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Colorectal cancer screening and the role of community pharmacy

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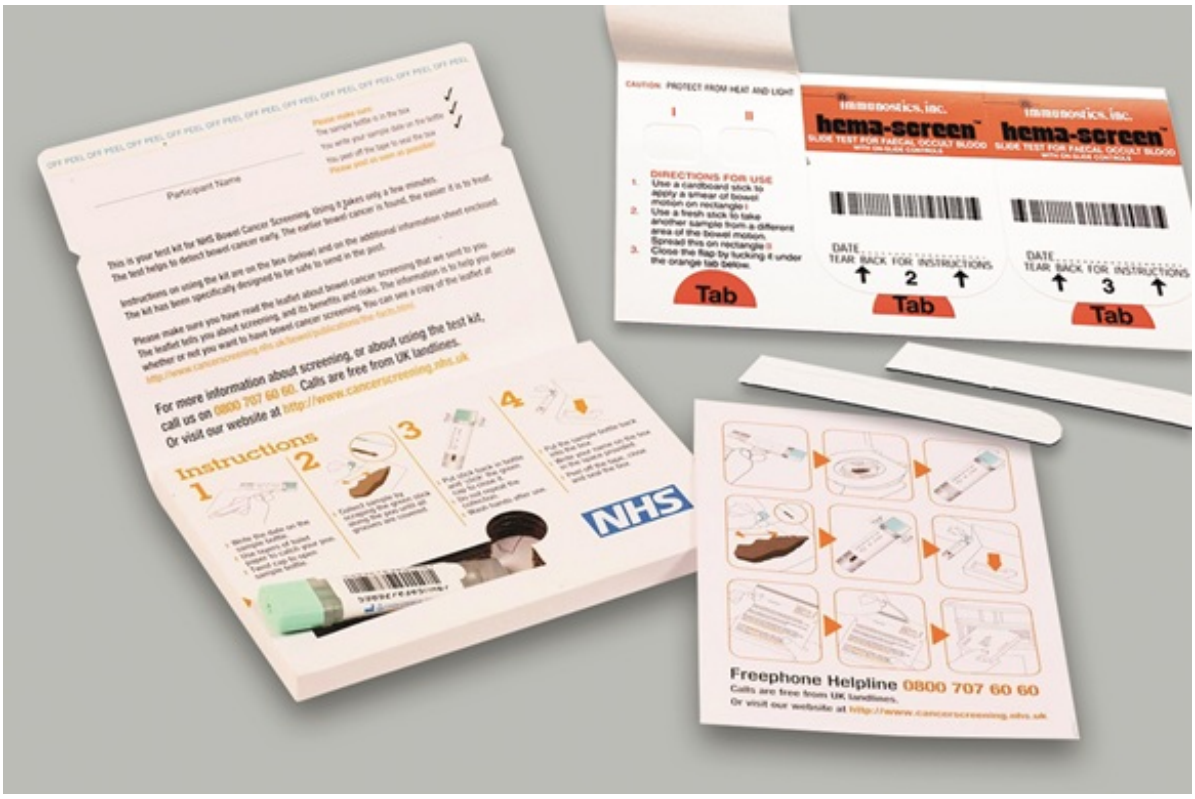
Access to colorectal cancer screening varies across the UK. This article describes the various tests and how community pharmacists can promote them.



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Colorectal cancer (CRC), also called bowel cancer, is a leading cause of morbidity and mortality in the UK. In 2012, the disease accounted for nearly 1 in every 10 newly diagnosed cancer cases and more than 1 in every 12 registered cancer deaths[1],[2], making it the fourth most frequently diagnosed cancer and the second leading cause of cancer-related deaths in that year[3],[4].

In the UK, incidence rates are higher among men than women (58 new cases per 100,000 men compared with 38 new cases per 100,000 women) and have steadily increased for both sexes since the 1970s[5]. Mortality rates are similarly higher among men; however,

rates have steadily declined over the past 40 years — in 2012, the mortality rate of CRC in the UK was 21 deaths per 100,000 men and 13 deaths per 100,000 women (nearly half of what they were in 1971)[5].

This article will discuss the main symptoms of CRC and the different screening tests available in the UK, as well as the role of the pharmacist and pharmacy team in promoting screening.

