**Faecal immunochemical test (FIT) to triage patients with abdominal symptoms for suspected colorectal cancer in primary care: review of international use and guidelines.**

**Running title:** FIT to triage patients with symptoms of suspected colorectal cancer: review of guidelines

**Category:** Systematic review

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**Key words:** cancer care/oncology; cancer, colorectal; diagnostic tests; primary care; endoscopy; screening

**Key messages**

- Faecal immunochemical tests (FIT) detect haemoglobin in stool; a marker of cancer
- Australia, Spain, and the UK recommend FIT in primary care
- In these countries, it is used to triage 'low risk' patients
- Emerging evidence supports FIT in patients with 'low risk' abdominal symptoms
- More research is needed to understand the implications of FIT in this population

**ABSTRACT**

**Background**

Recently, Faecal Immunochemical Tests (FITs) have been introduced for investigation of primary care patients with low-risk symptoms of colorectal cancer, but recommendations vary across the world. This systematic review of clinical practice guidelines aimed to determine how FITs are used in symptomatic primary care patients and the underpinning evidence for these guidelines.

**Methods**

MEDLINE, Embase, and TRIP databases were systematically searched, from 01/11/2008 to 01/11/2018, for guidelines on the assessment of patients with symptoms suggestive of colorectal cancer. Known guideline databases, websites, and references of related literature were searched. The following questions were addressed: 1) which countries use FIT for symptomatic primary care patients; 2) in which populations is FIT used; 3) what is the cut-off level used for haemoglobin in the faeces (FIT); and 4) on what evidence are FIT recommendations based.

**Results**

The search yielded 2,433 publications; 25 covered initial diagnostic assessment of patients with symptoms of colorectal cancer in 15 countries (Asia n=1, Europe n=13, Oceania n= 4, North America n=5, South America n=2). In 3 countries (Australia, Spain, and the UK), FIT was recommended for patients with abdominal symptoms, unexplained weight loss, change in bowel habit or anaemia despite a low level of evidence in the symptomatic primary care patient population.

**Conclusions**

Few countries recommend FITs in symptomatic patients in primary care, either because of limited evidence, or because symptomatic patients are directly referred to secondary care without triage. These results demonstrate a clear need for research on FIT in the symptomatic primary care population.

**BACKGROUND**

Colorectal cancer (CRC) is the third most common cancer worldwide, accounting for around 10% of all new cancers, and is the second most common cause of cancer death (1). As the symptoms of colorectal cancer are often vague and frequently caused by benign conditions, selection for investigation can be difficult. As a result, colorectal cancer is often diagnosed at a late stage, leaving few curative options (2). Diagnosing CRC at an earlier stage results in better treatment options and improved survival (3,4).

The usual investigation for possible CRC is colonoscopy, though imaging procedures such as CT colonography, are sometimes used. However, these investigations require patient preparation, are performed in secondary care, and are relatively expensive. Given the ubiquity of the symptoms of possible colorectal cancer, there is a place for a triage test in primary care to identify which patients with apparently low-risk symptoms would benefit from definitive investigation and which can be reassured without further investigation. Faecal occult blood testing, which assesses the presence of red blood cells in the faeces, has largely fallen out of use in symptomatic patients because the false-negative rate was considered unacceptably high. In recent years, faecal immunochemical testing (FIT), which assesses the quantity of haemoglobin in the faeces, has been introduced for screening, and latterly for use in symptomatic patients. It has been endorsed by the UK's National Institute for Health and Care Excellence (NICE) guideline 'Quantitative faecal immunochemical tests to guide referral for colorectal cancer in primary care' (DG30) as a triage test for patients whose low-risk symptoms (defined as a below 3% risk of CRC) do not warrant urgent referral (5). Patients with a positive test can be referred and offered urgent investigation through secondary care, usually by colonoscopy, and those testing negative can be managed in primary care, without further

testing for possible CRC unless symptoms change. The evidence underpinning this recommendation was not drawn from primary care population studies; instead, it was almost entirely from studies of FIT in screening and secondary care settings and expert opinion (5,6).

