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Guidance for Best Practice Management in the National Bowel Screening Programme

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National Screening Unit

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Foreword

The National Bowel Screening Programme (NBSP) is a significant investment in reducing disease and death from one of New Zealand's biggest cancer killers. The NBSP is our first screening programme for both men and women and, when fully implemented, is expected to detect 500 to 700 cancers every year, in the early stages.

The development of these clinical guidelines aims to embed best practice clinical management across the screening pathway and ensure quality and consistency. It is indeed a pleasure to see the NBSP become a reality and our thanks goes to all the members of the various committees, representing the relevant professional colleges and bodies, which have contributed over the last almost 20 years to getting us to this point.

We must also acknowledge the Waitemata DHB team, supported by the Ministry of Health, which so ably conducted the bowel screening pilot. The pilot provided a valuable learning experience and vital data that enabled us to set the parameters for a successful national programme. This programme now sits alongside other screening programmes in the National Screening Unit, within the Ministry of Health.

Finally, I want to acknowledge Dr Harold Neal (Principal Scientific Advisor, Clinicians Screening) who, with the support of Dr Jane O'Hallahan (Clinical Director, Clinicians Screening) embraced the challenge of drafting and managing these Guidelines. Thank you also to the clinical colleagues who provided input and comment.

It has been a privilege to be involved from the outset in New Zealand's journey to bowel screening and it remains a privilege to be the first Clinical Director of the NBSP. The key driver to implement this programme has always been the desire to reduce the toll of this devastating disease on individuals and families. It's hard to imagine a more compelling motivation. Thank you.

Dr Susan Parry

Gastroenterologist

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Introduction

New Zealand has a high rate of bowel cancer,[1] having the 16th highest incidence rate and the 4th highest mortality rate for OECD countries.

- Bowel cancer fulfils the NSU criteria for a population based cancer screening programme.
- Population screening for bowel cancer is for those at average risk of developing bowel cancer.
- Guidelines to identify and manage participants who are at moderate or potentially increased risk of developing bowel cancer should accompany a population screening programme.
- The initial National Health Committee working party on Population screening for Colorectal Cancer in 1998 did not recommend screening for bowel cancer but recommended that Guidelines for the Surveillance of Groups at increased risk of colorectal cancer be developed for New Zealand. This was completed and first published in 2004.[2]
- Establishment of a National Familial Bowel Cancer Registry was recommended.
- The MoH-funded New Zealand Familial GI Cancer Registry began by combining two research registries in 2009.
- The NSU Working Party on Population Screening for CRC in 2006 recommended a pilot study using an immunochemical faecal occult blood test FOBT, now termed faecal immunochemical test (FIT).
- The Waitemata bowel screening pilot offering a biennial FIT test with a threshold for positivity at 75 ng Hb/ml buffer to those aged 50–74 years, began in October 2011.
- Colonoscopy capacity is a key concern for population bowel cancer screening programmes with the consequence that most countries initially roll out bowel screening to a restricted age range.
- In preparation for bowel screening in New Zealand a number of initiatives were undertaken:
  - the National Direct Access Referral Criteria for Colonoscopy and CTC were developed
  - the colonoscopy wait time indicators were introduced as part of the wider Faster Cancer Treatment initiative
  - the National Bowel Cancer Working Group was established.

[1] OECD (2017), "Colorectal cancer mortality, 2005 and 2015 (or nearest years)", in *Quality and outcomes of care*, OECD Publishing, Paris, https://doi.org/10.1787/health_glance-2017-graph103-en and OECD (2017), "Survival and mortality for colorectal cancer", in *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris, https://doi.org/10.1787/health_glance-2017-41-en.

[2] *Guidelines for the Surveillance of Groups at Increased Risk of Colorectal Cancer*. Published by the New Zealand Guidelines Group for the Ministry of Health PO Box 10 665, Wellington 6143, New Zealand https://www.health.govt.nz/publication/guidance-surveillance-people-increased-risk-colorectal-cancer. Updated 2011 https://www.health.govt.nz/system/files/documents/publications/colorectal-cancer-surveillance-guidance.pdf.

- Data from the bowel screening pilot and the colonoscopy wait time indicators allowed Health Workforce NZ to model the colonoscopy requirements for a bowel screening programme.
- This subsequently informed:
  - workforce planning initiatives that included increasing the number of gastroenterology trainees and beginning a nurse endoscopy training programme
  - the decision to roll out the national bowel screening to those the BSP had identified to be most at risk, i.e., those aged 60–74 years with a threshold for positivity at 200 ng Hb/ml buffer[3] beginning with Hutt and Wairarapa DHBs in July 2018.

3 Age Range and Positivity Threshold, MoH, March 2017, https://www.health.govt.nz/our-work/preventative-health-wellness/screening/national-bowel-screening-programme/key-documents-national-bowel-screening-programme

Epidemiology

Incidence

In 2013, 3,005 New Zealanders were diagnosed with colorectal cancer (1,590 male and 1,415 female) (Table 1). Of those, 162 were Māori and 2,843 were non-Māori.

Table 1: 2013 age-standardised registration and mortality rates (cases per 100,000) by year and ethnicity for colorectal cancer (ICD codes C18–C20)

		New cancer registrations			Cancer deaths		
		Male	Female	Total	Male	Female	Total
All	Number	1,590	1,415	3,005	644	579	1,223
	Rate (per 100,000)*	48.1	36.7	42.1	18.7	14.0	16.1
Māori	Number	94	68	162	37	32	69
	Rate (per 100,000)	43.4	25.4	33.6	16.4	12.6	14.6
Non-Māori	Number	1,496	1,347	2,843	607	547	1,154
	Rate (per 100,000)	48.5	37.6	42.7	18.8	14.2	16.3

* Includes a total of 20 (1.7% of all cases) of C18 (anus and anal canal) associated deaths.

* Rates are expressed per 100,000 population and age standardised to the WHO World Standard population.

Source: New Zealand Mortality Collection

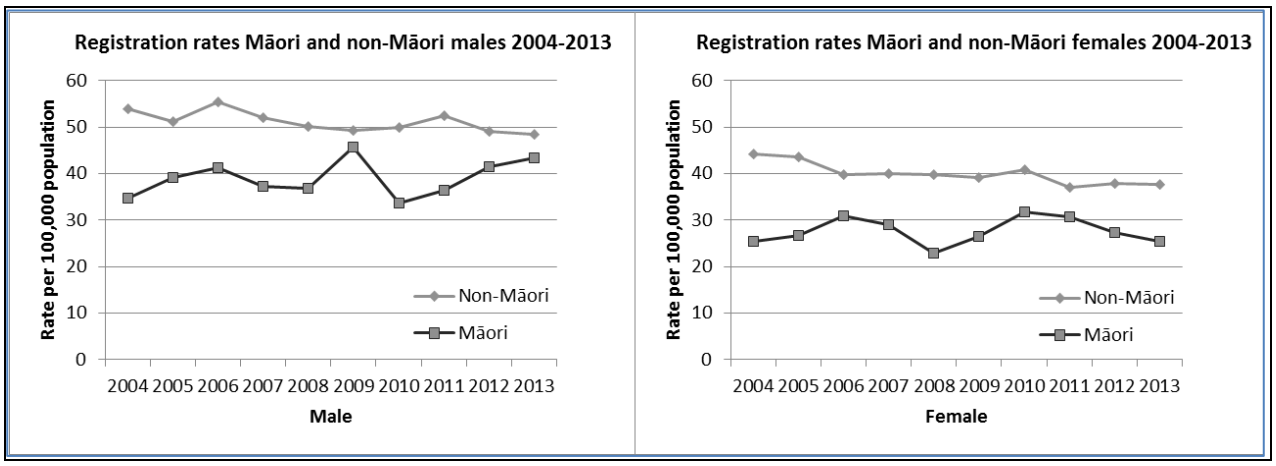
For the total population in 2013, colorectal cancer was the second most common cancer registered for both males and females. In that year, colorectal cancer was the third most commonly registered cancer for Māori. The age standardised rate for new case registrations in New Zealand was 42.1 per 100,000.

Males have a higher rate of colorectal cancer compared to females, both Māori and non-Māori. Colorectal cancer is one of the few cancers for which Māori registration, and death rates, have historically been lower than non-Māori rates (Blakely et al 2010; Ministry of Health 2010, 2011, 2016; Robson et al 2007). In 2013, the age standardised rate for Māori was 33.6 per 100,000. For Pacific peoples, colorectal cancer rates are low, with an average annual rate of 29.8 per 100,000 for males and 20.5 per 100,000 for females (Teng et al 2016). Deprivation index does not appear to have an effect on the rate of cancer registrations for either males or females.

Between 2006 and 2013 there was a 9.5% reduction in new registrations (from 46.5 to 42.1 per 100,000). While the rates of colorectal cancer have been steadily declining, the actual number of registrations had increased as the New Zealand population increased in size and a greater proportion of the population is in older age groups (2754 in 2006 to 3005 in 2013). The age-standardised rate in males has fell 12.1% from2006 to 2013. In females the age-standardised rate decreased by 6.6% during the same period.

The declining rates of colorectal cancer are not experienced equally by Māori and non-Māori (Figure 1). For non-Māori males, registration rates have trended downwards. However, for Māori males, rates are increasing. For females, the Māori registration rate trends are less clear, whereas the non-Māori female rate showed a steady decline.

Figure 1: Trends in rates of bowel cancer registrations for Māori and non-Māori by sex, 2004–2013



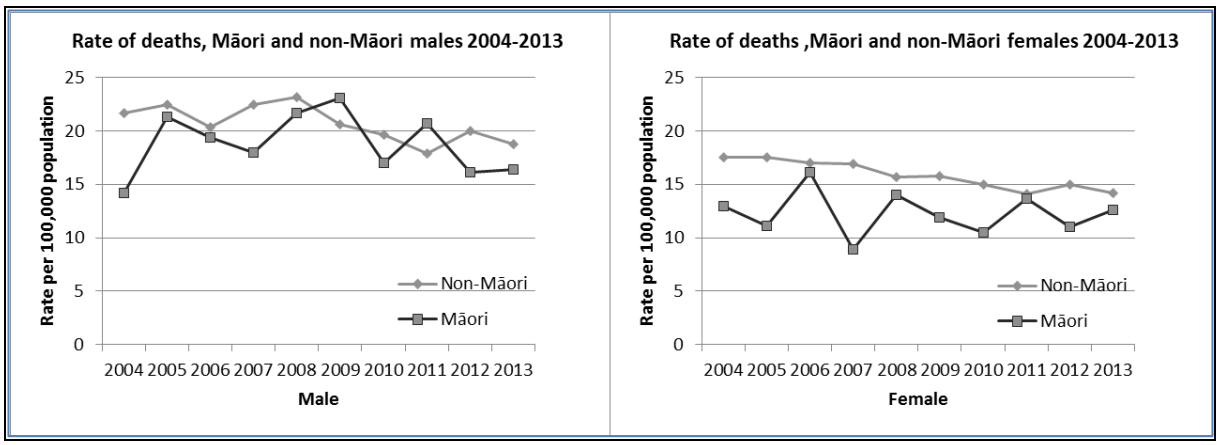
Source: Registration data for colorectal cancer (C18–20) sourced from the New Zealand Cancer Registry and National Mortality Collection respectively. Rates are expressed per 100,000 population and age-standardised to the WHO World Standard Population. Prioritised ethnicity has been used (Ministry of Health 2016).

Mortality

In 2013, 1,223 people died as a result of colorectal cancer (644 male and 579 female), with 69 deaths in Māori and 1,154 deaths in non-Māori (Table 1). It was the second most common cause of death from cancer in New Zealand. However, it was the most common cause of death in males but third most common in females. It was the third most common cause of death from cancer for Māori compared with the second most common for non-Māori. The age standardised mortality rate for the total population was 16.1 per 100,000. As with incidence, mortality was higher for males compared to females. Mortality rates in Māori were not statistically different from non-Māori, despite low bowel cancer incidence among Māori. For Pacific peoples, colorectal cancer mortality is lower than for Māori or European/Other, at an annual average of 9.4 per 100,000 for males and 10.0 per 100,000 for females (Teng et al 2016). Deprivation (NZDep quintiles 4 and 5) is associated with increased mortality rates for both genders compared to quintiles 1–3.

