



Position statement for screening for colorectal cancer

Key Messages:

The Cancer Society acknowledges that from recent randomised controlled trials [1, 2] and from evaluation of population based screening programmes[3] there is evidence of benefit in terms of mortality reduction, for asymptomatic people over the age of 50 to 55 years, from screening for colorectal cancer using faecal occult blood (FOB) tests as the primary screening tool. Recent UK RCT data shows that flexible sigmoidoscopy can significantly reduce mortality rates when used as the primary screening tool[4]. It has a lower rate of associated morbidity when compared to colonoscopy. Colonoscopy is not recommended as the primary population screening tool as there is significant morbidity associated with colonoscopy[5], and, like most countries, New Zealand does not have the capacity to provide colonoscopies to all those needing to be screened. There is no randomised trial evidence supporting the use of CT colonography (virtual colonoscopy) as the initial screening tool. The Society considers that screening should be offered annually or two yearly to asymptomatic people over the age of 50-55 years using a FOB test.

For those at increased risk of colorectal cancer due to a strong family or personal history of colorectal cancer, active surveillance options should be discussed with their medical practitioner as per the Surveillance and Management of groups at increased risk of Colorectal Cancer Guidelines[6].

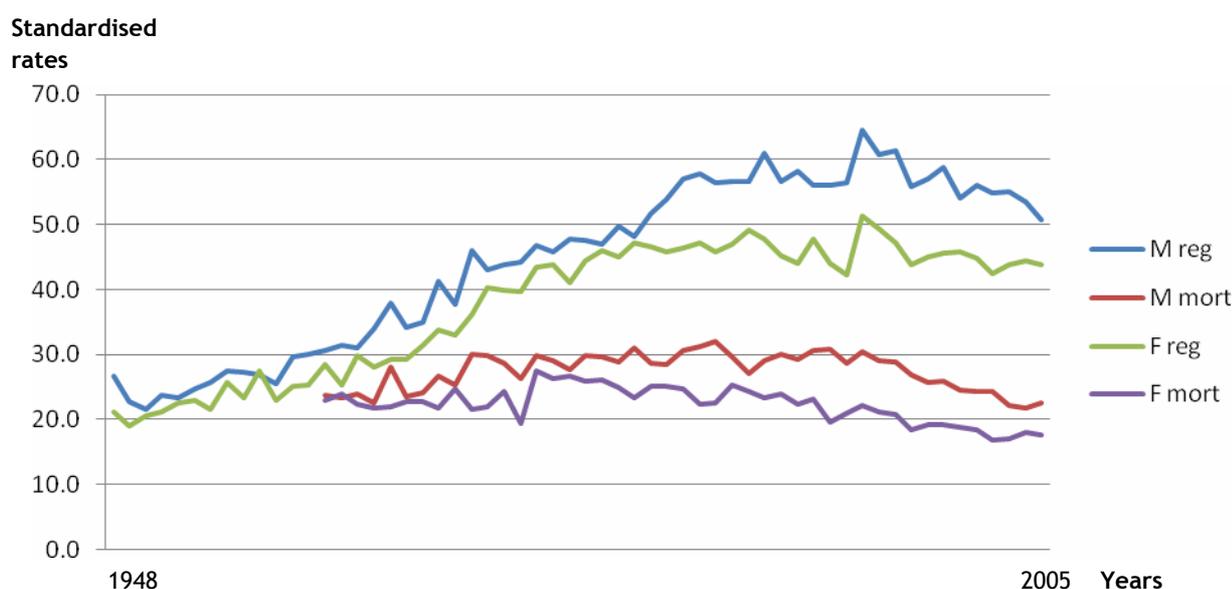
The Cancer Society supports the recommendation for a feasibility study to be conducted using the FOB test as the primary screening tool for a national screening programme for a targeted age group. All those participating in any screening programme should be made aware of both the potential harms and the benefits associated with the screening programme. The feasibility of using flexible sigmoidoscopy as the primary screening tool should also be assessed as a possibly more long term, cost effective screening tool in comparison to FOB testing.

However, screening is not just a test but rather a pathway for which all programme components must be available for. All positive FOB tests will require follow-up investigations, most commonly with colonoscopy.

