REVISED DRAFT
Evaluation of the Bowel Screening Pilot
2013 Immersion Visit

Ministry of Health

Manatū Hauora

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Level 9, iCentre Building
50 Manners Street
PO Box 24181
Wellington 6142
TEL +64 4 473 3885
FAX +64 4 473 3884
www.litmus.co.nz

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Preface

This report has been prepared for the Ministry of Health by Liz Smith from Litmus Limited.

We thank Dr Deborah Read for her review and feedback on the draft report.

We acknowledge and thank all those who participated in interviews, including representatives of the Ministry of Health, Waitematā District Health Board, and LabPLUS.

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Please contact Liz Smith (liz@litmus.co.nz) if you have any questions about this report.

1. Executive summary

1.1 Background

The Ministry of Health (the Ministry) has funded Waitematā District Health Board (WDHB) to run a Bowel Screening Pilot (BSP) over four years from 2011/12 to 2015/16. An evaluation of the BSP is being undertaken by Litmus and Sapere Research Group, the results of which will contribute to a decision on whether or not to roll out a national bowel screening programme. The goal of the evaluation is to determine whether organised bowel screening could be introduced in New Zealand in a way that is effective, safe and acceptable for participants, equitable and economically efficient.

In the first 18 months, 89,676 people in the appropriate age range (50-74 years) were invited to take part in the BSP. Of these, 49,050 returned a Faecal Immunochemical Test for Haemoglobin (iFOBT) kit to be tested by the laboratory[1]. This represents a participation rate of 55%, which is higher than the internationally defined minimum participation rate to have an effective bowel screening programme. Pacific people and Māori appear to be emerging as under-screened populations.

In 2012 an immersion visit was undertaken to explore the early implementation of the BSP across the screening pathway (Litmus 2013). At this stage, it was too early to gauge the impact of the BSP on the later stages of the pathway. In October 2013, focus was placed on exploring the impact of the BSP on the investigation, surveillance and treatment stages, as well as following-up issues identified in the 2012 immersion visit report (Litmus 2013).

1.2 Methodology

Evaluators from Litmus visited WDHB and undertook 30 face-to-face, phone interviews and group discussions with providers across the screening pathway (including representatives from the Ministry, WDHB, and LabPLUS). Fieldwork was undertaken in October 2013. All interviews followed an informed consent process.

1.3 Key findings

By January 2014, the BSP will have completed screening round one as all those in the eligible population living in WDHB should have received a pre-invitation letter followed by the iFOBT kit. At the time of the 2013 immersion visit, the BSP had three core foci:

- implementing business-as-usual screening processes across the BSP pathway
- monitoring quality standards and identifying, implementing and assessing quality improvements
- preparing for screening round two.

All stakeholders interviewed hold very positive perceptions of the BSP, how it is being implemented and achievements to date. Compared to 12 months ago, there was recognition that the implementation of the BSP has moved to business-as-usual and is running more smoothly through greater clarification of roles and processes as well as actions taken to address issues identified through quality monitoring and the evaluation findings.

[1] A single sample immunochemical faecal occult blood test (iFOBT) is being used in the BSP. The test, known as OC-Sensor, is an iFOBT widely used in screening programmes internationally.

The following strengths were identified with the BSP:

- integrated with the Ministry's Bowel Cancer Programme
- participants' positive experience through the BSP screening pathway
- high functioning multi-disciplinary team working effectively across the screening pathway, linked together via a range of networked meetings and led by respected and motivated clinical leaders at national and regional levels
- quality improvement is embedded into the BSP through the monitoring and review of quality standards and auditing processes.

As in 2012, some key challenges continue:

- Ensuring fair access for all New Zealanders. In 2013, work has been undertaken by WDHB to identify strategies to seek to increase the participation of Pacific people (in particular) and Māori, given their emergence as underscreened populations. Many of these strategies were implemented late 2013 or will be implemented in screening round two. Consequently, it is too early to assess their impact on participation.
- Having adequate colonoscopist capacity. As in 2012 having adequate colonoscopy capacity to meet quality standards continues to be identified as a key challenge for the BSP. While this challenge remains in 2013, the wait times for participants to have a colonoscopy have not exceeded the quality standard. To achieve this, the BSP Programme Manager, WDHB BSP Clinical Director and the Clinical Nurse Specialists (CNS) work continuously to encourage and support endoscopists from WDHB, other District Health Boards (DHBs) and private consultants to undertake the lists available.
- Ensuring the data quality and completeness of Register data. The following are key improvements needed to enhance the Register:
  - develop a strategy to enhance accuracy of participant contact details and to identify eligible participants moving into WDHB
  - ensure the knowledge management system on the Register is complete and clearly specifies variable definitions and assumptions underpinning data generated
  - ensure the Register has all the data fields necessary to meet quality and other reporting requirements, particularly with regard to histopathology and treatment data
  - agree the process and frequency to validate and audit data on the Register at WDHB and the Ministry
  - ensure adequate IT support at the Ministry to undertake updates and refinements to the Register as needed.

A number of issues reflecting the implementation stage of the BSP are now emerging:

- Management of completed samples using an expired iFOBT kit. By 10 December 2013, 72 completed iFOBT kits were received that had been completed after the printed expiry date (which is about 0.1% of completed kits). The Ministry, WDHB, LabPLUS and the supplier worked together to agree the appropriate response to this issue. Currently, expired kits are identified after they are tested. While this is not failsafe due to the potential for human error, there are fewer risks identifying at this stage than before testing.

At present, participants with positive expired iFOBTs are referred for a colonoscopy, and those with a negative result using an expired iFOBTs are asked to repeat the test. Supply arrangements have been changed to ensure the maximum possible time before expiry, and participant brochures and pamphlets have been updated to encourage prompt completion.

- Management of incomplete colonoscopies. Endoscopists are aware that it is critical that BSP participants who have incomplete colonoscopies are rescheduled quickly. However, the process to transfer and the responsibility for ensuring these BSP participants are seen promptly via the symptomatic list is not clear to all and feedback indicates the process is not seamless. Action has been taken to address this issue through the establishment of a monthly general anaesthetic colonoscopy list at Waikatere Hospital.
- Impact on symptomatic services through increasing number of BSP surveillance colonoscopies. Stakeholders interviewed recognised that the high level of polyps detected via BSP colonoscopies will, over time, add significantly to the symptomatic colonoscopy lists. While the accumulative effect of the surveillance colonoscopies have not yet impacted on the symptomatic list, there is some evidence that BSP participants requiring surveillance colonoscopies at one year are not receiving timely appointments.

  Planning has been undertaken to quantify known issues with symptomatic colonoscopy lists and to assess the impact of BSP participants being referred for surveillance colonoscopies. A business case to the WDHB has resulted in additional resources to address the needs of symptomatic patients as well as to accommodate the flow on effect of BSP surveillance colonoscopies. The impact of the BSP on symptomatic services needs to be monitored.
- Impact of the BSP on treatment services both surgical and oncology. As at 30 June 2013, 98 people had been diagnosed with cancer through the BSP. Since the Pilot commenced there has been a decrease in the full time equivalent of surgeons available, as a result there are pressures on surgical resources. The availability of theatre space was also highlighted as creating a barrier to ensuring timely surgical intervention.

  Like surgical services, the increase in the number of cancer patients identified by the BSP is starting to put pressure on oncology services due to no additional resource being allocated to this service. As the BSP moves into screening round two, this pressure may dissipate as fewer BSP participants will be identified with late stage cancers.

1.4 Quality monitoring

The review of quality monitoring confirms that BSP has a range of quality standards in place that align with international best practice. Quality standards, risk and issues are actively monitored, reported, discussed and actions taken to address risks of breaching quality standards and mitigated risks emerging. While WDHB note that reporting against all quality standards is now possible (with exception of the timeliness of the histology result letter), data has not be sighted for all quality standards. This reflects that some data collection remains a manual process for some quality standards and some standards are not reported on quarterly but addressed via WDHB's audit programme.

In November 2012, a review of the BSP interim quality standards (Ministry of Health 2012a) was jointly undertaken by the Ministry, WDHB and LabPLUS. Overall, no substantive issues were identified with the existing quality standards, although refinements and clarifications were made to the interim quality standards (Ministry of Health 2013).

In the main, the BSP is operating within the targets set in the BSP interim quality standards. The key exception is the first offer of colonoscopy within 25 working days which is 44.2% compared to the standard of 50%. However, 97.8% received the first offer of colonoscopy within 55 working days compared to the standard of 95%.

Discussions with key stakeholders highlighted:

- need to increase awareness of BSP quality standards for colonoscopy procedures amongst endoscopists. While endoscopists are aware of the indicators for quality colonoscopy, there is variable awareness of the detailed quality standards for BSP
- need to increase awareness of BSP quality standards for CTC amongst radiology staff and ensure BSP participants are appropriately coded
- duplication and potential confusion due to the number of quality documents for the BSP
- a lack of clarity in the link between the Global Rating Scale (GRS) being used to improve quality of endoscopy in New Zealand and the BSP's quality standards.

1.5 Considerations for a possible national bowel screening programme

At this early stage of the BSP implementation and evaluation, it is not yet known whether *organised bowel screening could be introduced in New Zealand in a way that is effective, safe and acceptable for participants; equitable and economically efficient.* Early evidence and participation suggests strong provider acceptance, and a level of acceptability amongst some populations. While further evidence is needed to address the overarching evaluation goals, detailed below are the implementation lessons at 18 months that could inform a national bowel screening programme – should it proceed. These considerations are drawn from the 2013 and 2014 immersion visit reports.

Programme design - leadership and governance

- Ensure effective governance and leadership structures for a national programme at a national and regional level, with clear roles and lines of responsibilities and accountability.
- Ensure strategic and operational involvement of Māori, Pacific and any other population groups identified as under-screened in the BSP, at all levels and in all programme phases. This will increase the likelihood of the programme being effective for priority populations.
- Ensure transfer of knowledge between the BSP and a national programme through active knowledge management and advice from those involved in the BSP.

Fair access for all New Zealanders

- Identify from the BSP which sub-groups are more likely to not participate in bowel screening.
- Review the effectiveness of strategies being implemented in screening round two to increase participation by Pacific people and Māori, while ensuring informed consent processes.

Service delivery

- Agree the role of primary care in the screening pathway (refer Litmus 2014).

- Allow for a realistic implementation planning period at the end of which providers demonstrate their ability to meet bowel screening quality standards.

Areas for further exploration

- Explore the appropriate physical configuration of services for the BSP Coordination Centre, endoscopy and laboratory functions for the iFOBT and histology samples.
- Clarify the role of the Register using National Health Index (NHI) data to invite eligible people to participate, particularly given the challenges of incomplete contact details.

Workforce capacity

- Ensure colonoscopy capacity and quality meets bowel screening standards across New Zealand.
- Ensure adequate workforce and service capacity for bowel screening, symptomatic colonoscopy services, treatment and oncology and histopathology. To avoid the risk of a two tier system, there is a need to address symptomatic wait times for colonoscopies.

2. Introduction

2.1 Background

The Ministry of Health ('the Ministry') has funded Waitematā District Health Board (WDHB) to run a Bowel Screening Pilot (BSP) over four years from 2012–16.[2] The BSP began with a 'soft launch' in late 2011, with full operation of the Pilot starting in January 2012. Litmus and Sapere Research Group have been funded by the Ministry to undertake an evaluation of the BSP, including a cost-effectiveness analysis. The evaluation will inform a decision about whether or not to roll out a national bowel screening programme.

The overall goal and underlying objectives of the BSP and its evaluation are the same and have been defined by the Ministry. The overall goal of both is to determine:

> *Whether organised bowel screening could be introduced in New Zealand in a way that is effective, safe and acceptable for participants; equitable and economically efficient.*

The goal comprises four key aims.

1. Effectiveness: Is a national bowel screening programme likely to achieve the mortality reduction from bowel cancer for all population groups seen in international randomised controlled trials?
2. Safety and acceptability: Can a national bowel screening programme be delivered in a manner that is safe and acceptable?
3. Equity: Can a national bowel screening programme be delivered in a manner that eliminates (or does not increase) current inequalities between population groups?
4. Economic efficiency: Can a national bowel screening programme be delivered in an economically efficient manner?

A number of activities are planned for the evaluation of the BSP.[3] Included in these are three immersion visits, whereby the Litmus evaluation team interviews providers and stakeholders involved in aspects of BSP implementation. Three immersion visits are scheduled to inform a number of evaluation questions.[4] The first was completed in late 2012 (Litmus 2013), which focused on the early implementation. This report presents findings from the second immersion visit undertaken in October 2013; 19 months after the BSP was launched. The final immersion visit will be undertaken to feed into the final evaluation report due July 2016.

The New Zealand Health and Disability Multi-region Ethics Committee granted ethical approval for the suite of BSP evaluation activities (reference MEC/11/EXP/119).

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2 WDHB was named as the pilot bowel screening site in December 2010 http://beehive.govt.nz/release/waitemata-named-bowel-screening-pilot-site accessed 22 February 2012.

3 Refer to the *Evaluation Plan for the Bowel Screening Pilot 2011–2016* (Litmus 2011) for details of evaluation activities.

4 Refer Section 2.4 of the *Evaluation Plan for the Bowel Screening Pilot 2011–2016* (Litmus 2011) for the full list of evaluation questions.

2.2 Immersion visit purpose

The purpose of the second immersion visit was to focus on the later stages of the BSP screening pathway in particular investigation, surveillance and treatment stages. At the time of the 2012 immersion visit, it was too early to gauge the impact of the BSP on these stages of the BSP pathway. In the 2013 immersion visit focus was placed on exploring what worked well, improvement areas and lessons for a national roll-out should it proceed, as well as following-up issues identified in the 2012 immersion visit.

Annually Litmus undertakes a review of the Ministry and WDHB's quality systems. The immersion visit was also used to undertake interviews with Ministry and WDHB stakeholders involved in quality monitoring of the BSP.

2.3 Glossary of terms

For clarification, in this report the following terms have been used as follows:

- ADHB – Auckland DHB
- BPOP – Policy and Operational Procedures for the Bowel Screening Pilot
- BSP – Bowel Screening Pilot
- CAR – community awareness raising
- CNS – clinical nurse specialists
- CTC – Computerised Tomographic Colonography
- DHB – District Health Board
- DNA – did not attend
- FTE – Full-time equivalent
- IANZ – International Accreditation New Zealand is the accreditation body of the Testing Laboratory Registration Council in New Zealand
- iFOBT – immunochemical faecal occult blood test [5]. A single sample iFOBT test is being used in the BSP. The test is known as OC-Sensor.
- General practice – refers generically to the differing systems and models in which primary care is delivered
- gFOBT - guaiac-based faecal occult blood test
- GE – Gastroenterologists
- GP – General Practitioner
- GRS – Global Rating Scale
- MDM – multi-disciplinary meeting
- The Ministry – Ministry of Health
- MoH – Ministry of Health
- NHI – National Health Index

[5] Referred to internationally as Faecal Immunochemical Test for Haemoglobin (FIT)

- Non-responders – people who have received a pre-invitation, invitation and reminder letter, have not returned a completed kit, and have not contacted the Coordination Centre to opt out of the BSP
- The Pilot – the Bowel Screening Pilot/BSP
- Spoilt kits – refers to iFOBT kits where the test has not been performed or labelled correctly. Most spoilt kits are due to date and label issues
- WDHB - Waitematā District Health Board
- The Register – BSP information system
- Under-screened populations – no definition was agreed on what constitutes an 'under-screened' sub-group therefore the focus was placed on those sub-groups with the lowest level of participation.

3. Immersion visit methodology

This section outlines the method used to undertake the immersion visit. It details the sample frame, recruitment and interviewing approach, analysis and research limitations.

3.1 Sample

Litmus worked with the Ministry and WDHB to develop a sample frame that ensured participation of providers who are involved or engaged in the implementation and delivery of the BSP across the ten implementation areas with a particular focus on: Screening Pathway 4: Colonoscopy; Screening Pathway 5: Alternative investigation; Surveillance; Treatment (refer Table 1), and in quality monitoring across the screening pathway.

Table 1: The 10 implementation areas

Ten implementation areas
Leadership, governance and management
District coordination
Register
Screening Pathway 1: iFOBT kit sent
Screening Pathway 2: iFOBT result – Laboratory and Coordination Centre management of iFOBT kits and results
Screening Pathway 3: Pre-assessment
Screening Pathway 4: Colonoscopy
Screening Pathway 5: Alternative investigation
Surveillance
Treatment

In total, 30 providers participated in an interview. Table 2 details the interviews undertaken by provider type.

Table 2: Sample achieved by provider type

Provider type	WDHB	Other	Total
Ministry of Health	-	4	4
Coordination Centre	5	-	5
Gastroenterologists (GE)	3	1	4
CT Computerised Tomographic Colonography (CTC)	3	-	3
Laboratory	-	5	5
Endoscopy nurses	3	-	3
BSP Colonoscopy surgeons	3	1	4
Non- BSP Colonoscopy surgeons who do not scope in BSP	1	-	1
Oncologist	-	1	1
Total	**18**	**12**	**30**

3.2 Fieldwork

Evaluators from Litmus visited WDHB to undertake face-to-face interviews and group discussions with providers across the screening pathway. Interviews were also undertaken by phone to offer greater timing convenience to providers.

Fieldwork was undertaken in October 2013. All interviews were audio-recorded and notes were taken during the interview. All interviews followed an informed consent process.

3.3 Research questions

The purpose of the second immersion visit was to focus on the later stages of the BSP screening pathway in particular investigation, surveillance and treatment stages. Questions focused on:

- What has changed over the last 12 months?
- What is the impact of the BSP on these stages?
- What is working well?
- What are the improvement areas?
- What are the lessons for a national roll out should it proceed?

Consideration was also given to changes to the BSP implementation, whether issues identified in 2012 are being addressed and whether any new issues are emerging reflecting that the BSP is moving towards the completion of the first screening round.

As appropriate to their role in the BSP, interviews also focused on the process the Ministry and WDHB use to monitor the quality standards of the BSP. In this context, consideration was given to awareness, monitoring and adherence to the BSP Quality Standards, and quality improvement processes.

Refer Appendix 1 for the information sheet, consent form and discussion guide.

3.4 Analysis and reporting

Qualitative interview data was coded and grouped into concepts and categories and presented as themes in this report.

The 2012 immersion visit report (Litmus 2013) describes in detail the implementation of the BSP. This report therefore focuses on presenting key implementation changes, how issues identified in 2012 are being addressed and new issues emerging.

Litmus is confident that the report accurately represents the views and perceptions of providers who contributed to the 2013 immersion visit report.

4. Implementation progress

This section provides an overview of the implementation stage of the BSP and progress to date. It presents the results from the first 18 months of the BSP to offer the reader a context for considering the findings. Changes to the implementation of the BSP are highlighted across the screening pathway particularly where they seek to address issues identified in the 2012 immersion visit report (Litmus 2013). Emerging issues are also highlighted.

