

New Screening Colonoscopy Studies and Risks of the Small Adenoma

Digestive Disease Week, May 18, 2008
International Digestive Cancers Alliance



Ann Graham Zauber, Ph.D.

Memorial Sloan-Kettering Cancer Center
New York, NY

NordICC

The Nordic Initiative on Colorectal Cancer Screening

Michael Bretthauer MD PhD

Chairman, NordICC Executive Committee

The Cancer Registry of Norway, Oslo

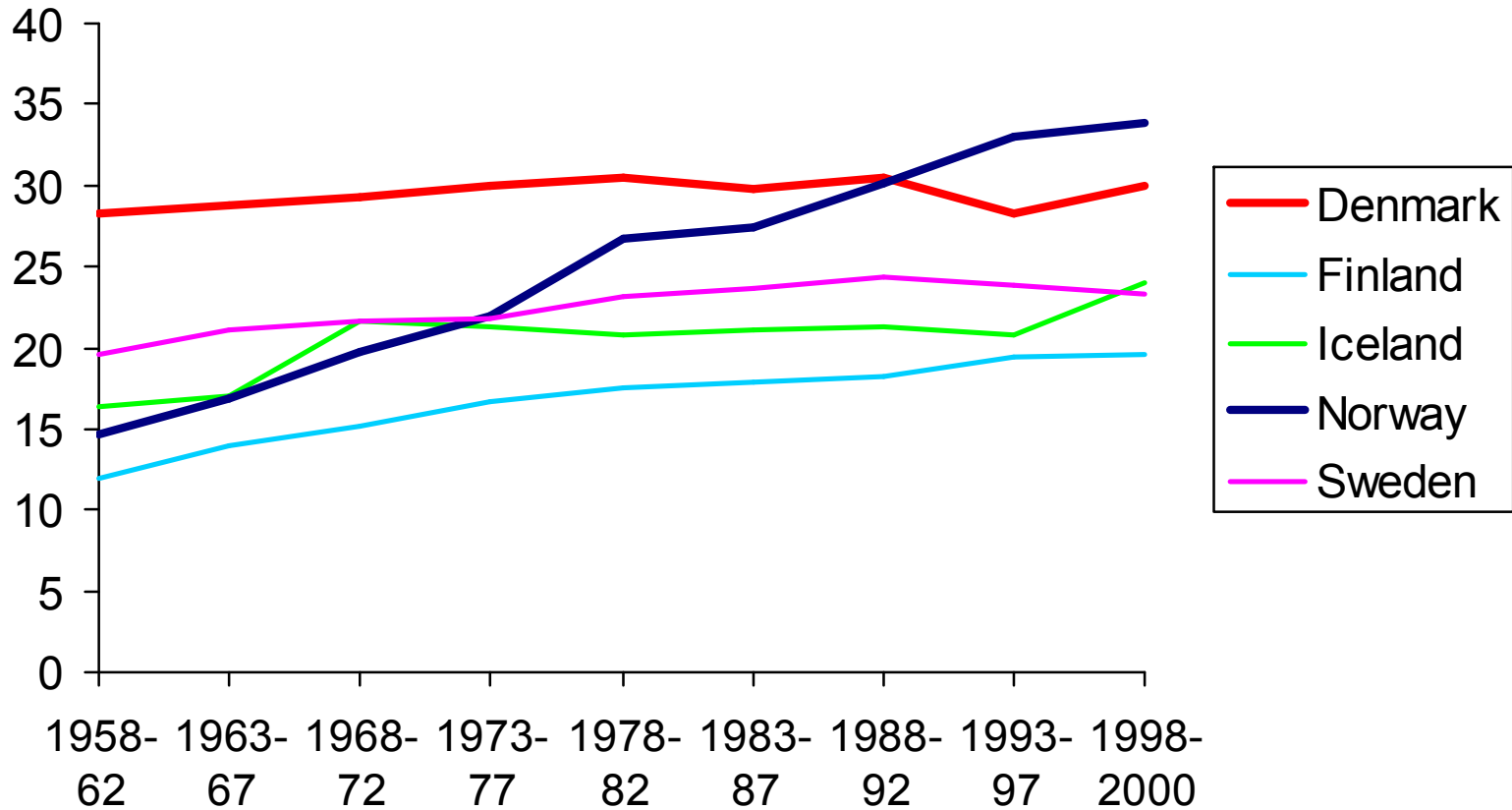
Presented by Ann Zauber, Ph.D.

