Results and recent progress in the Czech Colorectal Cancer Screening Programme

M. Zavoral, S. Suchanek, O. Majek, B. Seifert, L. Dusek

European Colorectal Cancer Days: Brno 2012 - Prevention and Screening
4 - 5 May 2012, Brno
Programme development
positive steps

• 2000: programme launched
  – GPs, preventive check-up
  – Biennial gFOBT – colonoscopy

• 2006: screening colonoscopies database
  – On-line access from every GE unit involved
  – Data quality control – validation, regular reports

• 2009: new program design introduced
Actual programme design

• Asymptomatic individuals:
  – Age 50-54: gFOBT/FIT annually
  – Age 55: gFOBT/FIT biannually or primary screening colonoscopy in 10 years interval

• Centers for screening colonoscopy
  – Nationwide network
  – 225 GE units available, 160 involved (71%)
  – Minimum of screening colonoscopies: 50 per year

• Involvement of gynecologists

→ Is this enough to satisfy?
Controversial topics

• Programme efficiency evaluation
  1. long-term impact indicators  YES/NO
     a) decrease of CRC incidence and mortality
     b) detection of early stage cancers
     c) low numbers of interval cancers
  2. population programme  NO
  3. individual data  NO
  4. early performance indicators  YES/NO

• Adequate reimbursement?
Decrease of CRC incidence and mortality

**Incidence**
- 2000: 7,456
- 2009: 8,205

**Mortality**
- 2000: 4,506
- 2009: 4,169

**Prevalence 2010**

<table>
<thead>
<tr>
<th>Stage</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stadium I</td>
<td>17,077</td>
<td>31%</td>
</tr>
<tr>
<td>Stadium II</td>
<td>16,287</td>
<td>30%</td>
</tr>
<tr>
<td>Stadium III</td>
<td>11,412</td>
<td>21%</td>
</tr>
<tr>
<td>Stadium IV</td>
<td>7,243</td>
<td>13%</td>
</tr>
<tr>
<td>Stadium unknown</td>
<td>2,983</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>55,002</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Institute of Health Information and Statistics of the Czech Republic
Detection of early stage cancers

<table>
<thead>
<tr>
<th>Stage</th>
<th>2000</th>
<th>2008</th>
<th>Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage I</td>
<td>13.4 %</td>
<td>18.6 %</td>
<td>↑</td>
</tr>
<tr>
<td>Stage II</td>
<td>27.6 %</td>
<td>26.2 %</td>
<td>↓</td>
</tr>
<tr>
<td>Stage III</td>
<td>16.8 %</td>
<td>23.0 %</td>
<td>↑</td>
</tr>
<tr>
<td>Stage IV</td>
<td>22.1 %</td>
<td>26.5 %</td>
<td>↑</td>
</tr>
<tr>
<td>Stage unknown</td>
<td>20.1 %</td>
<td>5.7 %</td>
<td>↓</td>
</tr>
</tbody>
</table>

Source: Institute of Health Information and Statistics of the Czech Republic
Low numbers of interval cancer

• „CRC that occur following a negative screening test, in the interval before the next procedure is due“
• Individual data necessary
• Czech Republic: 3 databases, but without linkage
  – CRC screening database
  – National Oncology Registry (NOR)
  – National Reference Center (NRC)
    • Health insurance companies
Population programme

FOBT + PSC, target population 3.8 mil individuals

- Identification and **organized personal invitation** of target population
- EU Recommendation:
  - Accepted coverage: 45%
  - Recommended coverage: 65%

Source: National Reference Centre

European CRC Screening Guidelines, 2010
Individual data

• Every individual can be identified by national identification number

• Chain of screening and follow-up procedures
  – example: FOBT given → FOBT returned → FOBT positive → screening colonoscopy → therapeutic procedure → possibly operation or oncology therapy → death

• Interval cancers identification

• Exposure of non indicated procedures
  – Repeated in different health facility
  – Shorter interval than by recommendation

• Relevant and detailed data of FOBT
  – Currently only aggregated data available
Early performance indicators

- FOBT positivity
- Waiting times for screening colonoscopy
- Adenoma detection rate
- Positive predictive values and detection rates for adenomas and cancers
- Cecal intubation rate
- Adverse events
Overall FOBT positivity has been growing since 2007

- immunochemical FOBT introduction?
- gynecologists involvement (qualitative FIT)?