The NICE-mandated positive threshold for FIT in the low risk symptomatic primary care population is 10 μg Hb/g of faeces (5). In screening programmes, thresholds are higher; positive predictive values (PPVs) of 4.8% to 5.8% are reported with thresholds of 50 to 80 μg Hb/g (7,8). PPV varies by age and sex (9,10). Several studies are ongoing to evaluate FIT in the symptomatic primary care population. Outside the UK, FIT is being used in a variety of patient groups, including those with low risk symptoms, although in some countries it is specifically recommended not to be used.

This study reviewed current worldwide recommendations around the assessment of colorectal cancer symptoms to determine how FIT is used to triage patients with symptoms of possible colorectal cancer in primary care. The aim was to provide an overview of the current guidelines and to discuss the areas of uncertainty and controversy with the specific objectives to determine 1) which countries use FIT for symptomatic primary care patients; 2) in which populations is FIT used; 3) what is the cut-off level haemoglobin in the faeces (FIT) in different countries; and 4) on what evidence are FIT recommendations based.

## METHODS

*Search strategy and data sources*

A systematic search of the literature was conducted in MEDLINE (through Ovid), Embase, and TRIP database, based on MESH headings and textual synonyms of colorectal cancer (protocol

available from authors). The search was limited to guidelines and position or consensus statements on initial assessment and diagnosis of possible colorectal cancer in symptomatic primary care patients, published between November 2008 and November 2018 (supplementary material). Existing guideline databases such as NHS evidence and cancer and gastroenterology societies, and Google (supplementary material) were hand searched for additional guidelines and consensus statements. Guidelines on population-based screening of asymptomatic patients were excluded. Reference lists of identified guidelines and related systematic reviews were reviewed (6,11). Discussions with Danish colleagues on the use of FIT in their country led to the identification of further relevant literature not picked up in the English language search.

*Inclusion and exclusion criteria*

Inclusion

- Guidelines, consensus and position statements
- Initial assessment of suspected colorectal, bowel, or anal cancer
- Symptom-led guidelines
- Screening for colorectal cancer
- Published in the last 10 years (2008 to current)

Exclusion

- Publications focused on only on screening or secondary care assessment
- Publications singularly aimed at the high-risk population (Lynch syndrome, polyposis coli, and genetic mutations and patients with a previous history of CRC).

*Study selection*

All current guidelines and consensus or position statements on initial assessment of patients presenting with symptoms of possible CRC, published within the last 10 years, were included. There were no language restrictions, although only English search terms were used. Publications with a focus on screening or secondary care assessment were excluded, as were publications singularly aimed at the high-risk population (Lynch syndrome and genetic mutations, polyposis coli, and patients with a previous history of CRC). Screening was defined as the process of investigating an apparently healthy population for a disease: these are usually asymptomatic patients. However, sometimes the term 'screening' can be used to mean triaging symptomatic patients. Therefore, guidelines using the term 'screening' were included in the title abstract selection in an attempt to identify those that used the term screening in that way.

If it became clear that the publication referred to asymptomatic population screening, it was excluded.

*Data extraction*

Title, abstract, and full text selection was performed by SB, MM, and SYM. Data were extracted by two out of four researchers (SB, SYM, HW and MM), using a specifically developed template. Disagreements were resolved by consensus. Information was gathered on publication characteristics (country, year of publication, intended audience and funding body or guideline committee). The intended audience was classified in four categories: primary care providers, secondary care providers, policy makers, and patients and carers. Papers in languages other than English were reviewed by native speakers of those languages; either authors of this paper, or their international contacts.

Data relating to FIT recommendations were collated: whether FIT was used in the diagnostic pathway of symptomatic patients and the name used for FIT. Guidelines were categorized by recommendation for the symptomatic primary care population: FIT recommended, FIT mentioned but not recommended, FIT not mentioned, or the guideline specifically recommended not to use FIT. In guidelines recommending FIT, data extracted on those recommendations included the assay types and cut-off values, actions to be taken for positive or negative FIT results, and the evidence underpinning the recommendation (including grade of evidence).

As this review aimed to give an overview of FIT use in investigation of symptomatic patients, it was deemed unnecessary to assess the rigour of the entire guideline development. Therefore, we did not perform a quality assessment of the guideline.

