Organized CRC Screening Outreach Efforts in Various Countries and Health Systems

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University of Washington School of Medicine
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Global Overview of CRC Screening Programs (2014)

Significant Recent Adoption of CRC Screening

Young et al. Gastro 2019; 156(4):843
## Adherence to CRC Screening in Europe

<table>
<thead>
<tr>
<th>Country</th>
<th>Years</th>
<th>Age</th>
<th>Test</th>
<th>Participation</th>
<th>Positivity</th>
<th>Colonoscopy</th>
<th>CRC detection/1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ireland</td>
<td>2008-2009</td>
<td>50-74</td>
<td>FIT</td>
<td>51%</td>
<td>10%</td>
<td>87%</td>
<td>3.3</td>
</tr>
<tr>
<td>Italy</td>
<td>2007-2009</td>
<td>50-69</td>
<td>FIT</td>
<td>54.4%</td>
<td>5.8%</td>
<td>92.5%</td>
<td>1.6</td>
</tr>
<tr>
<td>Lithuania</td>
<td>2009-2012</td>
<td>50-74</td>
<td>FIT</td>
<td>46%</td>
<td>7.2%</td>
<td>66.1%</td>
<td>0.2</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2014-2015</td>
<td>55-75</td>
<td>FIT</td>
<td>68.2%</td>
<td>12.2%</td>
<td>74.3%</td>
<td>5.9</td>
</tr>
<tr>
<td>Slovenia</td>
<td>2009-2014</td>
<td>50-69</td>
<td>FIT</td>
<td>60.43%</td>
<td>5.9%</td>
<td>98.9%</td>
<td>NA</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>2000-2011</td>
<td>&gt;50</td>
<td>gFOBT/FIT</td>
<td>22.7%</td>
<td>6.1%</td>
<td>95.7%</td>
<td>1</td>
</tr>
<tr>
<td>Croatia</td>
<td>2007-2011</td>
<td>50-74</td>
<td>gFOBT</td>
<td>19.9%</td>
<td>6.9%</td>
<td>66%</td>
<td>NA</td>
</tr>
<tr>
<td>England</td>
<td>2006-2010</td>
<td>60-69</td>
<td>gFOBT</td>
<td>52%</td>
<td>2%</td>
<td>83%</td>
<td>NA</td>
</tr>
<tr>
<td>France</td>
<td>2008-2009</td>
<td>50-74</td>
<td>gFOBT</td>
<td>34.3%</td>
<td>2.8%</td>
<td>88.4%</td>
<td>1.9</td>
</tr>
</tbody>
</table>

Navarro *World J Gastroenterol* 2017 May 28; 23(20): 3632-3642
## Adherence to CRC Screening in Asia & Americas

<table>
<thead>
<tr>
<th>Country</th>
<th>Years</th>
<th>Age</th>
<th>Test</th>
<th>Participation</th>
<th>Positivity</th>
<th>Colonoscopy</th>
<th>CRC detection/1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>2002-2004</td>
<td>55-74</td>
<td>FIT q 2</td>
<td>45.4</td>
<td>8.9%</td>
<td>31.4%</td>
<td>2.59</td>
</tr>
<tr>
<td>Japan</td>
<td>1992-</td>
<td>40-69</td>
<td>FIT q 1</td>
<td>M41.4%</td>
<td>F34.5%</td>
<td>~70%</td>
<td></td>
</tr>
<tr>
<td>South Korea</td>
<td>2004-2008</td>
<td>50-75</td>
<td>FIT q 1</td>
<td>21%</td>
<td>7.5%</td>
<td>31.4%</td>
<td>NA</td>
</tr>
<tr>
<td>Taiwan</td>
<td>2004-2009</td>
<td>50-69</td>
<td>FIT q 2</td>
<td>21.4%</td>
<td>4%</td>
<td>80%</td>
<td>2.5</td>
</tr>
<tr>
<td>Thailand</td>
<td>2011-2012</td>
<td>50-65</td>
<td>FIT</td>
<td>62.9%</td>
<td>1.1%</td>
<td>71.8%</td>
<td>0.29</td>
</tr>
<tr>
<td>KP N. California</td>
<td>2006-</td>
<td>51-75</td>
<td>FIT q 1</td>
<td>68.0%</td>
<td>3.4%</td>
<td>81%</td>
<td>0.8</td>
</tr>
<tr>
<td>Canada</td>
<td>2009-2011</td>
<td>50-74</td>
<td>gFOBT/FIT q 2</td>
<td>16.1%</td>
<td>4.4%</td>
<td>80.5%</td>
<td>1.8</td>
</tr>
<tr>
<td>Chile</td>
<td>2007-2009</td>
<td>&gt;50</td>
<td>FIT</td>
<td>NA</td>
<td>9.6%</td>
<td>58.6%</td>
<td>2</td>
</tr>
</tbody>
</table>

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Variation in Participation

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Variation in Participation: gFOBT vs. FIT?