4.1 Results from the first 18 months of the BSP

Detailed below are the results from the first 18 months of the BSP. The results have been sourced from the Ministry of Health website[6]. Appendix 2 contains the BSP's monitoring indicator results from January 2012 to June 2013 (Ministry of Health 2013b).

Participation in the BSP

Between January 2012 and June 2013, 89,676 people in the appropriate age range (50–74 years) were invited to take part in the BSP. Of these, 49,050 returned an iFOBT kit to be tested by the laboratory. A single sample iFOBT test is being used in the BSP.

Over this time, the participation rate was 55%. The New Zealand participation rate is higher than the minimum participation rate as defined internationally (Ministry of Health 2012d). By the end of the Pilot (in December 2015) it is hoped the participation rate will be 60 percent (Ministry of Health 2013c).

Based on the first 18 months, not all population groups are participating in the Pilot in equal measure. Pacific people have a much lower participation than other groups, and Māori participation is lower than Asian and the Other population groups.

Between January 2012 and June 2013, the participation rate for:

- Pacific people was 25%
- Māori was 43%
- Asian was 53%
- Other population group was 58%.

Those in the younger age ranges are less likely to participate than those who are older, and women are more likely to take part than men.

[6] http://www.health.govt.nz/our-work/diseases-and-conditions/cancer-programme/bowel-cancer-programme/bowel-screening-pilot/bowel-screening-pilot-results/bowel-screening-pilot-january-2012-june-2013-results accessed 5 December 2013. The interim report, due in late 2014, will contain the detailed epidemiological analysis.

Positive iFOBTs

About 7.2% of all participants who correctly complete their iFOBT kit show a positive result. Between January 2012 and June 2013, 3555 people were identified as having blood in their sample. This is within the expected range when compared with other international bowel screening pilots (Colorectal Cancer Screening Advisory Group 2006; Segnan et al 2010).

Number of colonoscopies performed

Between January 2012 and June 2013, 2622 people attended a colonoscopy through the Bowel Screening Pilot. As required in the screening pathway, the majority of participants were offered a colonoscopy within eleven weeks of the laboratory identifying that their test was positive.

Number of cancers found

As at 30 June 2013, 98 people had been diagnosed with cancer through the BSP. This number is within the expected range when compared with international bowel screening programmes (Segnan et al 2010). When a cancer is diagnosed, the participant is referred on for appropriate treatment and care.

In addition to finding cancers, the BSP is also finding that many participants have non-cancerous polyps (adenomas). These polyps are removed at colonoscopy. These participants will require regular bowel checks by colonoscopy (i.e. surveillance) in the future.

Complications following colonoscopies

Between January 2012 and June 2013, 41 BSP participants were admitted to hospital within 14 days after undergoing a colonoscopy to have further treatment or monitoring. Most of these admissions were for complications that were not considered to be serious[7] and involved a short stay in hospital for observation.

4.2 Perceptions of implementation to date

By January 2014, the BSP will have completed screening round one as all those in the eligible population living in WDHB should have received a pre-invitation letter followed by the iFOBT kit. As described by one stakeholder, at the time of these interviews, the BSP had three core foci:

- implementing business-as-usual screening processes across the BSP pathway
- monitoring quality standards and identifying, implementing and assessing quality improvements

[7] Serious adverse events include bowel perforation or major bleeding after colonoscopy and are more likely to be associated with an intervention such as removal of bowel polyps. Serious (major) adverse events are as defined in the UK NHS BSCP Quality Assurance Guidelines for Colonoscopy (Chilton and Rutter 2011).

- preparing for screening round two, for example the development of new invitation letters reflecting that some participants may have completed an iFOBT kit and others have not, and participants need to be aware that a bowel screening programme may or may not continue beyond 2015.

All stakeholders interviewed hold very positive perceptions of the BSP, how it is being implemented and achievements to date. Compared to 12 months ago, there was recognition that the implementation of the BSP has moved to business-as-usual and is running more smoothly through greater clarification of roles and processes as well as actions taken to address issues identified through quality monitoring and the evaluation findings.

> *In general, it's going really well and to be honest it's better than expected – thought we run into technical issues in terms of the availability of endoscopists but that doesn't seem to be the case.* (WDHB)

> *I think it is going well. A lot of the initial teething problems have been resolved. There were so many things that needed to be clarified, both in the quality standards and operationally communicating how to do it. It was very busy. Twelve months on I think we have clarified a lot of the ambiguities.* (Ministry of Health)

> *My overall impression is that I think it is a really well put together Pilot. There is a very clear algorithm for clinicians to follow in terms of the patient journey. Entry into the programme is very clear, timelines once you are in the programme are very clear. I know we are starting to get to the point where those timelines are being really stretched but I think the algorithm is very clear and the "what to do with the patient if you find something at colonoscopy" is also clearly set out. (Other DHB)*

Stakeholders identified the following strengths of the BSP:

- Integrated with the Ministry's Bowel Cancer Programme which ensures the BSP is linked into the development of colonoscopy services, wait time indicators, and workforce planning to improve access and treatment for people with bowel cancer across New Zealand.
- Focus on ensuring participants have a positive experience is central to the implementation of the BSP. There is evidence of high participant satisfaction (90% rate treatment overall as very good, 8% as good and 2% average) and there are low DNAs for colonoscopy (0.0028%) (Griffith, Turner and Williams 2013, Waitematā DHB 2013).
- High functioning multi-disciplinary team working effectively across the screening pathway, linked together via a range of networked meetings and led by respected and motivated clinical leaders at national and regional levels.
- Quality improvement is embedded into the BSP through the monitoring and review of quality standards and auditing processes. As one stakeholder commented the BSP is one *'big quality improvement project'.* Publicly available quarterly reporting of BSP monitoring indicators ensures transparency of achievements and issues.

> *A highly functional team of comms, community awareness, active follow up, quality and data. A fantastic team that is growing in the Pilot context. They all have highly transferable skills. (WDHB)*

> *The very positive things are the close relationship we have with the BSP, that is often not the case with other screening programmes. With BSP we work very closely with them so if we have any issues or challenges then we are quick to discuss them and try and work them out together. I am in the [name] group for the BSP. I do find this very useful especially where you get feedback from the other parts of the unit doing awareness programmes and also from GPs and primary care. (LabPLUS)*
>
> *Our quarterly reporting is pretty open and honest on the website, and detailed. Internationally people have [positively] commented on that as well.* (Ministry of Health)

Stakeholders acknowledge continuing challenges and areas for ongoing improvements, especially increasing Pacific people and Māori participation and endoscopy capacity. Both issues are discussed further below.

4.3 Review of 2012 implementation issues

Resource reallocation in 2013

Over the last 12 months, monitoring of service demand has refined resource allocation at WDHB. Summarised below is the reallocation of resources:

Endoscopy unit

- Additional full-time Clinical Nurse Specialist (CNS) at the endoscopy unit.
- An additional Registered Nurse.

BSP Coordination Centre

- Reducing the information line Full Time Equivalent (FTE) by 0.6 FTE and, increasing the capacity at the endoscopy unit by 0.6 FTE to address the larger than expected administrative workload.
- Reducing the Quality Assurance role to 0.5 FTE from 1.0 FTE.
- Reducing the Māori Community Awareness Raising (CAR) coordinator role to 0.6 FTE and, employing a Samoan CAR Coordinator with the 0.4 FTE balance.
- Increasing the Data Manager from 0.5 to 1.0 FTE from October 2014.

Ministry of Health

- An additional senior advisor.

Review of 2012 key issues

The 2012 immersion visit report (Litmus 2013) found that the early implementation of the BSP, (while intensive and not without its challenges), progressed relatively smoothly. A number of key challenges were highlighted relating to equity of access, workforce capacity, and incorrect completion of iFOBT kits. Detailed below is a review of these key challenges 12 months on.

Ensuring fair access for all New Zealanders. As in 2012, Pacific people (in particular) and Māori are emerging as the under-screened populations for the BSP due to a range of reasons including a dislike of handling faeces, an aversion to posting faecal samples, low literacy levels, other priority health needs, and environment barriers (e.g. not receiving the test kit) (Litmus 2013a). In 2013, work has been undertaken by WDHB to identify and action strategies to seek to increase their participation including:

- Establishing WDHB's Kaitiaki Roopu to address the lack of robust Māori participation and partnership in the overall direction, design and governance of the BSP. The purpose of the Kaitiaki Roopu is to provide a Treaty of Waitangi based partnership and participation oversight to the WDHB BSP. Kaitiaki Roopu also provide guidance, support, advice and links into the Māori community serviced by the WDHB to ensure Māori make informed decisions about the BSP.
- Representatives from two Pacific providers continue to offer advice to the BSP Coordination Centre via the CAR group. The DHB's Manager, Pacific Health also attends CAR meetings from time to time and is available for ad hoc advice.
- Undertaking research to review communication collateral (Phoenix 2013) and revising the pre-invitation letter, kit instructions and consent form to be more accessible to all literacy levels. These documents will be used in the second screening round from January 2014. Consequently, their impact on participation cannot be assessed at this stage.
- Revised CAR processes to encourage completion of the iFOBT and to ensure kits are completed correctly. Key changes include:
  - Focusing on active follow-up by Pacific, Māori, Korean and Chinese CAR coordinators by phoning non-responders within two weeks of sending the iFOBT kit. A lack of up-to-date phone numbers for follow-up continues to be an issue. CAR coordinators use a range of strategies to try to make contact from asking GPs for more up-to-date phone numbers to home visiting.
  - Employing a Samoan male CAR coordinator from August 2013 to focus on active follow-up with primarily Samoan and also other Pacific nations where appropriate. The Samoan CAR coordinator has also supported West Fono in community awareness presentations.
  - Establishing, following a review, a dedicated 0.5 FTE with the Pacific provider West Fono to ensure contractual agreements such as follow-up (spoilt kit and active follow-up), group education sessions (and follow-up from these sessions), home visits and leadership/coordination were completed. West Fono's Health Promotion and Social Services team undertake CAR activities in the range of Pacific languages.
  - Employing a new Māori female CAR Coordinator in July 2013 to follow up Māori who do not participate and those who have incorrectly completed a kit. The Māori CAR Coordinator also undertakes activities.
  - Developing a DVD to encourage Māori participation. A randomised control trial commenced in January 2012 to assess the extent to which the DVD supports higher participation levels[8]. Pacific advisors indicated the DVD is also acceptable to use within the Pacific community.

[8] Half of the reminder letters sent to eligible Pacific people and Māori contains the DVD.

- Developing a DVD offering a step-by-step process to complete the bowel screening test using the iFOBT was posted on youtube and WDHB's Bowel Screening website[9]. The DVD was fronted by Mr Ily Delasau, a Fijian surgical registrar at WDHB. The YouTube video was posted on 7 October 2013, and by 13 February 2014 had received 123 hits.
- Focusing on younger people in the eligible population as those in the 50–60 age group are less likely to take part in the BSP.

It is too early to assess the effectiveness of these initiatives. Monitoring Pacific people and Māori participation through 2014 will contribute to determining the effectiveness of the initiatives. Care is needed in the interpretation of participation rates as promotional strategies to increase bowel screening participation by Pacific people and Māori need to be balanced with informed consent on whether or not they want to be screened. People may be informed about the BSP and decide not to take part.

> *The community awareness has been a bit hard without having a Māori or Samoan organiser. This year there's been a shift with our community, there's been more of a focus on follow-up. The priority used to be on the community awareness but it's shifted this year to active follow-up. We knew that those phone calls were really important. For Māori and Chinese, you're looking at 300 a month so that's huge numbers. Sometimes they're disconnected or you can't hold of them. So if [name] gets a disconnected number, he'll have to contact the GP and try and get updated details and it's a bit of chasing around. (WDHB)*

> *We are still looking at participation for Pacific and Māori, that has been slow to get everything in place and we are still only just getting to the situation where we may see some improvement. It has been slow to work through the range of issues that might be responsible for that. Whether it is clearer info sheets, everything takes time to attain the appropriate feedback as to why something isn't working and then to make the changes. (Ministry of Health)*

In 2012, feedback from Pacific people and Māori indicated some disliked doing the test in their home and posting faecal samples (Litmus 2013a). At this stage, no action has been taken to modify the screening pathway in this regard, although CAR coordinators will pick up samples if requested.

Ensuring adequate workforce capacity. As in 2012 having adequate colonoscopy capacity to meet quality standards continues to be identified as a key challenge for the BSP. While this challenge remains in 2013, 98% of BSP participants had their colonoscopy by the quality standard of 55 days in the period January to June 2013[10]. To remain within the quality standards, wait times for colonoscopy requires 50 colonoscopies per week to be completed, based on the current participation and iFOBT positivity result rates.

To achieve this, the BSP programme manager, the WDHB BSP Clinical Director and the two CNSs work continuously to encourage and support endoscopists from WDHB, other DHBs and private consultants to undertake the lists available. Some of the identified pressures on the availability of endoscopists are:

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[9] http://www.youtube.com/watch?v=J-Qz0XOMldo and http://www.bowelscreeningwaitemata.co.nz/Home.aspx#video_box accessed 6 December 2013

[10] Since January 2013, the quality standard is 50% having a completed colonoscopy within 25 days of notification of a positive result, and at least 95% by 55 days. For the period January to June 2013, the BSP achieved 44% and 98% respectively. For the period July to December 2012, the targets were 50% within 20 working days and 95% within 50 working days, and the BSP achieved 11% and 86.6% respectively.

- Not enough endoscopists within WDHB to cover the BSP lists. A new endoscopy room has been opened at Waitakere Hospital for symptomatic lists. As a result the availability of endoscopists has declined. The BSP Coordination Centre seeks to ensure that their actions do not affect the availability of endoscopists for the symptomatic list.
- Staff turnover and need to increase staff. Slow recruitment processes for a new surgeon are creating delays and frustrations. New staff, both a surgeon and Gastroenterology Fellow, are commencing in January 2014, which may alleviate some of the pressure to find endoscopists to get lists completed within quality standards. The surgeon will contribute to both the BSP colonoscopies and treatment.

  A re-sizing of some senior clinician roles has resulted in the confirmation of three additional lists per week for the BSP from October 2013 onwards.
- Competing priorities affect the availability of endoscopists from other DHBs. As one endoscopist noted there is a risk that they may need to stop their BSP list if other needs at their DHB are deemed more pressing. Endoscopists from other DHBs noted they are involved due to an interest in the Pilot, for some linked to involvement in similar screening programmes overseas, and wanting the experience of the more complex colonoscopies of the BSP.

Key stakeholders highlight the need for experienced endoscopists for bowel screening given the complexity of the colonoscopies and the additional risks of asymptomatic participants. Consistency within the team doing the bowel screening colonoscopies is important particularly for monitoring quality.

> *We are always on the back foot trying to keep up with the endoscopy. We are now booking all endoscopy into January next year, this year is full. So endoscopy resources are a major issue. The problem is that with the new people coming on board in January we have to then play catch up. It is mainly people, the resource that we are lacking. But rooms occasionally. (WDHB)*

Managing incorrectly completed iFOBT kits. In 2013 (as in 2012), an estimated 14% of iFOBT kits were not completed correctly the first time they are returned; mainly due to supporting paperwork being incorrectly completed. Most of these people went on to complete a kit correctly, once another kit was sent to them together with a letter explaining the error. Māori, Pacific and Korean participants receive a phone call to discuss the error before the kit is sent. The introduction of the simplified and more pictorial kit instructions and revisions to the consent form is intended to increase the number of kits completed correctly first time. The impact of the revised documents on correct completion will not be known until late 2014 following the introduction of the revised instructions.

Managing the variability in general practices' role in the screening pathway. Feedback indicates that the variability in general practice involvement in the BSP continues, particularly with regard to the quality and completeness of GP referral information to endoscopy. Some GPs provide the required information, while others simply refer with little relevant information. In 2013, e-referrals have been introduced which has addressed this issue to some extent; although not all GPs are using e-referral. Litmus (2014) offers a more detailed consideration of the role and value of general practice in the BSP from the perspective of general practice, BSP participants and other key stakeholders.

Review of other 2012 issues

Below is a response to other challenges noted in the 2012 immersion visit report.

Leadership, governance and management. In 2013, there is mixed perceptions on whether there is greater clarity over the roles, responsibilities and accountabilities of the BSP between the Ministry and WDHB. On one hand, early issues and ambiguities have been addressed with the BSP moving to business-as-usual in screening round one. However, tensions and role confusion can occur when new and unexpected issues arise.

> *I think we're still struggling with roles and responsibilities. There are not a lot of us to all be involved, but it seems a bit mucky at the moment. I think part of that is because we're still developing as we're going, as well as the distance. It used to be more about governance, but now it's more the day-to-day things. (Ministry of Health)*

Inadequate resource and support for BSP programme management and clinical leadership roles was identified in the early implementation phases. In 2013, the move to business-as-usual and the growing maturity of the team are decreasing the pressure on the BSP programme manager. Feedback indicates that the Waitematā Clinical Lead continues to be a very busy role across a number of fronts. The CNS now reviewing the histopathology results from endoscopy, under the clinical review, has taken some pressure off this role.

Register. In 2012, having an eligible population database was identified as a key strength of the BSP enabling the identification and monitoring of the eligible population, and informing targeted participant follow-up and CAR strategies. A number of issues with the Register were noted in 2012. Most of these issues have continued into 2013, specifically:

- Incorrect participant address due to National Health Index (NHI) details uploaded to the Register being out of date which is resulting in high volumes of returned mail[11]. The BSP Coordination Centre uses WDHB's Intelligent Patient Information Systems (iPIMs), looks up the White Pages and contacts general practices to find correct contact details for returned mail.
- Planned regular updates from PHO data have not occurred to update NHI information and ensure eligible people moving into WDHB are offered bowel screening. When PHO uploads occur directly to the Register it updates only the GP/participant match and not participants' contact details.
- Understanding of the Register sits with a small number of people, and some of the assumptions underpinning the definition of variables are not known. There is documentation on the Register at the Ministry and WDHB, although there are some incomplete areas.
- A few coding issues have been identified with a small number of laboratory results due to mismatched codes. The BSP Coordination Centre is aware of the issue and is monitoring to ensure appropriate corrective action. Quality improvement discussions are taking place to ensure correct coding.

[11] The BSP Coordination Centre receive about 60 return mail letters per week (i.e. no one of that name at this address); this represents approximately 6,000 pieces of returned mail up to October 2013 (about 5%).

- Histopathology and treatment data are only now being entered on to the Register. Before late 2013, WDHB Clinical Director maintained a spreadsheet of all cancers identified and treated. He would provide this to the Ministry for analysis and reporting purposes. Some types of polyps could not be entered (e.g. serrated polyps) as there was no field. Following updates to the Register in late 2013, this data can now be entered. Once data collected before this update is entered, the data process will be more manageable.