## RESULTS

### *Guideline selection*

The search, performed in Nov 2018, yielded 2,433 unique publications. One hundred and twenty-two full text documents were obtained. Twenty-five documents met the inclusion criteria covering the initial investigation of patients with symptoms of possible colorectal cancer (Figure 1) (5,12,13,14–20,21–30,31–36).

### *Guideline characteristics*

The 25 publications were developed in 15 countries across five continents (Asia n=1, Europe n=13, Oceania n= 4, North America n=5, South America n=2). One guideline was published in 2009, and the rest published between 2012 and 2018 (Table 1). Eighteen were published in English, three in Spanish, two in French, one in Danish and one in Swedish.

Seventeen guidelines were developed by a national healthcare organization, five by a specialist society and three by government ministries. Documents varied in their intended audience and scope. Most guidelines covered the entire colon cancer pathway from diagnosis to treatment, so targeted all healthcare practitioners involved in cancer diagnosis and treatment (n=23); however, two guidelines solely covered the primary assessment of symptomatic patients and were targeted at primary care practitioners. Besides healthcare professionals, guidelines were also targeted at policymakers (n=12) and patients and carers (n=7).

Most of the guidelines did not specifically cover FIT for symptomatic patients (n=17): one guideline recommended specifically not to use FIT in symptomatic patients (New Zealand)(21). Many guidelines recommended FIT in screening (n=8), or discussed FIT replacing faecal occult blood testing for population screening (n=5) (Table 1). In Denmark, FIT was recommended for use in secondary care for patients with change in bowel habit and a normal sigmoidoscopy(30).

*FIT recommendations in symptomatic patients*

FIT was recommended in primary care symptomatic patients in four guidelines, from three countries (Australia, Spain, and UK (excluding Scotland)) (5,12,17,19,34,35). Three of these four were published in the last two years (Table 2). The oldest guideline, published in Australia in 2009 and revised in 2013, recommended FIT use for case finding in patients with symptoms, without any other specifications(17).

In the three most recent guidelines (2017-2018), FIT was recommended for primary care use in patients with low-risk symptoms such as lower gastrointestinal symptoms, unexplained weight loss or change in bowel habit (Box 1). The recommended cutoff value to define a positive test was 10 μg Hb/g of faeces in all recommendations, although this threshold was not underpinned by evidence. Assay types recommended were OCSensor, HM-Jackarc, and FOBGold. If FIT was positive, primary care clinicians were advised to refer patients urgently to secondary care or directly for colonoscopy. Only one guideline specifically advised action if FIT were negative; the advice was to refer the patient to a specialist should symptoms persist (34,37) (Table 2).

Although the three recent guidelines were based on extensive literature reviews, FIT recommendations were largely based on consensus and expert opinion; there was minimal published research evidence for the use of FIT in the symptomatic primary care patient population. NICE's DG30 guideline, solely covering FIT use in primary care symptomatic patients was based on an extensive systematic review and health economic study(5). However, the evidence supporting these recommendations was mainly based on evidence from secondary care, population screening and on expert opinion; only one of nine included papers sampled patients urgently referred from primary care(6).

**Box 1. Recommendations**

**Clinical practice guidelines for the prevention, early detection and management of colorectal cancer**- Australia (19)

Immunochemical faecal occult blood testing (iFOBT) is of particular use in the following patients:

- People without overt rectal bleeding

- Aged over 50 years with either unexplained weight loss or abdominal pain
- Aged under 60 years with either altered bowel habit or anaemia*.

(*Consensus-based recommendation; refers to NICE NG12).*

**Change in bowel habit is considered a high risk symptom in those aged over 60 years*

**Clinical practice guideline**- Spain (34,37)

Diagnosis and prevention of colorectal cancer. Patients with lower gastrointestinal symptoms of recent onset who do not meet criteria for referral without delay to a specialist service due to high suspicion of CRC (rectal or abdominal mass, rectal bleeding or iron-deficiency anaemia) should have a faecal immunochemical test (FIT).
*(Quality of evidence low, strength of recommendation strongly in favour).*

