CRC screening in the Netherlands; from pilots to national programme

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Meeting WEO
CRC Screening Committee
Lead-up to the bowel cancer screening programme

2006: Start of pilot screening programmes
2009: Advisory report issued by the Health Council of the Netherlands
2011: Feasibility study conducted by RIVM

June 2011: Ministerial decision
Early 2013: Application and recommendation for permit under Population Screening Act
September 2013: Start of pilot
January 2014: National launch
CRC screening started end of January 2014

- FIT (FOB Gold, cut-off 15 µg/g) + colonoscopy
- Men and women 55–75 years old
- Bi-annually
- Phased introduction; when fully implemented: 2,2 million invitees per year
- Till 13 October: 473,435 invitees; 14,894 colonoscopies
In July cut-off was increased

- FIT (FOB Gold) from 88 to 275 ng/ml
- Cut-off did not give the right harm-benefit ratio, 12% referral rate, too many false positives, too little colonoscopy capacity
- Rationale for decision explained this morning in FIT for screening session; See also http://www.rivm.nl/en/Topics/B/Bowel_cancer_screening_programme
- Next year comparative study FOB Gold and OC sensor

Now: results of first half year with cut-off 88 ng/ml by Erasmus Medical Centre + Antonie van Leeuwenhoek hospital, national evaluator
Invitation and participation

Target population: 891,294

Invited: 189,610

Not yet invited: 701,684

Reminder: 57,023 (95.9% of non-responders)

Participants: 129,395 (68.2%)

Non-participants: 22,255 (11.7%)
Non-responders: 37,960 (20.0%)
Invitations per birth cohort

- **1938**: 60% Invited, 40% Not yet invited
- **1939**: 30% Invited, 70% Not yet invited
- **1947**: 20% Invited, 80% Not yet invited
- **1949**: 10% Invited, 90% Not yet invited
- **1951**: 5% Invited, 95% Not yet invited
- **Totaal**: 35% Invited, 65% Not yet invited

National Monitoring & Evaluation Colorectal Cancer Screening Programme
Erasmus MC – NKI / AvL
Participation: 68.2%
Participants: 129,395 (68.2%)

Unreliable: 946 (0.7%)

Not analyzable: 1,150 (0.9%)

Participants with analyzable FIT: 127,680 (98.7%)

Negative test: 112,297 (88.0%)

Positive test: 15,383 (12.0%)
Postivity rate: 12.0%
Intake colonoscopy

Positive test: 15,383 (12.0%)

Reminder: 224 (99.6% of non-shows)

Intake: 13,220 (85.9%)

Colonoscopy: 12,167 (92.0%)

Non-participants: 1,625 (10.6%)
No-show: 225 (1.5%)
Conclusions intake

- Colonoscopy: 92%
- CT colonography: 5%
- Different intake location: 2%
- Colonoscopy delayed: 1%
- Exclusion: 0%
Colonoscopy

**Colonoscopy:**
11,430 (95.4%)

- **Non-adenomatous findings:**
  4,195 (36.7%)

- **Non-advanced adenomas:**
  2,640 (23.1%)

- **Advanced adenomas:**
  3,832 (33.5%)

- **Colorectal cancer:**
  763 (6.7%)
Colonoscopies per positive test result

- Of the 15,383 participants with a positive test result currently 11,430 (74.3%) received a colonoscopy
Yield of colonoscopy

- Colorectal cancer: 32%
- Adv adenomas: 33%
- Non-adv adenomas: 7%
- Serrated polyps: 5%
- No findings: 23%
# Positivity and detection rates

<table>
<thead>
<tr>
<th></th>
<th>Pilot studies</th>
<th>National program 88 ng/ml</th>
<th>National program 275 ng/ml</th>
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</thead>
<tbody>
<tr>
<td>Test positivity</td>
<td>6.4%</td>
<td>12.0%</td>
<td>7.2%</td>
</tr>
<tr>
<td>Colonoscopy</td>
<td>85.7%</td>
<td>74.3%</td>
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</tr>
<tr>
<td>Detection rate* CRC</td>
<td>4.5 per 1,000</td>
<td>5.9 per 1,000</td>
<td>5.0 per 1,000</td>
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<tr>
<td>Detection rate* CRC+AA</td>
<td>28.3 per 1,000</td>
<td>36.2 per 1,000</td>
<td>25.4 per 1,000</td>
</tr>
<tr>
<td>PPV CRC</td>
<td>8.2%</td>
<td>6.7%</td>
<td>9.5%</td>
</tr>
<tr>
<td>PPV CRC+AA</td>
<td>51.6%</td>
<td>40.2%</td>
<td>48.1%</td>
</tr>
<tr>
<td><strong>False-positive FIT†</strong></td>
<td><strong>48.4%</strong></td>
<td><strong>59.8%</strong></td>
<td><strong>51.9%</strong></td>
</tr>
<tr>
<td>NNScope CRC</td>
<td>12.2</td>
<td>14.9</td>
<td>10.5</td>
</tr>
<tr>
<td>NNScope CRC+AA</td>
<td>1.8</td>
<td>2.5</td>
<td>2.1</td>
</tr>
</tbody>
</table>

PPV = Positive predictive value of a positive FIT

* Detection rate per 1,000 screened individuals

† False-positive FIT = percentage of positive FIT for which no advanced neoplasia are found during follow-up colonoscopy
Further information

http://www.rivm.nl/en/Topics/B/Bowel_cancer_screening_programme

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