Aetiology

Onset of CRC is influenced by a complex interaction between genetic, environmental and lifestyle factors, which include:

The likelihood of being diagnosed increases with age; men aged 60–64 years are nearly 14 times more likely to be diagnosed with CRC than men aged 40–44 years[17]. The effect of age is less pronounced in women, although older women (between the ages of 80 and 84 years) are also much more likely to develop CRC than younger women (under the age of 69 years)[17].

A previous history of bowel polyps[18], severe ulcerative colitis or Crohn's disease are all associated with an increased risk of developing CRC[19],[20]. There are also two known genetic syndromes linked to the malignancy: hereditary non-polyposis colon cancer and familial adenomatous polyposis. However, syndromes with known genetic defects only account for 1–5% of all CRCs[18]; therefore, at present, genetic screening can only make a limited contribution to risk reduction in the general population.

Symptoms

There are many symptoms of CRC that pharmacists should be aware of, including[21]:

- A persistent change in bowel habit;
- Bleeding from the back passage;
- Blood in the stool;
- A lump in the abdomen;
- Anaemia;

- Unexplained tiredness;
- Weight loss;
- Abdominal pain.

The adenoma-carcinoma pathway

More than 90% of CRCs develop from adenomas (also referred to as adenomatous polyps), which are benign growths that develop from gland cells that line the bowel wall[22],[23],[24]. Around 33–50% of all adults will develop one or more adenomas during their lifetime[25],[26] and, while all have the potential to become malignant, fewer than 10% develop into invasive cancer[24],[27].

The likelihood that an adenoma will develop into invasive cancer is highly dependent on a number of factors, including: the size and histological type of the adenoma; the degree of epithelial dysplasia (i.e. the extent to which cells appear to be abnormal); and the involvement of specific tumour suppressor genes[28] (see Box).

Box: Treatment and survival rates by stage of colorectal cancer at diagnosis

Chances of survival are strongly contingent on the stage at diagnosis[29].

Stage I

People with localised disease have the best chances for survival, with 95% surviving for at least five years[29].

Stage II

For people with colorectal cancer (CRC) that has infiltrated the colon wall, the chance of surviving five or more years is reduced to 80%.

Stage III

For people where the cancer has spread to one or more lymph nodes, the chance of surviving for five or more years is reduced to around 63%[29].

Stage IV

People with distant metastases have the poorest chances of survival, with as few as 10% surviving for five or more years[29].

Owing to the extensive preclinical phase of CRC[30], most people are diagnosed when the cancer has spread to the surrounding tissues or lymph nodes (stages III and IV), and the prognosis for survival is generally poor[31].

As well as being associated with a poorer prognosis for survival, late-stage CRC is generally associated with more expensive and more invasive treatment regimens. For most early-stage CRCs, surgery is the main treatment[32], whereas a combination of surgery and chemotherapy or radiotherapy is recommended for late-stage CRCs[33].

Consequently, the lifetime cost per head to treat a CRC can range from £3,337 for a stage I CRC to £12,519 for a stage IV CRC[34]. Impetus to improve the early diagnosis of CRC is therefore high, not only because doing so will have improved outcomes for the patient, but also reduced treatment costs for the NHS.

Screening for colorectal cancer in the UK

Several investigations are capable of testing for CRC and the precancerous lesions from which it develops[35]. These can be broadly categorised into two groups:

1. Those that detect cancer early (e.g. the guaiac faecal occult blood test [FOBt] and the faecal immunochemical test [FIT]);
2. Those that prevent cancer through the timely detection and removal of adenomas (e.g. flexible sigmoidoscopy and colonoscopy).

Guidelines on the delivery of CRC screening vary between parts of the UK and are outlined as follows.

Bowel scope screening for men and women aged 55–59 years (England only)

Introduced in 2013, bowel scope screening is gradually being rolled out to all men and women aged 55–59 years who are registered with a GP in England. It involves an endoscopic test called a 'flexible sigmoidoscopy' that examines the rectum and sigmoid colon (the most distal third of the large bowel where cancer is most likely to develop) for adenomas and cancer. Patients are invited to a one-off test at the age of 55 years, however, patients are able to self refer up to their 60th birthday. This test has been shown to reduce CRC incidence among users by up to 33% and CRC mortality by up to 50%[36].