**NICE guidelines DG30** (2017)-UK (5)
FIT should be offered to people without rectal bleeding who have unexplained symptoms but do not meet the criteria for a suspected cancer pathway urgent referral outlined in NICE's NG12 guideline on suspected cancer.
*(Based on Westwood et al. 9 included studies; 8 in specialist care, 1 in primary care – higher risk referred patients)*

*Recommendations in symptomatic patients when not using FIT*

The majority of publications (n=13) gave the same recommendation in patients across a variety of (usually high risk) features of possible CRC. These higher risk features included rectal bleeding, abdominal or rectal mass, and (unexplained) anaemia. Sometimes this recommendation was also made for lower-risk symptoms such as change in bowel habit, abdominal pain, and weight loss. These patients were recommended to be referred to secondary care, mainly for colonoscopy.

Seven guidelines gave different recommendations for different categories of symptoms (higher vs lower risk), sometimes in combination with age (14,16,20,24,26,30,36). In patients with highest risk symptoms, referral to secondary care for colonoscopy was recommended. In

patients with lower risk symptoms (including symptoms such as loss of appetite, abdominal pain, mucoid stool, tenesmus and constipation), a watch and wait policy was recommended, with referral for persisting symptoms.

## DISCUSSION

FIT may be a useful triage test for primary care patients with low risk symptoms of possible colorectal cancer, although most of the evidence for this originates from secondary care or population screening studies. However, worldwide guidance for primary care clinicians on the use of FIT varies greatly, and FIT is only recommended for primary care symptomatic patients in three countries: Australia, Spain, and the UK (excluding Scotland, as NICE recommendations do not cover Scotland). These recommendations are based on a systematic review of studies that included patients with lower GI symptoms suggestive of colorectal cancer (6). That review reported the sensitivity of FIT as 92.1% – 100%, and specificity as 76.6% – 85.5%. Of the 10 studies included in that systematic review, only one was based in primary care (38), where FIT was still performed at the point of referral, rather than to triage referrals.

### *Interpretation and implications*

Evidence on the value of FIT in patients with low risk CRC symptoms is still emerging (39–41). Early studies have suggested that it may be effective in selecting patients for further investigation, and also for identifying patients at very low risk of colorectal cancer, who can avoid a colonoscopy. Despite this emerging evidence, it will take some time for FIT to be widely accepted into guidance and clinical practice, partly due to the length of time it takes for evidence to be integrated into practice; some are updated only every 10 years (for example, NICE guidance in the UK). For example, the Northern Ireland Cancer Network guidance, published in 2012, only included reference to the faecal occult blood test - the commonly used test at the time. Differences in healthcare systems and patient perspectives in different countries may also be barriers to accepting FIT as a triage test. This could relate to the role of primary care in the healthcare system, ease of access to secondary care services or to

endoscopy, or how burdened secondary care services are. In some countries, including Australia and USA, many people have regular screening colonoscopies above a certain age, regardless of symptoms. Even with the potential benefits of FIT over colonoscopy, in terms of patient acceptability, and cost-effectiveness, it may be a challenge to implement symptomatic FIT testing, at least until an acceptable low false-negative rate is identified among this primary care population. Updating medical guidelines is a long and arduous process which happens infrequently. The lack of recommendations for FIT may reflect the fact that many of the identified guidelines were published before the latest evidence on FIT in symptomatic patients. Guidelines that did include FIT were published more recently. The evidence on FIT to date comes from heterogenous populations at different stages of the care pathway, with different thresholds, and different assays used; this heterogeneity adds to the difficulty in making clear recommendations. Future updates may begin to integrate FIT testing for this low-risk CRC symptoms group.

It is possible that FIT is being used in countries despite not being mentioned in the national guidance; anecdotally we know that this is the case in Sweden and Denmark where FIT is used extensively in primary care symptomatic patients but not mentioned in any national guidance (personal report).

*Strengths and limitations*

This guideline review was not restricted to the English language, and included hand searching of international websites and gastroenterology societies: both these aspects are strengths. However, the search was based on English terminology, which might have restricted the identified publications. Despite that, several non-English language guidelines with English

language abstracts were identified with the English search terms used. We were also able to use our extensive international contacts to identify FIT usage (or non-usage) outside recommendations.

