-annual FIT<sup>75</sup> starting in 2013
  - Call – recall
  - Centrally coordinated
  - Gastroenterologists in role of regional leads
  - Emphasis on quality assurance, site visits, and accreditation
  - Endoscopies performed by gastroenterologists and nurse endoscopists