Background

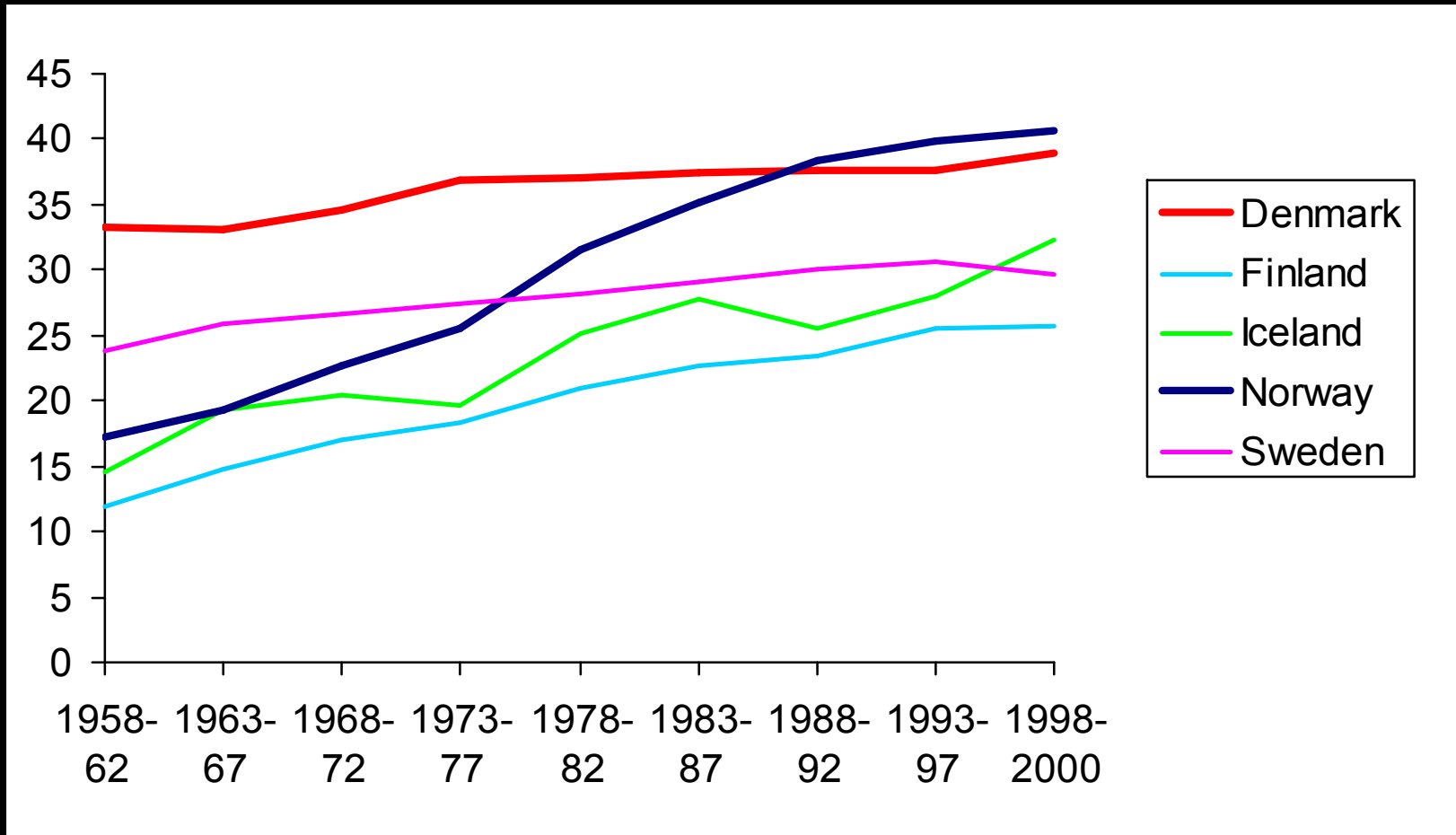
- CRC: a major disease in the Western world
- Prerequisites for screening
 - Common disease
 - Long asymptomatic stage/precursor lesions
 - Early treatment beneficial
 - Screening tool available

Nordic Countries: CRC Incidence, Women

(age adj. per 100,000)



Nordic Countries: CRC Incidence, Men (age adj. per 100,000)



NordICC

- Initiative from Iceland/Sweden (2004)
- NordICC group since June 2005
- Epidemiologists, oncologists, gastroenterologists, biostatisticians
 - Nordic countries, Poland, the Netherlands, Latvia, Hungary and US