  Other issues noted with histopathology and treatment data are:

  - The histopathology details the most significant findings but not all the findings (e.g. if 20 polyps are found only the most significant are listed).
  - There is no field on the Register to record the date when the histology letter is sent out so it is not possible to monitor the timeliness of results being sent to the participant and their GP. This letter is generated from the WDHB transcription system because it is a letter which needs to be modified for each participant. It is labour intensive to access this data as it is a manual process.
- The inflexibility of some of the pathology result fields are frustrating for LabPLUS. The Register only allows the entry of a result or an error code. In some cases there can be an error (i.e. a completed expired test kit) and a result as the kit was tested. In this case, LabPLUS wants to note the error and the result but cannot.
- Validation or auditing of data on to the Register at WDHB and the Ministry is not consistently undertaken.
- Not enough dedicated data and IT resource at WDHB and the Ministry contributed to the inability to ensure data quality and timely updates to the Register.

In October 2013, new full time data managers were employed at the BSP Coordination Centre which may help to address these issues. The Ministry has now access to SAS to manipulate the Register data.

> *The other thing that hasn't worked well is the turnaround time to make changes to the BSP IT system. It has been very frustrating for the people on the data entry end. So I think more responsiveness and a quicker turnaround time for changes in the IT system is certainly important. It needs to be well resourced to allow that. (Ministry of Health)*

Mail out. In 2013, the BSP is trialling the outsourcing to Orange Box of the pre-invitation letter mail out. As noted in 2012, the previous internal mail out process was inefficient due to the lack of appropriate printers, collation and mail out equipment and the physical lay-out of the centre. If this outsourcing is assessed as working well, the kit, reminder letters and negative result letter will also be outsourced to gain efficiencies in administrative processes.

On appointment day, colonoscopy wait time. In 2013 colonoscopy appointments have been spaced out to address long participant wait-times on the day of their appointment. Focus has also been placed on informing participants if delays occur where a participant on the list is found to have multiple polyps needing to be removed. Feedback in the 2013 survey of BSP participants who received a colonoscopy showed no change in satisfaction with how long they have to wait on the day for their colonoscopy[12].

[12] In 2013, 7% rated the wait time as 'average' and 4% 'poor/very poor', compared to 8% and 6% respectively in 2012 (WDHB 2013 and 2012).

Specimens from colonoscopy are now sent directly to LabPLUS bypassing the North Shore Hospital lab thus reducing the transportation time.

4.4 2013 emerging issues

Discussions with key stakeholders indicate a number of emerging issues reflecting the implementation stage of the BSP, in summary

- management of completed samples using an expired iFOBT kit
- impact on symptomatic services through increasing number of surveillance colonoscopies (discussed in section 5.3)
- impact of the BSP on treatment services (discussed in section 5.4)
- the role of the GRS (discussed in section 6.4)
- limited IT support at the Ministry to facilitate timely updates to the Register and to maximise the use of data collected (discussed in 4.3).

Expired iFOBT kits

The management of completed samples using an expired iFOBT kit is an example of how issues arising through the Pilot are identified and then collectively a process is agreed to manage or resolve it.

To date, iFOBT kits being sent out have at least six months to run before they expire. By 10 December 2013, 72 completed iFOBT kits were received that had been completed after the printed expiry date (which is about 0.1% of completed kits). Research with eligible participants highlighted that those taking part in the BSP tend to be prompted to act (Litmus 2013a). It is not known what has triggered these participants to act at least six months later; although it is positive they have acted.

Working together, the Ministry, WDHB, LabPLUS and the supplier determined the most effective time to identify whether a completed kit had expired was after analysis. While this is not failsafe due to the potential for human error, there are fewer risks identifying at this stage than before testing. Participants with positive expired iFOBTs are referred for a colonoscopy. In the three or four instances where this has occurred, the participant's GP was informed and asked to inform the participant together with the recommendation the result should be acted on. Negative expired iFOBTs are asked to repeat the test.

Discussions with the supplier (ProHealth) identified the option of ordering stock from the manufacturer immediately it came off the production line to ensure the longest possible pre-expiry period. It is estimated this would extend the minimum expiry period to around 12 months. WDHB have aligning ordering from ProHealth to take advantage of this. Information about the importance of completing the test promptly has been included in the revised BSP brochure and pamphlet which is inserted in the BSP invitation letters.

5. Review of end stages of the BSP screening pathway

This section focuses on the later stages of the BSP screening pathway in particular colonoscopy, alternative investigation, surveillance and treatment stages. It highlights the impact of the BSP on these stages and the interface with wider health services. Drawing from these analyses, considerations for a potential national roll-out are then discussed.

5.1 Diagnostic testing: colonoscopy

Overview of process

BSP colonoscopies are undertaken at the Endoscopy Unit at Waitakere Hospital. The procedure is as follows:

- BSP participants arrive at the hospital and are admitted as a day case.
- An endoscopy nurse goes through the pre-procedure checklist with the participant.
- The endoscopist meets with the participant to get their consent for the procedure.
- The participant's nurse, who will be in the endoscopy room during the procedure, introduces themself, checks participant's identity and brings them into the endoscopy room.
- The colonoscopy is conducted under 'conscious sedation'; usually there are two nurses and an endoscopist in the room.
- The participant is taken to Recovery where they are kept under observation for a period.
- The endoscopist usually meets with the participant at this time to discuss the outcome of the colonoscopy; the endoscopist will always meet with a participant if the outcome is abnormal.
- The participant's nurse reiterates the outcome and talks with the participant about post-procedure risks and what they need to do in the immediate post-procedure period.

Both gastroenterologists (GEs) and surgeons undertake colonoscopies on the BSP. It is estimated that around 50% of colonoscopies are contracted out to non-WDHB clinicians.

Colonoscopy outcomes:

- Alternative procedure - Participants who have a failed colonoscopy are scheduled for a repeat colonoscopy if the failure is due to inadequate bowel preparation; otherwise they are referred for an alternative diagnostic investigation: computerised tomographic colonography (CTC), or colonoscopy under a general anaesthetic.
- Five year recall for iFOBT - Participants with normal colonoscopies do not need to undergo another iFOBT screening episode for five years and are placed on a five year recall on the Register with advice of that to GP and participant.
- Treatment - Participants diagnosed with bowel cancer or high-risk polyps are referred for treatment with surgical services. Participants' GPs are notified and these participants are considered to have exited the BSP.

- Surveillance - Participants diagnosed with polyps or other bowel disease requiring ongoing surveillance, have their care handed over to the gastroenterology service. Participants' GPs are notified and these participants are considered to have exited the BSP.

Overarching reflections on BSP colonoscopy

Overall key stakeholders note that the management and operations relating to colonoscopy is in the main working smoothly. Clinician-related quality standards are formally reported quarterly to the Endoscopy Review Group and quality standards are reported quarterly to the Ministry as part of the Quarterly Progress Report.

From January to June 2013, the following additional colonoscopy data was reported (WDHB 2013b):

- 0.76% of participants have a failed colonoscopy due to poor bowel preparation which is within the indicator of less than 5%
- Colonoscopy completion rates (the percentage of colonoscopies where the caecum is reached) is 97.2% (compared to the standard of 95% or greater)
- Mean withdrawal time with no polypectomy is 7.2 minutes (compared to the standard of 6 minutes or greater).

> *I think the nurse administration side is going well, the specialist nursing and the contact with the patients before the procedure has led to really good bowel preps and really high level attendance… the actual colonoscopy from my point of view is encouraging. Good completion rates. We do have some complications but they are within acceptable parameters. (WDHB)*

Since 2012, work has been undertaken to develop a closer and more efficient working relationship between the BSP and symptomatic nursing services. As a result, the quality standards and processes built into the BSP are being shared with symptomatic services. Examples of an enhanced working relationship include the BSP sharing established policies (e.g. anticoagulant policy which was recently updated) and assisting with a patient survey.

> *Both the symptomatic and the bowel screen nurses were very divided and it was very much and us and them. [We needed] to bring those two teams together and get them working as a team of gastroenterology nurses not as a bowel screen nurse or a symptomatic nurse. Where their pay packet gets paid from makes no difference about the job that they do. They need to provide a high level quality service to patients… When they were divided, if one room ran over and the other finishes, you have no cover, so one service might be paying overtime whilst the other sat around and did nothing. (WDHB)*

Key stakeholders interviewed commented that the BSP is having a halo effect on symptomatic services through shared information and quality processes. It is acknowledged that resource constraints in the symptomatic service prevent routine pre-assessment phoning, and that differing patient profiles raise unique challenges. The BSP is perceived as having highly motivated participants which contribute to their low DNAs rates. Higher DNAs in the symptomatic services is perceived to reflect longer wait times where the patient may decide to go private or the symptoms have gone away and there is no longer a perceived need for a colonoscopy.

We can learn from each other. Some of the good things that we see the Bowel Screening Programme doing [the symptomatic services are adopting]. We have updated our own hospital information sheets to give patients more information and I think that has been partly from the Bowel Screening Programme. I think we have become more aware of the regular audits that we are doing because bowel screening is doing that. I think giving feedback to the individual endoscopist on how they are performing is something we have done in the hospital but not as regularly as the Bowel Screening Programme does. We can learn from the patient surveys as well. (WDHB)

We get BSP people there and they tend to be well prepared and understand what it is all about. There is a lot of work done beforehand, more so than our hospital patients. It is not supposed to be a two tiered system but in some ways it is because of the resources that are put in there [BSP]. (WDHB)

Pre-assessment – what's working well?

The pre-assessment phone call with BSP participants, while very resource intensive on CNS time, contributes to checking the appropriateness of colonoscopy versus alternative procedures, low DNA rates and good bowel preparation. Due to the time needed to undertake the pre-assessment, the CNSs are no longer calling participants the day before their colonoscopy to ensure the bowel preparation is proceeding as intended.

Telephone pre-assessment is proving to be so worthwhile. It's so time consuming but it's such a good tool. We try and keep it under a hundred positives at a time[13] *but you can't always do that. We try and do five to ten each a day, and some of them are really quick because you've got someone who's very healthy and fit. But there's others that take an awful lot of sorting out and some of them can take 30 minutes and then ones that are even longer are the interpreter calls. (WDHB)*

Working with the BSP Quality Lead**,** quality improvement processes are being used to identify issues through quality monitoring and participant feedback. Examples include:

- Enhancing bowel preparation. It was noted via audit that participants who had colonoscopies in the afternoon had better bowel preparation. As a result, information on bowel preparation was revised reflecting the time of the appointment and participants were sent a low-fibre diet sheet (refer appendix 3). Another audit is scheduled to see if this has improved bowel preparation.
- Actions from participant feedback. A second annual participant survey was completed in June 2013. 90% of participants who responded rated their treatment overall as very good (Waitematā DHB 2013). Suggestions for improvement noted in the survey are being used to inform discussions about service improvements, e.g. monitoring comfort levels, keeping participants informed if there is an unexpected wait, information on when participants will receive their results.

[13] Refers to CNSs seeking to maintain the list of BSP participants with a positive iFOBT who require a telephone pre-assessment to under 100 participants.

- The anti-coagulant policy was reviewed and adopted by the symptomatic service

  We've done a lot for quality standards–[Quality Lead] is so onto it, we've reviewed some of our letters and anti-coagulant policy so now BSP and symptomatic are in line. We updated all the information sheets that go out to the patients and brochure,s etc. Just seeing a problem or issue and doing something about it; evaluating it. The patient survey was amazing. (WDHB)

Use of translators for people with English as another language was identified as important to ensure participants understand information given both at the pre-assessment phone call and when having their colonoscopy.

Pacific people need support because you talk to them on the phone and they say they understand but they don't often. They're too polite – it pays to get an interpreter in if English is their second language just to follow up. (WDHB)

Colonoscopy – what's working well?

In the BSP, endoscopists perform five colonoscopies per list and those less experienced undertake four. This compares with six colonoscopies on symptomatic lists. As explained by one stakeholder, there is a need for experienced endoscopists to do bowel screening lists:

Having the best endoscopists doing the bowel screen means that those patients who were not symptomatic and come up clear are less likely to have complications and can carry on being healthy. Basically the first colonoscopy risk stratifies the patient. If you have a good colonoscopy and good prep and you detect nothing then you can know that that patient is low risk and you can send them away… We are finding polyps and that is probably the real community prevalence rate so 65–70% of patients have to have polyps removed and some you can't remove all in one go. (WDHB)

Endoscopists performing BSP colonoscopies are at the outset referred to the BSP quality standards. Detailed recall of the quality standards is mixed, although there is frequent mention of standard quality measures in endoscopy practice of completion and withdrawal rates. The three month reports from WDHB Lead Endoscopist are seen as very useful as it offers endoscopists an anonymous comparison of their performance against others. The WDHB BSP Clinical Director also puts out a quarterly email about any quality issues or other matters arising.

Every three months we look at everyone's data and obviously if someone has only done 10 colonoscopies you can't really make any serious comment about them but if they have done a 100 you can. The bulk of our endoscopists have higher numbers[14]. To be absolutely providing a high level service you wouldn't have people just dotting in here doing the odd scope. You have people that are regularly doing a list. But you don't want people doing too many, you want to spread it out, it is a risk reduction approach to not have one person doing too many scopes, everyone should be doing them. (WDHB)

[14] Refers to BSP endoscopists having done high numbers of colonoscopies.

Readmissions are reported and reviewed by the Endoscopy Review Group at the fortnightly meetings. In the period July to December 2012, there were 17 readmissions and 11 for the period January to June 2013; of these 20 were due to bleeding. All readmissions are entered into RiskPro, reported to the Ministry and further reviews are undertaken as needed. As a result of the review of readmissions, hot biopsy forceps were removed from the endoscopy rooms and further training was given on safe polyp removal.

> *I think because of the number of polyps we are finding we were surprised at first at the bleeding we were getting and the number of people who were being readmitted. But if you actually look at the literature for the size polyps we are dealing with I think the bleeding rate is acceptable. It's not like it has been one or two rogue endoscopists who have had bleeds. For instance the most serious complications we have had is a perforation. We had three and they were done by three different people and the bleeding is quite evenly shared. So we have tried to mitigate that by getting extra training on how to most safely remove polyps and we have banned the use of particular forceps that are riskier. (WDHB)*

Colonoscopy – what are the improvement areas?

Increasing endoscopy workforce capacity

As discussed having adequate endoscopy workforce capacity continues to require active management. From January 2014, some of this pressure may be alleviated with new staff potentially freeing up others to do BSP colonoscopies.

Regular reminders on the quality standards

While there is awareness of the quality indicators for colonoscopy, awareness of BSP quality standards is variable.

> *I don't know that I have ever seen them written down. But I do know what the principles are around completion rate, withdrawal times, that sort of thing so I guess I would do that. But I don't think I have actually sat down and read this document [BSP Interim Quality Standards]. I probably should. But I think we all know that that is what is verbally expected of us. There might be a place for just a couple of times a year flashing this up in front of every endoscopist. (Other DHB)*

Management of incomplete colonoscopies

Discussions with endoscopists highlighted that their personal experience of incomplete colonoscopies, due to not being able to remove all identified polyps and hence determine their pathology, was fairly low. They acknowledged that it is critical that these BSP participants are rescheduled quickly. BSP participants with incomplete colonoscopies are transferred to the symptomatic list so there is a risk of potential delays, given the existing wait times on the symptomatic list. The process to transfer and the responsibility for ensuring these BSP participants are seen promptly is not clear to all endoscopists and feedback indicates the process is not seamless.

Action has been taken to address this issue through the establishment of a monthly general anaesthetic colonoscopy list at Waikatere Hospital. Some endoscopists also noted that they take personal responsibility to ensure that their participants requiring completion of their colonoscopy are seen promptly.

The actual colonoscopy from my point of view is encouraging, good completion rates and we do have some complications but they are within acceptable parameters. What is not quite so acceptable is people who are needing further procedures, for instance further colonoscopies done under anaesthesia, or need a rapid follow up procedure for polyps to be removed, etc. that is not a seamless transfer, from BSP to symptomatic. (WDHB)

It is a small percent of the people who fail colonoscopies. It is a painful procedure under the sedation so most of the time we have gone back and repeated it with an anaesthetist who can flatten the patient out. But there are only so many slots that we can give to that. Most of the people that are brought back have something wrong with them and it would be nice to have that tidied up but there is scope for that to improve because there is more appointments and space capacity at Waitakere now as they have opened up a further room. (WDHB)

Probably more importantly is the incomplete resection. If you find 60 polyps, you can only take half and need to repeat procedure. You want to do it fairly quickly. The numbers aren't that high, but someone needs to take active control. If they are put into the general stream they can wait long time. There are safety issues with incomplete procedures. So someone needs to take responsibility, usually an endoscopist to ensure another one is done. (WDHB)

5.2 Diagnostic testing: histopathology

Overview of process

LabPLUS is required to provide histopathology results within ten working days. LabPLUS reports histopathology results directly into Concerto (the WDHB patient record system) using a standardised reporting template.

From 2013, the CNS has been reviewing the colonoscopy reports and the histopatholgy results and advises the BSP administrator the correct letters to send out to participants, their GP, and WDHB notes. The CNS prepares a spreadsheet of actions taken which is reviewed by the WDHB BSP Clinical Director or WDHB BSP Lead Endoscopist. Where there is any concern or uncertainty, the CNS discusses the results with the BSP Clinical Director or Lead Endoscopist. A formal policy has been developed (*Histology Results Management*) which sets out parameters within which the CNS may make decisions.

Overarching reflections on histopathology

Key stakeholders commented that there is an effective working relationship between LabPLUS histopathology, BSP endoscopy unit and the BSP Coordination Centre. LabPLUS are seen as having quality processes in place, being timely in their delivery and connected and engaged with the wider BSP screening pathway.

Feedback from endoscopists highlight support for the processes and procedures that enable quality histopathology. The requirement to put samples into separate pots was noted by one as best practice and one that is not always done in other endoscopy units.

> *I think it's a very robust system that they have going… Compared to [other hospital] – I don't think we're as good at putting things into separate pots as they are; it's very good for getting a good idea of what you've taken off and where that's been taken from. It's very labour intensive though, particularly for the nursing staff because it's a lot of things to keep track of. That provides a histologist the best gauge of what's been done. (Other DHB)*

Reflecting the high polyp detection rate, LabPLUS are processing more polyps than they originally expected and planned for. As a result, LabPLUS instigated a review of workforce to ensure quality standards relating to timeliness of results were adhered to.

> *We were originally told that 40% of the people having colonoscopies would have a polyp removed, and that there would only be one or two polyps from each of those people. We were expecting ten to twenty polyps a week, so 50–100 per month but we're averaging about 400–500 per month. We've done a lot of work to better size the work we're doing compared to the amount of staff that was originally funded for the BSP. Initially we expected half an FTE but realistically 500 biopsies is one FTE. (LabPLUS)*

Over the last 12 months, the faxing of tracking sheets of biopsies received by LabPLUS to the BSP Endoscopy Unit commenced. The tracking sheets allow the BSP Endoscopy Unit to audit whether all pots are received and to manage any labelling errors (which LabPLUS noted there are very few).

