DECISION MODELING CENTER VUMC

Cost-effectiveness in CRC early detection

Veerle Coupé

MEDOCC

STAND UP TO CANCER

MOCCAS

VUmc

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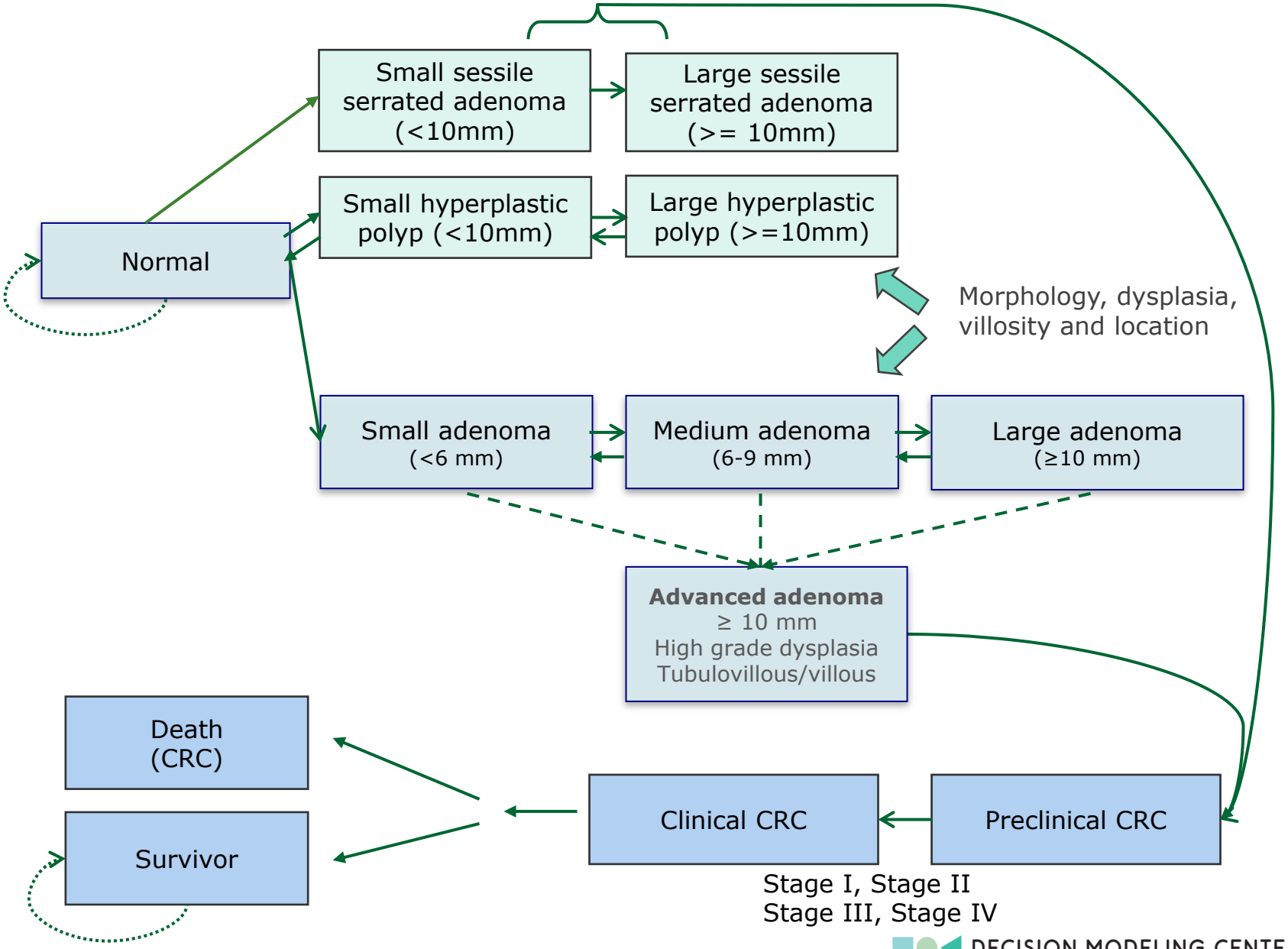
ASCCA model