NordICC

Executive Committee

- Michael Bretthauer (N, Chair)
- Jaroslaw Regula (Poland)
- Ann Zauber (USA)
- Ernst Kuipers (NED)
- Nea Malila (Finland)
- Anders Ekbohm (Sweden)
- Hans Nilsen (Denmark)
- Tryggvi Stefansson (Iceland)
- Marcis Leja (LAT)

Other group members

- Geir Hoff, Steinar Tretli, (Norway)
- Matti Hakama (Finland)
- Lars Pålman, Sven Tørnberg, Juni Palmgren, Rolf Hultcrantz (Sweden)
- M. Van Ballegooijen (NED)
- Istvan Racz (Hungary)
- Hans-Olov Adami (USA/Sweden)
- Michal Kaminski (POL)
- Mairita Ergle (LAT)

NordICC publication

- June/July 2006:
Simultaneous paper in all 5 Nordic medical journals

NordICC design

- Randomised controlled multicentre trial
- Nordic countries, Poland, NL, Iceland, others
- Intervention:
 - Colonoscopy versus No-Screening
- Endpoints:
 - CRC incidence
 - CRC mortality
 - 10 y follow-up

NordICC design

- Age 55-64 years
- Estimate:
 - 60% CRC mortality reduction for screenees,
 - 50% compliance
- 54,000 invited for colonoscopy
- 54,000 no-screening (usual care), or
biennial FOBT (in some areas)

NordICC design

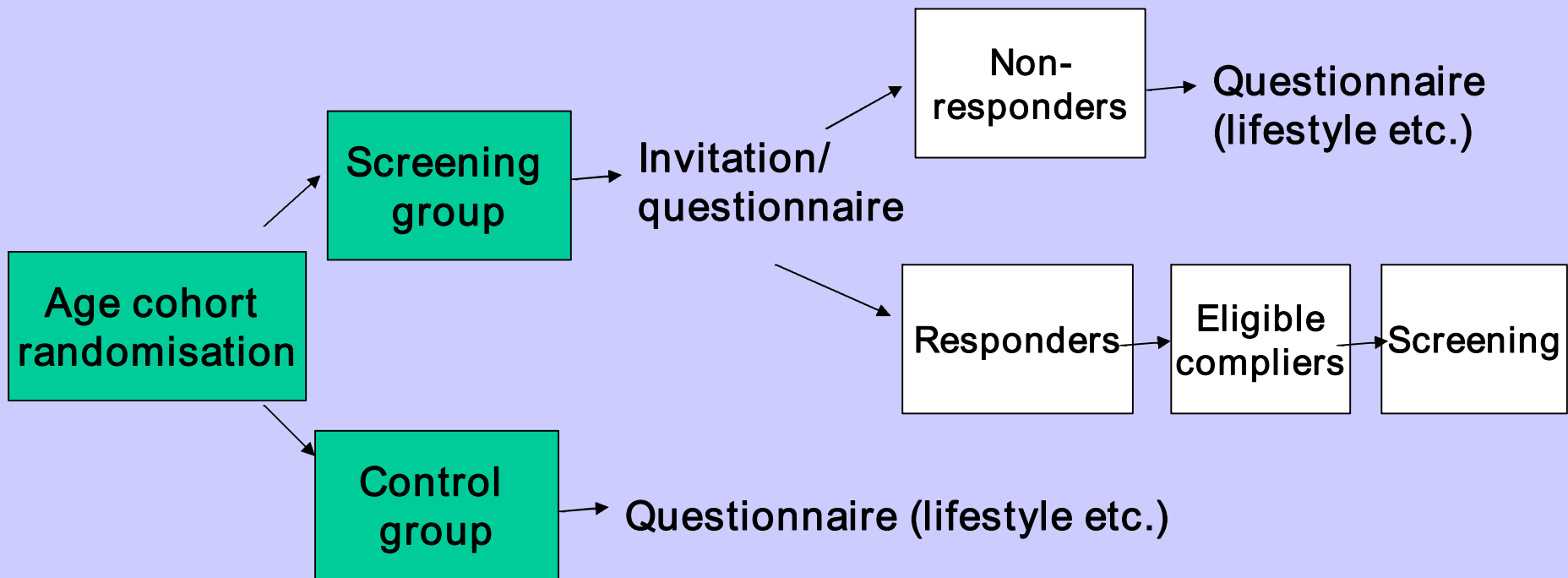
- Screening arm: Once-only colonoscopy
 - 2 years screening
 - 5-15 dedicated centres
 - Removal/biopsy of all polyps detected
 - Bowel cleansing: 2 liter PEG plus Bisacodyl (at home)
 - Exam and bowel cleansing free of charge