> *Those tracking sheets are great too. We can see what we're supposed to have and if we have a discrepancy we can go back. They're very helpful at the BSP so we can get hold of them promptly. On the tracking sheet is a list with the patient label and how many pots, then a signature for specimen reception to sign off and an accession number. Every case has a number – but within a case there could be more than one pot. So say case 1, 2 and 3. Then within a case 1 there could be three pots so then it would be 1.1, 1.2 and 1.3. Once we've got everything and everything matches, we send it off. (LabPLUS)*

LabPLUS have reviewed their process to determine whether there are ways to be more efficient within the cutting and sectioning of biopsies. The example was given on the work undertaken to determine the levels of cuts to be made with certain polyps, as histopathologists were coming back asking for additional levels.

> *We went through a process discussing whether we would change how we did our levels and sectioning but what we're doing is the best thing. So while it looks like we haven't changed, we have assessed whether we can improve things. The driving force was that on certain amount of polyps, the paths would come back and ask us to take additional levels. The protocol is to take three levels but on a reasonable percentage they were coming back and asking for another three levels. So we were trying to see whether it would be more effective to take six levels to begin with. (LabPLUS)*

Histopathology - what's working well?

As expected for an International Accreditation New Zealand (IANZ) accredited lab, LabPLUS has a strong focus on monitoring quality indicators as defined in the BSP Quality Standards[15].

> *Overall I think we do pretty well, we take quality very seriously so we do our best and check our reports. We have a really good team downstairs who work well together and know what they need to do. (LabPLUS)*

LabPLUS provides quarterly reports to the BSP which detail progress against the quality indicators for iFOBT testing and BSP histology samples. For the quarter 1 July – 30 September 2013, the following results were tabled highlighting the standard of 95% of specimens submitted from colonoscopy are reported and relayed to the referring endoscopist with ten working days of receipt by the laboratory.

Table 3: BSP Histology Samples Indicators for 1 July – 30 September 2013

	No of cases arrived	>10 days no of overdues last month	>10 days no of overdues this month	Max TAT (days)	Average TAT (days)	Percentile Rank	Avg. No. of pots received per case	No of cases with missing information (dates)
Jul 13	185	0	0	8	4.12	100	3.10	0
Aug 13	170	0	1	11	4.18	99.4	3.06	0
Sept 13	128	1	0	9	4.60	100	2.93	0

Source: LabPLUS 2013

Histology staff that process tissue samples receive monthly reports detailing indicator results which they note are actively monitored and any outliers are investigated. Turnaround times are received on a bi-monthly basis as due to the high workload there is potential for the timelines to slip. Strategies are used to minimise the timeframe from receipt to reporting. For example, the samples go directly to the pathologist, and are not reviewed by a Registrar.

Feedback from LabPLUS suggest that they receive the majority of information required about BSP colonoscopy biopsies. Very occasionally information is missing such as date of the specimen or there is a lack of specification on the location of where the polyp was taken.

> *It's under control, I would say 99% of the information is sufficient and as requested and there will be an occasional one that will be missing. If we really need to ask then we can do that. (LabPLUS)*

> *There's not much we ask for in the forms really. The only problem is that some of the surgeons will just say 'colon' or 'left side' and they don't specify where it's from and that's not as helpful if it's not specified. But yeah, very occasionally. Usually I'll just leave it blank but if I think it's really important I'll ask the clinician. (LabPLUS)*

[15] LabPLUS is accredited annually by International Accreditation New Zealand (IANZ) to ensure the quality of results released meets the NZ Standard NZS/ISO15189,"Medical Laboratories – Particular requirements for quality and competence".

Review of histology results by the CNS is seen to have a number of key benefits, specifically ensuring consistency of review, timeliness of referrals, and freeing up the WDHB BSP Clinical Director and WDHB BSP Lead Endoscopist[16]. Endoscopists interviewed were comfortable with the CNS reviewing the results. Endoscopists commented that where they detected cancer, they personally inform the WDHB BSP Clinical Director.

> *The other thing is that [WDHB BSP Clinical Director, WDHB BSP Lead Endoscopist and the CNS] are the only ones that look at the pathology so there is a disconnect between the colonoscopist and that. Once he has removed the polyps that is the last thing he does. There is no further control over the case. Having said that it does give a uniformity to the way things are followed up. Because if every endoscopist was making their own recommendation about follow-up it would be pretty …. I strongly advise either having an overall nurse specialist making the recommendations or the pathologist. The colonoscopists can see the results but they can't make any recommendations. (WDHB)*

> *The specialist nurse still sends them all to us and if she is uncertain we will check them for her but it just means that the straightforward ones can be dealt with easily. And the more complicated ones are those that we should be putting our minds to. (WDHB)*

Histopathology – what are the improvement areas?

Ensuring accuracy and completeness of Register data

Ensuring the Register contains accurate and complete data on histopathology is critical to monitor the effectiveness of the BSP. The Register requires updating to record:

- the date the colonoscopy result letter was sent to monitor the timeliness of results to BSP participants and their GP
- all histopathology findings and not only the most significant one (i.e. if 20 polyps are found only the most significant are listed).

Discouraging the collection of non-polyp biopsies

Non-polyp biopsies have been received for histology testing which adds to workload. LabPLUS have requested that endoscopists do not collect 'random' specimens.

Reviewing the referral of symptomatic participants

Some stakeholders across the pathway commented that symptomatic people are receiving BSP colonoscopies. For some this raises questions about the appropriate use of resources if BSP participants are already under surveillance.

[16] In symptomatic services histology results are normally reviewed by the endoscopist who performed the colonoscopy. To ensure continuity and timeliness, this was not feasible for a screening programme.

For example, it says this person has Crohn's disease which is a chronic illness of the gut/bowel and so they shouldn't be on the BSP anyway because they should be having screens connected to their Crohn's. So there's a problem there with the referral, so that's something that isn't always working. But I don't know how that could be done. What's the exclusion criterion? To me it's important because otherwise they're repeating that surveillance, and it's not the most optimal way to use to BSP. (LabPLUS)

5.3 Diagnostic testing: alternative investigation

Overview of process

BSP participants assessed as unfit for colonoscopy or with an incomplete colonoscopy, are offered a CTC investigation. Occasionally when a colonoscopy fails, the person may proceed to have a colonoscopy under General Anaesthetic.

Participants are referred to the Radiology Department by the Endoscopy CNS. Referral is via WDHB's usual referral system. The CTC policy agreed between BSP and Radiology states that when a BSP colonoscopy fails in the morning the person will have a CTC that afternoon, and when it fails in the afternoon the person will have one the following morning. The exception to this is when the colonoscopy fails on Friday afternoon. Ensuring same or next day referral to CTC means the BSP participant does not have to go through bowel preparation twice.

Referrals to CTC for BSP participants unfit for colonoscopy are given a unique BSP code on receipt by the Radiology Department. This code flags that the participant must be given a different level of priority, to meet the BSP requirement that a date for a CTC must be given within five days and the procedure completed within 20 days. CTC have a 30 day maximum wait time for non-BSP patients. For BSP participants who underwent a polypectomy, CTC will be undertaken after 30 working days but within 50 working days.

The shorter turnaround time and the unique identifier number on the referral are the only aspects of the CTC process that are different for BSP participants. Once BSP participants are booked they get treated like any other CTC patient.

Results are sent back to the referring clinician (usually the WDHB BSP Clinical Director) using the hospital's usual results system.

Overarching reflections on CTC

Stakeholders interacting with CTC are in the main positive about their communication and ability to fit BSP participants in who have had a failed colonoscopy. There is acknowledgement that getting appropriate processes set up took time, and that there are further areas for improvement.

Took a while to work out referral processes, we never had any issues in terms of the relationship, it was just getting those processes sorted. Still a little bit difficult to pull the data. (WDHB)

CT Colonography is really good, radiology are fabulous. The only issue is the Friday afternoon ones which have to be re-booked and re-prepped because they can't do it on a Saturday. The radiology here [Waitakere Hospital] have been wonderful. They just seem to be really engaged and go out of their way to make it happen. (WDHB

Feedback from CTC highlight that the BSP has had minimal impact on their workload. It is estimated that from July 2012 to October 2013[17]:

- In Waitakere Hospital – 34 BSP CTCs have been performed out of a total 492 CTC (7% of CTC undertaken were from the BSP)
- In North Shore Hospital - 13 BSP CTCs have been performed out of a total 456 CTC (3% of CTCs undertaken were from the BSP)
- In total across the two hospitals - 47 BSP CTCs have been performed out of a total 948 CTC (5% of CTC undertaken were from the BSP).

At the moment the BSP has had a minimal impact. We are not getting that many referrals through BSP. We are getting a lot more through other referrers which are having an impact on our waitlists. (Radiology)

Radiologists note that CTC is not a 'softer option' for participants. Bowel preparation is required (although it is not as harsh) and patients are required to lie still and follow instructions.

It is a bit of a misconception from some people that a CTC is somehow a gentler test. It is in some ways, we don't use the sedation side of it which might be an indication to some people but in terms of the bowel preparation we are still using a cleansing agent. It is not perhaps quite as aggressive as what they would use for an optical colonoscopy but it is still a cleansing agent so with the very frail patient if they are not suitable for colonoscopy they are not going to be suitable for CTC either. But then if they are that frail they are possibly not suitable for any sort of intervention. In saying that our safety profile is very good and we haven't had any significant morbidity and no mortality but it is not like a routine test that you come in for with no preparation. (Radiology)

CTC – what's working well?

The flexibility of the Radiology Department to see BSP participants who have had a failed colonoscopy that day or the next to avoid them having to repeat their bowel preparation is acknowledged.

Waitakere Hospital is in a reasonably good position to absorb these failed [BSP] colonoscopies. They can usually accommodate these patients without having to send them away and coming back [at a later date and therefore needing to undergo] another [bowel] prep. They can usually accommodate them on the day. We try to because the patient has gone through bowel prep and we don't want them to have to do that again, that is horrible stuff. So as long as their endoscopy session is performed in the morning, that gives us a bit of time, if they fail, to prepare the patient for afternoon colonography. But if they do it and fail in the afternoon we can't, unless they are happy to keep the patient in overnight then we can do it the next day. (Radiology)

[17] Personal communication from John Greenwood dated 22 October 2013.

CTC – what are the improvement areas?

Consistent coding of BSP participants

BSP participants coming into CTC should be given a unique code to identify them as coming from the BSP. The coding of BSP participants does not appear to be occurring consistently. For BSP participants seen on the day or day after their failed colonoscopy, this does not create any pathway issues. Review is required to identify if all BSP participants who have had a CTC are noted in the BSP Register.

> *The numbers may not be right as they [radiology administrators] have to code them as BSP when they put them into our system and sometimes they don't. (Radiology)*

Adherence to BSP quality referral and wait standards

BSP participants deemed unfit for a colonoscopy and fit for CTC are added to the pool of patients referred for a CTC. BSP participants are treated the same as other CTC patients. The quality standards of CTC for referral and wait times differ from BSP quality standards. The Radiology Department is confident that BSP participants are seen within 30 days (their standard) and not BSP's standard of 20 days.

> *The ones that are more tricky [are] when we look at the referral and there is strong indication that they can't have a colonoscopy and for some reason that you think a CT colon is better. It is not big numbers but some of those people are waiting a long time [for their CTC]. One was about three months. (WDHB)*
>
> *Depends when the referral gets put in. There is a prioritising system. It then goes back to the clerk to process and they give the patient a date. Five days might be pushing it[18]. (Radiology).*

CTC send letters to all their referred patients inviting them to call and make an appointment. Consequently, if patients do not respond promptly to the letter there will be a delay. BSP endoscopy staff have noted a preference to liaise and get an appointment that suits the participant.

> *Examined within 20 working days. That I think would be a problem. I think we are currently out to about six weeks. So probably 30 working days rather than 20. And we are outsourcing some of the CT colonography to cut down the waiting list. Having said that a lot of times we can't get a patient in earlier than six weeks is that the patient is away or we can't get hold of them. Because we have had quite a high DNA rate we have basically put the responsibility on the patient. We send them a letter and say contact us please for an appointment so those who are motivated will probably get theirs within four weeks and those who ignore our letter we obviously can't do it within that time frame. But we try and do all our exams within six weeks. That is our current aim. (Radiology)*

Radiology are confident that they deliver against the other quality standards**,** although they are not actively monitored by the Radiology Department. The Department relies on the BSP Coordination Centre or WDHB BSP Clinical Director to inform them if they are at risk of breaching the quality standards. Given the wider pressures of targets within Radiology Department, there is reluctance for BSP to impose another.

[18] BSP requirement that a date for a CTC must be given within five days and the procedure completed within 20 days.

Ensuring BSP participants are clear about next steps

Calls to the BSP Coordination Centre have indicated that following a CTC, some BSP participants are not receiving the correct information about what happens next. This reinforces the need to be able to identify BSP participants and to ensure Radiology staff are aware of the next steps for BSP participants.

5.4 Surveillance

Overview of process

Participants requiring ongoing surveillance are exited from the BSP, referred to a surveillance programme, and not recalled for subsequent screening.

WDHB Endoscopy Service is responsible for ensuring participants receive their surveillance colonoscopy within the recommended timeframe (according to guidelines for *Surveillance and Management of Groups at Increased Risk of Colorectal Cancer, Ministry of Health 2004*). The BSP Endoscopy Unit advises participants they have been referred for surveillance and notify participants' GPs of surveillance management requirements. The Unit records surveillance management requirements on the BSP Register[19] and removes the participant from the screening pathway. The BSP Endoscopy Unit also logs the referral for surveillance in iPIMS where the surveillance period is captured.

Participants requiring surveillance colonoscopy within one year are placed on the WDHB Endoscopy Service wait-list (this is a symptomatic list). In the 2012 immersion visit report, it was noted that those requiring surveillance colonoscopy over longer timeframes are discharged to their GP with a request to refer to the WDHB Endoscopy Service at the appropriate time (Litmus 2013).

In 2013, to effectively monitor and manage the impact of BSP surveillance colonoscopies on the symptomatic list the following process has been introduced:

- A letter goes out to the GP to say the BSP participant needs a surveillance colonoscopy for example in three years. The participants do not go 'back' to the GP.
- Based on the colonoscopy report, the booking clerk logs the patient into the waiting list for surveillance in three years. The time for the next colonoscopy can then be calculated, for example if the first procedure was in October 2013, then the surveillance would be October 2016.
- The system will then show when the procedure is due and give an update.
- When due, the booking clerk sends the participant a letter, saying they need another procedure and a copy is sent to the GP. The usual letter and confirmation is sent. The only difference is the different log in code, so it is known when BSP participants come in from bowel screening surveillance.

[19] The Register has a field for surveillance but not for the recommended surveillance period.

This tracking and booking system was set up:

- To avoid delays in GPs referring back into endoscopy, and to save them paperwork. One stakeholder reflected that delays due to late GP referrals can result in surveillance colonoscopies being six months late.
- To ensure that participants do not get 'lost' when discharged back to primary care.
- To calculate the impact of BSP by tracking the number of surveillance colonoscopies across the years to inform workforce and resource planning.

Reflections on surveillance impact

At 30 June 2013, of all BSP participants who had a colonoscopy, 71% were identified as having bowel polyps. Of those BSP participants with polyps: 52% required ongoing surveillance, 43% were returned to screening in five years and 5% were referred for treatment (BSP Register for the period from 1/1/2012 – 1/7/2013).

Stakeholders interviewed recognised that the high level of polyps detected via BSP colonoscopies will, over time, add significantly to the symptomatic colonoscopy lists.

> *There is a huge implication for the surveillance and follow up scopes because of the high polyp detection rate, we are effectively getting a lot of cases to be done and it means then that our symptomatic lists will be under pressure. (WDHB)*

While surveillance is not part of the BSP, it has a critical role in ensuring people with higher risk are monitored and if needed receive appropriate care. Of concern was a one-off comment that in other DHBs if symptomatic lists are under too much pressure, surveillance lists are stopped.

The auditing of BSP surveillance colonoscopies to create a New Zealand evidence-base of the effectiveness of the recommended surveillance intervention was recommended by one stakeholder. They acknowledged the guidelines for surveillance were set on the European Guidelines (Segnan et al 2010). However, they challenged their evidence-base and highlighted the need to develop New Zealand data.

> *In the BSP if we take off a polyp, the recommendation is that they have another colonoscopy in a year. What we need to be carefully auditing is whether or not that [surveillance] colonoscopy was of any benefit. Because there's no point in saying that everyone across the country needs to have another [surveillance] colonoscopy if there's no evidence of that actually helping. Then all that it's creating is more work, because although we want to catch things early, we don't want to be intervening too often because it's not risk free. So a flow on from the Pilot needs to be constant re-assessing in terms of surveillance. These guidelines are based on the European ones, but they're not always based on the best evidence. (WDHB)*

While the accumulative effect of the surveillance colonoscopies have not yet impacted on the symptomatic list, there is some evidence that BSP participants requiring surveillance colonoscopies at one year are not receiving timely appointments. This reflects the long symptomatic wait lists.

[Surveillance] – I know some participants phone in saying that they're meant to have a surveillance [colonoscopy] so they're not being dealt within the recommended time. Next year it will get worse because then we'll have the three year surveillance lists as well. From what I know the waiting lists are pretty long. (WDHB)

Symptomatic and surveillance is six to 12 months out. We can't actually keep up with the workload. So the impact of surveillance needs to be considered. It is not just the initial scope. It is the ongoing so we have referrals from GPs, from the hospital and from bowel screening… The amount of referrals that come in on a day-to-day basis outweighs the amount we can actually fit in. Then when you add in surveillance we are working really hard to get some of our waitlists under control but at the moment we are just treading water not getting on top of it. But to get on top of that we are going to have to outsource. I think once we get on top it will be different. (WDHB)

Perceptions are mixed on whether increasing awareness of bowel cancer and screening by GPs and the wider population is resulting in more referrals to symptomatic lists.

Surveillance planning

As noted by some stakeholders, it is too early to assess the impact of BSP participants requiring surveillance colonoscopies on symptomatic lists. Planning has been undertaken to quantify known issues with the symptomatic lists and to assess the impact of BSP participants being referred to the symptomatic list for surveillance colonoscopy. The business case put forward to the WDHB has resulted in additional resources to address the needs of symptomatic patients as well as to accommodate the flow on effect of surveillance colonoscopies from the BSP.

Surveillance becomes a concern if no one plans for it. Last year we did a business case - polyps, waiting and surveillance BSP, etc. We did the numbers and they said we needed an extra room and we have that third room now and we had to recruit an endoscopist… The thing that got the money was the DHB needs. The BSP was part of it but not the major part. The future will tell us how much we will need, but in terms of the impact you just need to be ready for it and plan for it. (WDHB)

5.5 Treatment

Overview of process

Participants diagnosed with cancer are referred to a colorectal Multi-Disciplinary Meeting (MDM) by the WDHB BSP Clinical Director/WDHB BSP Lead Endoscopist. Referrals are made using a standardised regional bowel cancer MDM form. BSP MDMs are held every two weeks at North Shore Hospital and include representation from Medical Oncology, Pathology, Radiation Oncology, Diagnostic Radiology, Surgery and Nursing. MDMs provide recommendations for culturally appropriate and coordinated care, advice and support. Outcomes of MDMs are communicated to the participant and their GP, and are documented in the medical records.