Small sessile serrated adenoma (<10mm)
Large sessile serrated adenoma (>= 10mm)
Small hyperplastic polyp (<10mm)
Large hyperplastic polyp (>=10mm)
Normal
Morphology, dysplasia, villosity and location
Small adenoma (<6 mm)
Medium adenoma (6-9 mm)
Large adenoma (≥10 mm)
Advanced adenoma
≥ 10 mm
High grade dysplasia
Tubulovillous/villous
Death (CRC)
Survivor
Clinical CRC
Preclinical CRC
Stage I, Stage II
Stage III, Stage IV

1. Effectiveness of surveillance

- Screening added to already existing surveillance programme
- Increased risk of developing CRC after polypectomy
- Aim: to evaluate the additional benefit of surveillance in a FIT-based screening program

1. Strategies

1) No screening and no sur

2) FIT-screening *without co*

   Low risk: return to screening after ten years

   Increased risk: immediately return to screening

3) FIT-screening *plus colo surveillance* based on Dutch guideline

   Low risk: return to screening after ten years

   Intermediate risk: five year surveillance interval

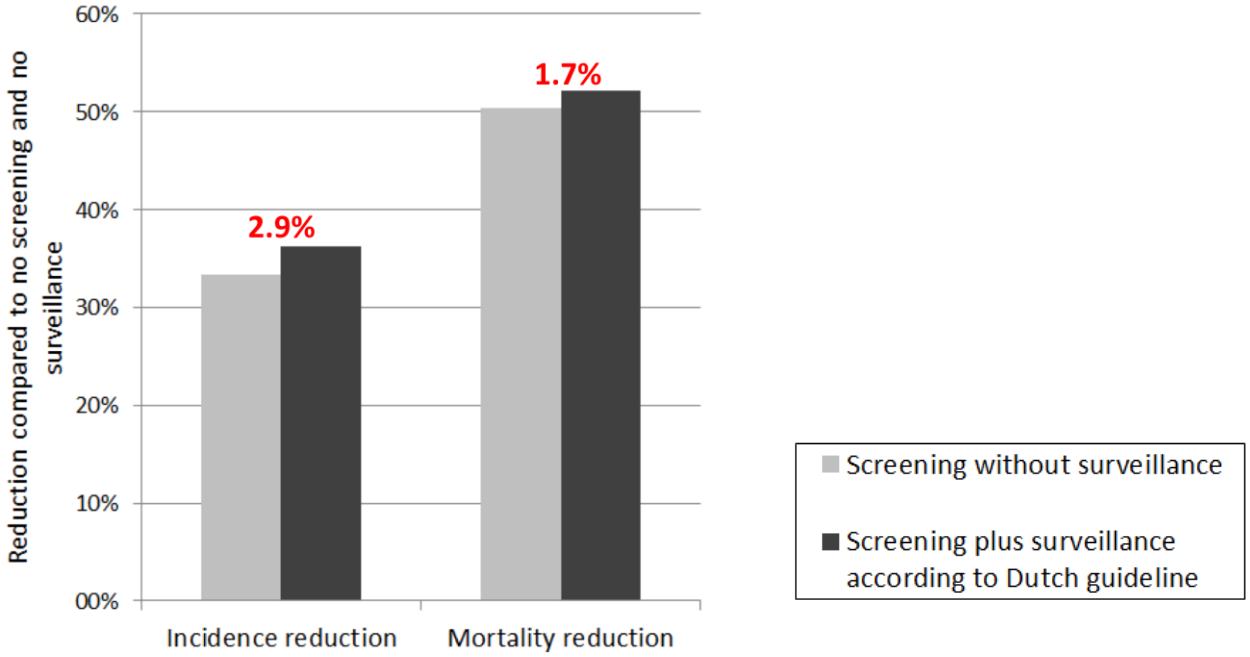
   High risk: three year surveillance interval