Mortality rates decreased over the last decade (Figure 2). There was a 7.5% reduction in mortality from a rate of 17.4 in 2006. Declining mortality rates are seen for both males and females. The trend is also similar for Māori and non-Māori. This is in contrast for between 1998 and 2008 where male and female mortality rates increased by 62% and 2%, respectively (Ministry of Health 2011).

Figure 2: Trends in rates of bowel cancer deaths for Māori and non-Māori by sex, 2004–2013



Source: Mortality data for Colorectal cancer (C18–20) sourced from the New Zealand Cancer Registry and National Mortality Collection respectively. Rates are expressed per 100,000 population and age-standardised to the WHO World Standard Population. Prioritised ethnicity has been used (Ministry of Health 2016).

Stage and survival

By international standards, New Zealand has a low rate of early stage diagnosis of colorectal cancer and the lowest percentage of surgically curable (stage I and II) localised disease (28%) when compared with Australia (New South Wales) (34%), United Kingdom (42%), United States (40%) and Hong Kong (35%) data. Twenty percent of disease at diagnosis in New Zealand is metastatic (Samson et al 2009).

Māori are more likely to have distant disease at diagnosis than non-Māori (30.4% compared with 19.4%) and are more likely to have unknown stage at diagnosis than non-Māori (12.7% compared with 9.4%) (Robson and Harris 2007). Higher proportions of Pacific colorectal cancer patients are also diagnosed with advanced disease (Jackson et al 2015). More advanced disease contributes to significantly poorer cancer survival for Māori than non-Māori (hazard ratio 1.33; 95% CI 1.03–1.71) (Hill et al 2010b). Levels of comorbidity and socioeconomic deprivation also contribute to survival rates, along with access to and quality of health care (C3 Quantitative Study; Hill et al 2010a, 2010b, 2013; Jackson et al 2015; Sarfati et al 2010).

Equity

Equity is an essential component of a quality screening programme (National Screening Unit 2015). The World Health Organization defines equity as the absence of avoidable, unnecessary and unjust differences in the health of groups of people (Ministry of Health 2002; Whitehead 1990; Whitehead and Dahlgren 2006).

A key priority for the NBSP is achieving equitable access to and through the bowel screening pathway. Māori, Pacific and those living in deprived areas (NZDep 9 and 10) have been identified as priority groups for the programme. This was because of a number of factors: ongoing broader health inequities experienced by these groups; lower participation in the bowel screening pilot; and the potential to improve survival due to earlier detection.

To achieve the aim of equitable access in bowel screening equity is considered at all levels of the programme and with all providers. Achieving equity is expected not only in participation in the programme, but also in other quality indicators such as timely progress along the screening pathway. Evidence based initiatives are supported, as well as testing innovative approaches designed to meet the needs of priority populations. Strong leadership for equity is important throughout the programme.

Equity for Māori is a key focus for the NBSP as part of the Crown's obligations to the indigenous people of New Zealand as a partner to Te Tiriti o Waitangi. While the programme has positive health gains for both Māori and non-Māori and aims for equitable access, it acknowledges that the overall health gains from the programme will be greater for non-Māori at the start of the programme. In depth consideration was given to lowering the starting range for Māori as a way to achieve the same health gain.[4] The Bowel Screening Advisory Group (BSAG) reviewed the evidence about the balance of benefits and risks of screening for younger Māori in 2017, and did not recommend it at that stage. The programme accepted that decision, but is committed to reviewing new evidence as it becomes available.

The National Bowel Cancer Working Group (NBCWG) has identified actions for clinicians in addition to screening which address the inequities in bowel cancer survival between Māori and non-Māori. The NBCWG Māori Equity Statement[5] has a 'get it right for Māori, get it right for all' focus. The actions include early referral, referral for chemotherapy, management of co-morbidities, high quality smoking cessation treatment, socioeconomic support and advocating for Māori patients. These are actions that can influence earlier detection and improved quality of care, both of which contribute to poorer survival for Māori (Hill et al 2010a).

4 Will need to insert webpage link here when available.

5 Available from https://www.health.govt.nz/our-work/diseases-and-conditions/cancer-programme/bowel-cancer-programme/background-reports

Key findings from the Waitemata Bowel Screening Pilot[6]

1. In the first screening round (Round 1) a total of 121,798 people were invited to take part and 69,176 people (56.8%) returned a correctly completed kit (and documentation) that could be tested by the laboratory. In the second screening round (Round 2), a total of 130,094 people were invited and 71,810 (55.2%) people returned a correctly completed kit. In the third screening round (first nine months – 1 January 2016 to 30 September 2016), 48,524 people were invited and 26,621 people (54.9%) returned a correctly completed kit.

2. The New Zealand participation rate for Round 1 of 56.8% was higher than the internationally acceptable minimum participation rate of 45.0% for first screening rounds.

3. The data shows that for all those who received an invite in Round 2, the average participation was 55% for that round. The average participation for the initial nine months of Round 3 is similar, at 55%. For people for whom Round 2 was their first screen, due to aging in or moving into the area, participation is low (47%). This may be because the average age of a person in this group was 53 and participation is known to be much lower in younger age groups. The initial result from Round 3 shows a similar participation for this group (46%).

4. For people who were invited in Round 1, but either did not complete their kit correctly or did not take part, only 25% participated in Round 2.

5. The participation was 20% in Round 3, for people who were invited in Round 1 and/or Round 2, but either did not complete their kit correctly or did not take part. A similar pattern is seen in international data; if a person did not take part in an initial screening round, they are less likely to take part when invited a second time.

6. The participation rate for Pacific people in Round 1 was about half that of the 'European and Other' group. The final results for Round 2 and initial results for Round 3 show this gap, while having closed somewhat (possibly in response to a number of initiatives) still remains.

7. For people who successfully took part in previous screening rounds (returning a kit that could be tested by the laboratory) it was very likely that they would return a successful kit in Round 2. The participation rate for this group of people was 85% and this is towards the higher range reported internationally. A similarly high percentage participation was seen for those invited in the first nine months of Round 3 (82%). Participation by ethnicity for each round is shown in figure 1.

[6] Bowel Screening Pilot Results. http://www.health.govt.nz/our-work/diseases-and-conditions/cancer-programme/bowel-cancer-programme/bowel-screening-pilot/bowel-screening-pilot-results. Updated 16 June 2017

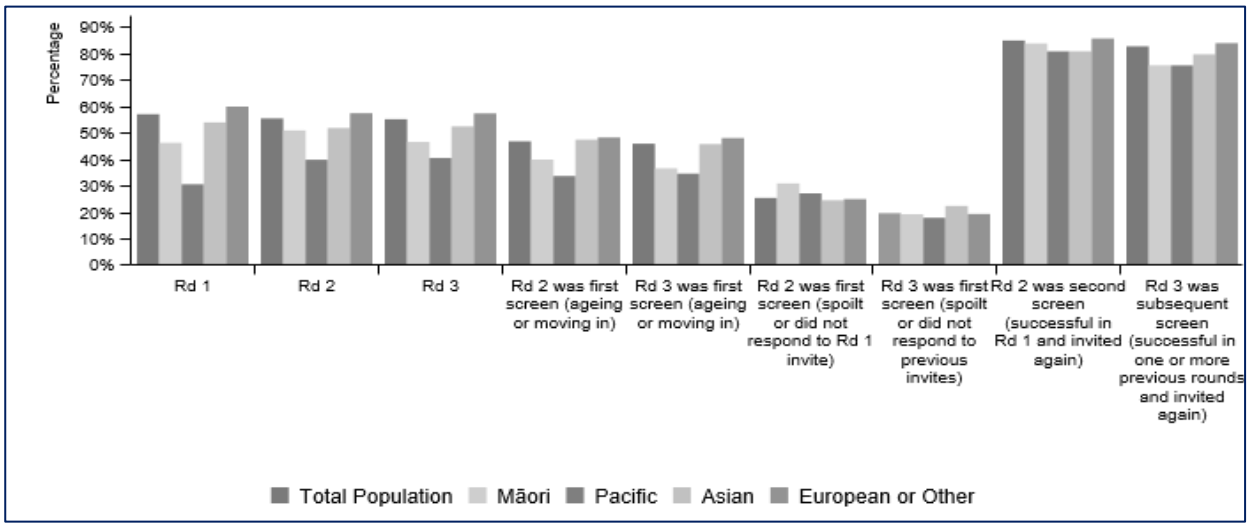
8. The positivity rate refers to the percentage of people returning a completed test kit who were reported to have a positive FIT during the first and subsequent screening rounds between 1 January 2012 and 30 September 2016. Māori and Pacific participants had slightly higher proportions of positive tests compared with other participants (8.1% and 7.5% for Māori and Pacific respectively compared with 6.4% for Asian and 6.1% for European/other).

9. About 6 in 10 people who have a colonoscopy will have adenomas detected. Adenomas may be removed at colonoscopy. Some participants identified with adenomas will be advised to have regular colonoscopy in the future. About 4 in 100 people who have a colonoscopy after their first screening test through the programme will be found to have bowel cancer. For those taking part in Round 2, about 3 in 100 colonoscopies will find bowel cancer. They will be referred for treatment.

10. Māori participants had the highest proportion of cancer or advanced adenoma detected compared to all other ethnicities. Nearly 14 out of 1000 Māori participants screened with a FIT result available were diagnosed with either an advanced adenoma or cancer compared to around 12 for European/Other, 9 for Pacific and 8 for Asian participants.

11. The positive predictive value for any abnormality detected was highest for Māori and European/Other groups (57% each) followed by Asian and Pacific people (52% and 47% respectively).

Figure 3: Participation in the Bowel Screening Pilot by ethnicity showing those invited from 1 January 2012 to 30 September 2016



Colonoscopy definitions[7]

Screening colonoscopy

Screening is the examination of asymptomatic or well individuals in order to classify them as unlikely or likely to have a disease. A national screening programme is an example of a population preventive strategy, where everyone in a particular age-group is invited to participate. A population preventive strategy has the potential to identify a high proportion of individuals with early disease in a population. In a screening programme, this proportion is dependent on the uptake of screening and the sensitivity of the test.

The faecal immunochemical test (FIT) is the primary screening test for the NBSP. If the FIT is negative the participant is returned for 2 yearly FIT screening. If the FIT is positive the participant has a higher likelihood of having a colorectal abnormality or cancer and therefore they are referred for colonoscopy to exclude or confirm disease. In effect a two tier screening strategy - FIT first followed, if indicated, by colonoscopy.

Surveillance colonoscopy

Surveillance colonoscopy, as opposed to screening, refers to monitoring individuals known to have a disease or to be at increased risk of a disease. Recommendations are made on the follow-up and management of individuals identified to be at increased risk of developing colorectal cancer and therefore the term surveillance rather than screening is appropriate. A greater proportion of this group could potentially benefit from surveillance because the prevalence of the disease is likely to be higher. Thus, the benefit-to-risk ratio of surveillance (as opposed to population screening) is more favourable. Colonoscopy, as opposed to FIT, is widely recommended for surveillance in individuals with a significant increase in risk of developing colorectal cancer.

[7] Modified from Surveillance and Management of Groups at increased Risk of Colorectal Cancer 2004. Evidence-based best practice guideline. The New Zealand Guidelines Group

G1 Recommendations – equity and screening for priority groups

R1.01	Commitment to equity in health outcomes	***Practice point*** (MoH Equity; MoH Priority) A key priority for the NBSP is achieving equitable access to and through the bowel screening pathway across all population groups. To achieve equitable participation and quality throughout the screening pathway, additional effort is needed to support priority group people to be screened and access assessment and treatment services. For the NBSP, **priority group people** are Māori, Pacific Peoples, and those living in areas of deprivation (NZ Deprivation index 9 and 10) within the eligible age range for screening. Providers are expected to use evidence-based strategies to support equal access and quality for priority group people. For more details, see:[8] • Equity Options Report for the Bowel Screening Programme • Equity Checklist.
R1.02	Responsiveness to Maori	***Practice point*** (MoH)[9] Services must recognise the principles of the Treaty of Waitangi and be responsive to the needs of Māori. The principles of partnership, participation and protection underpin the relationship between the Government and Māori under the Treaty of Waitangi. • **Partnership** involves working together with iwi, hapū, whānau and Māori communities to develop strategies for Māori health gain and appropriate health and disability services. • **Participation** requires Māori to be involved at all levels of the health and disability sector, including in decision-making, planning, development and delivery of health and disability services. • **Protection** involves the Government working to ensure Māori have at least the same level of health as non-Māori, and safeguarding Māori cultural concepts, values and practices.
R1.03	Culturally competent/ appropriate services	***Practice point*** (MoH)[10,11] Culturally appropriate service delivery is an integral requirement in the provision of health services. Bowel screening services must be provided in an environment that respects the culture and the dignity and autonomy of people.
R1.04	Practical points and considerations for clinicians	***Evidence-based recommendation*** (MoH)[12] Advocate for your priority group participants. • Endorsement of the programme or encouragement to participate by a GP, nurse or Māori or Pacific health provider can increase participation for priority populations. • Take into account different levels of health literacy and present information in a language and a manner that is culturally appropriate and easy to understand. • Refer to available support services that can support participation through the screening pathway.