Source: National Reference Centre
Screening colonoscopy waiting times

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of screening colonoscopies</th>
<th>Average waiting time (months)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>5,335</td>
<td>0.85</td>
</tr>
<tr>
<td>2007</td>
<td>5,678</td>
<td>0.91</td>
</tr>
<tr>
<td>2008</td>
<td>7,457</td>
<td>0.95</td>
</tr>
<tr>
<td>2009</td>
<td>11,710</td>
<td>1.04</td>
</tr>
<tr>
<td>2010</td>
<td>18,324</td>
<td>1.13</td>
</tr>
<tr>
<td>2011</td>
<td>20,042</td>
<td>1.22</td>
</tr>
</tbody>
</table>

Notice: FOBT data are monitored in month and year system. Waiting time is evaluated in full months (0: colonoscopy in the same month, 1 colonoscopy in the following months ..).

Source: CRC screening database
Timeframe of screening procedures

Number of individuals with procedure

Number of FOBTs performed has been growing since 2009 intensively

Source: National Reference Centre
# Programme basic results and ADR

<table>
<thead>
<tr>
<th>Year</th>
<th>Patients with colonoscopy</th>
<th>Patients with detected adenoma</th>
<th>Proportion</th>
<th>Patients with detected cancer</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>5,335</td>
<td>1,578</td>
<td>29.6%</td>
<td>335</td>
<td>6.3%</td>
</tr>
<tr>
<td>2007</td>
<td>5,678</td>
<td>1,636</td>
<td>28.8%</td>
<td>337</td>
<td>5.9%</td>
</tr>
<tr>
<td>2008</td>
<td>7,457</td>
<td>2,367</td>
<td>31.7%</td>
<td>446</td>
<td>6.0%</td>
</tr>
<tr>
<td>2009</td>
<td>13,072</td>
<td>4,122</td>
<td>31.5%</td>
<td>624</td>
<td>4.8%</td>
</tr>
<tr>
<td>2010</td>
<td>22,723</td>
<td>7,304</td>
<td>32.1%</td>
<td>872</td>
<td>3.8%</td>
</tr>
<tr>
<td>2011</td>
<td>24,591</td>
<td>8,251</td>
<td>33.6%</td>
<td>766</td>
<td>3.1%</td>
</tr>
<tr>
<td>2012*</td>
<td>3,915</td>
<td>1,221</td>
<td>31.2%</td>
<td>83</td>
<td>2.1%</td>
</tr>
<tr>
<td>Total</td>
<td>82,771</td>
<td>26,479</td>
<td>32.0%</td>
<td>3,463</td>
<td>4.2%</td>
</tr>
</tbody>
</table>

* Preliminary results (April 2012)

Source: CRC screening database
Screening procedures reimbursement

- Cervical screening: since 2008
  - New screening specialty 820, special reimbursement, no regulation

- Breast screening: since 2002
  - New screening specialty 806, special reimbursement, no regulation

- Colorectal screening: since 2000
  - Request of new screening specialty → denied by Ministry of Health
  - Only screening colonoscopy a primary screening colonoscopy: new codes (15101, 15105), special reimbursement, no regulation
  - Accompanying procedures (biopsy, polypectomy, resection, videocode) stays under regulation

→ Request: to have same conditions as the other two screening programs
Challenges to the future

- Organized personal invitation – population screening
- Individual data – programme monitoring
- FOBT: switch from gFOBT to qFIT (quantitative)
- Adequate screening procedure reimbursement with new screening specialty