   End age: 75 years

Participation rates:
FIT-screening: 73%
Diagn + surv colonoscopy: 92%

1. Results

- Adding surveillance decreases CRC burden slightly



- Not cost-effective compared to screening without surveillance
- Substantial colonoscopy demand

2. Optical diagnosis

- 70-90% of detected polyps during colonoscopy are 1-5mm
- Small risk on advanced histological features and CRC
- Aim: to determine the effectiveness and costs of an optical diagnosis strategy compared to histopathological diagnosis of all diminutive polyps

2. Strategies

FIT-based CRC screen participation

1) Histopathology (H

Polypectomy and histop polyps

Parameters optical diagnosis:
High confidence: 76%
Diagnostic sensitivity:
- Adenomas: 88%
- SSAs: 91%
- HPs: 88%

Incomplete polypectomy 1-5mm: 3%
CRC in 1-5mm adenoma: 0.04%

2) Optical diagnosis (OD) strategy:

Diminutive polyps assessed with high confidence are not analysed by a pathologist and HPs in the rectosigmoid are left without resection

2. Results

- Implementation of OD saves costs without decreasing program effectiveness
- Annual undiscounted cost-saving of 1.7-2.2 million euros
- Training for adequate competence in OD

3. Differences in detection rates

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- Colonoscopy quality indicators: ADR and PSPDR
- ADR and PSPDR vary among endoscopists
- Aim: to evaluate the effect of variation in detection rates on the long-term impact of a FIT-based screening program

3. Strategies

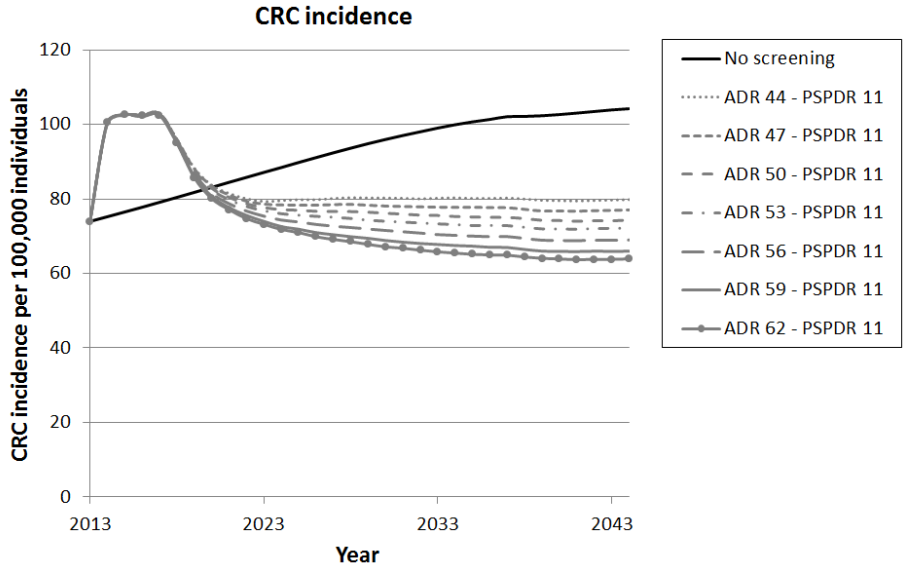
- ADR and PSPDR were determined in a screening cohort

- Base-case detection rates:
  - ADR: 59%
  - PSPDR: 11%

- Different detection settings:
  - ADR varied with steps of 3%
  - PSPDR varied with steps of 2%

3. Results

- Increase in ADR reduces long-term CRC burden



- Increase in PSPDR does not influence long-term CRC burden on a population level
- Limited effect PSPDR due to:
  - 15% contribution of serrated pathway to CRC incidence
  - Limited diagnostic accuracy of FIT for SPs

QUESTIONS / REMARKS ?

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