8 Final Evaluation Report of the Bowel Screening Pilot Screening Rounds One and Two. 5.0 Equity https://www.health.govt.nz/system/files/documents/publications/bowel-screening-pilot-final-evaluation-report-redacted-january2017.pdf

9 www.health.govt.nz/our-work/populations/maori-health/he-korowai-oranga/strengthening-he-korowai-oranga/treaty-waitangi-principles

10 Final Evaluation Report of the Bowel Screening Pilot Screening Rounds One and Two. 5.0 Equity https://www.health.govt.nz/system/files/documents/publications/bowel-screening-pilot-final-evaluation-report-redacted-january2017.pdf

11 Minister of Health. 2016. New Zealand Health Strategy: Future direction. Wellington: Ministry of Health. https://www.health.govt.nz/publication/new-zealand-health-strategy-2016

12 MoH National Bowel Cancer Working Group Maori Equity Statement 2017 http://www.health.govt.nz/system/files/documents/pages/nbswg-maori-equity-statement-updated2017.docx (note this was developed for symptomatic participants, but also has relevance for screen-detected bowel cancers)

G2 Recommendations – primary screening

Recommendations: The screening test

R2.01	The primary screening test	***Evidence-based recommendation*** (EC) The recommended screening test for detecting faecal occult blood is the faecal immunochemical (FIT).[13]
R2.02	Frequency of the screening test	***Evidence-based recommendation*** (EC) Eligible people are invited to take part in the screening programme every 24 months.

Recommendations: Eligibility to participate in the screening programme

R2.03	Age for screening	***Consensus-based recommendation*** (EC) The eligible age range to screen for the NBSP is 60 to 74 years of age. There is evidence that population-based screening amongst the age range 60–74 years leads to a reduction in incidence and mortality from bowel cancer.
R2.04	Screening after age 74 years	***Consensus-based recommendation*** (EC) Screening after age 74 is currently not recommended due the increasing co-morbidity in this age range.
R2.05	Family history of bowel cancer	***Consensus-based recommendation*** (EC) People with a family history of bowel cancer should complete the FIT and discuss bowel cancer risk factors with their GP team: • those with low to average risk continue with screening • those with moderate risk continue with surveillance • those with potentially high risk are referred to *New Zealand Familial Gastrointestinal Cancer Service* (NZFGICS).[14]
R2.06	Benefits from screening	***Practice point*** (NBSP) There is evidence that effective invitation and subsequent recall maximises these benefits.
R2.07	Method of invitation	***Practice point*** (NBSP) By a mailed pre-notification letter followed by an invitation letter which includes a FIT kit.

[13] FIT is a non-invasive screening test (home based self-sampling) with a better participation rate compared to invasive screening tests such as flexible sigmoidoscopy. FIT has a substantially higher yield of CRCs and is predicted to have a greater impact on CRC mortality than either gFOBT or one-off sigmoidoscopy (Sarfati D, et al NZMJ 19 August 2016, Vol 129 No 1440 https://www.nzma.org.nz/__data/assets/pdf_file/0009/50949/Sarfati-Final.pdf)

[14] New Zealand Familial Gastrointestinal Cancer Service (NZFGICS) http://www.nzfgcs.co.nz/home

R2.08	Risks from screening	***Consensus-based recommendation*** (EC, NBSP) In a well-organised high-quality FIT screening programme, the risks of adverse effects may occur from diagnostic colonoscopies after positive test results. These are defined, monitored and not exceed rates as per NBSP Interim Quality Standards.[15] All screening tests will have false negative and false positive results. The outcomes of positive predictive value (PPV), false negative and false positive FIT are minimised and monitored by quality systems, and risks managed appropriately,[16] including open disclosure for serious events,[17,18,19,20]
R2.09	Exclusions to screening	***Practice point*** (NBSP; NHSBCSP) People with the following conditions are informed of the information in the NBSP booklet[21] and advised to the NBSP, but do not complete a screening test: • have had, or currently being treated for bowel cancer • have symptoms of bowel cancer • have had a colonoscopy in the last five years • are on a bowel polyp or bowel cancer surveillance programme • have had, or currently being treated for, bowel cancer • had their large bowel removed • have ulcerative colitis or Crohn's disease that is currently active • seeing a doctor about bowel problems
R2.10	Did not respond to invitation	***Practice point*** (NBSP) Recall for screening within two years.
R2.11	Eligibility for free health care in New Zealand	***Evidence-based recommendation*** (MoH Eligibility) Information is available for participants and service providers if there is uncertainty regarding a participants eligibility for free health care services and publically funded screening.

[15] NBSP Interim Quality Standards https://www.nsu.govt.nz/system/files/resources/national-bowel-screening-programme interim-quality-standards-jul17v2.pdf
- complications and safety: Perforation rate <1:1,000 colonoscopies
- post-polypectomy perforation rate <1:500 colonoscopies where polypectomy is performed
- post-polypectomy bleeding <1:100 colonoscopies where polypectomy is performed (this includes EMR (endoscopic mucosal resection), endoscopic submucosal dissection and all other polypectomies at colonoscopy)
- rate of intermediate or serious colonoscopic complications relating to perforation or bleeding requiring hospital admission within 30 days of performance of colonoscopy within the NBSP <10:1,000 colonoscopies (note: this number is based on the fact that 70% of participants proceeding to colonoscopy in the WDHB pilot have a lesion detected).

[16] Bowel screening Pilot Monitoring Standards /our-work/diseases-and-conditions/cancer-programme/bowel-cancer-programme/bowel-screening-pilot/bowel-screening-pilotmonitoring-indicators

[17] Guidance on open disclosure policies. Health and Disability Commissioner December 2009 https://www.hdc.org.nz/resources-publications/search-resources/leaflets/guidance-on-open-disclosure-policies/

[18] Health Quality and Safety Commission New Zealand. Guidance on open disclosure 20 February 2012. https://www.hqsc.govt.nz/our-programmes/adverse-events/publications-and-resources/publication/328/ updated 26/03/2018

[19] NHS Screening Programmes: Guidance on applying Duty of Candour and disclosing audit results. Version 1/ September 2016. https://www.gov.uk/government/publications/nhs-screening-programmes-duty-of-candour

[20] NHS Screening Programmes: Managing safety incidents in NHS screening programmes. October 2015, updated August 2017. https://www.gov.uk/government/publications/managing-safety-incidents-in-nhs-screening-programmes

[21] All about bowel screening. The National Bowel Screening Programme. HE1202 March 2018 www.timetoscreen.nz

G3 National coordination centre

Recommendation: Key functions of the National Coordination Centre (NCC)

R3.01	Participation, invitation and results	***Practice point*** (NBSP) Bowel screening is effectively delivered to the eligible population by: • managing participant pathways • inviting eligible participants between the age of 60 and 74 years • recalling eligible participants for routine rescreening every 2 years • taking all steps to ensure participants receive appropriate referral or recall depending on the test result by: – notifying participants of a negative FIT result – finding and notifying the participants general practitioner (if not recorded) of a positive FIT result – If the general practitioner is not found for a participant with a positive FIT result, the endoscopy unit will be notified to contact the participant – NCC does not notify participants of a positive FIT result. • appropriate referral or recall is dependent on the FIT result: – screen negative: invitation in two years – screen positive: referral to endoscopy – spoilt test: resend a FIT kit
R3.02	Equity, information and support	***Practice point*** (NBSP) Equity, information and support for participants is best achieved by: • ensuring a high level of equitable participation for all population groups to maximise the benefits of screening, with a particular focus on priority groups: – Maori – Pacific – those living in deprived areas (NZ Deprivation Index 9 and 10) • being participant focused and providing effective information about the programme in written and verbal forms as required, that conforms with Code of Health and Disability Services Consumers' Rights[22] the enabling them to make an informed choice and provide their informed consent where it is required • being responsive to Maori participants and their whanau by ensuring all staff and service providers apply the Treaty principles of partnership, participation and protection to the services they deliver • providing a free telephone helpline for verbal clarification or extra information a participant may require, in a timely manner and communicated in a sensitive, respectful and culturally appropriate manner.

[22] The Code is available online on the website of the Health & Disability Commissioner: www.hdc.org.nz/the-act-code/the-code-of-rights

R3.03	Information technology and systems	***Practice point*** (NBSP) Quality data is essential for monitoring and evaluating the NBSP to enable the best possible data-driven decisions. IT systems and processes that are fit for purpose, reliable and well supported by: • ensuring that information collection and data management supports the clinical and business needs of the NCC by being: – timely – accurate and reliable – complete – in an appropriate format with particular emphasis on: – participant care – management and privacy – quality assurance – security – governance • ongoing training and support of all users.
R3.04	Incidents and complaints	***Practice point*** (NBSP) Reducing potential risks to participants and supporting quality improvement are maximised by: • maintaining documented incident and complaints management and reporting processes • managing incidents and complaints according to documented protocols, and reporting them in line with the Ministry requirements • quality systems that are an explicit part of incident management • meeting the requirements of the Code of Health and Disability Services Consumers' Rights, in particular the right to complain (Right 10).[23]

G4 Recommendations – information to participants

Recommendations: Information to participants – the Programme

R4.01	Information on the national bowel screening programme	***Practice point*** (NBSP) NBSP resources are available to assist in explaining all aspects of the national bowel screening programme to include: • the objectives and benefits of participating in the NBSP, including the letters and information participants receive from the NBSP • enrolment in the NBSP including how a participant may cancel their enrolment in the NBSP, if they wish to do so (refer below) • who can access the information stored on the NBSP Register • the ways in which information can be used following enrolment in the Programme • the process and implications of declining to participate or withdraw from the programme.

[23] The Code is available online on the website of the Health & Disability Commissioner: www.hdc.org.nz/the-act-code/the-code-of-rights

Recommendations: Information to participants – bowel cancer screening

R4.02	Information on bowel cancer screening	***Practice point*** (NBSP) NBSP resources are available to assist in explaining all aspects of the bowel cancer screening to include:[24,25] • risk factors • the importance of having regular bowel screening tests, even if no symptoms • the benefits and limitations of bowel screening • the difference between a screening test[26] and a diagnostic test, explaining that the bowel screening test is a screening test only, and has limitations, such as the possibility of a false positive or negative result; however regular tests increase the likelihood of abnormalities being detected • the importance of reporting any abnormal symptoms such as bleeding to their doctor immediately, even if they have had a recent negative FIT screening test.

Recommendations: Information to participants – the FIT screening test

R4.03	Information on the FIT test	***Practice point*** (NBSP) NBSP resources are available to assist in explaining all aspects of the bowel FIT screening to include: • details of the test • the procedure for taking and submitting the sample • how and when results will be provided • what the results mean and subsequent recall and follow up • accuracy of the test including false negative and false positive test results.

G5 Recommendations – the FIT laboratory

Recommendations – FIT thresholds and results

R5.01	Reporting FIT results	***Consensus-based recommendation*** (EC; NBSP) FIT results are reported as negative or positive. Quantitative (numerical) results are only sent to BSP+. If the provider (e.g., GP) requests the numerical FIT result on behalf of the participant, the result is provided by the NBSP using international units as nanograms of haemoglobin/ml of buffer (ng Hb/ml buffer).[27]

[24] National Bowel Screening Programme: Why regular bowel screening is important https://www.nsu.govt.nz/national-bowel-screening-programme/why-regular-bowel-screening-important

[25] All about bowel screening. The National Bowel Screening Programme. HE1202 March 2018 www.timetoscreen.nz

[26] A screening test is undertaken when a participant who has no symptoms, whereas a diagnostic test is usually performed when a participant has symptoms and requires a diagnosis.

