



RESEARCH

INFORMATION

The impact of Primary Care led, FIT-based, triage of new onset colorectal symptoms on diagnostic service demand and the diagnosis of colorectal cancer



AIMS

This study aimed to determine the impact of the introduction of a Faecal Immunochemical Test (FIT) to help assessment of new bowel symptoms in primary care on subsequent bowel cancer diagnosis and referral pathways in NHS Tayside. FIT is a test which involves collecting a sample of a bowel movement to measure the amount of blood found in the stool.

The main research questions were:

1. What percentage of bowel cancers are detected using an approach incorporating FIT used at a reassurance threshold of $<10 \mu\text{g Hb/g}$ combined with safety netting including testing for anaemia?
2. What is the impact of this approach on the routes to diagnosis of bowel cancer, for example presenting via GP referral or via emergency routes and what is the impact on the stage of bowel cancer at the time of diagnosis?
3. What is the impact of this approach on the number of referrals to secondary care?



KEY FINDINGS

- Almost 90% of patients with bowel cancer had either a FIT test result of $\geq 10 \mu\text{g Hb/g}$ or had iron deficiency anaemia.
- The proportion of bowel cancers detected via referral from GPs increased from 43.1% to 53.5% after the introduction of FIT but there was no change in cancer stage at the time of diagnosis.
- FIT-based triage of patients attending their GP practice is associated with decreased time to bowel cancer diagnosis.
- No significant change was seen in the number of referrals to secondary care following the introduction of FIT.





WHAT DID THE STUDY INVOLVE?

FIT was introduced into primary care in NHS Tayside in December 2015 to help GPs decide which patients to refer to secondary care for further investigations to check for serious bowel disease including bowel cancer.

To determine the effectiveness of an approach incorporating FIT used at a reassurance threshold of $<10 \mu\text{g Hb/g}$ combined with safety netting including testing for anaemia, data on patients completing FIT between 2016 and 2019 in primary care were linked with the Scottish Cancer Registry. We then calculated the proportion of bowel cancers which would be detected if patients were referred for further investigation based on having a FIT result $\geq 10 \mu\text{g Hb/g}$ faeces or a full blood count (FBC) result of iron deficiency anaemia, which indicates chronic blood loss.

NHS Tayside Cancer audit data from January 2013 to December 2019 were reviewed to identify all new bowel cancer diagnoses. This comprehensive database included mode of presentation (e.g. primary care referral pathway, bowel screening, emergency admission), date of diagnosis and treatment outcomes. Patients with a diagnosis of bowel cancer via the primary care referral pathway were identified, and their electronic patient records were reviewed to record date of referral, and whether patients had an associated FIT test and FBC at the point of referral. The mode of presentation and stage at diagnosis were noted and patient records were interrogated to identify whether FIT and FBC had been performed prior to referral. Results on mode of presentation and stage of cancer at diagnosis were compared between the FIT and non-FIT groups. Time from referral to diagnosis of CRC was calculated for each patient and compared between the FIT and non-FIT groups.

Finally, NHS Tayside referral records were reviewed from January 2013 to December 2019 to assess the impact of the introduction of FIT on the number of referrals of patients to secondary care for further investigation, and the proportion of these referrals which were booked directly to tests to look inside the bowel, rather than referrals to clinics for further assessment.

Figure 1. Faecal Immunochemical Test for Haemoglobin (FIT).





WHAT WERE THE RESULTS AND WHAT DO THEY MEAN?

572 bowel cancers were diagnosed in patients completing FIT in primary care between December 2015 and December 2019. 499 of these had a FIT result $\geq 10 \mu\text{g Hb/g}$ (87%). Of the remaining 73 patients with bowel cancer with FIT results $< 10 \mu\text{g Hb/g}$, 14 had iron deficiency anaemia. In total 513 of 572 patients with bowel cancer had either a FIT $\geq 10 \mu\text{g Hb/g}$ or iron deficiency anaemia, meaning this approach of referring all patients with these criteria for bowel investigation would detect 89% of bowel cancers.

Primary care bowel cancer presentations increased from 43.1% to 53.5% after the introduction of FIT (Figure 2). There was no difference in stage at diagnosis of bowel cancers diagnosed in those who did and did not complete FIT. Median time to diagnosis was shorter after compared with before the introduction of FIT (25 vs. 30 days, Figure 3).

The number of referrals for bowel investigation stayed relatively steady before and after the introduction of FIT.

Figure 2. Annual bowel cancer diagnoses in NHS Tayside by mode of presentation.

