FIT in the Symptomatic:
Putting Theory into Practice
FIT in Assessment of the Symptomatic:

Prof. Callum Fraser, Senior Research Fellow,
School of Medicine, University of Dundee
FIT - Faecal Immunochemical Tests

- Detect haemoglobin in faeces with antibodies to globin.
- Easy to sample faeces with user friendly, hygienic specimen collection devices.
- One sample only.
- No dietary interferences.
- More specific for lower GI lesions.
- Generally more analytically sensitive than gFOBT.
- Now recommended in guidelines for population screening.
Haemoglobin in Faeces

The Evidence and The New Paradigm

- **Studies from Scotland, Spain, England and elsewhere prove that quantitative FIT can be used to rule in cancer in symptomatic patients but, perhaps more importantly, rule out significant colorectal disease (high NPV).**
- **No. of referrals for colonoscopy could be cut significantly.**
- **Some adenomas and IBD would be missed – and cancer.**

“ALL” Patients with Symptoms

- FIT Positive
  - Colonoscopy
- FIT Negative
  - Watch and wait
  - GI referral
  - Repeat Test
  - Reassure
Key cancer services across Scotland are being redesigned.

Efforts to reduce demand on colorectal cancer services are being prioritised, with a new primary care diagnostic test being examined for national roll-out early next year.

FIT is designed to rule out the presence of blood in faeces – a key indicator of bowel disease – reducing the number of unnecessary colonoscopies being carried out.
Faecal immunochemical tests to triage low risk populations for suspected colorectal cancer referrals in primary care.

**Draft** guidance (and evidence base) are available at:

https://www.nice.org.uk/guidance/indevelopment/gid-dg10005

...... quantitative FIT are recommended for routine adoption in primary care to guide referral for suspected CRC in people who have symptoms but are at low risk.

Results should be reported using a threshold of 10 µg Hb/g faeces.

**Final guidance – June 2017.**

Meeting of NHS England with ACB, BSG and ACPGBI on 08/03/17.
FIT in the Symptomatic: Putting Theory into Practice

The Tayside Experience

Dr Jayne Digby, Research fellow, Ninewells Hospital and Medical School, Dundee
Background

58.3% patients had faecal haemoglobin concentration (f-Hb) > 0 µg Hb/g/faeces

<table>
<thead>
<tr>
<th>Test Status</th>
<th>Cancer</th>
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<th>Total</th>
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<tbody>
<tr>
<td>Test +</td>
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<td>481</td>
<td>409</td>
</tr>
<tr>
<td>Test -</td>
<td>0</td>
<td>288</td>
<td>288</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>769</td>
<td>797</td>
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</table>

PPV = 5.5%  
Sensitivity = 100%  
NPV = 100%  
Specificity = 37.5%
Current Work

• Detect Cancer Early Programme:
  – Since December 2015, GP in NHS Tayside have been encouraged to use FIT as an adjunct to history, examination and mandatory “blood tests” in patients referred with bowel symptoms.

• Scottish Government Chief Scientist Office:
  – Development of a clinical risk score incorporating f-Hb with relevant age, gender, specific symptom and lifestyle data.
• Total of 5,660 FIT kits returned from December 2015 – December 2016.
• 21.1% with f-Hb > 10 µg Hb/g faeces.
• 5.2% with f-Hb > 400 µg Hb/g faeces.
Results - One Year On

- 6 patients with f-Hb < 10 µg Hb/g faeces had CRC.
- All had co-existing iron deficiency anaemia and were referred regardless of f-Hb result.
Ramifications for Clinical Practice

• A FIT investigation is an essential adjunct to history, examination and blood tests in the assessment of patients presenting in primary care with bowel symptoms.

• f-Hb < 10 µg Hb/g faeces reassures Primary Care that serious bowel disease is unlikely (use as a rule out test).

• Referrals to secondary care - 14% down on the previous year.