*Conclusion*

The performance of FIT across the spectrum of patients, from asymptomatic to those referred to secondary care, has not yet been fully explored. With little evidence to support the use of FITs in those with low-risk symptoms of possible CRC (39–41), it is currently recommended in only three countries. In addition to the limited research evidence, the lack of recommendations for FIT may also be driven by concerns about endoscopy services being overwhelmed by referrals of patients with positive FITs if they are used in too broad a primary care group, or by healthcare systems not considering FIT necessary, as all symptomatic patients are referred for a colonoscopy even at very low levels of risk. The availability of imaging services may drive this, as well as local priorities and beliefs about the costs and benefits of diagnostic testing. There seems to be no evidence around patient preference for FIT testing against colonoscopy, an evidence gap that should be filled. Despite this, FIT test usage is gaining momentum; repeating this review in 5 or 10 years may give a different picture as more evidence of its effectiveness as a diagnostic test emerges.

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**Competing interests**

None to declare.

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Figure legend

Figure 1: PRISMA flow diagram

Table 1: guidelines identified detailing the investigation of patients with symptoms of possible colorectal cancer

| Country/region (reference) | Name of guideline (date) | Developing/endorsing body | Development | Target group | Recommendation |
|---|---|---|---|---|---|
| Argentina (28) | Guía para equipos de atención primaria de la salud - Información para la prevención y detección temprana del cáncer colorrectal [Guide for primary health care teams - information for prevention and early detection of CRC] (July 2015) | Instituto Nacional del Cáncer, Ministerio de Salud Presidencia de la Nación | Expert opinion | Primary care practitioners | Assessment of symptomatic patients does not mention FIT, but it is recommended in screening. |
| Australia (19) | Clinical practice guidelines for the prevention, early detection and management of colorectal cancer (January 2018) | Cancer Council Australia | Not reported | Primary and secondary care practitioners | FIT recommended to investigate patients with symptoms of colorectal cancer, and is used in screening. |
| Australia (17) | Early detection screening and surveillance for bowel cancer (2013) | Digestive Health Foundation, Gastroenterological Society of Australia | Not reported | Primary and secondary care practitioners | FIT recommended to investigate patients with symptoms of colorectal cancer, described as case finding (which is defined as screening based on symptoms). |
| Australia (Western) (18) | Diagnostic imaging pathways, Colorectal Cancer (Suspected) (August 2016) | Funded by Department of Health Western Australia | Systematic review | Primary and secondary care practitioners and policy makers | Assessment of symptomatic patients does not mention FIT. |
| Belgium (23) | Colon cancer: diagnosis, treatment and follow-up (January 2014) | Federaal Kenniscentrum voor de Gezondheidszorg | Based on review of data. | Primary and secondary care practitioners, policy makers, and patients and carers | Assessment of symptomatic patients does not mention FIT. Those with qualifying symptoms are investigated with history taking, examination, and colonoscopy. |
| Canada (Manitoba) (22) | ColonCheck Screening guidelines (2014) | Cancer Care Manitoba | Not reported | Primary and secondary care practitioners | Assessment of symptomatic patients does not mention FIT. |