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Variation in Participation: Invitation Approach

Navarro World J Gastroenterol 2017 May 28; 23(20): 3632-3642
# Detailed Comparison of 4 European Programs

<table>
<thead>
<tr>
<th>Country</th>
<th>Cut-off Level (Hb/g feces)</th>
<th>Pre-Invitation Letter?</th>
<th>Mailed FIT?</th>
<th>Reminder Letter</th>
<th>Exclusions Pre-invitation</th>
<th>Exclusions Mentioned in Letter</th>
</tr>
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<tbody>
<tr>
<td>France</td>
<td>30 µg</td>
<td>No</td>
<td>No</td>
<td>12 &amp; 24 wks</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Flanders (Belgium)</td>
<td>15 µg</td>
<td>No</td>
<td>Yes</td>
<td>8 wks</td>
<td>Yes</td>
<td>CRC, occult blood in stool, change in bowel habits, colonoscopy in past 10 years, FIT&lt; 2 yrs, high risk for CRC</td>
</tr>
<tr>
<td>Netherlands</td>
<td>47 µg</td>
<td>Yes (3 wks)</td>
<td>Yes</td>
<td>6 wks</td>
<td>No</td>
<td>CRC, occult blood, change in bowel habits</td>
</tr>
<tr>
<td>Basque Country (Spain)</td>
<td>20 µg</td>
<td>Yes (4 wks)</td>
<td>Yes</td>
<td>4 wks</td>
<td>Yes</td>
<td>Colonoscopy ≤5 years</td>
</tr>
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USA Has High Rates of Opportunistic Screening

Percentage of Adults Aged 50–75 Years Who Met Colorectal Cancer (CRC) Screening Recommendations* † — National Health Interview Survey, United States, 2018

MMWR Morb Mortal Wkly Rep 2020;69:314. DOI: http://dx.doi.org/10.15585/mmwr.mm6911a7
Proportion of US Veterans Age 50-75 Up-To-Date with Screening

* CRC screening in veterans age ≥52
** CRC screening in veterans age 50-80

http://vaww.rs.rtp.med.va.gov/Reports/Pages/Report.aspx?ItemPath=%2fEBB+Reports%2fMeasureMaster

Jason A. Dominitz, MD, MHS
VA: Diagnostic Colonoscopy After FOBT+

Rates Across Sites

Proportion with Colonoscopy

Months Post FIT+
Diagnostic Colonoscopy After FOBT+

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Is Cost of Diagnostic Colonoscopy a Factor in Adherence?

Taiwan

– Screening costs are covered by the government, including FIT and diagnostic colonoscopy
– Cost of moderate sedation is not covered
– This may contribute to lower adherence with diagnostic colonoscopy

Wang et al. J Formosan Medical Association 2018;117:358-364
Kaiser Permanente N. California Screening Program

- All members age 51-75
- Approximately 900,000 eligible members
  - 700,000 receiving annual FIT outreach

Regional FIT Outreach Program:
- PCP Pre-letter Mailed
- FIT Kit Mailed
- Robo-call reminder
- Reminder Postcard
- Secure Message
- MA Calls

Colonoscopy by referral: high risk, or by referral, particularly 65-75 year olds

Slide courtesy of TR Levin
Kaiser Permanente N. California Screening Program

1,023,415 Adults age 51-75
40% up to date due to prior colonoscopy or sig

- FIT kit mailed
  20% complete FIT within 28 days (60% coverage)

- Robo-call reminder
  26% complete FIT within 42 days (66% coverage)

- Reminder postcard
  30% complete FIT within 56 days (70% coverage)

- Personalized outreach by Primary Care offices
  34% complete FIT within 91 days (74% coverage)

- Local inreach efforts yields
  Additional 6.7% undergo FIT (81% coverage)

- Colonoscopy, sig or gFOBT for other reasons

82% coverage

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82% coverage (colonoscopy for FIT+: 81%)

Organized Screening at Kaiser Permanente of N. California

Initiation of Mailed FIT Led to a Spike in CRC Incidence

And a Decline in CRC Mortality

Recent CDC Summit on Mailed FIT

Mailed Fecal Immunochemical Test Outreach for Colorectal Cancer Screening: Summary of a Centers for Disease Control and Prevention-Sponsored Summit

Samir Gupta, MD, MSCS 1,2,3; Gloria D. Coronado, PhD 4; Keith Argenbright, MD 5,6,7; Alison T. Brenner, PhD, MPH 8,9; Sheila F. Castañeda, PhD 10; Jason A. Dominitz, MD, MHS 11,12; Beverly Green, MD, MPH 13,14,15; Rachel B. Issaka, MD, MAS 16,17; Theodore R. Levin, MD 18,19; Daniel S. Reuland, MD, MPH 8,9; Lisa C. Richardson, MD, MPH 20; Douglas J. Robertson, MD, MPH 21,22; Amit G. Singal, MD, MS 23; Michael Pignone, MD, MPH 24

Conclusions

• Organized screening is increasingly adopted worldwide

• There is substantial variation in organized screening methods
  – Age, exclusions, type of FOBT, invitation approach, reminders, etc.

• Improved participation results from mailed FIT

• Colonoscopy after positive FIT can be a challenge

• We can learn “best practices” from highly successful programs