Colonoscopy screening

- Dedicated centres
- 3 000 colonoscopies/year
- No interference with clinical work
- Equipment, IT, staff, endoscopists approved by NordICC
- Hospital: infrastructure, quality proven beforehand

Management Design

(mimicking a national screening programme)



NordICC impact

- Novel, innovative, important
- High impact on Population Health
- Highest research evidence level
- Co-operation in the Nordic countries, Europe
- Numerous Spin-off possibilities

Prerequisites for centres

- High-volume diagn. and therap. colonoscopy practice
- Experienced endoscopists (supervision, training)
- Quality control programs
- Eligible population
- Follow-up for 10 years

Premises for screening centre for ~3000 colonoscopies/yr

Colonoscopy	Enema, Toilet	1 endoscope washing machine 6 video colonoscopes 2 video racks & diathermy units 2 Magnetic endoscope imagers 2 CO ₂ insufflators Disposable biopsy forceps and snares
Technical (washing etc.)	Enema, Toilet	
Colonoscopy	Office	5 endoscopists (50% employee) 1 secretary 4 endoscopy assistants Associated pathologists
Lab.?	Waiting area	45 mins/exam=16 exams/day, 80/week in 42 weeks=3360/yr

Quality control program

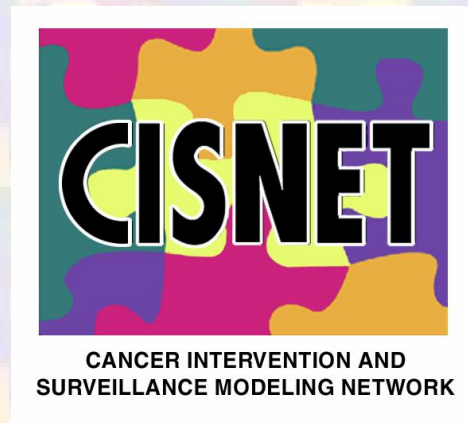
- Participation in program **before** inclusion in NordICC
 - Sedation, coecum reach ratio, pain and discomfort, complications
 - Individual performance
 - Patient feedback

Current status

- Protocol developed
- Head secretariate established (Oslo)
- Funding for group meetings, organisation secured
- **April 2008: funding for main study for colonoscopies in POLAND (5,000), NETHERLANDS (5,000), ICELAND (2,000), for 12,000 colonoscopies) 22% of study goal**
- Plan: Screening start in POL, NL, ICE early 2009
- Decision awaited for funding in Sweden, Norway