[27] Allison JE*,†, Fraser CG‡, Halloran SP§, and Young GP‖. 2014. Population screening for colorectal cancer means getting FIT: the past, present, and future of colorectal cancer screening using the fecal immunochemical test for hemoglobin (FIT). *Gut and Liver* 8(2): 117–130, March. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3964261/

R5.02	FIT positive threshold	***Practice point*** (NBSP) The FIT threshold for a positive test results is ≥200ng Hb/ml buffer[28] (this is equivalent to ≥40 µg Hb/gram faeces for OC Sensor Diana analysis).[29]

Recommendation – Organisation, quality and equity

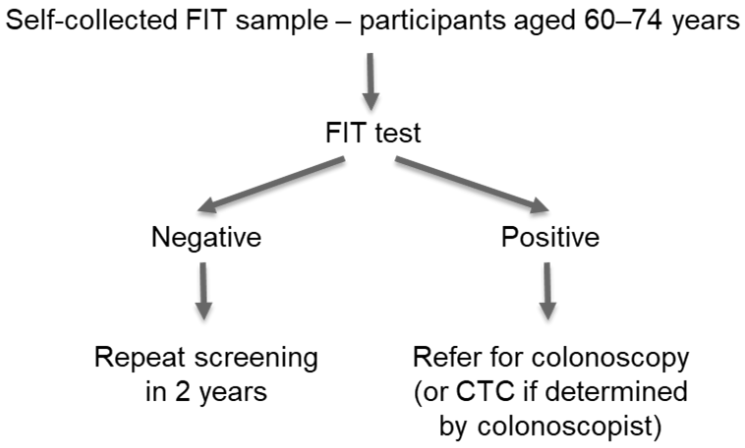
R5.03	Laboratory organisation	***Practice point*** (NBSP) Bowel screening is effectively delivered to the eligible population by the laboratory: • having management structures, business processes and operational components in place to provide a high quality bowel screening service • ensuring organisational requirements include controlled standard operational procedures, monitoring and evaluation processes and reporting, a recovery plan for under performance, and protocols for identifying and managing risk and adverse events • providing clinical and governance oversight • establishing and maintaining linkages and regular meetings with Ministry service providers, including the NCC, and stakeholders • having a suitable mix of qualified, trained and competent staff • ensuring that IT systems are maintained and provide high quality data and information.
R5.04	Quality	***Practice point*** (NBSP) Quality FIT for haemoglobin is achieved at the laboratory by: • validation of test platforms, analyticals, and sample collection kits • having protocols, QC and internal and external QA programmes that ensure high quality registration, processing, analysing and result reporting • delivering timely reports to participants, general practice, the NBSP and when appropriate the endoscopy unit • FIT results being reported as both qualitative and quantitative • maintaining accreditation against ISO15189.
R5.05	Equity	***Practice point*** (NBSP) The laboratory and staff are responsive to cultural diversity and committed to ongoing development of cultural competency. Samples are handled and disposed of in a culturally sensitive manner.

[28] Age Range and Positivity Threshold for the National Bowel Screening Programme 2017. https://www.health.govt.nz/our-work/diseases-and-conditions/cancer-programme/bowel-cancer-programme/national-bowel-screening-programme/key-documents-national-bowel-screening-programme

[29] Robertson DJ[1], Lee JK[2], Boland CR[3], Dominitz JA[4], Giardiello FM[5], Johnson DA[6], Kaltenbach T[7], Lieberman D[8], Levin TR[9], Rex DK[10]. *Recommendations on Fecal Immunochemical Testing to Screen for Colorectal Neoplasia: A consensus statement by the US Multi-Society Task Force on colorectal cancer*. http://www.giejournal.org/article/S0016-5107(16)30625-3/pdf

G6 Recommendations – managing FIT results

Figure 4: Basic screening pathway



Recommendations: Managing FIT results

R6.01	Recall for negative FIT test	***Consensus-based recommendation*** (EC) Recall for screening in two years is recommended.
R6.02	Referral for a positive FIT test	***Consensus-based recommendation*** (EC) Referral for colonoscopy is recommended.
R6.03	Access to colonoscopy (also refer to R7.03–R7.04)	***Practice point*** (NBSP) All participants with a positive screening test are provided with every opportunity by the GP and endoscopy unit to undergo colonoscopy (or other diagnostic investigation within 45 working days).
R6.04	Offer of pre assessment for colonoscopy (also refer to R7.03–R7.04, R8.01–8.06)	***Practice point*** (NBSP) All participants with a positive FIT result are offered pre-assessment for colonoscopy with an assessment and recording of family history by an experienced endoscopy nurse. Details of reasons for pre-assessment are detailed in sections R8.01–8.06.
R6.05	Invalid/could not test/spoilt FIT	***Practice point*** (NBSP) If the participant does not respond after three attempts at recall, the next recall is two years from the date when the initial invitation was made.
R6.06	Positive FIT but does not attend colonoscopy (also refer to R7.03 and R8.04)	***Practice point*** (NBSP) If the participant does not respond after three attempts at recall by the endoscopy unit, the participant is referred back to the general practitioner. If referral to colonoscopy is still not successful a FIT test is offered by the NCC two years from the date when the initial invitation was made.
R6.07	FIT after attending colonoscopy	***Practice point*** (NBSP) In the unlikely event of an individual having a FIT test taken (negative or positive result) when under surveillance following colonoscopy, the Clinical Director or Endoscopy Lead consider the result on a case by case basis in relation to the participants clinical circumstance.
R6.08	Management of positive FIT participants with exclusion criteria	***Practice point*** (NBSP) If a participant takes the FIT test even though they do not meet the criteria and the result is positive, review the exclusion criteria as part of pre-assessment. The responsibility for determining a participant's ongoing involvement in the BSP sits with the Clinical Director or Endoscopy Lead.

G7 Primary care and general practice

Recommendations: Provision of the National Bowel Screening Programme[30]

R7.01	Eligibility to participate in the NBSP	***Consensus based evidence*** (NBSP; MoH; NHSBCSP) Eligible participants are men and women eligible for New Zealand health services and aged 60–74 years. FIT screening is not recommended for people outside the eligible age range. FIT screening is not recommended for people with symptoms requiring clinical investigation[31] (MoH). Eligible participants return for screening every 24 months (NHSBCSP). ***Practice points*** (NHSBCSP; NBSP; NZGG 2009) Exclusion to screening include but are not limited to people who: • have had a colonoscopy within the last five years • have undergone total removal of the large bowel • have had, or are currently receiving, treatment for bowel cancer • are in a bowel polyp or bowel cancer surveillance programme • are currently receiving treatment for ulcerative colitis or Crohns disease, or are under specialist surveillance • are currently seeing a doctor for bowel cancer symptoms. Eligible participants with exclusion criteria are managed appropriately; when participants are temporality ineligible, providers advise them when they will become re-eligible. *The process for this is being developed*
R7.02	Informing the eligible population about the NBSP and screening	***Practice points*** (EC; NBSP) General practices, public health organisations and DHBs collaborate in communications and community engagement activities promoting the NBSP. Provides eligible participants with information and resources about the NBSP that are evidence based and consistent, and cover: • the potential benefits and risks of screening • the significance of positive and negative FIT results • the fact that providers will offer a colonoscopy or other diagnostic test if the screening test result is positive. Communicates the NBSP key messages to eligible participants.[32] Written and verbal communications about the NBSP that is clear, consistent and appropriate.
R7.03	Informing the participant of their FIT result	***Practice points*** (EC; NBSP) Accept The GP tells the participant their FIT result and manages and refers participants with a positive FIT for colonoscopy.

[30] Quick reference guide for primary health care teams March 2018 https://www.nsu.govt.nz/system/files/resources/hp6836-nbsp-quick-reference_guide_for_primary_healthcare_teams_mar18.pdf

[31] Ministry of Health. 2015. *Referral Criteria for Direct Access Outpatient Colonoscopy or CT Colonography*. Wellington: Ministry of Health. URL: https://www.health.govt.nz/system/files/documents/pages/referral-criteria-direct-access-outpatient-colonoscopy-ct-colonography-nov15.doc (accessed 11 December 2017).

[32] National Bowel Screening Programme: Why regular bowel screening is important https://www.nsu.govt.nz/national-bowel-screening-programme/why-regular-bowel-screening-important

R7.04	Advising eligible participants about the significance of the screening test, and managing the pathway for a positive screening test	***Practice points*** (EC; NBSP) Provides advice for participants seeking information about their eligibility[33] because of their: • symptoms or past medical history, including extensive inflammatory bowel disease, such as ulcerative colitis, for more than 10 years • family history of bowel cancer identifies them as: – moderate risk (therefore requiring referral for surveillance colonoscopy) or – potentially high risk (therefore requiring referral to the NZFGICS)[34,35] Advises and manages participants who are unsuitable for or decline diagnostic services. Manages participants that return a positive FIT test and are subsequently found to be ineligible for the NBSP in accordance with NBSP interim quality standards. General practices work with the NBSP DHB endoscopy unit to follow-up their participants that cannot be notified of their positive result, cannot be contacted for a pre-assessment or who do not attend their scheduled diagnostic procedure (colonoscopy or CTC).
R7.05	Responding to a participant request for a numerical FIT result	***Practice points*** (NBSP) The participant, or primary care provider on their behalf, requests the numerical result from the NBSP.
R7.06	Histopathology and post colonoscopy results	***Practice points*** (NBSP) The GP does not directly receive a copy of the histopathology result and is not responsible for determining appropriate follow up, as this is managed by the screening programme. However, when correspondence from the NBSP is received advising of proposed actions on the basis of the histopathology result, this should be managed in the general practice usual manner e.g. added to their reminder system. Note: The DHB clinical lead/lead endoscopist takes responsibility to assess and arrange appropriate management e.g. treatment, surveillance and communicate the outcome and follow up action to the participant and GP.

Recommendations: Maximising equitable participation in the National Bowel Screening Programme

R7.07	Offering all eligible participants the opportunity to participate in the NBSP	***Practice points*** (NBSP) Initiates discussions with eligible participants who have not participated in the NBSP. Informs eligible participants that have not received an invitation that they are able to self-enrol (or the practice can enrol on their behalf); priority participants (see section R5.05) will be sent an invitation immediately. Informs participants that they may withdraw or be temporarily suspended from the NBSP at their request.

33 All about bowel screening. The National Bowel Screening Programme. HE1202 March 2018 www.timetoscreen.nz

34 NZFGICS Who is Referred http://www.nzfgcs.co.nz/services/who-is-referred and http://www.nzfgcs.co.nz/Portals/4/NZ%20CRC%20guidelines%202012.pdf#page=44

35 New Zealand Guidelines Group. 2011. *Surveillance for People at Risk of Colorectal Cancer*. Wellington: Ministry of Health. URL: www.health.govt.nz/publication/guidance-surveillance-people-increased-risk-colorectal-cancer

R7.08	Achieving equitable participation for all population groups	***Practice points*** (NBSP) Promotes a high level of equitable participation for all population groups with a focus on the NBSP priority groups: • Māori • Pacific people • those living in deprived areas (NZ Deprivation Index deciles 9 and 10). Uses quality improvement processes to focus on equity for maximising participation and considered equity impacts for any changes to processes. Works collaboratively with the NBSP NCC to actively follow-up of priority participants who: • have not returned their FIT test kit in four weeks • have returned a spoilt kit or • have returned three consecutive spoilt tests.

G8 Bowel screening colonoscopy

Recommendations: Information to participants – assessment, risks and consent prior to colonoscopy following a positive FIT

R8.01	Information on colonoscopy	***Practice point*** (NZGG 2011; NICE 2011 rev 2017; EGGNZa, NBSP CTC) NBSP and DHB resources are available to assist in providing information and explaining all aspects of the colonoscopy procedure including: • the likelihood of being identified to have bowel cancer or bowel polyps following a positive FIT test (information is available in the *All About Bowel Screening* booklet)[36] • that approximately a third of participants proceeding to colonoscopy following a positive FIT, based on the pilot data, will be identified to have advanced adenomas and be recommended to undergo regular colonoscopy surveillance • the potential benefits, limitations and risks of such surveillance should be explained (NICE) as should the fact that surveillance is regarded as treatment and as such the participant exits the screening programme • what bowel preparation involves and the possible side effects (NZGG 2011) • the need for bowel preparation to be chosen with attention to participant age and comorbidities including renal impairment. Bowel preparation regimes associated with severe fluid or electrolyte shifts should be avoided in high-risk groups • the recognised risks associated with colonoscopy which, although generally safe and the gold standard bowel investigation, is an invasive procedure[37] (NZGG, EGGNZ 2017) • polypectomy and interventions are associated with an increased risk of adverse events • participants with diabetes or on anticoagulants require additional advice regarding preparation for colonoscopy[38] • advising that in relationship to making a decision re anticoagulant therapy, screening colonoscopy following a FIT is regarded as high risk because of the high PPV for polyps, etc. • advising risks in relation to colonic perforation and other complications with CTC.

