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### Maximising uptake to the target population: Lessons from the NHS Bowel Cancer Screening Programme in England

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### Overview

- Bowel Cancer Screening uptake in England
- Barriers relating to the current test
  - Disgust
  - Ambiguous results and re-testing
  - Health literacy
- The role of FIT
  - Revealed preferences
  - Stated preferences
  - Patient experience

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### Cancer screening programmes in England

- Bowel cancer
  - Faecal occult blood test
  - Every 2 years from 60-74 (men and women)
  - Aims to detect early-stage cancer
  - Once-only flexible sigmoidoscopy at age 55 years



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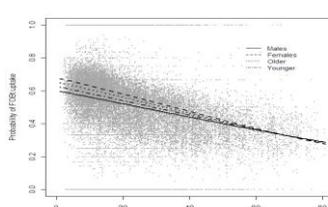
### Uptake of bowel cancer screening in England

- First time invitations
  - The results of the first 2.6 million invitations
  - Area-based uptake
  - Area-level measure of index of multiple deprivation
    - Housing, Income, Employment, Health, Education, Crime, Living Environment.
  - Gender and age

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### ASCEND Study - Background

- Uptake overall: 54%
- Linear gradient across quintiles of deprivation: 35% to 61%



(von Wagner et al. UCL, 2011)

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### Beyond first screening invitations: Three rounds of screening

- Data from the Southern Bowel Cancer Screening Hub
- 62,099 records extracted of people who at the time of their appointment were aged 60-64 between September 2006 and February 2008
- Screening activity was recorded until December 2012

Lo, Halloran, Snowball, Seaman, Wardle, von Wagner, Gut, 2014

### Uptake across three rounds of invitations

	Round 1	Round 2	Round 3
Uptake	57.4%	60.9%	66.2%

	At least once	Twice	Three times
Number of rounds completed per participant	70.1	60.7%	44.4%

### The impact of repeated invitations on uptake

	P1	P2	P3	Cumulative
Uptake	57.4%	23.1%	14.6%	70.1%

Lo, Halloran, Snowball, Seaman, Wardle, von Wagner, Gut, 2014

### Repeat uptake

- 86.6% of responders in the first invitation round return a test kit in the second round
- 94.5% of those who had responded to the first and second round of invitations also completed the third test kit.

Lo, Halloran, Snowball, Seaman, Wardle, von Wagner, Gut, 2014

### Key Point 1: Uptake

- A key objective of home-based stool sampling is to maximise adherence to the recommended schedule (screen every 2 years from 60 until age 74).
- Participation accumulates over several rounds (time lag of about 4 years).
- Consistent participation is low.
  - Key Question: How much of this is attributable to gFOBT?

### Test-specific attitudes

- We drip fed information about bowel cancer screening to 211 adults (aged 45-59)
- Intention to complete FOBT-based screening declined as people learned about test completion
  - Collecting faecal samples
  - Repeating the test three times

Information stage	Low CFC (Intention)	High CFC (Intention)
1	5.9	5.8
2	5.9	5.7
3	6.2	5.8
4	6.1	5.7
5	5.8	5.6
6	5.9	5.5
7	5.8	5.4
8	5.7	5.4

von Wagner, Good, Smith & Wardle, 2012, 15 : 176-186

### Qualitative study to explore psychosocial and cultural determinants of low uptake of FOBT

- 128 participants recruited from London/ South Yorkshire
- 18 focus groups
- 67 men, 61 women
- 22 black and ethnic minority
- 50 'non-professional' occupation
- majority had not undertaken screening by FOBT on one or more occasions

Palmer et al, British Journal of Cancer 2014

**Barriers to test completion**

**Collecting**

- "I ain't doing that in nothing and scooping it out, no, I'm not doing that, and I left it" (FG15 P6)