NORDICC and IDCA Collaboration

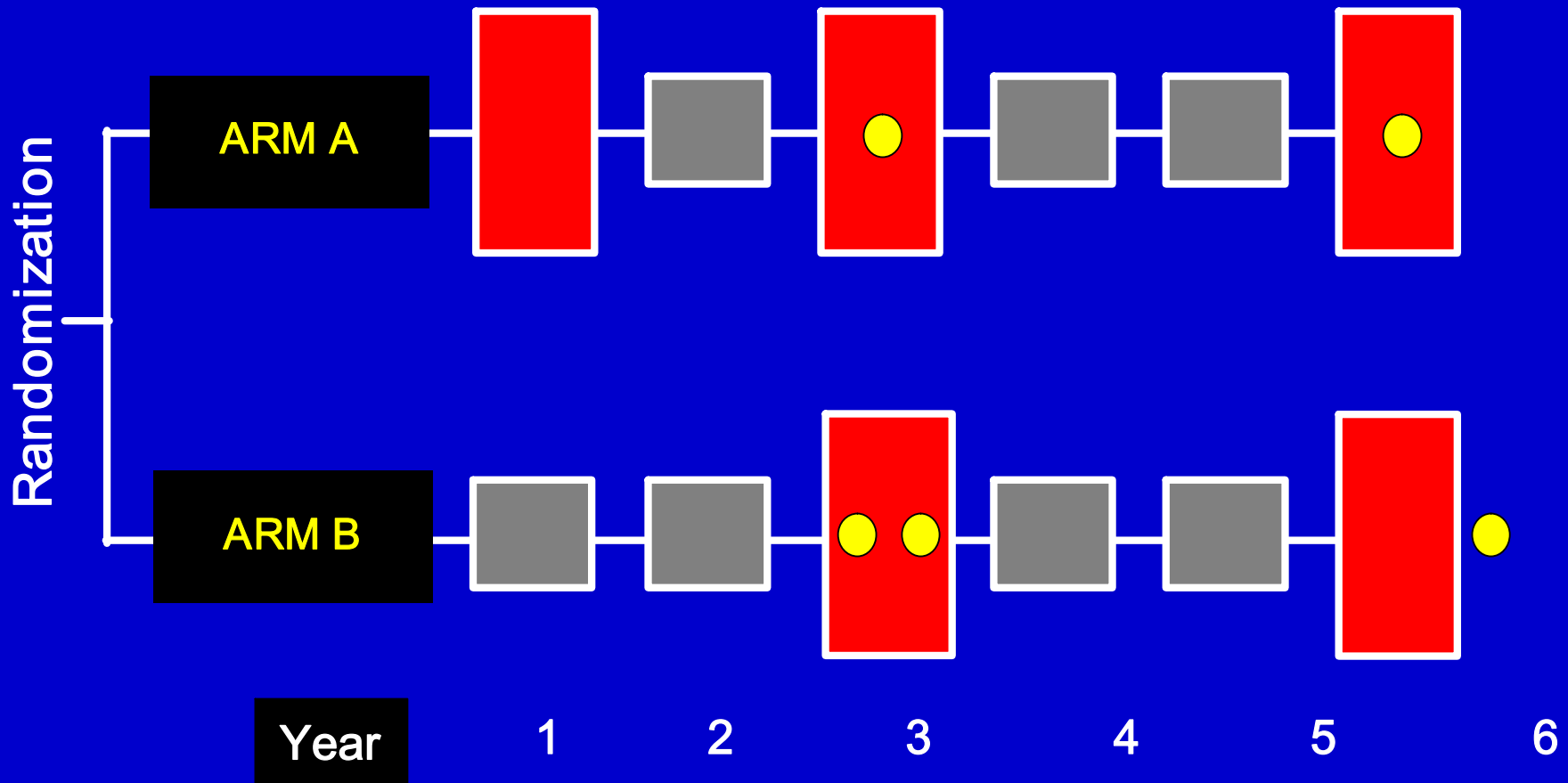
Risks of the Small Adenoma



Ann Graham Zauber, Ph.D.
Memorial Sloan-Kettering Cancer Center
New York, New York