[36] All about Bowel Screening. National Screening Unit https://www.nsu.govt.nz/resources/all-about-bowel-screening

[37] EGGNZ 2017 (Endoscopy Standards for Individual Colonoscopists Performing Bowel Cancer Screening in New Zealand and Endoscopy Unit Standards for Performing Bowel Cancer Screening in New Zealand).

[38] Endoscopy in patients on antiplatelet or anticoagulant therapy, including direct oral anticoagulants: British Society of Gastroenterology (BSG) and European Society of Gastrointestinal Endoscopy (ESGE) guidelines. 2016. Veitch AM, et al. Gut 2016;65:374–389. doi:10.1136/gutjnl-2015-311110. https://gut.bmj.com/content/gutjnl/65/3/374.full.pdf

Recommendations: referral assessment – colonoscopy and indications for CT colonography (CTC)

R8.02	Pre-assessment for colonoscopy referral	***Practice point*** (NBSP, NZGG 2011) Participants: • with a positive faecal immunochemical test for haemoglobin (FIT) result be offered pre-assessment for colonoscopy by an experienced endoscopy nurse • be fully informed (refer to consent R8.06) • with a positive screening test be provided with every opportunity to undergo colonoscopy or other diagnostic investigation within 45 days of positive FIT • if the participant changes DHB, the clinical lead for the current DHB sends a formal colonoscopy referral to the clinical lead of the participants new DHB with information regarding referral and colonoscopy requirements. The NCC is also notified of the DHB change • if the participant changes to a DHB that is not yet active under the NBSP, they are either offered colonoscopy at the screening DHB for the participant at the time of the positive FIT, or the clinical lead of the screening DHB arranges a formal colonoscopy referral to the DHB for the participant's new residence with the requirements for colonoscopy. The screening DHB will also request a copy of subsequent colonoscopy and histology reports and treatment data etc. if a cancer was confirmed. Pre-assessment includes: • determining co-morbidities • determining medications • determining appropriate bowel preparation • there should be specific protocols for participants with diabetes or on anticoagulants[39] • documenting a participants family history of bowel cancer (including if not known) based on the participants completed family history questionnaire. Note: The questionnaire is designed to facilitate on-referral (with participant consent) by the colonoscopist, to the New Zealand Familial Gastrointestinal (GI) Cancer Service if considered at potentially high risk or to refer for surveillance colonoscopy if moderate risk criteria are met.
R8.03	Referral for CTC	***Practice point*** (NBSP, NZGG 2011, RANZCR, NBSP CTC) Participants deemed unfit for colonoscopy, be offered the first available appointment for a CTC within 45 days of positive FIT. If a participant is temporarily unfit the clinical lead will determine when the participant becomes fit on a case by case basis. Providers of CTC comply with the *CT Colonography Standards* as endorsed by Royal Australasian New Zealand College of Radiologists (RANZCR).[40]

[39] Endoscopy in patients on antiplatelet or anticoagulant therapy, including direct oral anticoagulants: British Society of Gastroenterology (BSG) and European Society of Gastrointestinal Endoscopy (ESGE) guidelines. 2016. Veitch AM, et al. Gut 2016;65:374–389. doi:10.1136/gutjnl-2015-311110. https://gut.bmj.com/content/gutjnl/65/3/374.full.pdf

[40] RANZCR requirements for the practice of computed Tomography colonography 2013. https://www.ranzcr.com/fellows/clinical-radiology/quality-assurance-and-accreditation/ctc

R8.04	Non-referral for colonoscopy is received for participant	***Practice point*** (NBSP) No referral for colonoscopy is received. • The participant is contacted by the endoscopy unit via phone. – A pre-assessment may be performed if required. – If the participant does not want to participate in a particular screening episode at any time, or are unable to continue with the screening program, they should be placed into a 'two-year recall' queue. – If the participant has repeated positive FIT result for each screening round but on each occasion declines colonoscopy, the issue is escalated to the endoscopy clinical lead at the DHB. – If the participant clearly indicates they are no longer willing to participate in the programme then they are removed completely from the Programme. • Identify all participants who are unable to be contacted (for example who do not respond to telephone calls or postal letters). – Participants who have not responded to a minimum of three attempts by the endoscopy unit to reach them by phone (including at least one phone call out of hours) for a pre-assessment should be sent a letter (cc GP) advising them that they have a positive result and should contact either their GP or the endoscopy unit to discuss next steps.
R8.05	Participant withdrawal following a positive FIT	***Practice point*** (NBSP) A protocol is in place for a participant who has a positive FIT but wants to withdraw from the programme.

Recommendation: Consent

R8.06	Consent	***Practice point*** (EGGNZb 2017; ANZCA) To enable participants to make an informed choice and provide consent: • the room used for discussion should be appropriate: – the likelihood of finding an abnormality is discussed and information on incidence is provided – 7 in 10 will have polyps detected – 7 in 100 will have cancer detected • procedural complications and risks (bowel preparation and colonoscopy) associated with: – colonoscopy alone and – colonoscopy with polypectomy – CTC are explained • post procedure risks explained • post procedure activities explained • restarting medications including anti-coagulants explained.

Recommendation: Bowel preparation

R8.07	Effective bowel preparation for colonoscopy (also refer to R8.01)	***Evidence-based recommendation*** (EGGNZb 2017; AGSE2015; NZGG 2011; NBSP) Effective bowel preparation is key to a detailed examination of the bowel. Good bowel preparation supports improved polyp detection and caecal intubation.[41] Poor bowel preparation is associated with failure to reach the caecum and hinders the detection of lesions.[42] A split regimen of 4L of polyethylene glycol (PEG) solution (or a same-day regimen in the case of afternoon colonoscopy) for routine bowel preparation. A split regimen (or same-day regimen in the case of afternoon colonoscopy) of 2L PEG plus ascorbate or of sodium picosulphate plus magnesium citrate may be valid alternatives, in particular for elective outpatients. This is in line with international recommendation for split bowel preparation and is encouraged where feasible.[43] In patients with renal failure, PEG is the only recommended bowel preparation. The delay between the last dose of bowel preparation and colonoscopy should be minimised and no longer than four hours. Adequate hydration is vital to protect against adverse effects of bowel preparation; however a regimen acceptable to patients and meeting the cleanliness standard is best locally agreed and administered. In practice there are many different regimens (diet and catharsis, gut lavage and phosphate preparations) but no ideal exists. Endoscopy units need to monitor effective bowel preparation while ensuring patient acceptability and tolerability. In cases of multiple sensitivities to conventional bowel preparations, or in complex cases, the colonoscopist and the endoscopy nurse should work with the patient to find a suitable alternative, consulting specialists in other areas if necessary. Diabetic medications need to be adjusted for participants with diabetes as part of preparation for colonoscopy. Anticoagulant medication needs to modified in accordance with the local protocol. The routine use of sodium phosphate for bowel preparation is no longer recommended because of safety concerns (AGSE 2015).

Recommendation: Colonoscopy and CTC staff experience and competencies

R8.08	Staff – general	***Evidence-based recommendation*** (EGGNZa 2017; NZNO; NICE 2011 rev 2017, NBSP CTC) Colonoscopists, nurses[44] (endoscopy and other) and endoscopy technicians must meet the competency requirements for procedural and non-procedural activities as defined by EGGNZ. This includes competencies for bowel preparation. Ancillary staff for CTC (radiographers, nursing support and secretarial support are appropriately trained. A review of capabilities may identify shortcomings that can be addressed with further training or investment. This training and investment should occur before screening begins. DHBs and endoscopy unit participate fully in the National Endoscopy Quality Improvement Programme (NEQIP).[45]

41 Lai E, et al. 2009. The Boston Bowel Preparation Scale: A valid and reliable instrument for colonoscopy-oriented research. *Gastrointest Endosc* 69(3 Pt 2): 620–5, March. doi:10.1016/j.gie.2008.05.057. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2763922/pdf/nihms-148874.pdf

42 Harewood GC, Sharma VK, de Garmo P. 2003. Impact of colonoscopy preparation quality on detection of suspected colonic neoplasia. *Gastrointest Endosc* 58(1): 76–9.

43 American Society for Gastrointestinal Endoscopy: Bowel preparation before colonoscopy (guidelines) 2015. https://www.asge.org/docs/default-source/education/practice_guidelines/doc-bowel_prep_before_colonoscopy.pdf?sfvrsn=14

44 New Zealand Nurses Organisation, Gastroenterology Nurses College, 2000. https://www.nzno.org.nz/groups/colleges_sections/colleges/nzno_gastroenterology_nurses_college/nzgns_standards

45 National Endoscopy Quality Improvement Programme, Joint Advisory Group on GI Endoscopy (JAG), https://nz.jagaccreditation.org/

R8.09	Colonoscopists performing polypectomy	***Consensus-based recommendation*** (EGGNZa 2017) Colonoscopists performing colonoscopy for a positive FIT for the NBSP require a minimum competency level 3 to remove smaller flat lesions (<20 mm) that are suitable for endoscopic therapy, larger sessile and polypoid lesions, and smaller lesions with more difficult access. Some flat lesions <20 mm with poor access might be unsuitable for this level. Level 4 competency is required to remove large flat lesions or other challenging polypoid lesions that might also be treated with surgery. This is the type of lesion that would not be removed at the first colonoscopy because of time constraints, if applicable, or because the surgical option needs to be discussed with the patient. If the patient chooses to have endoscopic therapy, then he/she should be referred to a level 4 competent endoscopist. This level of competency would be expected of only a small number of regionally based colonoscopists. Colonoscopists are conversant with and follow international guidelines regarding recommendations for colorectal polypectomy and endoscopic mucosal resection (EMR)[46]. Colonoscopists consider patient co-morbidities to minimise adverse events when removing large sessile proximal colonic polyps or performing multiple polypectomies (NBSP Colonoscopy Quality Assurance Group).
R8.09a	Radiologists performing CTC	***Consensus-based recommendation*** (NBSP CTC) Radiologists will hold Fellowship of RANZCR (or equivalent) and completed at least one accredited CTC training course. Each site requires a lead screening CTC radiologist with at least two accredited consultant radiologists at each site. Double reading may be indicated particularly when there is uncertainty about interpretation or image quality.
R8.09b	General principles of CTC	***Practice point*** (NBSP CTC) CTC is the alternative imaging investigation of choice if OC incomplete or unsuitable for the patient. Barium enema should not be performed. Best practice must be adhered to at screening CTC centres. Patients should be provided with appropriate verbal and written information. The consent process should be started by the specialist screening practitioner, who therefore need to be fully informed about CTC. Technical quality of screening CTC should meet the standards required for the NZ NBSCP. Screening CTC should be performed by MRTs and nurse radiologists who satisfy the professional standards required by the NBSP. Departments offering a CTC service to the NBCSP must measure and monitor their activity in relation to patient safety, outcomes and experience. Screening referrals should be via a formally agreed mechanism. If the CTC can be performed to a high standard at the screening centre but interpretive experience is lacking then CTC data can be transferred to a suitably experience radiologist for reporting or double reporting. A team approach is critical to the success of CTC. The skills and competencies of team members should be clearly defined in the screening centres protocols.

