An Update on the Bowel Cancer Screening Programme

Natasha Djedovic, London Hub Director
17th September 2018
NHS Bowel Cancer Screening Programme

- 2006: 60-69 yr old men & women offered guaiac Faecal Occult Blood test
- 2013: phased roll-out of Bowel scope screening (flexible sigmoidoscopy) to 55 yr olds
- 2014: age extension (70 - 74 yr olds) for gFOBt completed
- 2015: UK National Screening Committee recommended that FIT replace gFOBt
- 2018: UK National Screening Committee recommended lowering the age of bowel cancer screening in England to the age of 50
FOBt Pathway

• Eligibility criteria:
  • men and women aged 60 – 74
  • registered with a General Practice
  • entitled to NHS care
  • have a functioning bowel

• Identification of participants through Bowel Cancer Screening System (national IT system)
  • Invited within 6 weeks of their 60th birthday

• Men & women ≥75 yrs old can self-refer.
Communication of abnormal results (~43,000 per year) & booking appointments at Screening Centres

Deal with telephone enquiries to national helpline (~800,000 per year)

Dispatch of pre-invitation materials & invitation packs (~4.5m pre-invites & ~4.9m test kits per year)

Analysis of completed test kits (~2.9m per year, ~59% uptake)
Hub FOBt Pathway

1. Invitation sent

1 week later

2. Kit dispatched

3. Receipt & development of used test kit

- Normal result (6 negative samples)
  - FOBt offered in 2 years if <75

- Abnormal result (5 or 6 positive samples)
  - SSP appointment offered within 14 days of abnormal result

- Unclear result (1-4 positive samples)
  - 1 or 2 repeat kits dispatched

- Spoilt kit or technical fail
  - 1 repeat kit dispatched

4. Reminder sent if no return within 4 weeks
Faecal Immunochemical Test (2016)

Crucial changes to the bowel cancer screening programme in England

Public Health Minister, Jane Ellison, said:

“This new test is an exciting game changer for helping us beat bowel cancer. It is easier to use, will increase the number of tests and help us tackle cancer earlier.”
Guaiac + $2\text{H}_2\text{O}_2$ → Haem → Quinone + $2\text{H}_2\text{O} + \text{O}_2$
Haemoglobin - Globin
Antibody recognition of the tertiary structure produced by the folding of the amino acid chain in the globin protein.
Faecal Immunochemical Test

Slide from Sally Benton
Faecal Immunochemical Test

Gut, 2016

Increased uptake and improved outcomes of bowel cancer screening with a faecal immunochemical test: results from a pilot study within the national screening programme in England

Sue Moss,1 Christopher Mathews,1 T J Day,2 Steve Smith,3 Helen E Seaman,4 Julia Snowball,4 Stephen P Halloran4,5

FIT in place of guaiac FOBT
1 in 28 invitations
40,000 FIT tests
2 Hubs
Single kit
FIT trial (2014)

- Both: 7.1% Increase
- Southern: 7.0%
- Mid & NW: 7.3%
gFOBt Uptake in London

All Ages (Source - OBIEE)

- Uptake
- Positivity
FIT trial (London, 2015/2016)

- Male: 9.7%
- Female: 7.4%
- All: 8.5%
FIT trial (London, 2015/2016)

- IMD5: 9.8% uptake
- IMD4: 50%
- IMD3: 55%
- IMD2: 60%
- IMD1: 65%
FIT trial (London, 2015/2016)

- Incident: 5.4%
- Prevalent: 9.7%
- First: 13.7%
Hub FIT Pathway (60 – 74 yr)

1. Invitation sent
   1 week later

2. Kit dispatched
   - Reminder sent if no return within 4 weeks

3. Receipt & analysis of completed test kit

   - Normal result: <120 µg Hb/g faeces
     - FIT offered in 2 years if <75
   - Abnormal result: ≥120 µg Hb/g faeces
     - SSP appointment offered within 14 days of abnormal result
   - Unclear result: (1-4 positive samples)
   - Spoilt kit or technical fail
     - 1 repeat kit dispatched
% Detection Rate