• At colonoscopy, yield of cancer, high-risk adenoma and IBD has increased and is high in those with f-Hb > 10 µg Hb/g faeces.
What Next for Tayside and Scotland?

• Continuation of use of FIT as routine practice in primary care.

• Roll out to other NHS Boards?

• Development and validation of further clinical risk scores – including examination in practice of our FAST Score (f-Hb, age and sex test score).

Putting Theory into Practice: NHS England – Problems and Progress

Sally C Benton
Consultant Biochemist, BSPS
Director, Bowel Cancer Screening Southern England Hub
1.3 Lower gastrointestinal tract cancers

Colorectal cancer

1.3.1 Refer adults using a suspected cancer pathway referral (for an appointment within 2 weeks) for colorectal cancer if:
   • they are aged 40 and over with unexplained weight loss and abdominal pain or
   • they are aged 50 and over with unexplained rectal bleeding or
   • they are aged 60 and over with:
     • iron-deficiency anaemia or
     • changes in their bowel habit, or
   • tests show occult blood in their faeces (see recommendation 1.3.4 for who should be offered a test for occult blood in faeces). [new 2015]

1.3.2 Consider a suspected cancer pathway referral (for an appointment within 2 weeks) for colorectal cancer in adults with a rectal or abdominal mass. [new 2015]

1.3.3 Consider a suspected cancer pathway referral (for an appointment within 2 weeks) for colorectal cancer in adults aged under 50 with rectal bleeding and any of the following unexplained symptoms or findings:
   • abdominal pain
   • change in bowel habit
   • weight loss
   • iron-deficiency anaemia. [new 2015]

1.3.4 Offer testing for occult blood in faeces to assess for colorectal cancer in adults without rectal bleeding who:
   • are aged 50 and over with unexplained:
     • abdominal pain or
     • weight loss, or
   • are aged under 60 with:
     • changes in their bowel habit or
     • iron-deficiency anaemia, or
   • are aged 60 and over and have anaemia even in the absence of iron deficiency. [new 2015]
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- are aged 60 and over and have anaemia even in the absence of iron deficiency. [new 2015]

• Guaiac FOB – very poor analytical sensitivity and specificity
• Most labs in the UK had stopped offering the FOB test
Recommended use of FIT in the NG12 guidelines

“The faecal occult blood tests are recommended to triage referral to secondary care”
NICE recommendation in brief;

1. **Draft recommendations**

1.1 The OC Sensor, HM-JACKarc and FOB Gold quantitative faecal immunochemical tests are recommended for routine adoption in primary care to guide referral for suspected colorectal cancer in people who have symptoms but are at low risk.

The tests should be used in combination with clinical judgement and other test results to decide whether to make a referral using a suspected colorectal cancer pathway for an appointment within 2 weeks or a routine outpatient referral to a specialist.

1.2 Results should be reported using a threshold of 10 micrograms of haemoglobin per gram of faeces. Laboratories adopting the tests should take note of the instructions for use and ask the companies for advice about the performance characteristics when needed.

1.3 There is currently insufficient evidence to recommend the routine adoption of the RIDASCREEN haemoglobin or the RIDASCREEN

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Recommends use of FIT in primary care referral pathway for suspected CRC in low risk patients. 3 analysers recommended

Cut-off to be used; 10ug Hb/ g faeces
Endoscopy services are struggling to deliver capacity to keep up with demand from combination of screening, symptomatic and surveillance patients

Demand expected to increase significantly over next few years

Does FIT provide a solution?
Scoping workshop - FIT for Symptomatic patients

• 52 attendees
  – Colorectal surgeons, gastroenterologists, clinical biochemists, GP’s academia, service managers, NICE, HTA, Bowel Cancer UK, Beating bowel cancer, WEQAS, Sysmex, Mast, Alpha laboratories, Alere, NHS England, National Screening Committee, Bowel Cancer Screening programme