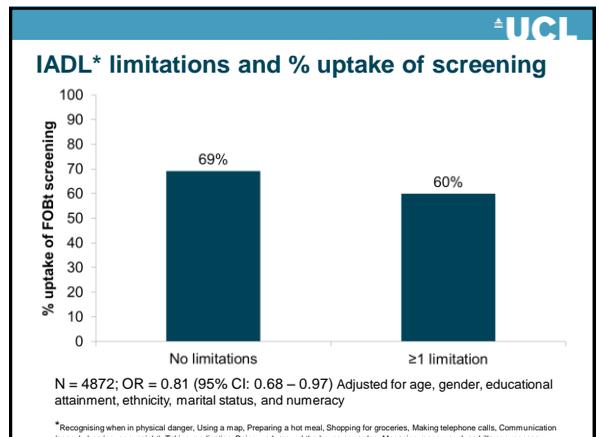
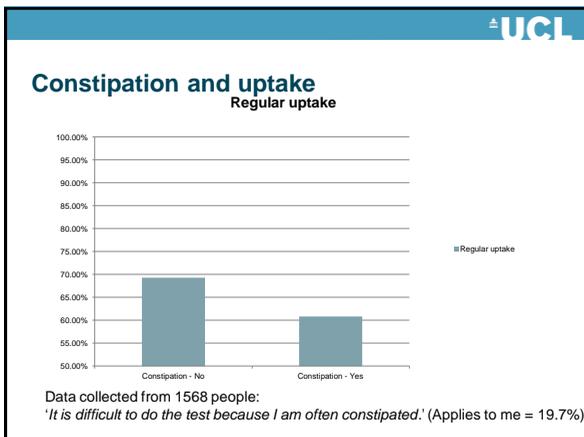
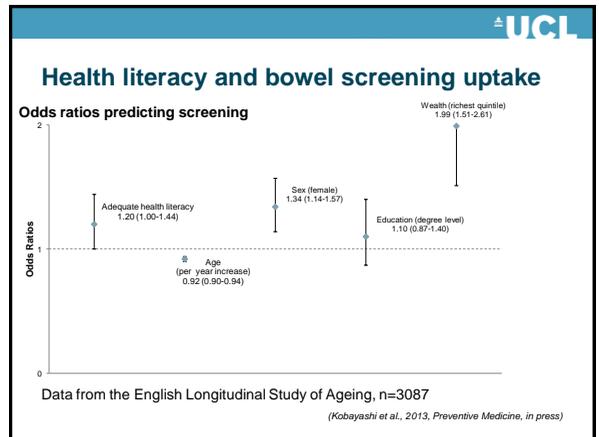
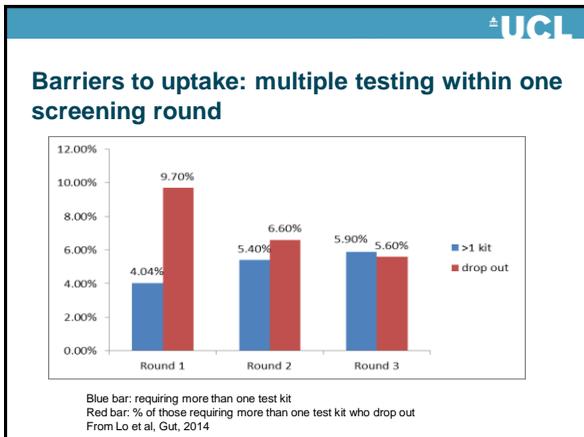
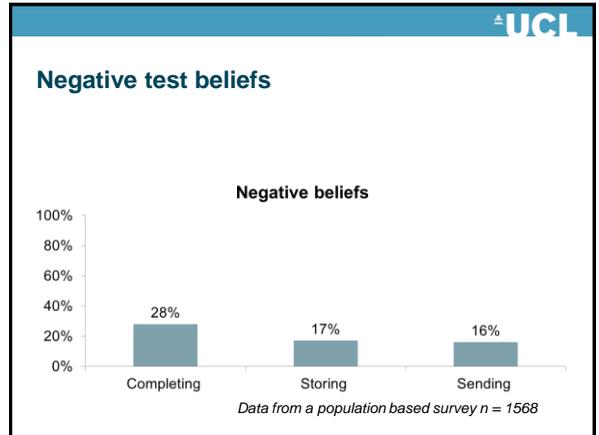
**Storing**

- "If somebody said to me, right, you go to the toilet once, you dip something, you send it off, I think I'd probably do it. But I think when I read through it, and it says, keep it for three days...it's the hygiene, the image of it" (FG10 P1)

**Posting**

- "I thought there's something better than that. Sending such rubbish through the post, same as he says it could offend someone" (FG09 P6)

Data from a Qualitative study, N = 128



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### Key Point 2

- There are a number of test-specific barriers
  - Disgust
  - Complexity
- Demonstrated impact on
  - Participation
  - Re-participation

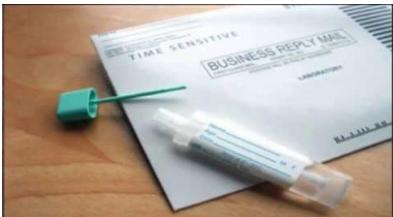
• *Key Question: Can any of these barriers be ameliorated by a simpler test?*

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## WHAT IS THE EVIDENCE THAT UPTAKE IS HIGHER WITH IMMUNOCHEMICAL TESTS?