<table>
<thead>
<tr>
<th>Test</th>
<th>Cancer</th>
<th>Ad. Adenoma</th>
<th>All Neoplasms</th>
</tr>
</thead>
<tbody>
<tr>
<td>gFOBt</td>
<td>0.12%</td>
<td>0.35%</td>
<td>0.76%</td>
</tr>
<tr>
<td>FIT 20</td>
<td>0.27%</td>
<td>1.74%</td>
<td>3.74%</td>
</tr>
<tr>
<td>FIT 40</td>
<td>0.24%</td>
<td>1.30%</td>
<td>2.63%</td>
</tr>
<tr>
<td>FIT 100</td>
<td>0.16%</td>
<td>0.68%</td>
<td>1.30%</td>
</tr>
<tr>
<td>FIT 150</td>
<td>0.15%</td>
<td>0.50%</td>
<td>0.94%</td>
</tr>
<tr>
<td>FIT 180</td>
<td>0.13%</td>
<td>0.43%</td>
<td>0.80%</td>
</tr>
</tbody>
</table>

Slide from Stephen P Halloran
# Faecal Immunochemical Test vs Guaiac Test

<table>
<thead>
<tr>
<th>FIT</th>
<th>gFOBt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single faecal sample</td>
<td>Six faecal samples from three bowel motions</td>
</tr>
<tr>
<td>Sample put into a plastic bottle</td>
<td>Sample put onto cardboard</td>
</tr>
<tr>
<td>Higher participation rate than with gFOBt</td>
<td>Lower participation rate than with FIT</td>
</tr>
<tr>
<td>Sample can be analysed more than once</td>
<td>One-time only analysis</td>
</tr>
<tr>
<td>Automated objective instrument analysis</td>
<td>Subjective visual assessment</td>
</tr>
<tr>
<td>Measures human blood</td>
<td>Measures any blood, including that in the diet</td>
</tr>
<tr>
<td>Higher detection of cancers and adenomas</td>
<td>Lower detection of cancers and adenomas</td>
</tr>
<tr>
<td>Adjustable Hb cut-off concentration</td>
<td>Non-adjustable Hb cut-off concentration</td>
</tr>
</tbody>
</table>
Impact of FIT 120 µg/g

Based on PHE modelling data, ~15,663 extra screening colonoscopies per year on top of FOBt 36,589 colonoscopies

~1,427 more cancers detected
Implementation of FIT for 60 – 74 yr olds

• National procurement process is underway
• 1 single supplier for England
• Assessment of screening centre capacity in progress

• Interim solution before April 2019: 1 in n (by Hub/screening centre)
• Full roll-out anticipated in April 2019
Age extension to 50 – 74 yr olds

Bowel cancer screening to start earlier at age 50 in England

Bowel cancer screening age in England to be lowered to 50

Ministers accept experts’ view that age when screening starts should fall by 10 years
Bowel Scope (Flexible Sigmoidoscopy)

Long-term effects of once-only flexible sigmoidoscopy screening after 17 years of follow-up: the UK Flexible Sigmoidoscopy Screening randomised controlled trial

Wendy Atkin, Kate Wooldrage, D Maxwell Parkin, Ines Kralj-Hans, Eilidh MacRae, Urvi Shah, Stephen Duffy, Amanda J Cross

• Multi-centre randomised trial (UK Flexible Sigmoidoscopy Screening Trial)
• 1994 – 1999, n = 170,432 (55 – 64 yrs)
• 17 years follow up:
  • Colorectal cancer incidence reduced by 33%
  • Colorectal cancer mortality reduced by 43%

The Lancet, 2017
Bowel Scope Pathway

- Eligibility criteria:
  - men and women aged 55 yrs
  - registered with a General Practice
  - entitled to NHS care
  - have a functioning bowel

- Identification of participants through Bowel Cancer Screening System (national IT system)

- Men & women 55 - 59 yrs old can self-refer if GP practice live for Bowel scope
Hub Mailing

Dispatch of pre-invitation materials & invitation/confirmation/non-response letters (~2 – 2.5m per year)

Hub Call Centre

Deal with telephone enquiries to national helpline – appointment rebookings & cancellations

Hub Admin

Process response slips, organise dispatch of enemas from central distribution centre once confirmation of attendance is received, maintain maps

London North West University Healthcare

NHS Trust
Bowel Scope Pathway

- ~47.5% of GPs rolled out in England (100% expected by 2021)

Challenges:
- 40 – 45% uptake
- Screening centre resources
Future

- Full roll out of FIT to 60 – 74 yr olds at 120 µg/g
- Lowering starting age to 50 yr old
- Lowering cut-off to 20 µg/g
- Using screening history to determine risk
- Changing the screening interval
- Different cut-offs for men & women
- Withdrawal of Bowel scope
Acknowledgements

- Prof Stephen Halloran
- Sally Benton
- Prof Sue Moss
- Dr Chris Matthews

Thank you for your attention