The Society holds concerns about the current ability of the New Zealand health sector to support a full screening programme[7]. The Cancer Society supports current work being carried out by the Ministry of Health to increase colonoscopy capacity, and recognises that a national screening programme should not be initiated until there is the guarantee that positive tests can be followed up with timely diagnostic and best practice treatment, regardless of the patient's geographical location or ethnicity[8]. The Cancer Society notes the current effort being made to resolve these issues and supports the institution of a national colorectal screening programme as quickly as possible.

Introduction:

Colorectal (or bowel cancer, ICD codes C18-C21) is a serious public health issue for New Zealand as it is the second leading cause of cancer death for both men and women. In 2005 there were 1331 new registrations and 608 deaths due to colorectal cancer. New Zealand has one of the highest rates of colorectal cancer in the world.



Trends in Colorectal cancer rates of registration and mortality for men and women in New Zealand 1948-2005

(New Zealand Cancer Registry and the Ministry of Health's Mortality Data Collection, Historical Summary 1948–2005)

As with most cancers, there are some ethnic differences in colorectal cancer. Both male and female registration rates for colorectal cancer were substantially lower for Māori than the comparable non-Māori rates. However, the mortality rates for both Māori and non-Māori men are similar, and for Māori women the mortality rate is only slightly lower than for non-Māori women[9]. This and other evidence suggests that Māori, on average, have poorer outcomes when diagnosed with colorectal cancer. Māori are significantly more likely to be diagnosed at an advanced stage of disease than non-Māori and have poorer survival from colorectal cancer even within a specified stage of disease[10].

Screening for colorectal cancer reduces mortality through detection and treatment of early-stage cancer, and detection and removal of adenomatous polyps (identified as the

precursor to cancerous changes). This is usually done during a colonoscopic procedure. Colonoscopy is a necessary step in any screening programme that reduces mortality from colorectal cancer. The benefit from screening is modest with a 16 percent mortality reduction with biennial programme using a FOB (either immunochemical (FOBi) or guaiac (FOBg)) test as the initial screening tool [11, 12]. FOBg is the test for which there is evidence from randomised controlled trials of a mortality benefit. However, this test has a lower sensitivity, meaning that nearly half of the cancers are not detected. FOBi has a higher sensitivity that means that more cancers will be detected. However, due to the lower specificity and therefore a higher rate of false positive results, the FOBi test will result in more colonoscopies being required [11].

Screening for colorectal cancer has been on and off the New Zealand political agenda for many years. The first report from the National Health Committee in 1998, advised that, based on the evidence available at the time, the benefits of screening were not sufficient to recommend a national programme. In the early 2000s, screening programmes were established in a number of countries around the world including Australia, the United Kingdom and a number of other European countries. In 2007, a report from the National Screening Advisory Committee to the Director General of Health continued to express concern that while there was increasing evidence of benefit from colorectal screening programmes, there were significant concerns over the New Zealand health sector's capability to meet the demands of such a programme. In 2008, another report[13] was prepared for the Ministry of Health suggesting two years for planning would be needed followed by four years of screening with ongoing evaluation. The Report also identified key steps required before screening could occur. These included agreement on leadership, agreement on key policy parameters, development of information systems, and development of quality indicators for the whole screening pathway. Despite these points being unresolved at the time, it was decided by the then Labour Government to implement a national screening programme. The Sector Capability and Innovation Directorate within the Ministry of Health is overseeing this project and a Bowel Cancer Working Group has been appointed.

Screening tests:

Faecal Occult Blood (FOB) test

FOB testing is the only form of colorectal screening that has been assessed with randomised controlled trials (RCTs). Three large RCTs have consistently demonstrated that serial FOB tests reduce colorectal cancer mortality[14]. Testing can be done by the person in their own home with the samples sent away for analysis. Any positive result is then required to be followed up by a colonoscopy. There are two types of FOB tests currently available, FOBi (immunochemical) and FOBg (guaiac). Both types of test have pros and

cons associated with their use. The predicted outcomes of colorectal screening using FOBi are that for every 1000 individuals who complete a FOBi test around 20 will have a positive result. Of the 16 who will then undergo colonoscopy, around 8 will have had a false

positive with no abnormalities detected, 6 will have polyps detected and around 2 will have bowel cancer detected[15]. The FOBg test has a lower false positive rate, but has a potentially lower uptake by different population groups due to the dietary restrictions needed for accurate results. Using FOBi could potentially increase demands on colonoscopy services due to its higher false positive rate[13].

Harms:

For the FOB test itself there are no noted harms. Any risks associated with using this screening test are related to the possible false-positive test results and the further testing required (such as colonoscopy) confirming the positive test result.