National Polyp Study

Surveillance Arms Following Randomization CANCERS



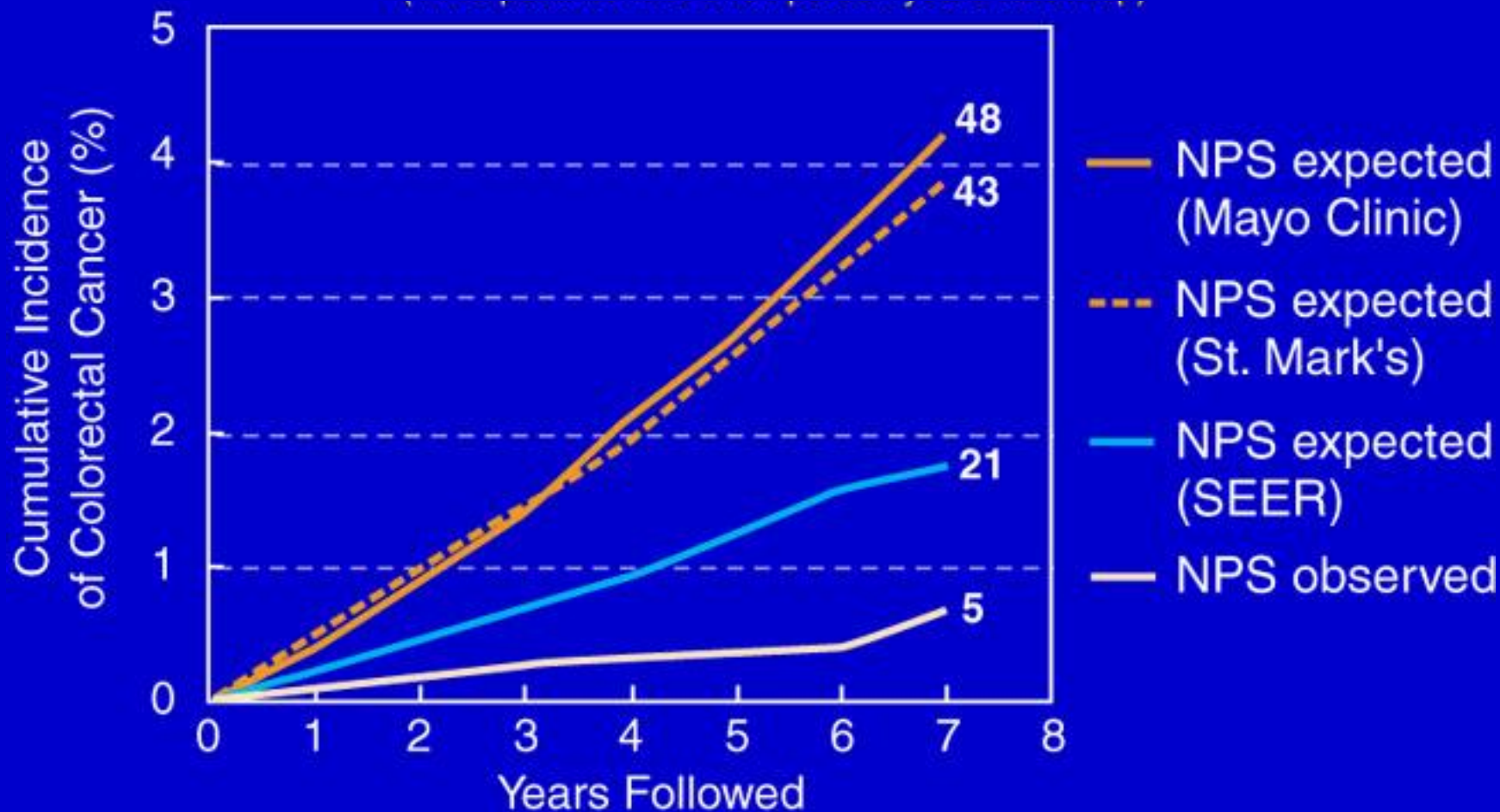
C = Colonoscopy

● = Cancer

Q = Interval History Questionnaire

Colorectal Cancer Incidence in NPS Following Colonoscopic Polypectomy

(1418 pts ; 8401 person yrs)



Which adenoma patients benefit from initial polypectomy and surveillance in the National Polyp Study?

**What is the impact of the initial polypectomy
What is the impact of surveillance**

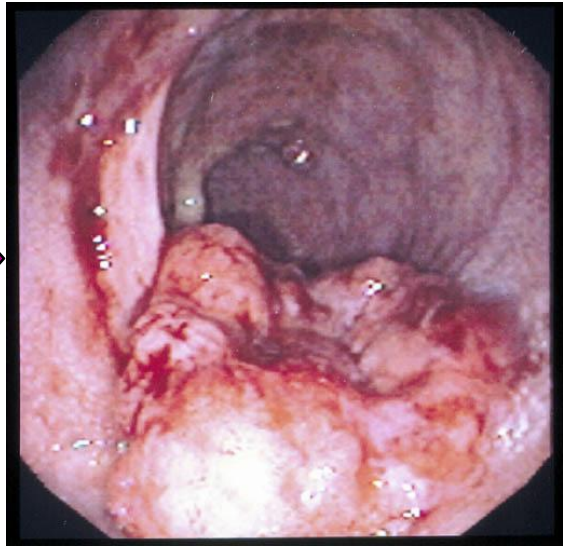
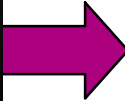
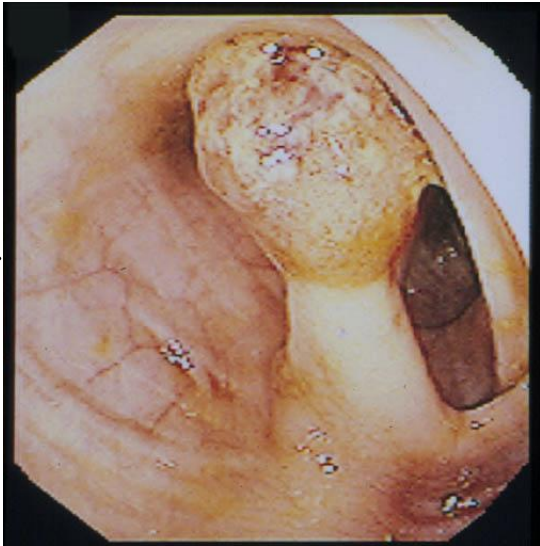
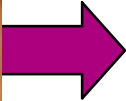
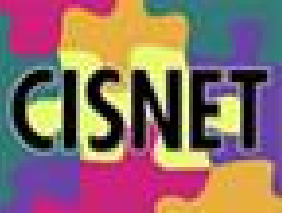
for patients with small adenomas in the National Polyp Study?