• Purpose of workshop
  – Share any data collected on FIT in symptomatic population in England
    • Research, service evaluation, audit (published and unpublished)
  – Find out about any proposed projects
  – Discuss issues, challenges, gaps in knowledge and potential solutions
NHSE workshop – material presented

Background

Study data

Discussion

### Scoping Workshop FIT for Symptomatic Patients

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<th>Time</th>
<th>Session</th>
<th>Presenter(s)</th>
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<tr>
<td>10.30</td>
<td>Welcome &amp; Introduction</td>
<td>Celia Ingham-Clark, NHS England</td>
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<tr>
<td>10.40</td>
<td>FIT testing: issues from the lab</td>
<td>Sally Benton, Guildford</td>
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<td>10.50</td>
<td>FIT testing: issues from NICE</td>
<td>Dr Robert Logan, London</td>
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<tr>
<td>11.00</td>
<td>FIT testing: issues in practice and learning:</td>
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<tr>
<td></td>
<td>1) Aintree</td>
<td>Mr Paul Scaife</td>
</tr>
<tr>
<td></td>
<td>2) Nottingham</td>
<td>Mr Ayan Banerjea</td>
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<td></td>
<td>3) Coventry</td>
<td>Dr Monika Widlak</td>
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<td>11.20</td>
<td>Coffee</td>
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<td>11.30</td>
<td>Forward with FIT – What are the gaps that we need to fill?</td>
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<td>12.00</td>
<td>Lunch</td>
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<td>12:45</td>
<td>Forward with FIT – how can we work together to overcome the challenges</td>
<td>All / Group discussion</td>
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<td>FIT sampling: who, how, when</td>
<td>All / Group discussion</td>
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<td></td>
<td>Data Collection: who, what, how where?</td>
<td>All / Group discussion</td>
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<td>14:15</td>
<td>Next stages</td>
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<td>14:30</td>
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</table>
FIT Testing – laboratory challenges

Pre-analytical Variation;

- Stool isn’t homogenous

- “pickers” from all manufacturers are different

- Individual patients will sample their stool differently (no matter what the instructions say!)
FIT Testing – laboratory challenges (cont.)

Analytical Variation

• No assay standardisation
  – Different buffers
  – Different antibodies
  – Different calibration

IFCC working group set-up to address this

• No established EQA scheme

WEQAS & UKNEQAS working on this

• No established independent IQC
NHSE workshop – material presented

- Four presentations from on-going FIT studies
  1. Liverpool
  2. Nottingham
  3. Coventry and Warwickshire
  4. York

- Different study approaches in each
- All demonstrated FIT has potential as a rule out test for CRC
NHSE workshop – discussion points

Evidence

- Lack of evidence, particularly from the English population
- Evidence required to support cut-offs being the same on all analysers
- Does FIT decrease referral to colonoscopy? *no published evidence at all yet to support this*

Practicalities

- Should FIT be requested in primary or secondary care?
- How to safety net patients with a negative FIT
- Concern about confusion between screening and symptomatic FIT
- Practicalities and impact of operationalizing FIT in the diagnostic pathway
  - Different referral pathways
  - Logistics of getting samples to labs
Identified difficulties in introduction of FIT in assessment of the symptomatic

• Lack of evidence

• Different clinical pathways
  – No “one-size fits all”

• Not everyone is in favour of FIT
  – workshop was a self-selected group of people with a positive attitude towards FIT
Possible solutions to these difficulties

GENERATE EVIDENCE

• Encourage peer-reviewed publication of any symptomatic FIT work already underway

• Extend any studies already underway to speed up data collection and publication

• Consider how current studies might be used to investigate differences between analytical platforms
What next for England?

- Final NICE Diagnostics Assessment Programme document – expected to be published in June 2017

- Aim to have some published data from England by end of 2017

- Decisions will be made locally as to whether to implement FIT or not
  - Funding
  - Analyser procurement
  - Where in pathway FIT is requested