Flexible sigmoidoscopy (FS)

To date, there have been a number of case-controlled studies which have shown that FS appears to reduce deaths from colorectal cancer[16, 17]. A just released RCT undertaken in the UK has demonstrated a significant reduction in mortality from colorectal cancer when using sigmoidoscopy as the primary screening tool[4]. This trial demonstrated a 43% reduction in mortality from colorectal cancer when screening was offered once between the ages of 55 and 64 years. Unlike colonoscopy, FS only examines the lower part of the bowel, where cancer more commonly develops. There will, therefore, be a significant portion of the bowel not examined by FS. If pre-cancerous polyps are detected during screening with FS, a full bowel examination with colonoscopy is usually recommended.

At this time sigmoidoscopy, if used as the initial screening tool, appears to be sufficiently effective if used at 10 year intervals though this time frame could possibly be increased as further data from the UK RCT is released.

Harms:

The patient will be required to undergo bowel preparation prior to the examination, and there is often some discomfort during the procedure. FS has been found to have very low rates of complications, such as perforation of the bowel[14]. A rate of 0.34 serious complications per 1000 procedures has been reported [18]. However, as noted, follow-up of abnormalities will require colonoscopy.

Colonoscopy

Colonoscopy can be used by a trained endoscopist to examine the entire length of the colon. The evidence for effectiveness of screening colonoscopy is indirect as there have been no randomised controlled trials to test for reduction in mortality from colorectal cancer. There is evidence to suggest that colonoscopy is less effective at detecting cancers in the right side of the colon than in the left side[19]. The overall effectiveness in reducing colorectal mortality therefore, while significant, is not absolute[20].

Harms:

Colonoscopy has a higher rate of serious complications when compared with sigmoidoscopy (a rate of about 2 per 1000 procedures) [21].

Colonography (virtual colonoscopy)

Virtual colonoscopy, also known as computed tomographic colonography (CTC), has variable sensitivity for detection of small lesions. In one study the sensitivity of CTC for detecting patients with lesions sized at least 10mm was 55 percent compared with conventional colonoscopy with 96 percent sensitivity[22]. There has been variation in results, with little correlation in relation to level of experience or expertise with the procedure[18, 22]. At this time, there is insufficient evidence to recommend use of CTC as a primary screening tool.

Harms:

There is uncertainty about possible delayed harms from CT-related radiation exposure. A recent modelling exercise[23] found that lifetime CTC screening (starting at age 50 years and repeated every 10 years) produced 36 per 100,000 radiation induced cases of cancer with 8 deaths, which offset some of the benefits from reductions in colonoscopy-related complications.

The risk of serious procedure related harms appear to be minimal. The risk for perforation with air insufflations is very low.

CTC will also potentially detect extracolonic abnormalities, some of which will receive recommendations for further potentially invasive diagnostic testing. Whether these findings will ultimately reduce all cause mortality or constitute over-diagnosis is not known.

Screening for people at higher risk

A family history of colorectal cancer may increase an individual's lifetime risk of developing this disease. The number of affected first-degree relatives and the age at which they were diagnosed determines the level of risk and therefore the level of screening that is recommended. Individuals with suspected inherited bowel cancer syndrome (familial adenomatous polyposis (FAP), hereditary non-polyposis colorectal cancer (HNPCC) should be referred to a genetic specialist and a colorectal cancer specialist for appropriate surveillance and management. Best practice guidelines for those people at greater risk of colorectal cancer have been developed by the New Zealand Guidelines Group[6].

Screening programmes

Currently, a number of countries are offering national screening programmes for colorectal cancer. These include Australia, United Kingdom, and Finland[13]. Canada, Italy and France all have state or regionally-based programmes. Participation rates vary between countries ranging from as high as 70 percent and to others at around 20 percent[11]. Other countries have opportunistic screening for colorectal cancer that is dependent on the health practitioner offering the screening test or the patient requesting it.

Colonoscopy services

Colonoscopy is the primary diagnostic and treatment modality for pre-cancerous lesions and early stage colorectal cancer. The provision of colonoscopy services has long been an area of concern by review groups [7, 11, 13, 20]. Before any screening programme commences problems such as access to diagnostics and treatment facilities needs to be assured [8]. The Society recognises the current efforts being made to address these issues.

This position statement has been reviewed and endorsed by the Society's Medical Director Dr Chris Atkinson as well as the National Health Promotion Committee, the members of which are:

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