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|---|---|---|---|---|---|
| Canada (Manitoba) (24) | Colon or Rectal cancer pathway (September 2014) | Cancer Care Manitoba | Evidence based | Primary and secondary care practitioners | Assessment of symptomatic patients does not mention FIT. |
| Canada (Ontario) (26) | Referral of patients with suspected colorectal cancer by family physicians and other primary care providers (April 2017) | Cancer Care Ontario | Systematic review | Primary and secondary care practitioners and policy makers | FIT is specifically not recommended for symptomatic patients. Low risk symptoms should be treated. High risk symptoms warrant referral for colonoscopy. |
| Canada (Ontario) (25) | ColonCancerCheck (CCC) Screening Recommendations (April 2016) | The Colorectal Cancer Referral Expert Panel, Cancer Care Ontario | Systematic review | Primary and secondary care practitioners and policy makers | Assessment of symptomatic patients does not mention FIT, but it is recommended in screening. |
| Chile (29) | Guía Clínica AUGE Cáncer colorectal en personas de 15 años y más ["AUGE" Clinical Practice Guidelin on Colorectal Cancer in people over 15 years of age] (2013) | Subsecretaría de salud pública - división de prevención y control de enfermedades , Secretaría técnica AUGE | Systematic review | Primary and secondary care practitioners and policy makers | Assessment of symptomatic patients does not mention FIT. |
| Denmark (30) | Pakkeforløb for kræft i tyk- og endetarm [Guideline for colon and rectal cancer] (September 2016) | Sundhetsstyrelsen | Systematic preparation. | Primary and secondary care practitioners | Assessment of symptomatic patients does not mention FIT, but FIT is recommended for secondary care in patients with change in bowel habit and normal sigmoidoscopy. |
| Europe and Japan (31) | Early Colon Cancer (July 2013) | European Society for Medical Oncology (ESMO). Endorsed by the Japanese Society of Medical Oncology (JSMO) | Systematic review and meta-analysis | Primary and secondary care practitioners | Assessment of symptomatic patients does not mention FIT, but it is recommended for screening. Common symptoms should be investigated with endoscopy. |

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| France (33) | Dépistage et prévention du cancer colorectal - Actualisation du référentiel de pratiques de lexamen périodique de santé (EPS) [Screening and prevention of CRC - update by EPS] (June 2013) | Haute Autorité de Santé | Systematic review and evaluation of evidence. | Not described | Assessment of symptomatic patients does not mention FIT. Colonoscopy recommended when patients have symptoms that raise the suspicion of colorectal cancer. |
| France (32) | Tumeur maligne, affection maligne du tissue lymphatique ou hématopoïétique Cancer colorectal Adénocarcinome [Chronic disease, malignant tumours, lymphatic tissue or haematological or hematopoietic malignancies, CRC, Adenocarcinoma] (January 2012) | Haute Autorité de Santé, Institut National du Cancer | Not reported | Primary and secondary care practitioners | FIT used in screening for colorectal cancer. Specific symptoms described that warrant the initiation of the colorectal cancer diagnostic pathway which involves endoscopy. |
| Malaysia (20) | CPG Management of CRC (July 2017) | Ministry of Health (MoH) and Ministry of Higher Education (MoHE), Malaysia Health Technology Assessment Section (MaHTAS) | Systematic review | Primary and secondary care practitioners, policy makers, and patients and carers | Assessment of symptomatic patients does not mention FIT; screening with FIT is performed in primary care. Symptoms that do not qualify for referral for colonoscopy should be treated, and a referral made if the symptoms have not resolved within four weeks. |
| New Zealand (21) | Suspected Cancer in Primary Care (September 2009) | New Zealand Guidelines Group (NZGG), Ministry of Health | Systematic review | Primary care practitioners | Assessment of symptomatic patients does not mention FIT. |
| Northern Ireland (13) | Regional Colorectal Cancer Network Guidelines for the Management of Colorectal Cancer (March 2012) | Northern Ireland Cancer Network (NICAN) | Revision of existing guideline. | Primary and secondary care practitioners | Assessment of symptomatic patients does not mention FIT – FOB is the recommended test. Patients with 'red flag' symptoms should be referred; those who do not fulfil criteria can still be referred if the GP has concerns. |
| Scotland (14) | SIGN 126: Diagnosis and management of colorectal cancer (August 2016) | Scottish Intercollegiate Guidelines Network (SIGN), Healthcare | Systematic review and critical appraisal | Primary and secondary care practitioners, policy makers, | Assessment of symptomatic patients does not mention FIT. Watch and wait is recommended in those with low risk |