All participants who require chemotherapy and/or radiation therapy are managed by the Auckland Regional Cancer and Blood Service at ADHB. ADHB is the regional provider of oncology services for the WDHB population.

Participants diagnosed with cancer are not recalled for screening. The WDHB BSP Clinical Director or the Endoscopy Unit CNSs enter treatment outcomes into the BSP Register.

Reflections on treatment impact

As at 30 June 2013, 98 people had been diagnosed with cancer through the BSP.

> *It's constantly amazing to me how many cases are being found that we otherwise wouldn't have picked up. I do wonder if there's slight bias in some of the screening in that people are more likely to screen if they already have some symptoms so they think it's a good chance, because it is staggering how many people are being diagnosed. None the less that's a role of the Pilot too, reducing the barriers to care. But they're not strictly speaking, purely screening in a way. (WDHB)*

Lack of surgical resources creating delays to treatment

WDHB commenced the Pilot with five FTE colorectal surgeons. In 2013, a workforce analysis conducted in WDHB found there are now three FTE colorectal surgeons, and the support of a surgeon seeking to retire. Recruitment of replacement surgeons has been slow. The decreased number of colorectal surgeons and the historically low number of surgeons per head of population at WDHB has meant that the participants diagnosed with cancer via the BSP have placed significant pressure on these limited resources.

> *Surgery department under huge pressure staffing wise. They are struggling with the capacity. (WDHB)*

The availability of theatre space was also highlighted as creating a barrier to ensuring timely surgical intervention. As explained by a surgeon, the general rule is that a patient with colorectal cancer can require the equivalent to half a day of operating time. Several stakeholders commented on the lack of support to address these resource issues.

> *I think the BSP should have come along with one extra theatre a week that's completely staffed. It's not a lot but it would be very significant. (WDHB)*

> *You can't tell someone they have cancer in October and then say you'll operate in December or January; you have to think of something better... To me it's the one failing of us taking it on. No provision of extra resources to get the things done. (WDHB)*

The lack of surgical resource is now adversely impacting on the time to surgery for BSP participants diagnosed with cancer.

> *The reality is that the wait time for surgery here has always been longer than what they were set out for…but I've had some people waiting anywhere up to eight weeks for surgery for their bowel cancer. The reality is that it doesn't have any impact physically on their risk, but psychologically it does. (WDHB)*

SP MDMs follow set guidelines

BSP MDMs are in the main well attended and all BSP participants are discussed as per the guidelines. The challenging areas for attendance are histopathology and oncology representation who need to travel from Auckland. Histopathology attendance is irregular due to clashing MDM commitments in their DHB. Action is being taken to address this issue.

Clinicians question whether all BSP participants need to be discussed at the MDM. Clinicians believe that the need to discuss a BSP participant should be based on a clinical decision based on the complexity of their disease. Discussing all BSP participants when the treatment pathway is clearly defined decreases the limited time available to discuss options where the treatment pathway is less well defined.

> *At the MDMs every patient has to be discussed as I understand it, so whether they've got a cancer in a polyp or an advanced local cancer there's no differentiation. The cancer in polyps is the difficult discussion because it's usually based around whether they need more done after the polyp is removed or not. There are pathology criteria with polyps which decisions are based on. There are more vague areas, like a malignant polyp in an 80 year old compared to a malignant polyp in a [younger person]. (WDHB)*

> *The compulsory presentation at MDMs of all colorectal cancer which is a Ministry-led initiative creates a problem because if you don't have oncologists attending every week then your MDM is not an MDM. Secondly the volume of work that you have to get through and the time allotted is too great so you can't actually talk about the people you really want to talk about in depth. Finally, there is no evidence at all that presenting most people at MDMs actually alters their outcomes. It doesn't improve survival. So we should be able to choose who we present because we know who needs to be discussed. That is what we have been trained to do. So these are just frustrations that are unnecessary frustrations. (WDHB)*

Timing of first specialist assessment (FSA)

Faster Cancer Treatment (FCT) times use the FSA as one of their key indicators where: '*all patients referred urgently with a high-suspicion of cancer have their first specialist assessment within 14 days of the referral being received by the hospital.*'[20] In contrast, BSP quality standards require 95% of BSP participants requiring clinical follow-up to have been referred and seen within ten days of diagnosis, and within 20 days discussed at an MDM. The reason for the different FSA time frames between the FCT and BSP standards was unknown to those interviewed.

BSP participants, who are found to have identifiable cancer at colonoscopy, are informed of this by the endoscopist on the day before they leave the endoscopy unit. On this basis the question is raised as whether this counts as the FSA/ clinical follow-up. The shortage of surgeons makes meeting the BSP quality standard of ten days particularly challenging.

[20] http://www.health.govt.nz/our-work/diseases-and-conditions/cancer-programme/faster-cancer-treatment-programme/faster-cancer-treatment-indicators#whatcti accessed 12/12/13

When the cancer is identified, [participants] have quite a significant conversation with the [endoscopist who] identified [it], who tell [participants] what to expect next. It is not a lot more than what happens if you go to an FSA. The only distinction is people who are identified as having cancer via histo and not at the time of the colonoscopy – this is a much smaller number. [These participants] might be rung immediately with the results. I don't think we are meeting quality standards of an FSA within ten days of diagnosis, but everyone is having a conversation, having things happen and someone calls which is pretty much what happens at FSA. (WDHB)

Benign work not being done

Benign colorectal issues are not being addressed due to the impact of the BSP and the lack of surgical capacity.

The impact it is having on the wider community is that we are not doing the benign work that we could and should be doing. So in Waitematā DHB if you have got problems with your haemorrhoids or a fissure or one of those really benign problems which are a real nuisance for people, then by and large, they don't get seen or treated. (WDHB)

BSP impact on oncology

Like surgical services, the increase in the number of cancer patients identified by the BSP is starting to put pressure on oncology services due to no additional resource being allocated. As the BSP moves into screening round two, pressure on oncology may dissipate as fewer BSP participants will be identified with late stage cancers.

5.6 Reflections for a potential national roll out

Drawing on the previous analysis and discussions with key stakeholders, a number of considerations are noted relating to a potential national roll out of a bowel screening programme.

Funding

Funding implications of the potential national roll out of bowel screening was raised. Some stakeholders highlighted the need to factor in the costs for laboratory work given the high number of polyps found, the impact of screening on symptomatic lists through increase in surveillance and the ongoing surgical and oncology impacts. Linked to funding, the need for adequate time to prepare the infrastructure across the screening pathway was also noted.

The number one issue for me when they roll it out is how they are going to fund it. Because if they try and do it like they are now which is just paying for the screening colonoscopy and ignoring the impact surveillance and ancillary staffing cost, pathology, et.c then they are not going to get a good gold quality service.

We just must resource the medical oncology and radiation side for those extra cases that are being diagnosed because our funding is going backwards keeping up with our demand anyway but then adding in a new programme which is really great and world standards without adding any funding is a little bit short sighted. (WDHB)

Colonoscopy

Having enough highly experienced endoscopists is a critical issue. Reflections from GEs and surgeons note the complexity of the bowel screening colonoscopy list and their different nature and risk profile from symptomatic lists. In this context, workforce capacity concerns are not simply about finding endoscopists to do screening lists but ensuring endoscopists are appropriately trained and skilled to manage the complexity of screening lists.

There are also moves afoot to look at the capacity around the country… The answer isn't really to import people or train nurse endoscopists. As a general rule nurse endoscopists in the UK are not doing bowel screening list. They are doing open access gastroscopy colonoscopy straight forward procedures. In a way you want your best endoscopists doing bowel screening because you want to make the first colonoscopy the best for many reasons. (WDHB)

Quality standards for colonoscopy and their monitoring are seen as critical to bowel screening to minimise risk and ensure equity of service delivery across New Zealand.

The endoscopists should all be on the same page – some uniform arrangement as to how they do it. No variation, so a patient won't be advantaged or disadvantaged depending on what list they're on. This is achieved with repeated auditing and emails and check on the endoscopists. Might be an element of training needed for BSP on the way to do endoscopy to be suitable for screening – there is work in the UK about this. (WDHB)

The risks of a two-tier system was noted with asymptomatic bowel screening participants potentially having a faster pathway to diagnosis compared to symptomatic patients. In this context, stakeholders note the need to address symptomatic wait times to colonoscopy, especially as bowel screening will increase the number of people on symptomatic lists due to surveillance requirements. Potentially a bowel screening programme may also adversely impact on benign surgical work.

They need to have adequate endoscopists to cope with the workload so that symptomatic doesn't go backwards, and then they need to make sure that the roll-on effect of surgery is catered for and there needs to be an acceptance that it will have an effect on benign work. That's not necessarily a bad thing but we just have to accept it's a trade-off, unless you increase the resource proportionally which is unlikely to happen. (WDHB)

One stakeholder, while acknowledging the benefits, suggested that pre-assessment calls may not be sustainable in a potential national roll out due to being time intensive.

BSP parameters

The parameters of the BSP may need to be reviewed for any potential national roll out. Key stakeholders commented that the BSP is the 'gold standard'. To be able to roll out bowel screening within the constraints of costs and the limited endoscopy workforce may require key parameters to be changed (e.g. a narrower age band). In contrast other stakeholders argue that to change the screening parameters of the BSP for a national roll out may change the cost benefit analysis. Sapere Research Group are reporting on cost analysis in the interim evaluation report in late 2014, and the cost effectiveness analysis using a micro-simulation model will be reported in the final evaluation report in 2016.

> *The serious questions are, if it is rolled out what age should it be for and what sites should be involved? Is it only those that show that they can actually reach criteria to do bowel screening? Which I think it should be but then you are going to have different services offered in different areas, which politically isn't very palatable. Perhaps a more limited screening programme would be easier to roll out and then you could look at expanding it in time. Some smaller areas might only be five cases a week, it might be quite small. But places like Auckland, Wellington, Christchurch it will be more like 50 a week, plus the downstream effects. (WDHB)*

Histopathology

The structure, location and number of laboratories and the workforce needed to complete iFOBT samples and histolopathology require careful scoping. Some reflections from stakeholders interviewed note a preference for two laboratories to be able to handle the volume of iFOBT specimens and to offer disaster planning contingency.

> *And also just the sheer workload really. There will be a really big team in terms of handling the workload. We are at capacity and we are just handling one DHB with a participation of 60%. If you extend it to all DHBs then it will be quite a lot more; although the other DHBs will be a lot smaller.*

For colonoscopy biopsies, there is some preference particularly amongst clinicians for histology to occur in the DHB laboratory where the endoscopy unit is located. This will enable easy access to the pathologist to attend MDMs; although it was acknowledged that there is potential for the pathologist to attend via teleconference.

> *Good argument to be made for the histology to be managed at the DHB for the MDM linkages and the histology for symptomatic are managed at the labs as well. (WDHB)*

A shortage of histologists was highlighted, and needs to be considered in the context of the realistic workload.

> *From a roll out perspective, histologists are hard to come by and good ones are even harder, which could be a problem. Not BSP specific, but a general problem. (LabPLUS)*

Consider aligning BSP quality standards for laboratories with IANZ. It is suggested that BSP quality standards are streamlined and auditing is incorporated into IANZ as per other screening programmes.

> *Internal audit of BSP once a year and IANZ also audit once a year, so in other words we get audited twice a year. Once internally and once externally. So really what would be a good outcome would be for another rationalisation … From our perspective IANZ really cover all that… You can encompass it with one standard, and the tester be IANZ accredited and it encompasses all. (LabPLUS)*

Alternative investigation

The potential of using CTC to address the potential shortfall in the endoscopy workforce if bowel screening was rolled out nationally was raised.

Concerns were also raised about the capacity for other DHBs' radiology departments to cope with CTCs if there was a national bowel screening programme. WDHB has a large radiology department which uses both nursing staff and radiology registrars to do CTCs.

> *I would like to know is what impact this potentially might have, whether you will select out the patients who are going to have colonoscopies, and then the rest will have CT colons? If you speak to some of the gastro guys they don't think there are equal exams. Some GEs will say CT colons are not as good as a colonoscopy yet they probably don't have enough resources in the short immediate term to be able to cope with the numbers so, whether the huge explosion in numbers of colons to be examined, is going to spill over to CT colon. Whether risk factor will come into it, CT colon for those with lesser risk or what happens. Other DHBs may not have the staffing levels that we have here. (Radiology)*

Surveillance

The impact of a bowel screening programme on symptomatic lists through the increased number of surveillance colonoscopies needs to be given careful consideration. As one stakeholder commented if symptomatic list wait times are under control and planning is taking place then the impact can be managed appropriately.

> *If the service is already stretched and suffering with their symptomatic list, a bowel screening programme will make it worse. However if they're on top of symptomatic list, a bowel screening programme will not have an impact. So again it depends on how good you're running and planning your service. (WDHB)*

Treatment

Unlike WDHB, some DHBs may not have the necessary structure and capacity to discuss every bowel screening participant that is diagnosed with cancer at MDMs.

MDMs are not uniform across the country and so some places don't have the capacity to discuss each case because the MDM structure doesn't exist. This [the BSP] is jumped on the back of a good solid pre-existing MDM so there's not culture change required, where in some smaller centres it's much more difficult for them to organise themselves in this way and we're lucky we have sub-specialties. In some of the smaller places you'd have one surgeon who would have to go to every MDM under the sun and have no time to operate. (WDHB)

6. Quality monitoring

This section describes the quality standards and processes the Ministry and WDHB use to monitor the quality of the BSP. The findings of the 2013 review of the BSP quality standards are presented followed by an overview of 2013 quality activities, adherence to BSP quality standards and issues and risks identified. Reflections on quality monitoring and considerations should a national bowel screening programme be rolled out are also outlined.

6.1 Overview of BSP quality standards and processes

The BSP is a population-based pilot, the design of which draws on the European Guidelines for Quality Assurance in Colorectal Cancer Screening and Diagnosis (Segnan et al 2010). The European Guidelines were also used as a guide for the development of the BSP quality standards. Where no standard exists, the Ministry working with the Bowel Screening Advisory Group reached a consensus decision based on consultation with experts from those involved in the BSPs undertaken in Scotland, England, Wales and Australia, as well as undertaking a review of existing evidence.

Five key quality documents were developed for the BSP:

1. BSP Final Service Delivery Model (Ministry of Health 2013d): This document details the final Service Delivery Model and outlines the screening pathway for the eligible population in the BSP site at WDHB.
2. Policy and Operational Procedures for the BSP (BPOP) (Ministry of Health 2011): This document is intended to provide an overview of business practices and processes for the whole bowel screening process, including the population database, invitations, informing general practice, communications, setting up screening tests and quality standards for iFOBT. The BPOP, which will inform the national programme (should it proceed), will be progressively developed as the BSP is implemented.
3. BSP Interim Quality Standards (Ministry of Health 2012a and 2013c): This working document sets out the monitoring, draft quality standards, clinical audit, risk management, and monitoring indicators. These Standards have been reviewed by the Bowel Cancer Taskforce, the Colonoscopy Quality Working Group and the BSP Quality Assurance Group. The Standards identified in this document will be monitored within the BSP and continually reviewed by the BSP Quality Assurance Group during the Pilot's four year period. The interim BSP Quality Standards have been collated based on the English, Welsh and Scottish bowel cancer screening programmes. These UK Standards are based on the outcome of the English and Scottish bowel screening pilot evaluations.
4. BSP iFOBT Draft Performance Quality Standards (Ministry of Health 2011a): This document identifies requirements for manufacture of the test kit and requirements for laboratory testing. The Ministry and LabPLUS jointly developed the document.

5. Standards for Endoscopy (colonoscopy) facilities BSP (Ministry of Health 2011b)[21]: This document covers service management, quality assurance, participant care, infection control, equipment and participant sedation. The standards have been developed by the Bowel Cancer Colonoscopy Nurses Quality Working Group based on the *Endoscopic Facilities and Services Guidelines*; Gastroenterological Society of Australia, 3rd Edition 2006, and the recommendations from the Australian Quality Working Group report *Improving Colonoscopy Services in Australia* (2009).

These documents are interim reflecting that they are 'living' documents.

Other relevant documentation to guide quality in the BSP are New Zealand Guidelines Group's:

- Suspected cancer in primary care: guidelines for investigation, referral and reducing ethnic disparities (2009)
- Surveillance and management of groups at increased risk of colorectal cancer (2004).

The leadership, governance and management structures relating to quality standards are:

- BSP Quality Assurance Group which meets quarterly to review relevant standards, guidelines, and monitor performance/compliance of the BSP against appropriate standards and guidelines.
- BSP Steering Group which meets monthly and to which any issues relating to BSP quality monitoring and their mitigation strategies are referred. The BSP Steering Group maintains a Risk Register which is reviewed and updated each month.
- BSP Clinical Governance Group which meets quarterly and is focused on the clinical subset of the BSP quality standards.
- Bowel Screening Advisory Group which meets quarterly and from which quality issues arising may be referred for a wider sector opinion.

From January 2013, the Ministry has been publishing on a quarterly basis the result of 16 key monitoring indicators (refer Appendix 2).

From January to around August 2012, the Ministry and WDHB focused on agreeing the quality standards for the BSP. From August to October 2012 the focus shifted to monitoring and reporting and resolving any issues arising relating to definitions and data formulas.

With the Quality Lead reappointed in May 2013[22] there was an increased focus on using the data from the monitoring of quality standards and wider data to drive quality improvement initiatives for BSP. Examples of quality improvement initiatives include[23]:

- review of bowel preparation for colonoscopy which resulted in revised afternoon and morning information sheets accompanied by a low fibre diet sheet (refer Appendix 3)
- review of readmission data which resulted in further training for endoscopists about polyp removal and the removal of hot biopsies forceps
- review of anticoagulant policy

[21] The standards referring to the quality assurance of the colonoscopy procedure are outlined in the BSP Interim Quality Standards.

[22] The Quality Lead position was vacant from October 2012 to May 2013.

[23] Other quality initiatives may have been undertaken that are not listed here.

- BSP participant survey findings being used to identify further improvement areas to enhance participant experience.

Having a Quality Lead dedicated to focusing on quality through reviewing data and trends and identifying areas where quality can be enhanced is noted by stakeholders as a particular strength of the BSP.

6.2 Review of BSP quality standards

In November 2012, a review of the BSP interim quality standards (Ministry of Health 2012a) was jointly undertaken by the Ministry, WDHB and LabPLUS. A line-by-line analysis was undertaken and any issues were noted with suggested recommended changes. Overall, no substantive issues were identified with the existing quality standards, although refinements and clarifications were made.