[46] Colorectal polypectomy and endoscopic mucosal resection (EMR): European Society of Gastrointestinal Endoscopy (ESGE) clinical guideline (2013). http://www.esge.com/colorectal-polypectomy-and-endoscopic-mucosal-resection-emr-esge.html

Recommendation: Colonoscopy report information

R8.10	Information in colonoscopy report	***Practice point*** (NBSP; EGGNZa, b) Information included in colonoscopy report: • indication is an NBSP procedure following a positive FIT • comorbidities are documented • adverse events before or during colonoscopy are documented • family history field is completed and outcome of family history assessment (see R 6.15) • number, size and location of polyps or colorectal pathology clearly recorded • polypectomy method • any other interventions.
R8.10a	Information for a histopathology request	***Practice point*** (NBSP) Information on the histology request form includes: • for each polyp in a separate pot, the pathology pot number and the location, size and shape of the polyp. • Relevant clinical information

Recommendation: Incomplete colonoscopy – referral for CTC

R8.11	Referral for CTC	***Practice point*** (NBSP, NBSP CT) Participants with an incomplete colonoscopy and requiring a CTC have the procedure within ten working days from when they have an incomplete colonoscopy.[47] The exception being if they have had a polypectomy as part of the failed colonoscopy and would therefore need to delay the CTC for >30 days. • Participants with an incomplete colonoscopy a may be rebooked at the discretion of the colonoscopist for a repeat procedure with a different colonoscope, e.g., smaller diameter (if not already attempted). • A CTC may be preferred if the colonoscopist has managed to examine most of the bowel and has not found any polyps. • A GA colonoscopy may be preferred if polyps have been detected because of the likelihood of further polyps being present.

Recommendation: Did not attend colonoscopy

R8.12	Did not attend (DNA) colonoscopy	***Practice point*** (NBSP) Participants who DNA for their colonoscopy appointment are actively followed up by the colonoscopy unit for a rescheduled appointment in accordance with DNA protocol.

[47] The exception being if they have had a polypectomy as part of the failed colonoscopy and would therefore need to delay the CTC for >30 days.

Recommendations: Assessment of family history at time of colonoscopy

R8.13	Family history – assessing risk	***Practice point*** (NZGG 2011) The Family History questionnaire completed at pre-assessment should be presented to the colonoscopist at the time of colonoscopy. The questionnaire is designed to identify participants who on the basis of their family history are: • at moderately increased risk and should therefore be offered ongoing surveillance and removed from the NBSP or • are at potentially high risk of developing bowel cancer and should be referred (with participant consent) by the colonoscopist, to the New Zealand Familial Gastrointestinal Service.[48] Outcome of the family history assessment should be documented in the colonoscopy report. If moderate risk criteria are met, i.e., one FDR aged 55 years or less or two FDRs with bowel cancer at any age, five-yearly colonoscopy surveillance (unless polyp number, size or subsequent histology indicate an earlier surveillance procedure) is advised. Family history needs further review. Participant is advised to discuss with GP at their next visit. Family history requires no action.
R8.14	Actions based on high risk outcome	***Practice point*** (NZGG 2011; NZFGICS; NBSP) Based on risk outcomes, high risk on the family history of bowel cancer, e.g., three ticks on the questionnaire (regardless of age at diagnosis) AND involving a first degree relative (FDR) or if ANY first degree relative (FDR) reported to have bowel cancer at age 50 years or younger, then with the participants consent, a referral should be made to the NZ Familial Gastrointestinal Cancer Service (NZFGICS) by sending a copy of the colonoscopy report to the relevant branch. Participants with a potentially high risk of colorectal cancer have one or more of the following: • a family history of familial adenomatous polyposis (FAP), hereditary non-polyposis colorectal cancer or other familial colorectal cancer syndromes • one first-degree relative plus two or more first- or second-degree relatives all on the same side of the family with a diagnosis of colorectal cancer at any age • two first-degree relatives, or one first-degree relative plus one or more second degree-relatives, all on the same side of the family with a diagnosis of colorectal cancer and one such relative: – was diagnosed with colorectal cancer under the age of 55 years, or – developed multiple bowel cancers, or – developed an extra-colonic tumour suggestive of hereditary non-polyposis colorectal cancer (i.e., endometrial, ovarian, stomach, small bowel, renal pelvis, pancreas or brain) • at least one first- or second-degree family member diagnosed with colorectal cancer in association with multiple bowel polyps • a personal history or one first-degree relative with colorectal cancer diagnosed under the age of 50, particularly where colorectal tumour immunohistochemistry has revealed loss of protein expression for one of the mismatch repair genes (MLH1, MSH2, MSH6 and PMS2) • a personal history or one first-degree relative with multiple colonic polyps.

[48] http://www.health.govt.nz/publication/guidance-surveillance-people-increased-risk-colorectal-cancer

R8.15	Actions based on moderate to low risk outcomes	***Practice point*** (NZGG 2011; NZFGICS; NBSP) Based on risk outcomes the following actions are: • If moderate risk criteria are met, i.e.: – one first degree relative (FDR) aged 55 years or less or two FDRs with bowel cancer at any age, then five-yearly colonoscopy surveillance (unless polyp number, size or subsequent histology indicate an earlier surveillance procedure) is advised. – family history needs further review: participant is advised to discuss with GP at their next visit. • If low risk criteria are met, i.e.: – family history requires no action – one first-degree relative with colorectal cancer diagnosed over the age of 55 years: return to FIT screening or surveillance based on findings at colonoscopy.

Recommendations: Management and surveillance recommendations at the time of colonoscopy based on high-risk family history

R8.16	Consideration of specific risks	***Practice point*** (NZGG 2011; ESGE) Before offering surveillance colonoscopy for participants who will be aged 75 years or older at the time of the recommended surveillance, carefully consider the possibility that the potential risks may outweigh the benefits. Significant participant comorbidities are carefully considered before offering surveillance.

Determination of surveillance recommendations at the time of colonoscopy based on the number and size of polyps

R8.17	Consideration of specific risks (restated)	***Practice point*** (NZGG 2011; ESGE) Before offering surveillance colonoscopy for participants who will be aged 75 years or older at the time of the recommended surveillance, carefully consider the possibility that the potential risks may outweigh the benefits. Significant participant comorbidities are carefully considered before offering surveillance.
R8.18	Determination of risk rating for adenoma (also see section 8.5)	***Consensus-based recommendation*** (EC, *NZGG 2011, NZFGICS) The risk rating recommendations apply following complete resection of the initial polyp(s): • low risk – one or two adenomas smaller than 10 mm • intermediate risk – three or four adenomas smaller than 10 mm or – one or two adenomas if one is 10 mm or larger – histological polyps with villous features* – polyps with high grade dysplasia* • high risk – five or more adenomas smaller than 10 mm or – three or more adenomas if one is 10 mm or larger • the risk rating recommendations may be modified with subsequent histology findings. Note: For participants identified to have greater than or equal to 10 adenomas at one colonoscopy procedure referral to the NZFGICS should be considered. For participants aged greater than 70 years an advanced adenoma should be present.

.19	Sessile Serrated Lesions (SSLs)	***Consensus-based recommendation*** (BSG 2017 statement 8; NZGG 2011) In the absence of NZ guidelines on surveillance of serrated lesions and in line with the BSG 2017 statement on Serrated polyps in the colon and rectum it is recommended that: • participants with SSLs that appear associated with higher risk of future neoplasia or CRC (SSLs ≥10 mm or SL's with dysplasia including traditional serrated adenomas should be offered a one off colonoscopy surveillance at three years • In line with BSG statement 9 there is currently no clear indication for colonoscopic surveillance for hyperplastic polyps or SSLs <10 mm unless sufficient in size, location or number to suggest or meet the criteria for Serrated Polyposis Syndrome.
R8.20	Sessile serrated polyposis surveillance	***Practice point*** (NZFGICS; as referenced) Surveillance as recommended by the NZFGICS. Following colonoscopic control of initial polyp burden annual surveillance colonoscopy is recommended with removal of all lesions >5mm and smaller as time allows (in some the polyp burden can be very high, and therefore initially colonoscopy may be required every 3–6 months to clear all polyps). Extension of the surveillance interval to two yearly can be considered in patients with SPS who have had two consecutive annual colonoscopies that meet the following criteria:[49,50] • less than 10 polyps where the majority of polyps are less than 5 mm in size • all right sided polyps have been removed • no histology of concern such as SSPs with dysplasia • good bowel preparation (particularly in the right colon) • a return to annual surveillance should be considered, if the polyp burden exceeds these criteria at any procedure.
R8.21	Sessile serrated polyposis risks	***Practice point*** (as referenced; BSG statement 11) Risk factors for colorectal cancer in SPS have been identified[51,52] (as summarised below) and should be taken in to consideration when determining surveillance intervals in SPS: • any proximal polyp SSA/P with high grade dysplasia • ≥1 serrated polyp (SP) with dysplasia • two proximal SSA/Ps • advanced adenoma. Fulfilment of both WHO criteria 1 and 3. BSG statement 11: Participants with SPS should be referred to clinical genetics services or a polyposis registry – in New Zealand referral should be to the NZFGICS.

[49] Parry S, Burt RW, Win AK, et al. 2017. Reducing the polyp burden in serrated polyposis by serial colonoscopy: the impact of nationally coordinated community surveillance. *NZMJ* 130(1451), 3 March.

[50] Hassan C, Repici A, Rex DK. 2016. Serrated polyposis syndrome: risk stratification or reduction. *Gut* 65(7): 1070–2, July.

[51] Carballal S, Rodríguez-Alcalde D, Moreira L, et al. 2016. Colorectal cancer risk factors in patients with serrated polyposis syndrome: a large multicentre study. *Gut* 65(11): 1829–37, November.

[52] IJspeert JE, Rana SA, Atkinson NS, et al. 2017. Clinical risk factors of colorectal cancer in serrated polyposis: a multicentre cohort analysis. *Gut* 66(2): 278–84, February.

Recommendation: Post procedure information to the participant and General Practice

R8.22	Post procedure information to the participant	***Practice point*** (NBSP; ANZCA; NBSP CTC) **Post procedure information** Before leaving the endoscopy unit, patients should be given a verbal explanation of the results of their procedure. It is preferred that this is usually to be undertaken by the proceduralist, or at least a senior nurse involved in the BCS program. Patients should also be given written information to support the verbal explanation. Written information should include: • findings • when to resume or take relevant medications including anticoagulants • symptoms to watch out for, e.g., bleeding and who to contact if they experience post procedural symptoms • contact numbers • what can be eaten and drunk • when it is safe to drive. Post procedure risks explained. Post procedure activities explained. Restarting medications including anti-coagulants: • before providing the participant with post procedure information the colonoscopist will review the clinical findings and family history to determine surveillance recommendations including: – return to screening – surveillance protocol – referral to NZFGICS etc. Similar information to above but specific for CTC. It is the responsibility of the DHB clinical lead/lead endoscopist to assess and arrange appropriate management e.g. treatment, surveillance and communicate the outcome and follow up action by letter to the patient.
R8.22a	Post procedure information to general practice	***Practice point*** (NBSP) It is the responsibility of the DHB clinical lead/lead endoscopist to assess and arrange appropriate management e.g. treatment, surveillance and communicate the outcome and follow up action by letter to the GP. Note: The GP does not receive a copy of the histopathology result and is not responsible for determining the appropriate follow up.

Recommendation: Post procedure review of surveillance recommendations in consideration of histopathology results and MDM

R8.23	Review of surveillance recommendations following histopathology and MDM	***Practice point*** (NBSP) When the histology report is received by the clinical/endoscopy lead the surveillance plan will be reviewed and recommendations updated based on a combination of the clinical findings and pathology. This may include MDM review depending on findings (see section R8.24). Participants will be notified of any change to surveillance, management or the need for referral to a specialist for treatment (see section R8.32 cancer treatment).

Recommendations: Multi-disciplinary meetings (MDM)

R8.24	Multidisciplinary meetings (MDMs) and concordance consultation	***Consensus-based recommendation*** (NZGG 2011; MoH MDM) A small body of evidence indicates that the formation of an MDM and adherence to treatment standards may increase survival for patients with colon cancer. It also appears that that MDM discussion may produce more favourable outcomes in terms of reducing positive circumferential margin rate and harvesting lymph nodes, than if no MDM discussion takes place. Local protocols must consider the membership of the MDM which is outlined in the Ministry of Health *"Guidance for Implementing High-Quality Multidisciplinary Meetings: Achieving best practice cancer care (2012)"*.
		Practice point (NBSP) All cancer cases and cases where there is a difference in opinion regarding management are discussed at MDM to determine best management plan for individual patients. All participating specialists can bring cases to MDM (endoscopists, surgeons, pathologists, etc.). MDM meetings provide determination of best practice and best management plan for individual patients and should be held regularly for all cancer cases and cases where there is a difference of opinion regarding management. When there is any concern about the management of a particular patient it is good practice to seek a second opinion from a colleague. Cases where there is a difference of opinion regarding patient management should be managed through review of individual cases by a multidisciplinary team that includes endoscopists and histopathologists.
R8.25	Cases referred for MDM	***Practice point*** (NBSP) If a cancer is suspected at colonoscopy, management should be coordinated according to local protocol. If a cancer is diagnosed by histopathology without prior indication, the result should be referred to the DHB bowel screening Clinical Lead and to the MDM. All cancers (including malignant polyps) and complex cases are discussed at MDM. Reasons for discordance between histopathologist and endoscopist should be reviewed prior to taking to MDM to exclude reasons such as clerical or sampling error. Discordant histopathology results should be discussed with another histopathologist and may be resolved before considering MDM.