Faecal occult blood test screening for men and women aged 60–74 years (England, Wales and Northern Ireland)

This home-based screening test is offered once every two years to men and women aged 60–74 years who are registered with a GP in England, Wales and Northern Ireland[37]. People aged 75 years or older can ask for a kit every two years by calling the free bowel cancer screening helpline on 0800 7076060.

Individuals complete the FOBt by applying a small stool sample onto a test card impregnated with guaiac (a resin that acts as phenolic redox indicator), using a cardboard applicator (see Figure 1). Two samples are usually taken from each bowel motion, so as to reduce the chances of obtaining a false negative result (i.e. a negative result for a sample that contains faecal occult blood). As tumours and adenomas can bleed intermittently, and the test may not be sensitive enough to detect particularly low concentrations of faecal haemoglobin[38], the stool sampling process is repeated so that a sample is taken from up to three separate bowel motions.

The test kit is returned by post to a screening centre for analysis[37]. If there is a positive result in five or six panels, the patient is referred to their local screening centre for suitability assessment for a colonoscopy[37],[39],[40]. If there is a positive result in one to four panels, another kit is sent to the patient's home address for repeat testing.

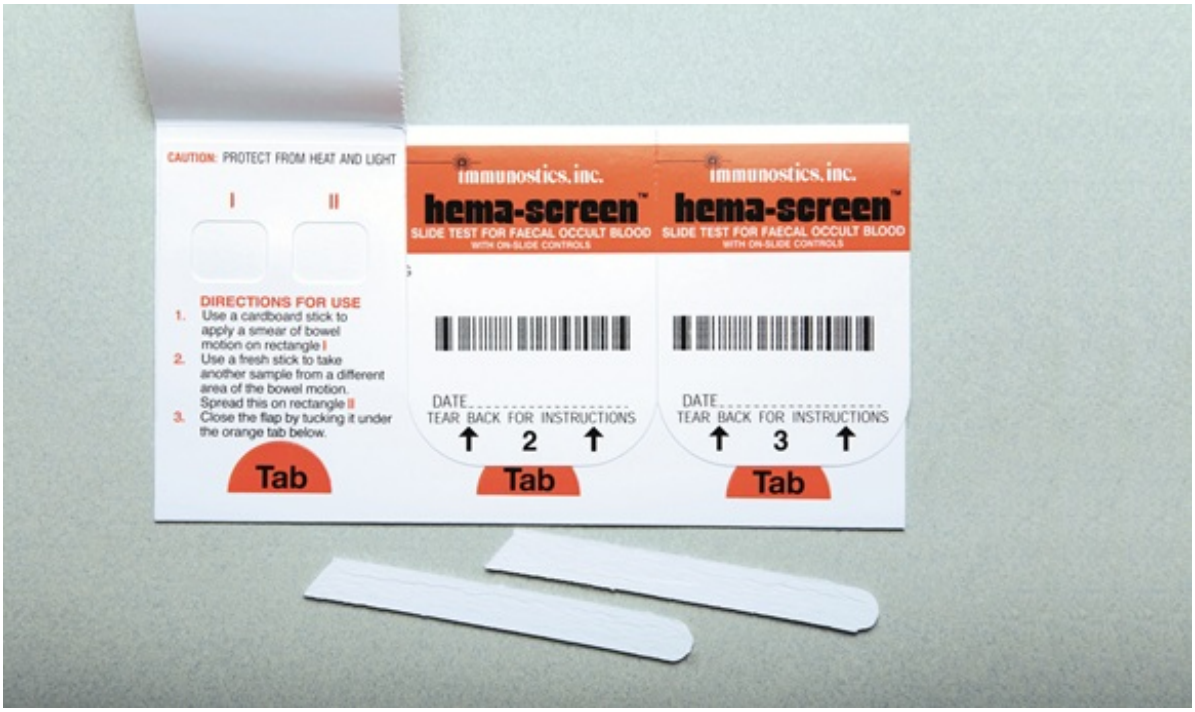

Figure 1: Guaiac faecal occult blood test kit used by the NHS Bowel Cancer Screening Programme

Source: Victor de Schwanberg / Science Photo Library

Faecal immunochemical test screening for men and women aged 50–74 years (Scotland)

This home-based screening test is offered once every two years to men and women aged 50–74 years registered with a GP in Scotland. Similar to the FOBt, individuals completing the FIT are required to collect a sample of their stool. However, rather than applying a sample to a test card, it is stored in a bottle containing buffer solution using a plastic applicator (see Figure 2)[41]. As with the FOBt, the FIT is completed in the individual's home and then returned to a screening centre where it is examined by a medical laboratory assistant using an analyser.