On 30 March 2013, an updated version of the BSP interim quality standards was released (Ministry of Health 2013c).

In summary, key changes made as a result of the review of the interim BSP quality standards were:

- From 2014, the New Zealand Familial Gastrointestinal Service questionnaire will be completed where there is evidence of a family history of bowel cancer for participants undergoing colonoscopy.
- A five day increase in the timeframe for a participant to have a colonoscopy following a positive iFOBT result.
- All adverse events and hospital admissions within 30 days following a colonoscopy within the BSP are documented and reviewed.
- Changes to polyp and adenoma detection rates.
- Participants who had an incomplete colonoscopy and underwent polypectomy will not have an immediate CTC but will have one between 30 and 50 working days.

An overview of changes made following the review is in Appendix 4.

6.3 Quality monitoring results

Reporting on quality standards

For the first six months of the BSP implementation, WDHB were required to report monthly to the Ministry on the quality standards. At six months into the BSP implementation, WDHB prepared a summary report for the Ministry followed by bi-annual reports (WDHB, 2012a&b and 2013 a&b).

In June 2013, it was noted that reporting against all quality standards is possible, although it will take some time before all of the treatment data is entered and reporting from the system can occur (WDHB 2013b).

Quality monitoring activities

Between July 2012 and June 2013, the following quality monitoring activities were completed:

July–December 2012

- All policies identified by the Ministry were in place.
- An audit of time taken to transport histology samples from Waitakere Hospital to LabPLUS.
- Readmission data was reviewed at the fortnightly Endoscopy Unit meetings.
- Informed consent audit.
- Endoscopist performance data audit.
- Access to the Register for reporting purposes was established which highlighted the need to clarify the data required and work on data definitions.
- Three compliments were received about Endoscopy Unit services. One complaint was received from a GP who claimed not to be informed about the BSP.

January–June 2013

- A second BSP participant satisfaction survey on Endoscopy service was conducted
- A postal time audit confirmed the test kit time in transit is well within requirements and confirmed the importance of emphasising not to mail samples on Friday or over the weekend.
- Second informed consent audit.
- Many compliments and one complaint were received.

Adherence with quality standard targets

The bi-annual WDHB reports report data against the interim quality standards, and additional colonoscopy-related data and readmissions. Review of the BSP monitoring indicator data for the period January and June 2013 highlights the following variations from the set quality standard targets (refer Table 4 in appendix 2):

- First offer of colonoscopy within 25 working days is 44.2% compared to the standard of 50%. However, 97.8% received the first offer of colonoscopy within 55 working days compared to the standard of 95%.
- 89.1% of participants with a positive iFOBT undergo colonoscopy compared to the target of greater than 90%. Note – this percentage does not include people with a positive iFOBT result who chose to have their colonoscopy in the private sector outside the BSP.
- Adenoma detection rate is approximately 34.7 per 1000 compared to the target of 13.3 – 22.3 per 1000.
- The positive predictive value (PPV) of iFOBT for adenoma in those having a colonoscopy for the first and subsequent screening round is approximately 65.0% compared to the target of PPV ademona for first screen of 9.6 – 40.3%.

Using the summary of quality standards listed in BSP interim quality standards (Ministry of Health 2013), an analysis was undertaken to identify the level of adherence with the standards at June 2013 (refer Appendix 5). The analysis highlighted the need for further data from the Register and other sources to assess adherence with the quality standards, particularly with regard to timeframes along the BSP pathway. Undertaking this is analysis is beyond the scope of this quality review. As noted, in June 2013 WDHB noted it can now report against all quality standards, although it will take some time for all data to be entered and reported.

Readmissions

As noted, readmissions are reported and reviewed by the Endoscopy Review Group each month. In the period July to December 2012, there were 17 readmissions and 11 for the period January to June 2013; of these 20 were due to bleeding. All readmissions are entered into RiskPro, reported to the Ministry and further reviews are undertaken as needed.

As a result of the review of readmissions, hot biopsy forceps were removed from the endoscopy rooms and further training was given on safe polyp removal.

Risks identified on the Risk Register

At 30 June 2013, 30 risks had been identified since the commencement of the BSP: 17 have been resolved or merged and 13 remain active. Of the 13 actve risks, two have a high likehood and high impact status (WDHB 2013b).

Issues log

Review of the four bi-annual WDHB reports demonstrates a declining trend in issues:

- 75 from January to June 2012
- 26 from July to December 2012
- 18 from January to June 2013.

The decline in issues is likely to reflect the growing maturity of the Pilot as well as clearer definitions of what constitutes issues/ incidents that require recording.

During the early implementation period, issues related to GPs coming to understand their role within the BSP were most frequently mentioned. The WDHB BSP Clinical Director and WDHB BSP Programme Manager followed up directly with practices who were not following BSP procedures. Over time mention of primary care on the issues log has declined.

From January to June 2013, data issues had the most frequent listing with four mentions (i.e. kits registered at LabPLUS and consent form received by BSP Coordination Centre but no results on Register).

Appendix 6 contains the BSP issue/ incident tables.

In summary, the BSP has a range of quality standards in place that align with international best practice. Quality standards, risk and issues are actively monitored, reported, discussed and actions taken to address risks of breaching quality standards and mitigated risks emerging. While WDHB note that reporting against all quality standards is now possible (with exception of the timeliness of the histology result letter), data has not been sighted for all quality standards. This reflects that some data collection remains a manual process for some quality standards and some standards are not reported on quarterly but addressed via WDHB's audit programme.

6.4 Reflections on quality standards monitoring

As noted by stakeholders, quality standards, their monitoring and use to identify quality improvement initiatives is a strength of the BSP. Quality standards and their monitoring are described as integrated into the process and systems supporting BSP.

> *They [Quality Standards] have become embedded. A classic example is around the waiting times within the unit. It has now been increased to the 55 days and the 25 days. So the quality standards were 50% of the participants needed to be booked in for the colonoscopy within 20 days and the other 95% within the 50 days. A difficult target to achieve. The Ministry team and the bowel screening team reviewed that and five days were added onto each one. An example of a standard we all worked towards. [CNS] is aware when she is booking participants in. It is in all of the reports for the different meetings. We generate a lot of the reports that are based on the quality standards. Kind of like best practice really. (WDHB)*

> *I think our quality standards have ensured that from the outset the Waitakere unit has been functioning to a high level so I have no concerns from that perspective. (Ministry of Health)*

Review of the quality monitoring indicators and feedback from stakeholders indicate potential risk areas to adhering with the BSP quality standards:

- ensuring the accuracy and completeness of data on the Register, and having adequate staffing resource to undertake analysis to assess adherence with the detailed BSP quality standards
- ensuring adequate endoscopy capacity to remain within agreed wait times to colonoscopy
- CTC focusing on a different wait time standard and inconsistent coding of BSP participants
- ensuring all information is provided on histology forms
- timeliness to treatment due to limited surgical resources
- while outside of the BSP screening pathway -
  - the impact of the BSP participants with cancer on oncology
  - the impact of BSP surveillance colonoscopies on the symptomatic list.

Other challenges noted about the BSP quality monitoring are:

- Awareness of quality standards is varied. Some stakeholders on the BSP screening pathway have a detailed understanding of the quality standards which tend to reflect their roles and reporting lines. In contrast, others tend to be aware at a broad level there are quality standards but have little appreciation of the detail. Whether this is of concern is not clear as quality standards appear to be embedded in the BSP systems.

  It is just a framework. People just get on and do it. When you talk to people about the quality standards they think oh my gosh, but they are doing it anyway and they are very embedded into people's practice around what the programme is about. (WDHB)

- Beyond referral times, primary care has no quality standards for their role in the BSP. Primary care have the flexibility to manage informing BSP participants about a positive iFOBT and referral to endoscopy within their standard practice.

- Duplication and potential confusion due to the number of quality documents for the BSP. Stakeholders questioned whether the quality documents could be rationalised into one so it is clear that this is the guiding document. LabPLUS are also seeking that quality standards for bowel screening are based on IANZ standards.

- Clarifying the link between the GRS and the BSP quality standards. In 2013, work was undertaken to strengthen the implementation of the GRS within WDHB's endoscopy unit. One of the CNS working on the BSP is tasked with the responsibility of embedding the implementation of the GRS within Waitekere Hospital for both BSP and the symptomatic services.

  In 2013 the GRS team undertook a one-off review. For this review the BSP Coordination Centre negotiated that they would be rated separately from symptomatic services at Waitakere Hospital. The request reflected the differing starting points of the BSP and symptomatic services (i.e. BSP is better resourced and has a focus on the BSP quality standards). There was concern that if the BSP was combined with symptomatic services, the achievements of the BSP would be diluted, and the BSP could not identify if their service had improved.

  The review process for the GRS highlighted confusion about how the BSP quality standards and the GRS fit together. The GRS is currently not explicitly included or cited within the BSP quality standards. One stakeholder who had worked in the UK positioned the BSP quality standards within the context of the endoscopy unit as focusing on the quality of colonoscopies and the GRS covering all the elements within an endoscopy unit.

  The [BSP] Quality Standards are really looking at the quality of the endoscopy. The GRS covers everything – what are the standards like of the endoscopists? Do you have facilities to see your patients outside of the endoscopy room? Do you have the ability to recover these patients in a separate area? Do you have appropriate reporting systems; all those kinds of things. Really the GRS is an unattainable goal, the goal of it is that you can never really get an A+ because it's a constant drive for improvement but it does highlight a lot of deficiencies in the way things work. I think that there are pros and cons to it, it's very good at highlighting areas that need improvement, a lot of those are things that people are already aware of but again that the monetary problem with working in the public health system. So I think it's a good tool in New Zealand because it will highlight problems that need money put into them, and I think it's always good to have a drive for improvement, and encouraging training, etc. (WDHB)

6.5 Reflections for a potential national roll out

The following are considerations for the BSP quality standards and monitoring within the context of a potential national roll out for bowel screening:

- The importance of having a Quality Lead in the programme to ensure quality data collection, review of monitoring data and trends and to facilitate processes to review issues arising and to undertake quality improvement initiatives.
- The Register must collect quality data to inform the quality standards. Data audit and logic checks need to be part of the ongoing maintenance of the Register as well as having capacity and capability to run reports of the Register to inform the review of the quality standards.
- Consider aligning BSP quality standards with quality standards for laboratories (IANZ) to avoid unnecessary duplication, and to enable their inclusion in the IANZ annual audit.
- Consider how to align the BSP quality standards with the GRS. In this context, consideration is needed on how BSP colonoscopy services are delivered within endoscopy units across New Zealand - as a standalone service or integrated into symptomatic services?
- Review how realistic the BSP quality standards will be in other DHB settings.

7. Future directions

Drawing across the 2013 and 2012 immersion visit report findings, this section presents key improvements for the BSP to achieve its goal and objectives. It also summarises the key lessons to inform a national roll out, should it proceed.

7.1 Key process improvements to achieve Pilot goal and objectives

BSP is coming to the end of screening round one. Participation in the BSP to date is higher than what is considered internationally to be the minimum participation rate. Pacific people and Māori are emerging as the under-screened populations.

BSP participants are very positive about the BSP and their screening pathway experiences (WDHB 2013 and Litmus 2013a). In 2013, stakeholders interviewed are also very positive about the BSP, how it is being implemented and achievements to date. Compared to 12 months ago, there is recognition that the implementation of the BSP has moved to business-as-usual and is running more smoothly through greater clarification of roles and processes.

As evidenced from this report, new issues are emerging reflecting the stage of the Pilot and issues noted in 2012 continue. Detailed below are the key improvements to facilitate the achievement of the BSP goal:

Programme design

- Continue to review and reinforce boundaries between the different roles and responsibilities of the Ministry, as funder, and WDHB, as provider of the BSP.
- Strengthen Pacific representation on BSP governance and advisory groups, in particular, the Steering Group. Investigate ways to increase Pacific involvement and decision making in BSP at leadership and operational levels so operational decisions on engaging with Pacific is placed into a wider strategic approach.
- Review the report on the role and value of primary care in the BSP (refer Litmus 2014).

Fair access for all New Zealanders

- Review the effectiveness, relevance and impact of strategies being implemented in screening round two that seek to increase participation by Pacific people and Māori.

Service delivery

- Ensure the quality and completeness of Register data, specifically:
  - develop a strategy to enhance accuracy of participant contact details and to identify eligible participants moving into WDHB
  - develop a knowledge management system which clearly specifies variable definitions
  - review data specifications to ensure all data fields are available to meet quality and other reporting requirements, particularly with regard to histopathology and treatment data

  - agree the process and frequency to validate and audit data on the Register at WDHB and the Ministry
  - ensure adequate workforce capacity to undertake data verification, auditing and logic checking and reporting needed to monitor the BSP.
- Review the management and clarity of processes for incomplete colonoscopies.
- Remind colonoscopists to ensure the full completion of histology forms.
- Remind CTC about the need to ensure BSP participants are correctly coded and receive the appropriate discharge information.
- Review whether the introduction of revised and more pictorial iFOBT completion instructions and consent form decrease the number of incorrectly completed kits.
- Review the effectiveness of outsourcing the pre-invitation mail out.

Workforce capacity

- Ensure adequate colonoscopy capacity to meet quality standards.
- Ensure adequate resources for treatment services both surgical and oncology.
- Review the effectiveness of the planning to enable symptomatic services to cope with BSP surveillance colonoscopies.

Quality standards

- Clarify the role of the GRS in the BSP quality standards.
- Ensure awareness of quality standards for colonoscopies.
- Ensure BSP participants referred directly to CTC are receiving this investigation within the BSP quality standard timeframe, and ensure all BSP participants who have a CTC are captured on the Register.
- Consider whether all BSP participants need to be discussed at MDMs or whether clinicians can determine those requiring discussion.
- Consider whether the colonoscopist's on-day discussion with BSP participants who are identified at colonoscopy as having cancer can be defined as the FSA.
- Consider the streamlining of quality documents into one master document.
- Ensure reporting against all quality standards.

7.2 Reflections for a possible national bowel screening programme

At this stage of the implementation of the BSP and its evaluation it is not known whether *organised bowel screening could be introduced in New Zealand in a way that is effective, safe and acceptable for participants; equitable and economically efficient.* Early evidence and participation suggests strong provider acceptance and a level of acceptability amongst some populations, but not all. While further evidence is needed to address the overarching evaluation goals, this section focuses on presenting considerations to inform a national bowel screening programme – should it proceed. These considerations are drawn from the 2012 and 2013 immersion visit reports.

The findings are presented as appropriate against the evaluation objectives.

Programme design - leadership and governance

- Ensure effective governance and leadership structures for a national programme at a national and regional level and have clear roles and lines of responsibilities and accountabilities.
- Ensure strategic and operational involvement of Māori, Pacific and any other population groups identified as under-screened in the BSP, at all levels and in all programme phases. This will increase the likelihood of the programme being effective for priority populations.
- Ensure transfer of knowledge between BSP and national programme through knowledge management and advice from those involved in the BSP.

Fair access for all New Zealanders

- Identify from the BSP which sub-groups are more likely to not participate in bowel screening.
- Review the effectiveness of strategies being implemented in screening round two to increase participation by Pacific people and Māori, while ensuring informed consent processes.

Service delivery

- Agree the role of primary care in the screening pathway (refer Litmus 2014).
- Allow for a realistic implementation planning period at the end of which providers demonstrate their ability to meet bowel screening quality standards. Providers will need a considerable amount of time to find space for the bowel screening programme, ready their endoscopy units, recruit and train staff, set up quality and reporting systems, etc.

Areas for further exploration are:

- Explore the appropriate physical configuration of services for the BSP coordination centre, endoscopy and laboratory functions for the iFOBT and histology samples.
- The role of the Register using National Health Index (NHI) data to invite eligible people to participate, particularly given the challenges of incomplete contact details.

Workforce capacity

- Ensure colonoscopy capacity and quality meets bowel screening standards across New Zealand.
- Ensure adequate workforce and service capacity for both bowel screening, symptomatic colonoscopy services, treatment and oncology and histopathology.
    - The Ministry is currently working with Health Workforce New Zealand to identify the impact of bowel screening on the colonoscopy workforce and solutions to address a potential short fall. In 2014, work will commence on considering the implications for the histology workforce. Consideration is also needed on the impact on the surgical and oncology workforce.

- To avoid the risk of a two tier system, there is a need to address symptomatic wait times for colonoscopies.

Quality

- Having experienced quality management expertise and adequate resource for development and implementation of quality monitoring mechanisms.
- Reviewing the quality standards to ensure they reflect service delivery across New Zealand, and that there is consistency of wording and definitions across the standards.
- Consider the linkages and consistency between programme and DHB required quality standards and processes and the link to GRS and other quality standards (e.g. IANZ).
- Ensuring quality standards can be adapted to measure technological advances in cancer treatment.
- Having a Register that collects quality data to inform the quality standards. Data audit and logic checks need to be part of the ongoing maintenance of the Register as well as having capacity and capability to run reports of the Register to inform the review of the quality standards.
- Having clearly defined processes, and roles and responsibilities for modifications to quality standards.

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Appendices

Appendix 1: Research Tools

Stakeholder and Provider Interviews - Information Sheet

What is the purpose of the project?	The purpose of the BSP evaluation is **to find out if organised bowel screening could be introduced to all of New Zealand** in a way that is effective, safe and acceptable.
Who is doing the evaluation?	The evaluation is being done by **Litmus**, an independent research and evaluation company (d). This project has been reviewed and approved by the Ministry of Health's Multi-Region Health and Disability Ethics Committee.
Why have you asked me to participate?	Litmus is interviewing a range of stakeholders and providers involved in investigation, surveillance and treatment stages of the BSP screening pathway, and quality monitoring of the BSP. This includes staff from Ministry of Health, Waitematā DHB (clinical and non-clinical personnel, and the BSP Coordination Centre), Waitakere Hospital Endoscopy Unit, and LabPLUS. Waitematā DHB and the Ministry of Health have identified a list of stakeholders and providers involved in these BSP stages and provided names and contact details to Litmus.
What is involved?	The focus of interviews is on understanding the impact of the BSP on investigation, surveillance and treatment services and to monitor BSP programme quality processes. Interviews will take between 30 and 60 minutes, dependent on your role and availability. Most interviews will be conducted face-to-face, but some may be by phone.
How will the evaluators ensure my personal information is confidential?	Litmus will ensure **your contribution is kept confidential**. What you say in the interview will be written down, with your permission. Notes will be kept securely for up to 2 years, and then securely destroyed. No information in the evaluation report will be attributed to individuals.
Do I have to take part?	No, you do not have to take part. Your **participation is voluntary.**
Can I change my mind and withdraw from the project?	**You may stop the interview at any time**. You do not need to give a reason and there will be no disadvantage to you of any kind. After the interview, you can ask for some or all of your feedback to be removed from the evaluation without explaining why. This can be done up to the reporting stage.
How can I find out more?	If you have any questions about this project, please contact: Liz Smith, Partner, Litmus, ph 04 473 3885, liz@litmus.co.nz Gaye Tozer, Project Manager BSP, Waitematā DHB, ph 09 486 8920 ext 3878, Gaye.Tozer@Waitematādhb.govt.nz Mhairi Porteous, National Bowel Cancer Programme Manager, Ministry of Health, ph 04 816 4359, mhairi_porteous@moh.govt.nz

Stakeholder and Provider Interviews – Consent Form

I (insert name) …….

of (insert organisation) ..……..……

agree to participate in this project for the evaluation of the Bowel Screening Pilot, as outlined in the information provided to me by Litmus. I understand that:

- My participation in the project is voluntary and I can withdraw at any time.
- Whether or not I participate will not affect any current or future relationships with the Ministry of Health, Waitematā DHB, or other organisations.
- If I withdraw, I can request that any information collected from me be returned or destroyed.
- I can choose not to answer any questions I do not wish to answer (without saying why).
- I can request any information collected from me be withdrawn at any time up until the reporting stage.
- The process followed by Litmus will seek to keep my information confidential. No information in the evaluation report will be attributed to me.
- The interview, with my permission, will be taped and may be transcribed.
- I have the right to request a copy of the audio or written notes of my discussion.
- Digital recordings, notes and summaries will be securely stored at Litmus and will not identify me. They will be kept for two years and then securely destroyed.