Recommendation: Management/surveillance of adenoma by risk rating

R8.26	Surveillance intervals after polyp clearance	***Consensus-based recommendation*** (EC, NZGG 2011) The recommendations for surveillance intervals apply after polyp clearance[53, 54]. Participants who have had low risk adenomas removed and in the absence of other risk factors for developing colorectal cancer, should be referred back for FIT screening after five years. Colonoscopic surveillance should be offered to people who have had adenomas removed and are at intermediate or high risk of developing colorectal cancer.

[53] Risk of advanced lesions at first follow-up colonoscopy in high-risk groups as defined by the United Kingdom post-polypectomy surveillance guideline: data from a single U.S. center. Vemulapalli KC, Rex DK. Gastrointest Endosc. 2014 Aug;80(2):299-306. doi: 10.1016/j.gie.2014.02.1029.

[54] Adenoma surveillance and colorectal cancer incidence; a retrospective multicentre cohort study. Atkin W, Wooldrage K, Brenner A, et al. Lancet Oncol. 2017 Jun;18(6):823-834. doi: 10.1016/S1470-2045(17)30187-0

R8.27	Re-entering the screening programme with low risk outcomes (see R8.26 above)	***Practice point*** (NBSP) participants identified to have low risk outcomes will be able to re-enter the screening programme after five years (if still in the eligible age range).

Recommendation: Subsequent surveillance visits and recommendations

R8.28	Subsequent surveillance, risk rating and management	***Practice point*** (NBSP) The same protocols used for initial surveillance, risk rating and management are applied for repeated scheduled surveillance assessments. This includes: • pre-assessment (see section R8.02) • providing information (see section R8.01) • consent (see section R8.01, R8.06) • potential risks (see section R8.01, R8.13–8.18, R8.21) • bowel preparation (see section R8.07) • colonoscopy (or CTC/GA colonoscopy) (see section R8.03) • post procedure activity (see section R8.29–8.31) • further recommendations for surveillance, management, treatment or return to screening (see section R8.29–8.31).
R8.28a	Evidence of previous colonoscopy within the last 5 years	***Practice point*** (NBSP) If a colonoscopy has been performed greater than 2 years and less than 5 years ago (in New Zealand or overseas) a colonoscopy is offered unless there are other clinical reasons why this may not be appropriate. For participants who have had a colonoscopy under 2 years ago the decision to offer a repeat colonoscopy rests with the clinical lead endoscopist. • If the report of the previous colonoscopy is available, adequate and complete, the participant will be recall within 5 years of the previous colonoscopy • If there is no report or the previous colonoscopy was incomplete the lead endoscopist should consider proceeding with a colonoscopy

Recommendations: Surveillance strategy following CT colonography (CTC)

R8.29	Recall following positive FIT with negative CTC	***Evidence-based recommendation*** (AGA 2008) Repeat FIT in five years.
R8.30	Procedures following a significant abnormality detected by CTC	***Consensus-based recommendation*** (NBSP, NCSPI) If an abnormal area of significance is detected by CTC (polyps >5mm), follow-up endoscopy will be required for visualising the abnormality and biopsy (NCSPI). Depending on the nature of the abnormal area simultaneous surgical referral may be indicated. If colonoscopy (under LA or GA) is not suitable or previously incomplete surgical referral and intervention may be required.
R8.31	Follow up of diminutive polyps and extra colonic lesions detected by CTC	***Practice point*** (NBSP CTC) Given the low risk of advanced neoplasia and the low specificity of CTC for small polyps <5mm, consensus is required on threshold polyp size for reporting and follow-up. Consensus and protocols for reporting and work-up of extracolonic findings are also required.

Recommendations: Confirmed cancer detection

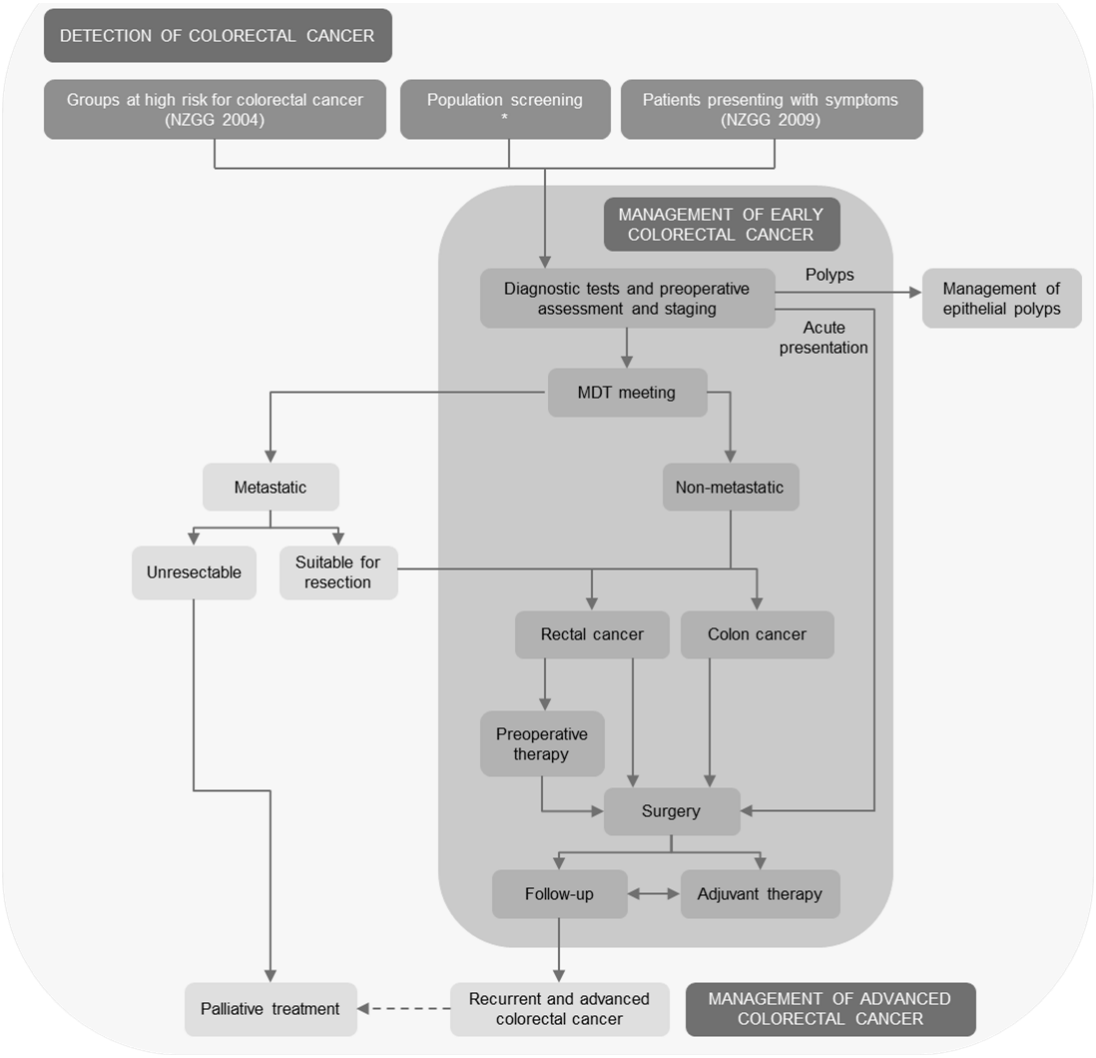
R8.32	Cancer detected	***Evidence-based recommendation*** (MoH)[55] Refer the participant for specialist assessment and treatment in line with faster cancer treatment.

Recommendation: Treatment for colorectal cancer/high risk lesions

R8.33	Cancer treatment and follow up	***Practice point*** (NZGG 2011, NBCWG) All participants who have been referred for treatment for cancer/high risk lesions are assessed by the specialist and treated based on the pathology and individuals clinical situation in accordance with best practice as defined in the guidelines and standards below. To support accurate stage data for screen detected cancers in the Cancer Registry, the National Bowel Cancer Working Group has proposed: The following information is recorded on the histopathology request form by the surgeon in addition to patient demographics: • clinical stage data regarding malignancy and metastasis • pre-operative chemotherapy, radiotherapy and initial radiological stage for rectal cancer. Participants who have undergone colorectal cancer resection are followed up intensively. Refer to: • NZGG 2011 guidelines for detailed cancer treatment and follow up http://www.health.govt.nz/publication/guidance-surveillance-people-increased-risk-colorectal-cancer • National tumour standards: Standards for service provision for bowel cancer patients in New Zealand (provisional) http://www.health.govt.nz/our-work/diseases-and-conditions/cancer-programme/faster-cancer-treatment-programme/national-tumour-standards. See flow chart below.
R8.34	Follow up of cancer resection	***Consensus-based recommendation*** (NZGG 2011) Patients treated for cancer are no longer part of the screening programme. The use of faecal occult blood testing as part of colorectal cancer follow-up is not recommended.

[55] Faster Cancer Treatment Programme, MoH, https://www.health.govt.nz/our-work/diseases-and-conditions/cancer-programme/faster-cancer-treatment-programme updated 30 August 2016

Figure 5: Cultural and supportive care



Source: http://www.health.govt.nz/our-work/diseases-and-conditions/cancer-programme/faster-cancer-treatment-programme/national-tumour-standards

Recommendation: Reporting adverse events

R8.35	Assessment of adverse events	***Practice point*** (NSU) A transparent process around serious adverse events with effective risk management and learning from adverse events, results in initiatives to prevent recurrence of similar events.[56] [57] A system is in place to: • document all adverse events before, during or immediately after colonoscopy in the colonoscopy report • record all adverse events before and during in the patient's colonoscopy report • review all adverse events relating to the performance of colonoscopy • ensure hospital readmissions within 30 days of performing NBSP colonoscopy are reviewed weekly to allow early identification of remedial factors. • ensure that adverse events and all hospital readmissions within 30 days of performing NBSP colonoscopy are reported to the NSU within in the month they occur on the provided data sheet. All readmissions need to be documented, appropriately reviewed are made available for external and NSU audit (see section 8.36) Note: The rate of intermediate or serious colonoscopic complications relating to perforation or bleeding requiring hospital admission within 30 days of performance of colonoscopy within the NBSP is <10:1,000 colonoscopies.[58] [59] *This set of indicators (and related targets) is currently under review*.
R8.36	Managing adverse events	***Practice point*** (NBSP) NBSP colonoscopy reports should include advice to contact the named NBSP DHB clinical lead should the patient present to hospital with an adverse event post NBSP colonoscopy. Adverse events such as perforation and bleeding should be managed in a manner that minimises the likelihood of serious morbidity and mortality as a consequence of the adverse event. Treatment of bowel perforation where there is CT evidence of perforation and significant intra-peritoneal air requires operative management unless there are significant reasons to the contrary identified at initial consultant assessment and supported by ongoing daily consultant review. If an adverse event requires transfer between hospitals there must be consultant to consultant communication.
R8.37	Reporting of adverse events to the National Screening Unit	***Practice point*** (NBSP) Significant adverse events are notified to the NSU immediately and reported according to the NSU incident reporting protocols.[60]

[56] Improving Quality: A Framework for Screening Programmes in New Zealand 2005 https://www.nsu.govt.nz/system/files/resources/quality-framework.pdf

[57] National Screening Unit Quality Principles 2014 https://www.nsu.govt.nz/system/files/page/qualityprinciples25june14.pdf

[58] Bowel Screening Pilot Monitoring Indicators, MoH https://www.health.govt.nz/our-work/diseases-and-conditions/cancer-programme/bowel-cancer-programme/bowel-screening-pilot/bowel-screening-pilot-monitoring-indicators. Updated 16 June 2017

[59] Quality Assurance Guidelines for Colonoscopy NHS BCSP Publication No 6February 2011 NHS BCSP Publication No 6 February 2011.