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### The FIT device used for the pilot study in England



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### FIT for Follow-Up: Questionnaire feedback

*Patient experience questionnaires*

- FIT instructions are easy to understand (100%)
- Catching the sample was easy (94%)
- 75% use toilet paper
- Using the stick to collect the sample was easy (93%)
- Removing and re-inserting the stick was easy
- Closing the sample bottle was easy (95%)

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### Background: Systematic Review

Vart et al. (2012):

- Systematic review and meta-analysis comparing participation rates for faecal immunochemical tests (FIT) and guaiac faecal occult blood tests (G-FOBt)
- Identified 7 RCTs comparing participation rates of these tests (Cole et al., 2003; Federici et al., 2005; Hoffman et al., 2010; Hughes et al., 2005; Levi et al., 2011; van Rossum et al., 2008)
- 6 RCTs found participation rates to be higher in FIT groups (Cole et al., 2003; Federici et al., 2005; Hoffman et al., 2010; Hughes et al., 2005; van Rossum et al., 2008)
- Results from meta-analysis show overall participation rates were significantly higher for individuals offered a FIT vs. G-FOBt

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### Possible determinants of higher FIT uptake

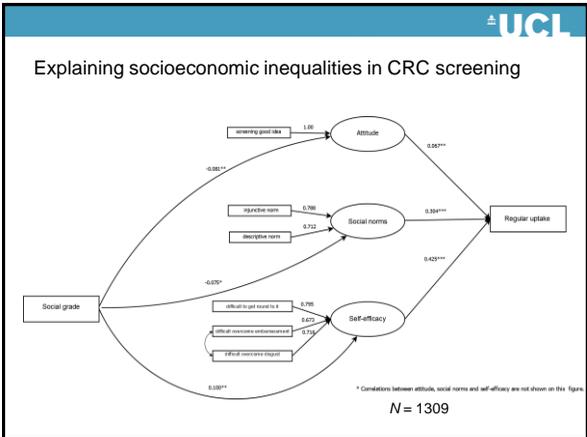
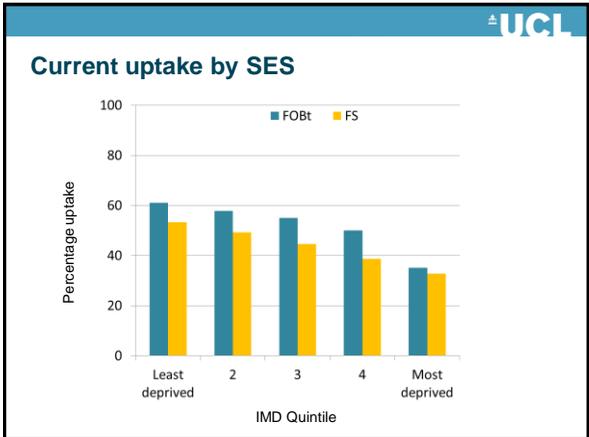
- **Fewer faecal samples:**
  - Encourages participation (Cole et al., 2003; Federici et al., 2005)
  - Makes FIT more convenient (Cole et al., 2003)
  - Lessens aversion to handling faecal samples (Cole et al., 2003)
- **No dietary and medicinal restrictions:**
  - Makes FIT more acceptable (Cole et al., 2003; Federici et al., 2005; Hoffman et al., 2010; Hughes et al., 2005)
- **Simpler sample collection:**
  - Makes FIT easier to perform (Hoffman et al., 2010)
  - Makes FIT more acceptable (Cole et al., 2003; Federici et al., 2005; Hoffman et al., 2010; Hughes et al., 2005)
  - Taking samples from the toilet water and brush sampling makes FIT more convenient and means less manipulation of faecal samples is required (Cole et al., 2003)
  - Makes FIT more 'user-friendly' and less messy (Hughes et al., 2005)

**Limitation:**

- Only Hoffman et al. (2010) conducted a participant survey (outside of the study protocol) to reveal reasons for FIT preference
- Other studies discussing determinants of participation interpreted reasons from previous literature
- Conclusion as to why FIT participation rate was higher could not be drawn

### Is FIT likely to reduce SES differences

- A few indirect observations
  - FOBT vs FS uptake
  - SES and uptake (ABACUS)



### Is FIT likely to reduce SES inequalities

- It appears that introducing FIT would reduce barriers, some of which are socially graded
- However there are a number of barriers (e.g. life stress, life expectancy, access to health information) which would be less affected.
  - Uptake of Flexible Sigmoidoscopy suggests that particularly among most deprived differences in modality might affect uptake.

### Key Point 3

- People who have done both tests clearly prefer completing the FIT test kit.
- Evidence from a systematic review of existing research suggests that immunochemical tests will substantially improve uptake.
- There is some potential that FIT may reduce inequalities.
  - bearing in mind that there are a number of mediators of socioeconomic inequalities many of which would not be affected by the choice of modality.

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