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| | | Improvement Scotland (HIS) | | patients and carers | symptoms. FIT recommended in screening for colorectal cancer. |
| Scotland (14) | Scottish referral guidelines for suspected cancer (August 2014) | Scottish Intercollegiate Guidelines Network (SIGN), Healthcare Improvement Scotland (HIS) | Literature review and review of guidance from other countries | Primary and secondary care practitioners, patients and carers | Assessment of symptomatic patients does not mention FIT. Abdominal and rectal exam recommended for all symptoms of colorectal cancer. |
| Spain (35) | Diagnostico y prevencion del cancer colorectal [Diagnosis and prevention of colorectal cancer] (July 2018) | Asociación Espan˜ola de Gastroenterología (AEG), Sociedad Espan˜ola de Medicina Familiar y Comunitaria (semFyC), External funding from Norgine. | | Primary and secondary care practitioners, and policy makers | FIT recommended to investigate patients with low risk symptoms of colorectal cancer, and used in screening. |
| Sweden (36) | Tjock-och ändtarmscancer. Standardiserat vårdförlopp [Colon and rectal cancer. Standardised care pathway] (January 2018) | | Based on scientific evidence. | Primary and secondary care practitioners, and policy makers | FIT used in practice for assessing symptomatic primary care patients (communication with expert) but not mentioned specifically in guidance. |
| UK (excluding Scotland) (5) | Quantitative faecal immunochemical tests to guide referral for colorectal cancer in primary care [DG30] (July 2017) | National Institute for Health and Care Excellence (NICE) | Systematic review and expert opinion | Primary and secondary care practitioners, policy makers, patients and carers | FIT recommended to investigate patients with symptoms of colorectal cancer. |
| UK (excluding Scotland) (12) | Suspected cancer: recognition and referral [NG12] (July 2017) | National Institute for Health and Care Excellence (NICE) | Systematic review and expert opinion | Primary and secondary care practitioners, policy makers, patients and carers | FIT recommended to investigate patients with symptoms of colorectal cancer. |

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| UK and Ireland (16) | Guidelines for the Management of Cancer of the Colon, Rectum and Anus - Diagnosis, Investigations and Screening. (January 2017) | The Association of Coloproctology of Great Britain and Ireland (ACPGBI) | | Primary and secondary care practitioners, policy makers, patients and carers | Assessment of symptomatic patients does not mention FIT, but FIT is recommended in screening for colorectal cancer. |
| USA (27) | Colorectal cancer screening: Recommendations for physicians and patients from the U.S. Multi-Society Task Force on Colorectal Cancer (July 2017) | U.S. Multi-Society Task Force of Colorectal Cancer (MSTF): American College of Gastroenterology, the American Gastroenterological Association, and The American Society for Gastrointestinal Endoscopy | Systematic review | Primary and secondary care practitioners and patients and carers | Assessment of symptomatic patients does not mention FIT, but it is recommended in screening. |

Table 2: details included in guidelines that specifically recommend the use of the faecal immunochemical test (FIT) for patients with symptoms suggestive of colorectal cancer.

| Country | Guideline | Population | Recommended assays | Threshold | Action if positive | Acton if negative | Evidence base |
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| Australia | Clinical practice guidelines for the prevention, early detection and management of colorectal cancer | Patients with symptoms other than overt rectal bleeding AND<br>• people over 50 years with either unexplained weight loss or abdominal pain OR<br>• people under 60 years with either altered bowel habit or anaemia. | Not reported | Not reported | Referral for colonoscopy | None given | Rodríguez-Alonso 2015, Chowdhury 2014 |
| Australia | Early detection screening and surveillance for bowel cancer | To be used for case finding | Not reported | Not reported | None given | None given | Not reported |
| Spain | Diagnosis and prevention of colorectal cancer. | Patients with lower gastrointestinal symptoms of recent onset who do not meet criteria for urgent referral to a specialist service due to high suspicion of CRC (rectal or abdominal mass, rectal bleeding or iron-deficiencyanaemia) | HMJackarc, OCSensor, FOBGold | 10 µg Hb/g of faeces | Urgent referral to the specialist service for a priority colonoscopy | Referral to specialist service and colonoscopy if symptoms persist | Cubiella et al 2014, Rodriguez-Alonso 2015, Auge 2015, Westwood 2017 |
| UK | Quantitative faecal immunochemical tests to guide referral for colorectal cancer in primary care - guidance [DG30] | Patients without rectal bleeding who have unexplained symptoms but do not meet the criteria for a suspected cancer pathway urgent referral outlined in NICE's NG12 guideline on suspected cancer: | HMJackarc, OCSensor, FOBGold | 10 µg Hb/g of faeces | Urgent referral for colonoscopy | None given | Westwood 2017 |