Microsimulation Modeling of Colorectal Cancer

Memorial Sloan-Kettering Cancer Center and
Erasmus MC

MISCAN

Adenoma to Carcinoma Pathway



Normal
Epithelium

Small
Adenoma

Advanced
Adenoma

Colorectal
Cancer



Microsimulation Modeling of Adenoma Carcinoma Sequence with Screening Interventions

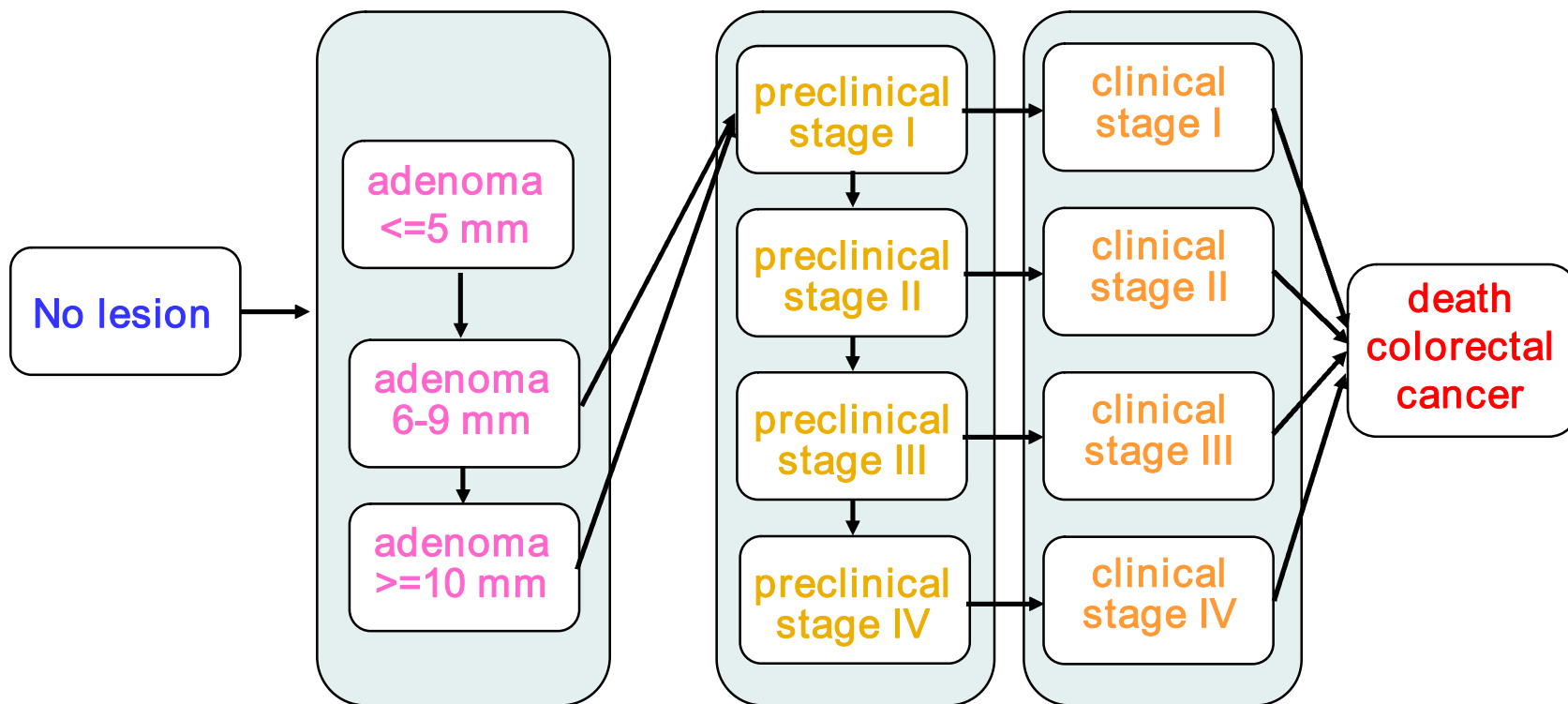


Screening

ADENOMA
Preclinical
screen-detectable
adenoma phase

Preclinical
CANCER
screen-detectable
cancer phase

Clinical
CANCER
phase



Datasources:

Adenoma
Autopsy studies
Colonoscopy studies

Preclinical Cancer
Dwell time

Clinical Cancer
SEER Incidence

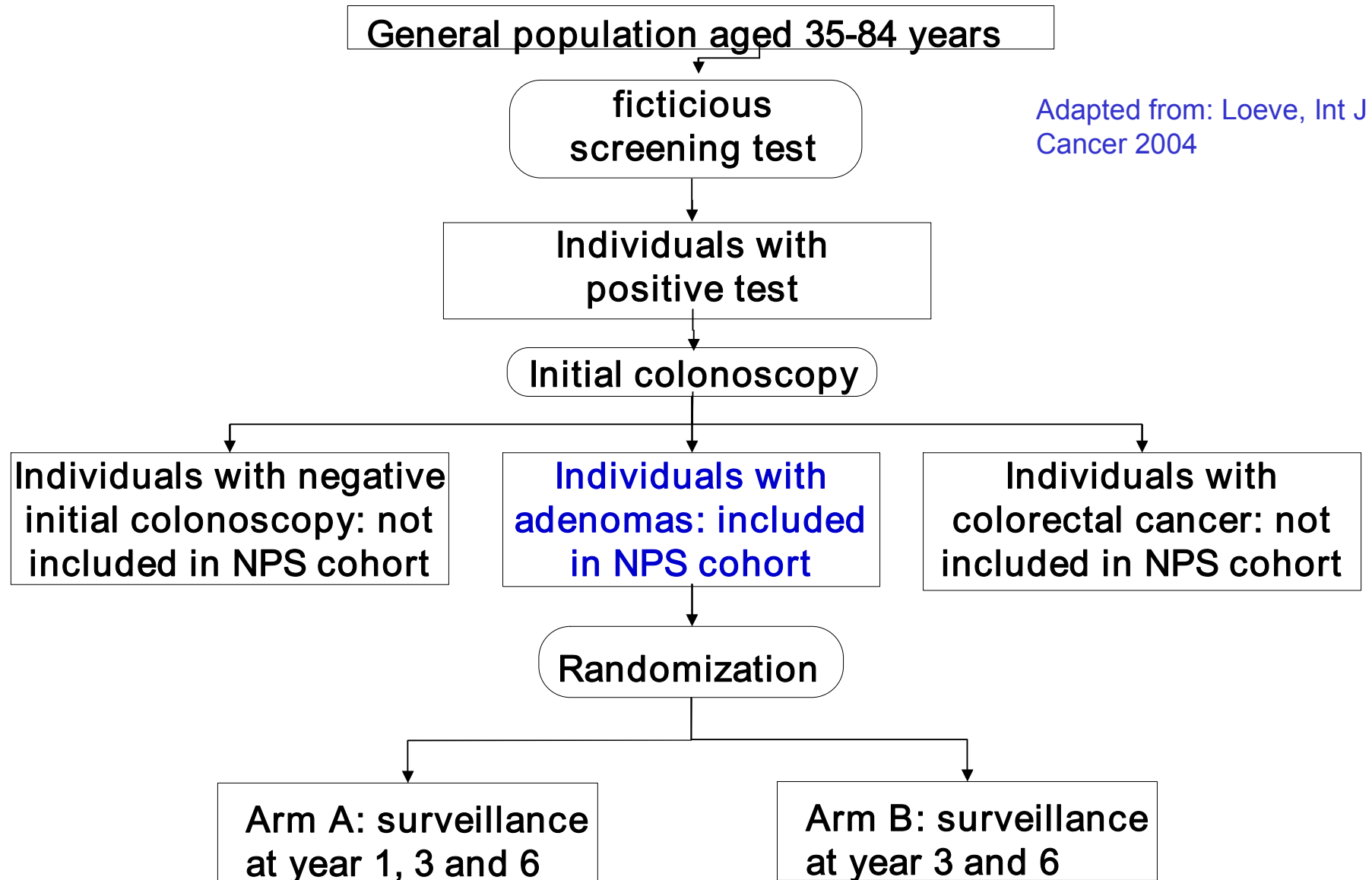
Death
US Mortality

What would have happened if no initial or surveillance colonoscopy?



-
- **Model colorectal cancer incidence in the National Polyp Study of adenoma patients**

MISCAN-simulation of NPS





- **NPS colonoscopy interventions**
 - ◆ With no initial and no surveillance
 - ◆ With initial but no surveillance
 - ◆ With initial and surveillance

- **Patient groups**
 - ◆ Overall
 - ◆ By number and size of adenomas at initial exam

- **New guidelines of ACS, Multi-Society, ACR on CTC**
 - ◆ ≥ 1 polyp of size 6mm or larger referred to optical colonoscopy

Results



- Manuscript in progress
- Results will be posted at a later date

Thank you



➤ Memorial Sloan-Kettering and Erasmus MC (The Netherlands)

- ◆ MSKCC: Ann Zauber,* Sid Winawer, Deb Schrag
- ◆ Erasmus: Marjolein van Ballegooijen, Iris Lansdorf-Vogelaar, Rob Boer, Janneke Wilschut, Dik Habbema