A recent pilot study examining the use of FIT in England showed a 7% increase in uptake compared with the FOBt[42]. As a result, Public Health England (PHE) has recently confirmed that FIT will replace the FOBt in the English Bowel Cancer Screening Programme and is scheduled to be phased in spring 2019. There are also recommendations that the screening age of the English programme is to be lowered from 60 to 50 years, as is currently the case in Scotland[43].

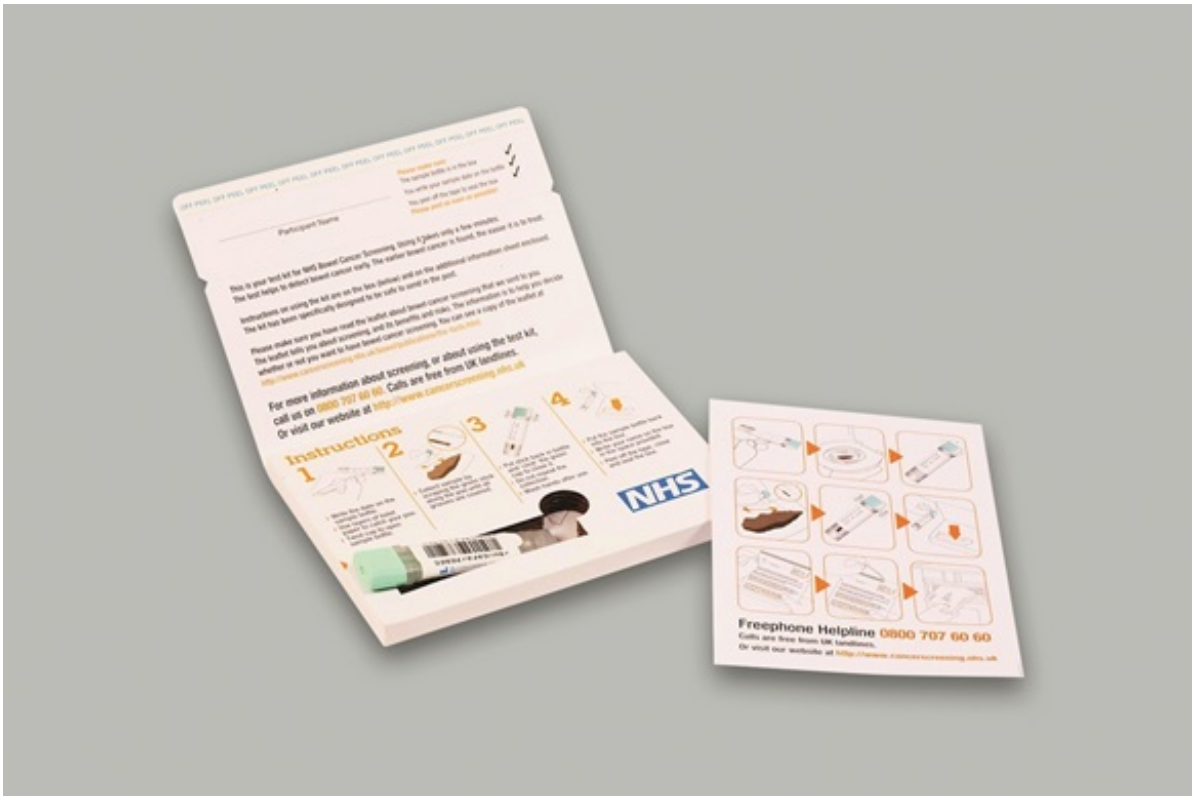

Figure 2: Instructions for the faecal immunochemical test kit piloted by the NHS Bowel Cancer Screening Programme

Source: Reproduced with permission from Gut 2017;66(9):1631–1644

Step 1:

Write date on sample bottle; use layers of toilet paper to catch the sample; twist cap to open sample bottle.