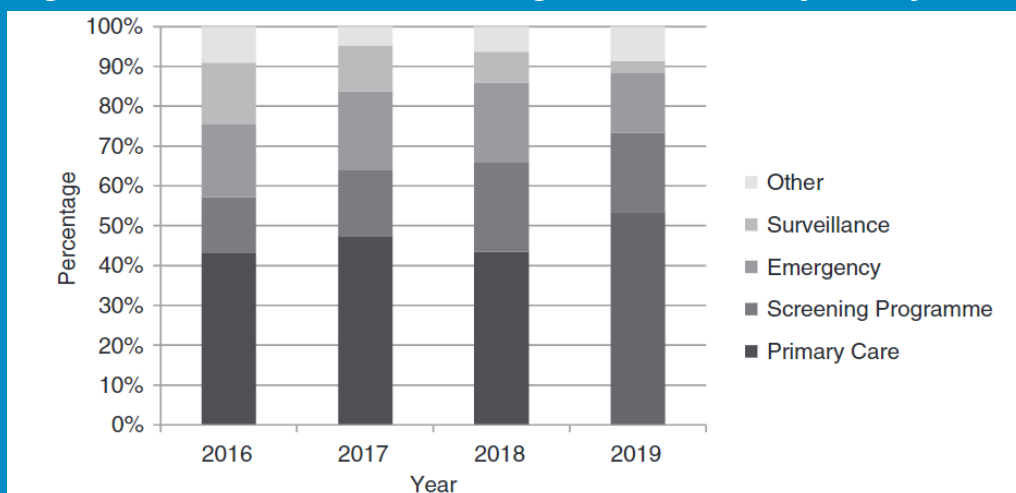
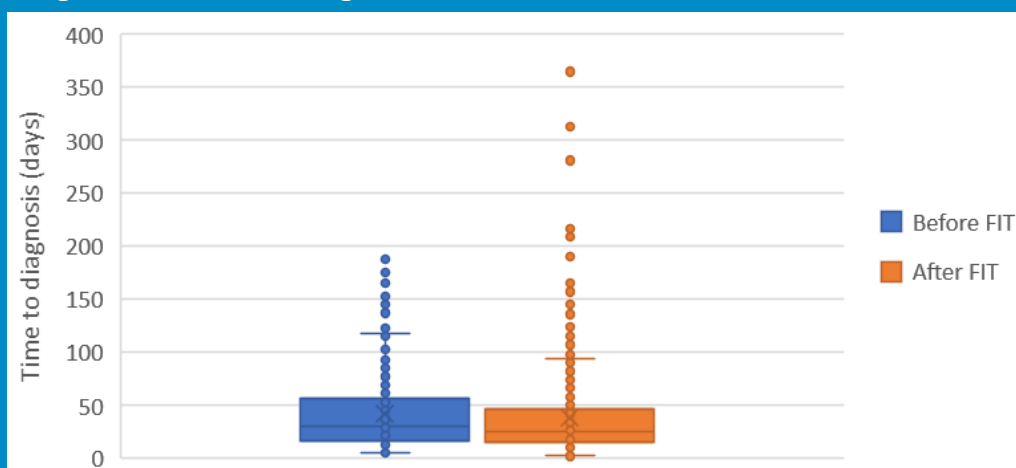


Figure 3. Time to diagnosis of bowel cancer before and after the introduction of FIT.





WHAT IMPACT COULD THE FINDINGS HAVE?

- We have shown that:
 - 89% of bowel cancer cases would be detected via FIT-based triage alongside safety-netting using full blood count;
 - The introduction of FIT resulted in an increase in the proportion of bowel cancers detected via referral from GPs;
 - FIT based triage has reduced time to diagnosis of bowel cancer;
 - No significant impact on secondary care resources.
- This work, and earlier work by our group, has been pivotal in informing updated **NICE guidelines (NG12 Suspected Cancer: recognition and referral <https://www.nice.org.uk/guidance/ng12/chapter/Recommendations-organised-by-site-of-cancer#lower-gastrointestinal-tract-cancers>)** which now recommend FIT testing is used by GPs to help assess new bowel symptoms.



HOW WILL THE OUTCOMES BE DISSEMINATED?

A full report on the impact of FIT-based triage on mode of presentation and stage of bowel cancer diagnosis has been published in a peer reviewed journal. The work on time to diagnosis has been prepared for submission for publication and has been presented at various national conferences. The findings on the percentage of bowel cancers detected using a FIT-based triage plus safety netting with FBC will also be shared in similar ways.



CONCLUSION

An approach using FIT at a reassurance threshold of $<10 \mu\text{g Hb/g}$ combined with safety netting including testing for anaemia is an effective aid to the clinical judgment of GPs, with 90% of bowel cancer cases either having a FIT result $\geq 10 \mu\text{g Hb/g}$ or iron deficiency anaemia. The proportion of cases of bowel cancer diagnosed after GP referral increased following the introduction of FIT and FIT-based triage in primary care was associated with decreased time to diagnosis.



RESEARCH TEAM & CONTACT

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Additional Information

The project ended on 31st July 2023 and received £111,283 of funding from the Chief Scientist Office.