[60] Managing Adverse Events in New Zealand Screening Programmes in conjunction with NSU Adverse Event Management Toolkit. National Screening Unit April 2017.

G9 Recommendations – histopathology

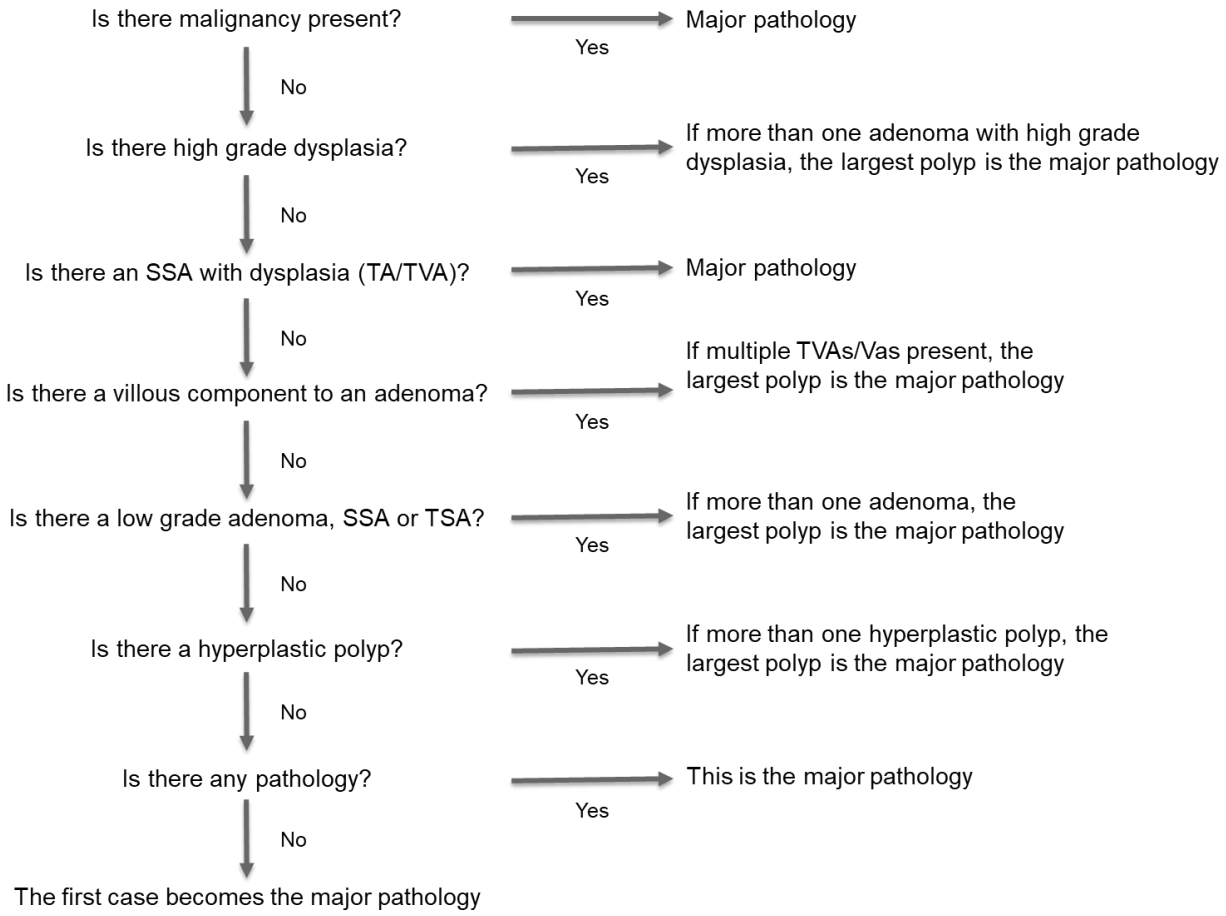
Recommendations: Terminology and classifications for histopathology reporting

R9.01	Reporting terminology and classifications for histopathology specimens	***Consensus-based recommendation*** (WHO; NBCWG) Adenomatous polyps are classified using the latest WHO classification of tumours of the colon and rectum. All polyps, including malignant polyps, are reported using a structured report. All colorectal adenocarcinomas in participants whom meet the modified Bethesda guidelines are tested for mismatch repair status. Universal testing may be implemented in the future. In addition (NBCWG) to support accurate stage data for screen detected cancers in the cancer registry, the National Bowel Cancer Working Group has proposed: • stage data as provided by the requesting surgeon following surgery for screen detected cancer, should be included in the pathology reports.
R9.02	Molecular testing strategies	***Evidence-based recommendation*** (NICE 2017; MoH 2018) Offer testing to all people with colorectal cancer, when first diagnosed, using immunohistochemistry for mismatch repair proteins or microsatellite instability testing to identify tumours with deficient DNA mismatch repair, and to guide further sequential testing for Lynch syndrome.[61,62]
R9.03	Serrated polyps	***Practice point*** (BSG 2017 statement 2) Adopt the terms hyperplastic polyp (HP), SSL, SSL with dysplasia, traditional serrated adenoma (TSA) or mixed polyp to describe SLs in the colorectum, using the WHO criteria to define SSL.
R9.04	Double reading of selected cases	***Practice point*** (NBSP) All adenocarcinomas (and particularly pT1 cancers) and polyps showing high-grade dysplasia are double-reported or independently second read by another pathologist who reports histopathology for the NBSP.
R9.05	Algorithm for determining major pathology in BSP+	***Practice point*** (NBSP) Figure 3 is the reporting algorithm to be used to determine major pathology.

61 Molecular Testing of Colorectal Cancers in New Zealand: Minimum standards for molecular testing of newly diagnosed colorectal cancers. Ministry of Health 2018 https://www.health.govt.nz/publication/molecular-testing-colorectal-cancers-new-zealand-minimum-standards-molecular-testing-newly-diagnosed Published 20 June 2018

62 NICE 2017 Molecular testing strategies for Lynch syndrome in people with colorectal cancer https://www.nice.org.uk/guidance/dg27/resources/molecular-testing-strategies-for-lynch-syndrome-in-people-with-colorectal-cancer-pdf-1053695294917

Figure 6: Reporting algorithm for major pathology



Recommendations – Organisation, quality and equity

R9.06	Laboratory organisation	***Practice point*** (NBSP) Bowel screening is effectively delivered to the eligible population by the laboratory: • having management structures, business processes and operational components in place to provide a high quality bowel screening service • ensuring organisational requirements include controlled standard operational procedures, monitoring and evaluation processes and reporting, a recovery plan for under performance, and protocols for identifying and managing risk and adverse events • providing clinical and governance oversight • establishing and maintaining linkages and regular meetings with Ministry service providers, including the NCC, and stakeholders • having a suitable mix of qualified, trained and competent staff • ensuring that IT systems are maintained and provide high quality data and information.
R9.07	Quality	***Practice point*** (NBSP) Quality histopathology is achieved by the laboratory by: • timely and accurate processing and reporting of histopathology specimens for the NBSP • utilising NBSP approved synoptic reporting • reporting using approved terminology and classifications • having protocols, QC and internal and external QA programmes that ensure high quality registration, processing, analysing and result reporting • participating in MDMs.
R9.08	Equity	***Practice point*** (NBSP) The laboratory and staff are responsive to cultural diversity and committed to ongoing development of cultural competency. Samples are handled and disposed of in a culturally sensitive manner.

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Information sources, organisations and groups

AGA = The American Gastroenterological Association www.gastro.org http://www.gastro.org/guidelines AGA Institute Guidelines for the Early Detection of Colorectal Cancer and Adenomatous Polyps. Clinical decision support tool 2008 http://campaigns.gastro.org/algorithms/crc/early-detection/150-027PNQ_14-3%20CRC%20Screening%20Algorithm_v1%5B1%5D.pdf Colorectal Cancer Screening: Recommendations for Physicians and Patients From the U.S. Multi-Society Task Force on Colorectal Cancer Rex. D et al Gastroenterology 2017 Volume 153, Issue 1, Pages 307–323 https://doi.org/10.1053/j.gastro.2017.05.013 http://www.gastrojournal.org/article/S0016-5085(17)35599-3/pdf

AGSE = American Society for Gastrointestinal Endoscopy. Bowel preparation before colonoscopy. Volume 81, No. 4 : 2015 GASTROINTESTINAL ENDOSCOPY. http://dx.doi.org/10.1016/j.gie.2014.09.048 https://www.asge.org/docs/default-source/education/practice_guidelines/doc-bowel_prep_before_colonoscopy.pdf

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EGGNZa = EGGNZ 2017, Endoscopy Standards for Individual Colonoscopists Performing Bowel Cancer Screening in New Zealand and Endoscopy Unit Standards for Performing Bowel Cancer Screening in New Zealand): https://endoscopyquality.co.nz/assets/Uploads/EGGNZ-Endoscopy-Standards-for-Individual-Colonoscopists-Performing-Bowel-Cancer-Screening-in-New-Zealand-Final-v3.0.pdf

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NBSP = National Bowel Screening Programme (NZ). https://www.nsu.govt.nz/health-professionals/national-bowel-screening-programme

NBSP CTC – CTC standards for quality assurance in the NZ BSP (in draft).

NCSPI: Faculty of Radiologists, Royal College of Surgeons in Ireland (2012) Guidelines for use of CT Colonography (CTC) as part of the National Colorectal Screening Programme in Ireland, available: http://www.radiology.ie/wp-content/uploads/2012/01/Guidelines-for-Use-of-CT-Colonography-CTC-as-Part-of-the-National-Colorectal-Screening-Programme-in-Ireland1.pdf

NHSBCSP = NHS Bowel Screening Programme. NHS public health functions agreement 2017–18 Service specification no.26 Bowel Cancer Screening Programme. Version number: 1.0. First published: April 2017. https://www.england.nhs.uk/wp-content/uploads/2017/04/service-spec-26.pdf

NICE = National Institute for Health and Care Excellence. Colorectal cancer: diagnosis and management (2011, rev 2017). https://www.nice.org.uk/guidance/cg131

NICE 2017 Molecular testing strategies for Lynch syndrome in people with colorectal cancer nice.org.uk/guidance/dg27

NSU = National Screening Unit https://www.nsu.govt.nz/

NZFGICS = New Zealand Familial GI Service http://www.nzfgcs.co.nz/home

NZGG = The New Zealand Guidelines Group (NZGG) was an independent, not-for-profit organisation, set up in 1999 to promote the use of evidence in the delivery of health and disability services. The NZGG went into voluntary liquidation in mid-2012.

NZGG 2011: The NZGG created evidence-based guidance, useable tools and implementation approaches. They also promoted the use of evidence in clinical and personal practice. http://www.health.govt.nz/search/results/NZGG

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WHO World Health Organisation. WHO Classification of Tumours of the Digestive System. WHO Classification of Tumours, Volume 3, IARC WHO Classification of Tumours, No 3 Bosman FT, Carneiro F, Hruban RH, Theise ND. ISBN-13 9789283224327 ISBN-10 9283224329
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Grading of evidence

Grading – cross comparison table for levels of evidence

	NZ guidance	NZGG; NZFGICS*	EC guidelines	BSG 2017	NICE; ESGE; NHSBCSP; AGSE; AGA; (GRADE)	#EGGNZ; RANZCR; NZNO; NCSPI; ACR
The recommendation is supported by good evidence (based on a number of studies that are valid, consistent, applicable and clinically relevant)	Evidence based	A	I-II	High quality evidence	High quality	
The recommendation is supported by fair evidence (based on studies that are valid, but there are some concerns about the volume, consistency, applicability and clinical relevance of the evidence that may cause some uncertainty but are not likely to be overturned by other evidence)	Census based	B	III-V	Moderate quality evidence	Moderate quality	
The recommendation is supported by international expert opinion	Census based	C	VI	Low quality evidence	Low quality	
The evidence is insufficient, evidence is lacking, of poor quality or opinions conflicting, the balance of benefits and harms cannot be determined	-	I			Very low quality	
Good practice point – where no evidence is available, best practice recommendations are made based on the experience of the Guidance Revision Team, or feedback from consultation within New Zealand	Practice point	✓				Practice point

* NZFGICS guidelines link directly to NZGG 2011.

\# This group Indicated as at least equivalent to practice point because either a grading system has not been identified or has been identified as based on review of other guidelines/standards by the organisations revision team.