I have read the information sheet and this consent form, and have been given the opportunity to ask questions and have them answered. I give my consent to participate in this evaluation.

Participant's signature: _____

Date: _____

Stakeholder Interviews – Interview Guide

Introduction

- Introduce self/Litmus.
- Evaluation purpose: To find out if organised bowel screening could be introduced to all of New Zealand in a way that is effective, safe and acceptable, equitable and economically efficient.
- Interview purpose: To gain more indepth understanding of the impact of the BSP on investigation, surveillance and treatment services and to discuss BSP programme quality processes.
- Information sheet, informed consent and audio recording.
- Time: 30-60 minutes.

Involvement with the BSP (5-10 mins)

- What is your role/s in the BSP? When did you get involved? How has the role evolved in the last 12 months?
  - What is working well in the BSP?
  - What has improved in the BSP over the last 12 months?
  - What are the areas of further improvement?
- [As appropriate] What interfaces does your role have with other parts of the BSP programme?
  - Which aspects of these interfaces work well?
  - Have improved?
  - Which aspects, if any, do not work so well?

FOLLOWING QUESTIONS WILL BE ASKED BASED ON ROLE

Colonoscopy: Workforce and colonoscopy capacity

<u>Overall impressions</u>

- What is working well with colonoscopy on the BSP?

<u>Workforce challenges</u>

- Having adequate colonoscopy capacity was identified in 2012 as a particular challenge for the BSP; one that was met through a range of strategies. How have the colonoscopy workforce challenges for the BSP changed in 2013 – improved, worse, no different?
  - How have challenges been or are being resolved?
- What are the other challenges with BSP colonoscopy?
- How many participants require additional scopes to complete pathology identified in BSP colonoscopy (i.e. removal polyps)?
  - What is the impact of the extra scopes to complete pathology on the BSP? Colonoscopy capacity?

Implications for a potential national roll out

- Reflecting on the lessons of colonoscopy capacity in 2013, what are the likely workforce implications for colonoscopy capacity if there was a national bowel screening programme roll-out?
  - Opportunities, challenges, resolutions?

Quality standards for colonoscopy *(review data pre-interview)*

- Are you aware of the quality standards for colonoscopy in the BSP? [Show Quality standards]
  - Full or part?
- How are the quality standards being monitored? High level? Detail?
- What is your role in quality standard monitoring for BSP?
- What is the level of adherence of colonoscopy to quality standards within BSP?
  - *Where divergence, explore reasons and resolutions*
- What is working well with the quality monitoring and review processes?
  - Not so well?
- How does GRS fit with the BSP quality standards? National roll out?
- What are the lessons or reflections on quality standards, monitoring and review processes if there was a national bowel screening programme roll-out?

Impact of BSP on symptomatic and surveillance

- What is the overall impact of the BSP on symptomatic services?
  - Now? In the future?
- Has the number of referrals from GPs to symptomatic services increased? What is driving this increase? Appropriateness of tests; referrals?
- 56% of BSP participants are identified as having bowel polyps which will require ongoing surveillance, what impact will this have on WDHB symptomatic services now? In the future?
  - How are BSP participants requiring surveillance booked into the symptomatic system? How well is this working?
  - How is scheduling managed for the transition from BSP to surveillance under symptomatic services?
  - How adequate is the handover to general practice to undertake surveillance for those identified at risk but not requiring further referral at this stage?
  - What risks if any exist for participants transitioning from BSP to symptomatic services
- Reflecting on the early lessons from the BSP, if there was a national bowel screening programme roll-out what considerations are needed with regard to s symptomatic services??

Alternative Investigation: Impact of BSP on alternative investigation

Capacity & changes in process (*seek data pre-interview on numbers to CTC colonography)*

- In 2013, what if anything has changed in undertaking alternative investigation in the BSP (compared to 2013 report)?
  - *(If changed)* What has been driving these changes?
- In the last 12 months, how if at all has the process and timeframe for notifying patients who are assessed as being unfit for colonoscopies changed?
  - *(If changed)* What has been driving these changes?

Impact on radiology services

- What is the overall impact of the BSP on radiology services, particularly around demand and delivery? What is the impact on other services?

Implications for a potential national roll out

- Reflecting on the lessons in 2013, what are the implications for alternative investigation if there was a national bowel screening programme roll-out?

Quality standards *(review data pre-interview) – college of radiology standards*

- Are you aware of the quality standards for alternative investigation in the BSP? [Show Quality standards]
- How are the quality standards being monitored? High level? Detail?
- What is your role in quality standard monitoring for BSP?
- What is the level of adherence of colonoscopy to quality standards within BSP?
  - *Where divergence, explore reasons and resolutions*
- What is working well with the quality monitoring and review processes?
  - Not so well?
- What are the lessons or reflections on quality standards, monitoring and review processes if there was a national bowel screening programme roll-out?

Treatment: Impact of BSP on surgery and oncology

Capacity & changes in process

- What impact has the BSP had on surgery's/ oncology's overall workload and other services? Was this expected? What are the implications for the BSP?
- Reflecting on the early lessons from the BSP, if there was a national bowel screening programme roll-out what considerations are needed with regard to surgery and other treatment?

MDMs

- What has been the impact of the BSP on MDMs?
- Are all colorectal cancers and polyps detected formally discussed at the MDMs?
  - What's working well? What's not working so well?

FCTs

- What has been the impact of the BSP on WDHB's FCT timeframes?

Pathology/ labs: Histopathology process; Histopathology process for surgical specimens, impact on MDMs

Capacity & changes in process

- In 2013, what if anything has changed in the systems, resources and personnel are involved in undertaking iFOBT testing?
  - (if changed) For what reasons have the changes occurred?
  - What's working well about this process? What's not working so well?
- In 2013, what if anything has changed in the systems, resources and personnel are involved in histopathology process?
  - (if changed) For what reasons have the changes occurred?
  - What's working well about this process? What's not working so well?
- In 2013, what if anything has changed in the systems, resources and personnel are involved in histopathology process for surgical samples?
  - (if changed) For what reasons have the changes occurred?
  - What's working well about this process? What's not working so well?
- What impact has the BSP had on LabPLUS/ North Shore Hospital lab overall workload and other services? Was this expected? What are the implications?
  - How is LabPLUS/ North Shore Hospital lab involved in the MDM process?
  - What's working well about this process? What's not working so well?

Histopathology process from colonoscopy

- Colonoscopies in the BSP have resulted in higher than expected polyps, what has been the impact of this on LabPLUS?
  - How have these issues/ challenges been addressed?
  - Works well? Not so well?
- Reflecting on the early lessons from the BSP, if there was a national bowel screening programme roll-out what considerations are needed with regard to histopathology?

Histopathology process from surgery

- What has been the impact on BSP histology on North Shore Hospital lab?
  - Works well? Not so well?

Potential national roll out

- Reflecting on the early lessons from the BSP, if there was a national bowel screening programme roll-out what considerations are needed with regard to histopathology?

Quality standards *(review data pre-interview)*

- Are you aware of the quality standards for BSP? [Show Quality standards]
- How are the quality standards being monitored? High level? Detail?
- What is your role in quality standard monitoring for BSP?
- What is the level of adherence of colonoscopy to quality standards within BSP?
  - *Where divergence, explore reasons and resolutions*
- What is working well with the quality monitoring and review processes?
  - Not so well?
- What are the lessons or reflections on quality standards, monitoring and review processes if there was a national bowel screening programme roll-out?

Thanks, close and next steps

Appendix 2: BSP monitoring indicators

The Ministry developed a detailed set of monitoring indicators (the Indicators) which have been drawn up to monitor and evaluate the progress of the BSP. Not all of the Indicators can be calculated at present, as some can only be completed at a later stage in the Pilot (Ministry of Health 2012e).

Unless otherwise stated the Indicators were developed using recommendations and standards set out in the European Guidelines for quality assurance in colorectal cancer screening and diagnosis.

Table 4: New Zealand Bowel Screening Pilot Monitoring Indicators January 2012 to June 2013

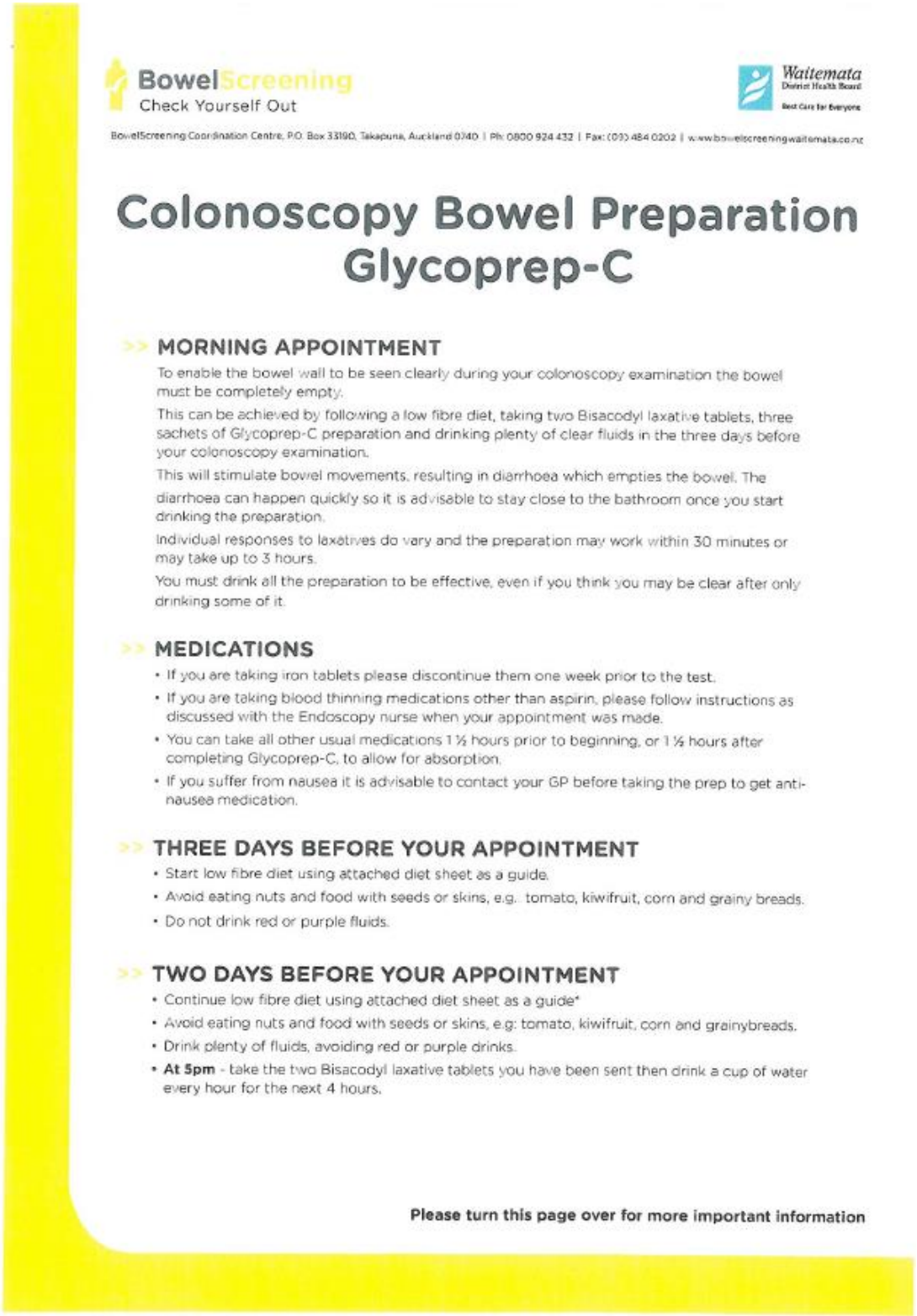
Indicator number	Indicator description	Evidence	Target	Value (January 2012 to June 2013)
1	Overall participation	This is the % of people with a final iFOBT result (+ve or –ve) out of all those invited by the programme (adjusted for undelivered kits and letters, those meeting exclusion criteria) for the first and subsequent screening round.	60% first screen	54.7%
2	Coverage	This is the % of eligible people in WDHB who were invited to participate during the first screening round.	>95%	Calculated at end of the first screening round
3	Time to colonoscopy as at 30 June 2013.	This is the % of people whose time between the laboratory receiving a positive iFOBT to having a colonoscopy carried out was within a specified target (excludes persons who decline colonoscopy).	95% <11 weeks*	97.8%
			50% < 5 weeks *	44.2%
4	Proportion of individuals with a positive screening test undergoing colonoscopy	This is the % of screened people with a positive iFOBT result who undergo a colonoscopy or CT colonography through the programme.	>90% undergo colonoscopy	89.1%
5	Colonoscopy completion rate	This is the % of completed colonoscopies (reaching the caecum).	Acceptable >90% Desirable > 95% completion to the caecum	97.2%
6	Colonoscopy complication rate for perforation or bleeding	This is the number of people requiring admission to hospital for an intermediate or serious adverse event related to perforation or bleeding occurring within 30 days of colonoscopy, per 1000 of those who had a colonoscopy during the first and subsequent screening round.	<10 per 1000 colonoscopies **	5.7 per 1000
7	Colonoscopy complication rate for events other than perforation or bleeding	This is the number of people requiring admission to hospital for other intermediate or serious adverse events not related to perforation or bleeding occurring within 30 days of colonoscopy, per 1000 of those who had a colonoscopy during the first and subsequent screening round.	No agreed international standard	0.4 per 1000
8	Positivity rate	This is the % of people with a positive iFOBT during the first and subsequent screening round.	6-8% first screen	7.2%
9	Colorectal Cancer (CRC) detection rate	This is the number of people diagnosed with any CRC per 1000 screened with a iFOBT result available for the first and subsequent screening round.	First screen 1.8-9.5 per 1000 (Range from population screening programmes with iFOBT)	Approximately 2.4 per 1000

Indicator number	Indicator description	Evidence	Target	Value (January 2012 to June 2013)
			Second screen 1.3 per 1000	N/A
10	Colorectal Cancer (CRC) Stage at diagnosis (including polyp cancers)	This is the TNM staging for CRC detected at the first and subsequent screening round. In cases where more than one staging was given for an individual only the most serious staging result is included.		Stage 1: 40.3% Stage 2: 26.0% Stage 3: 32.5% Stage 4: 1.3%
11	Advanced Adenoma detection rate	This is the number of people diagnosed with any advanced adenoma (villous or tubulovillous or, high grade dysplasia or, greater than or equal to 10 mm in size) per 1000 screened with a iFOBT result available for the first and subsequent screening round.	No agreed international standard	Approximately 19.3 per 1000
11	Advanced Adenoma detection rate	This is the number of people diagnosed with any advanced adenoma (villous or tubulovillous or, high grade dysplasia or, greater than or equal to 10 mm in size) per 1000 screened with a iFOBT result available for the first and subsequent screening round.	No agreed international standard	Approximately 19.3 per 1000
12	Adenoma detection rate	This is the number of people diagnosed with any adenoma per 1000 screened with a iFOBT result available for the first and subsequent screening round.	13.3-22.3 per 1000 (Range from population screening programmes with iFOBT)	Approximately 34.7 per 1000
13	Positive predictive value of FIT for cancer	This is the % of people with a malignant outcome in those having a colonoscopy for the first and subsequent screening round.	PPV Cancer first screen 4.5%-8.6%	Approximately 4.5%
14	Positive predictive value of FIT for advanced adenoma	This is the % of people with any advanced adenoma in those having a colonoscopy for the first and subsequent screening round.	No agreed international standard	Approximately 36.0%
15	Positive predictive value of FIT for adenoma	This is the % of people with any adenoma in those having a colonoscopy for the first and subsequent screening round.	PPV adenoma first screen 9.6 – 40.3%	Approximately 65.0%

* These timeframes have been extended by one week to allow adequate time for GPs to contact their patients who have a positive iFOBT result.

** This number was calculated on the expected number adverse event rates reported in the UK Bowel Cancer Screening Programme Quality Assurance Guidelines for Colonoscopy and based on the fact that 70 percent of Pilot participants proceeding to colonoscopy are identified to have had a lesion.

Appendix 3: Revised participant bowel preparation information



BowelScreening
Check Yourself Out

Waitemata District Health Board
Best Care for Everyone

BowelScreening Coordination Centre, P.O. Box 33190, Takapuna, Auckland 0740 | Ph: 0800 924 432 | Fax: (09) 484 0202 | www.bowelscreeningwaitemata.co.nz

Colonoscopy Bowel Preparation Glycoprep-C

>> MORNING APPOINTMENT

To enable the bowel wall to be seen clearly during your colonoscopy examination the bowel must be completely empty.

This can be achieved by following a low fibre diet, taking two Bisacodyl laxative tablets, three sachets of Glycoprep-C preparation and drinking plenty of clear fluids in the three days before your colonoscopy examination.

This will stimulate bowel movements, resulting in diarrhoea which empties the bowel. The diarrhoea can happen quickly so it is advisable to stay close to the bathroom once you start drinking the preparation.

Individual responses to laxatives do vary and the preparation may work within 30 minutes or may take up to 3 hours.

You must drink all the preparation to be effective, even if you think you may be clear after only drinking some of it.

>> MEDICATIONS

- If you are taking iron tablets please discontinue them one week prior to the test.
- If you are taking blood thinning medications other than aspirin, please follow instructions as discussed with the Endoscopy nurse when your appointment was made.
- You can take all other usual medications 1 ½ hours prior to beginning, or 1 ½ hours after completing Glycoprep-C, to allow for absorption.
- If you suffer from nausea it is advisable to contact your GP before taking the prep to get anti-nausea medication.