Step 2:

Collect sample by scraping the green, stick along the sample until all grooves are covered.

Step 3:

Put stick back in and ‘click’ the green cap to close it; do not repeat the collection; wash hands after use.

Step 4

Put the sample bottle back into the box; write your name on the box in the space provided; peel off tape, close and seal the box.

Uptake of CRC screening

CRC screening uptake across the UK is lower than the other cancer screening programmes, and there are considerable inequalities between areas and demographics. PHE has an uptake target of 75% but the most recent uptake figure stands at 56%[44]. In some parts of the country, uptake is as low as 33% according to figures from Bowel Cancer UK. Seven out of ten of the worst areas in the country are in London and 44% of clinical commissioning groups in England are below the national average[44].

In 2016, PHE established the quality criteria for community pharmacies to gain Health Living Pharmacy Status and the role of health promotion in meeting public health needs. This was further defined in the National Institute for Health and Care Excellence guideline 'Community pharmacies: promoting health and wellbeing', published in August 2018[45].

Building a relationship with a local bowel cancer screening centre and collaborating on the promotion of CRC screening in the local population will assist community pharmacies in demonstrating how they are meeting the criteria laid out in these documents. For example, Healthy Living Pharmacies could ensure information, including the upcoming changes to the NHS Bowel Cancer Screening programme, is part of their Health Promotion Zones with relevant information on their local screening centre. Team leaders within community pharmacies could ensure all staff receive training on bowel cancer to include:

- Providing up-to-date information – the facts about CRC;
- Benefits of early detection (including 'red flag' symptoms to look out for);
- The change to the FIT home testing kit;
- Ensuring staff feel confident on how to use the CRC testing kit and are able to explain it to patients in a simple and concise manner.

The table explains how pharmacy staff can support their local population with advice and information on CRC screening.

SCENARIO	WHAT TO DISCUSS	WHAT TO DO
When someone is within the age range for the home-testing kit AGE: 60–74	• Has the individual received and carried out the test kit? • If not, describe the benefits of early detection (e.g. peace of mind, better prognosis, less severe treatment). • Explain that most kits return normal results and, if positive, it does not necessarily indicate colorectal cancer. However, further testing is required.	• Explain that individuals need to be registered with a GP to receive a kit. • They can request a test through their GP or by calling the free bowel cancer screening helpline (0800 7076060). They can also answer any questions they may have about the kit. • Explain how to perform the test kit, making sure that common mistakes are highlighted (e.g. not dating the sample or taking more than two weeks to complete).
When someone is within the range of bowel screening AGE: 55–59	• Has the individual attended or been invited to a bowel scope procedure? • If not, describe the benefits of early detection (e.g. peace of mind, better prognosis, less severe treatment). • Highlight that the removal of growths that may occur during the procedure prevent a potential cancer from progressing.	• Explain to the individual how to arrange a bowel scope by calling 0800 707 6060 (they must be aged between 55 and 59 years and registered with a GP). • Reassure the patient with details of the procedure; most people do not find it painful, it takes around 20 minutes and 98% of people say they are glad they had a bowel scope screening.
When someone has received a test kit	• Explain that colorectal cancer is the fourth most common cancer and the second most fatal cancer. • However, completing the test kit through an informed choice can lead to early detection. • Explain that most tests are negative and a positive result does not necessarily	• Explain that taking the test will help their peace of mind and stop them thinking "what if?" • Increased survival rate — if detected early, more than 90% of colorectal cancer deaths are preventable. Diagnosis at stage I cancer has a 95% five-year survival rate compared with 25–40% for a stage IV diagnosis. • Less invasive treatments — treatments for early-stage

	indicate colorectal cancer; however, further investigation is needed that may remove growths before they become problematic.	cancer will have less of an impact on the patient's life, allowing for a faster recovery. • Financial burden — stage IV cancer treatment costs four times more than stage I.
When someone is showing red flag symptoms	• List the symptoms and discuss them with the individual. • Reassure them that the symptoms do not necessarily indicate bowel cancer.	• Advise them to make an appointment with their GP immediately. • Explain how to perform the test kit, making sure that common mistakes are highlighted (e.g. not dating the sample or taking more than two weeks to complete).

Table: Advice pharmacists can provide people concerned about colorectal cancer screening

Source: St Mark's Hospital, Middlesex

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