>> THREE DAYS BEFORE YOUR APPOINTMENT

- Start low fibre diet using attached diet sheet as a guide.
- Avoid eating nuts and food with seeds or skins, e.g. tomato, kiwifruit, corn and grainy breads.
- Do not drink red or purple fluids.

>> TWO DAYS BEFORE YOUR APPOINTMENT

- Continue low fibre diet using attached diet sheet as a guide*
- Avoid eating nuts and food with seeds or skins, e.g: tomato, kiwifruit, corn and grainybreads.
- Drink plenty of fluids, avoiding red or purple drinks.
- **At 5pm** - take the two Bisacodyl laxative tablets you have been sent then drink a cup of water every hour for the next 4 hours.

Please turn this page over for more important information

ONE DAY BEFORE YOUR APPOINTMENT

Disregard the instructions on the Glycoprep-C packets and follow the instructions below:

- **NO SOLID FOOD, MILK OR MILK PRODUCTS ALLOWED.**
- **Drink only clear liquids**, such as clear soup, jelly, clear apple juice, soft drink, water, tea and coffee without milk. Ginger ale, lemonade and clear apple juice are all good drinks at helping to settle your stomach.
- **Drink a cup of clear fluid every hour**
- Prepare **three** Glycoprep-C 70g sachets. Mix each sachet with one litre of water to make a total of three litres of fluid.
- **At 3pm** – drink 1 glass of Glycoprep-C every 5-10 minutes, aiming to complete 3 litres in 3 hours. **It is important that you take all 3 litres of Glycoprep-C**
- Anal soreness may occur due to multiple bowel motions. Apply Vaseline to anal area before starting Glycoprep-C to minimise this.
- When the Glycoprep-C is completed, continue to drink water, weak black tea or lemonade to prevent dehydration.

TIPS FOR TAKING GLYCOPREP

- One or two barley sugar sweets may help with the taste.
- If you feel bloated, try a short walk.
- If you feel cold or shivery, wrap up warmly.
- If you feel nauseous, have a break or slow down drinking the Glycoprep.
- Cleaning your teeth and tongue may help with the taste.

DAY OF APPOINTMENT

- **No solid food allowed.**
- Drink water only to prevent dehydration.
- Stop drinking **2 hours** before your appointment time

Please phone us if you have problems with the preparation for your examination:
Endoscopy Nurses 09 837 8892

On the day of your appointment come to: Waitakere Hospital Surgical Unit, Ground floor, Entrance 'C'

IN ADDITION

- Please bring a list of medications that you are taking.
- You **must** have someone to pick you up from the hospital to drive you home.
- Please have their contact number with you so that we can call them when you are ready for discharge.
- You cannot wait outside for them. You cannot catch a taxi or bus alone or drive yourself.
- You must have a responsible adult stay with you for the rest of the day.

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Colonoscopy Bowel Preparation Glycoprep-C

AFTERNOON APPOINTMENT

To enable the bowel wall to be seen clearly during your colonoscopy examination the bowel must be completely empty.

This is achieved by following a low fibre diet, taking two Bisacodyl laxative tablets, three sachets of Glycoprep-C preparation and drinking plenty of clear fluids in the three days before your colonoscopy examination.

This will stimulate bowel movements, resulting in diarrhoea which empties the bowel. The diarrhoea can happen quickly so it is advisable to stay close to the bathroom once you start drinking the preparation.

Individual responses to laxatives do vary and the preparation may work within 30 minutes or may take up to 3 hours.

You must drink all the preparation for it to be effective, even if you think you may be clear after only drinking some of it.

MEDICATIONS

- If you are taking iron tablets please discontinue them one week prior to the test.
- If you are taking blood thinning medications other than aspirin, please follow instructions as discussed with the Endoscopy nurse when your appointment was made.
- You can take all other usual medications 1 ½ hours prior to beginning, or 1 ½ hours after completing Glycoprep-C, to allow for absorption.
- If you suffer from nausea it is advisable to contact your GP before taking the prep to get anti-nausea medication.

THREE DAYS BEFORE YOUR APPOINTMENT

- Start low fibre diet using attached diet sheet as a guide.
- Avoid eating nuts and food with seeds or skins, e.g. tomato, kiwifruit, corn and grainy breads.
- Do not drink red or purple fluids until after your procedure.

TWO DAYS BEFORE YOUR APPOINTMENT

- Continue low fibre diet using attached diet sheet as a guide*
- Avoid eating nuts and food with seeds or skins, e.g: tomato, kiwifruit, corn and grainybreads.
- Drink plenty of fluids, avoiding red or purple drinks.
- **At 5pm - take the two Bisacodyl laxative tablets** you have been sent then drink a cup of water every hour for the next 4 hours.

Please turn this page over for more important information

ONE DAY BEFORE YOUR APPOINTMENT

Disregard the instructions on the Glycoprep-C packets and follow the instructions below

- You may have a low fibre breakfast before 8am then **NO SOLID FOOD, MILK OR MILK PRODUCTS ALLOWED.**
- **Drink only clear liquids,** such as clear soup, jelly, clear apple juice, soft drink, water or tea and coffee without milk. Ginger ale, lemonade and clear apple juice are all good drinks for helping to settle your stomach.
- Drink a cup of clear fluid every hour
- Prepare **two** Glycoprep-C 70g sachets. Mix each sachet with one litre of water to make a total of two litres of fluid.
- **At 3pm** – drink 1 glass of Glycoprep-C every 5-10 minutes, aiming to complete 2 litres in 2 hours. **It is important that you take all 2 litres of Glycoprep-C.**
- Anal soreness may occur due to multiple bowel motions. Apply Vaseline to anal area before starting Glycoprep-C to minimise this.
- When the Glycoprep-C is finished, continue to drink water, weak black tea or lemonade, to prevent dehydration.

TIPS FOR TAKING GLYCOPREP

- One or two barley sugar sweets may help with the taste.
- If you feel bloated, try a short walk.
- If you feel cold or shivery, wrap up warmly
- If you feel nauseous, have a break or slow down drinking the Glycoprep
- Cleaning your teeth and tongue may help with the taste.

DAY OF APPOINTMENT

- **At 7am** mix one 70g sachet with one litre of water and drink 1 glass of Glycoprep-C every 5 -10 minutes, aiming to complete in one hour.
- **It is important that you complete all three sachets of Glycoprep-C.**
- When the Glycoprep-C is completed continue to drink water
- Stop all fluids **2 hours** before your appointment time.

Please phone us if you have problems with the preparation for your examination:
Endoscopy Nurses: 09 837 8892

On the day of your appointment come to:

Waitakere Hospital Surgical Unit, Ground floor. Entrance 'C'

IN ADDITION

- Please bring a list of medications that you are taking.
- You **must** have a responsible adult to pick you up from the hospital to drive you home and stay with you for the rest of the day
- Please have their contact number with you so that we can call them when you are ready for discharge.
- You cannot wait outside for them. You cannot catch a taxi or bus alone or drive yourself.

Low Fibre Diet for Colonoscopy Preparation

A low fibre diet reduces the volume of your bowel movements which helps when cleaning out your bowel prior to colonoscopy.

Please follow the food guide below.

FOOD GROUPS	ALLOWED	AVOID
Bread, Cereals, Rice, Pasta, Noodles	White bread / crumpets / English muffins. Processed breakfast cereals eg *Rice Bubbles™*, *Cornflakes™*, *Special K™* White rice/ pasta, sago, tapioca, semolina. White flour, cornflour, custard powder. Plain sweet and savoury biscuits or cakes.	Wholemeal / wholegrain bread, fruit bread / rye bread. Wholegrain breakfast cereals or any with fruit, nuts or coconut, eg Muesli, *All Bran™*, *Weetbix™* Oats and oat bran, Muesli bars Brown rice, pasta, maize wholemeal flour, wheatgerm. Sweet and savoury biscuits or cakes made with wholemeal flour, nuts, dried fruit or coconut
Vegetables	**Ensure all vegetables are peeled and well cooked** Potato, pumpkin and zucchini. Cauliflower and broccoli tips Spring onions, lettuce, asparagus spears and button mushrooms. Well strained vegetable juice.	All raw vegetables. Any vegetables not listed in the "allowed" column
Fruit	Pawpaw and melon (no seeds), banana. Well cooked fruit with no skin or pips. Canned fruits except pineapple. Well strained fruit juice.	Fruit with skin, pips or of very "fibrous" texture. Dried fruit. Any other fruits not listed in the "allowed" column
Milk, yogurt, cheese	All varieties of milk Plain yoghurt, custard, vanilla, plain cheese, plain or flavoured ice cream.	Ice cream or gelatti containing dried fruit, nuts or coconut Products containing "chunky fruit" pieces

Meat, fish, poultry, eggs, nuts, legumes	Chicken (no skin), fish, turkey,ham. Tofu Eggs	Legumes eg. Baked beans, lentils, soy beans, kidney beans. Nuts and seeds.
Other	All fats including butter, margarine, salad dressings, mayonnaise. Sugar, honey, syrups, icecream toppings Boiled lollies, jubes, chocolate with no fruit, nuts or coconut Spreads without seeds or skin. Soup made from allowed ingredients Desserts made from allowed foods e.g. junket, jelly, custard, ice cream Gravy, salt, pepper, dried herbs, spices	Popcorn, coconut, crunchy peanut paste, chocolate with nuts and fruit Chutney and pickles

SAMPLE MEAL PLAN

Breakfast: 1 glass strained fruit juice.
Rice bubbles with milk. Sugar optional.
White toast/ bread/ crumpets, with margarine/ butter and Honey/ jam/ vegemite.
Egg / cheese, if desired.

Lunch: Chicken / fish / ham / egg / cheese.
White bread and margarine / butter.
Tinned fruit and custard or plain cake.
Cup of tea or coffee.

Dinner: Strained soup.
Chicken / fish / ham / egg / cheese.
Potato, white rice or pasta.
Small serve of "allowed" vegetables.
Bowl of plain ice cream.
Cup of tea or coffee.

Between meals: Cup of milo made with milk .
Plain cake / biscuits / cracker biscuits.
Tub of plain yoghurt.

Appendix 4: Summary of changes to BSP quality standards

Doing a side by side comparison, the following table provides a summary of the differences between BSP quality standards dated 14 May 2012 and 30 March 2013 (Ministry of Health 2012a & 2013c).

BSP quality standards dated 30 March 2013 is the base document and colour codes have been used to indicate changes to the standards:

- Yellow indicates a wording change
- Green indicates a new standard
- Blue indicates a change in amounts (i.e. rates, time etc).

The comparison of the 2012 and 2013 standards did not find that any standards had been removed.

Where the target is less than 100%, the assumption is that this is the minimum standard to aim for, with the requirements always seeking to be maximised.

Table 5: Overview of changes to the BSP quality standards dated 30 March 2013

Number	Section	Requirement
1	Uptake QS 1, 2	• Bowel Screening is offered to the target population within the Bowel Screening Pilot. • 60% of all eligible people will participate (completed an FIT test) in the screening programme after 2 years.
2	Call/Recall QS 3	• 95% of eligible participants are sent their first invitation for screening, though a pre-notification letter, within 2 years of commencement of the BSP. • 95% of eligible participants are recalled for screening every 2 years (within 27 months) of their previous invitation for screening.
3	Informed Choice/ Consent QS 3, 4	• 95% of bowel screening participants surveyed report that they were appropriately informed about the process involved prior to participating in BSP. • 90% of bowel screening participants receive appropriate information in a format that meets the needs of the individual. • 95% of participants return an FIT consent form with their completed FIT sample • 95% of participants surveyed report telephone contact was respectful, informative and culturally appropriate.
4	Failsafe QS 3	• 100% of bowel screening participants with a negative screening result are returned to 2 yearly recall. • 100% of bowel screening participants with a positive FIT result are followed up by the BSP Endoscopy Unit and/or their GP.
5	FIT Kit QS 4, 5	• 100% of FIT logged within 1 working day of receipt in laboratory. • 100% of correctly completed test kits received by the screening laboratory are tested and results released within 2 working days of receipt in the laboratory. • 95% of individuals returning a correctly completed screening test are advised of their results by the GP or endoscopy unit within 10 working days of receipt of the test result from the laboratory. • 100% of laboratory staff performing FIT testing must be appropriately qualified and receive relevant training before undertaking unsupervised work.

Number	Section	Requirement
6	Pre-Assessment QS 6	• The time interval following a positive result being entered into the BSP IT system and date of initial contact, for colonoscopy is within 15 working days for at least 95% of individuals. • 100% of participants are documented to have received a pre -assessment interview. • 100 % of participants deemed fit for colonoscopy are appropriately referred for colonoscopy. • For all participants with a positive FIT result who do not proceed for colonoscopy there is documentation that appropriate pathways were followed and action taken. • 95% of participants responding to patient satisfaction surveys report that they received appropriate information relating to colonoscopy and bowel preparation for the procedure. • 95% of participants responding to patient satisfaction surveys report that timely and appropriate advice regarding colonoscopy and bowel preparation was available. • For 90% of participants proceeding to colonoscopy there is evidence that a participant has completed the questionnaire relating to family history of bowel cancer. The questionnaire (yet to be finalised) is designed to facilitate on-referral to the New Zealand Familial Gastrointestinal Service, if appropriate.
7	Colonoscopy QS 7	• In at least 95% of cases, the interval between the pre- assessment appointment and the first date offered for colonoscopy is within 15 working days. • In at least 50% of cases, the interval between the notification (of the positive screening result and the date colonoscopy is completed is within 25 working days (5 weeks). In at least 95% of cases, the interval between the notification of the positive screening result and the date colonoscopy is completed is within 55 working days (11 weeks). • 100% of screening colonoscopy outcomes site are reported in the BSP IT system. • 100% of screening colonoscopy results (excluding histopathology) are reported within 5 working days after the procedure to the participants nominated GP and to the CC. • 100% of participants will receive the results of all colonoscopy investigations (including histopathology) within 20 working days of the final procedure.

Number	Section	Requirement
8	Colonoscopy Procedure QS 7	• All colonoscopists working in BSP are approved to work in the programme by the BSP Endoscopy Lead. • The minimum standards for performance of colonoscopy are met and reviewed three monthly by the Lead Endoscopist. These records are available for external audit as de-identified data. Minimum Standards for performance of colonoscopy are: • The caecal intubation rate for each proceduralist is 95%or greater for screening patients. • The mean colonoscope withdrawal time from the caecum is 6 minutes or greater for procedures where no polypectomy performed. • The polyp detection rate for each proceduralist is in line with the average polyp detection rate being documented in participants proceeding to colonoscopy within the WDHB bowel screening pilot • The Adenoma detection rate for each proceduralist performing colonoscopy within the bowel screening pilot should be ≥ than 35% of screening colonoscopies • The rate of polyp recovery for pathological examination for each proceduralist is more than 95% for polyps > 5mm. • All colonoscopists working in BSP receive performance feedback from the BSP Endoscopy Lead and these records are available for external audit as de-identified data. • 100% of screening colonoscopy results are reported in the BSP IT system • 100% of screening colonoscopy results are reported within 5 • working days after the procedure to the participant's nominated GP and the BSP IT system • All adverse events and hospital admissions within 30 days following performance of colonoscopy within the BCSP are documented and appropriately reviewed at a minimum of monthly intervals. The severity categorisation, root cause analysis and information to be recorded as per the United Kingdom NHS Quality Assurance Guidelines for Colonoscopy. • These records are available for external audit as de-identified data. • 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 BCSP shall be <10:1000 colonoscopies (this number is based on the fact that 70% of participants proceeding to colonoscopy in the WDHB Pilot have a lesion detected).
9	Alternative Investigation QS 7	• 95% of participants requiring a CT Colonography are given a date for the procedure on the day they are deemed unfit for colonoscopy or within 5 working days if pre-assessment is carried out by telephone. • 95% of participants requiring CTC receive the examination within 20 working days (4 weeks) from the day they are deemed unfit for colonoscopy/pre-assessment. • 95% of radiological reports will be sent to GPs within 7 working days from completion of the examination. • A date for CT Colonography is offered within 5 working days of the incomplete colonoscopy. • 90% of participants will be notified of their results of all final investigations within 7 working days. • 100% of providers of CT Colonography comply with the CT Colonography Standards as endorsed by RANZCR.
10	Histopathology QS 8	• 100% of BSP pathology specimens obtained during BSP colonoscopy or surgery are reported using BSP standardised/synoptic reports. • 95% of specimens submitted from colonoscopy are reported and relayed to the referring endoscopist/surgeon within 10 working days of receipt of the specimen in the laboratory.

Number	Section	Requirement
11	Referral Pathways QS 9	• 95% of BSP participants requiring clinical follow-up have been referred and seen by an appropriate consultant within 10 working days of diagnosis (2 weeks). • 95% of BSP participants diagnosed with cancer are referred to the appropriate consultant for presentation at an MDT management meeting within 20 working days from diagnosis (4 weeks).

Appendix 5: Adherence to BSP quality standards

To inform the quality monitoring review, analysis was undertaken to identify 1) whether data was available against each of the quality standards and 2) any variance from targets set.

Table 7: Adherence to BSP quality standards dated 30 June 2013

Number	Section	Requirement	Results
1	Uptake QS 1, 2	• Bowel Screening is offered to the target population within the Bowel Screening Pilot. • 60% of all eligible people will participate (completed an FIT test) in the screening programme after 2 years.	• 55% participation: – 25% Pacific people – 43% Māori – 53% Asian – 58% Other group
2	Call/Recall QS 3	• 95% of eligible participants are sent their first invitation for screening, though a pre-notification letter, within 2 years of commencement of the BSP. • 95% of eligible participants are recalled for screening every 2 years (within 27 months) of their previous invitation for screening.	• Calculated at the end of the first screening round • Calculated at the end of the second screening round. The system automatically returns all participants with a negative result to two year recall.
3	Informed Choice/ Consent QS 3, 4	• 95% of bowel screening participants surveyed report that they were appropriately informed about the process involved prior to participating in BSP. • 90% of bowel screening participants receive appropriate information in a format that meets the needs of the individual. • 95% of participants return an FIT consent form with their completed FIT sample • 95% of participants surveyed report telephone contact was respectful, informative and culturally appropriate.	• Not measured. • Not measured • This data can be accessed from a manual count but it cannot be reported off the Register. LabPlus advise the BSP Coordination Centre (BSP CC) each time a kit is received without a consent form. The BSP CC arranges for a replacement kit to be sent with advice to the participant on including the consent form. It is not a reporting requirement at the moment. • 100% of the survey participants said that the information line had met their needs
4	Failsafe QS 3	• 100% of bowel screening participants with a negative screening result are returned to 2 yearly recall. • 100% of bowel screening participants with a positive FIT result are followed up by the BSP Endoscopy Unit and/or their GP.	• The BSP system automatically moves participants to two yearly recall and there is no reason to suspect that this is not happening as it should • 100% – the system sends tasks to the Endoscopy Unit if the timeframe within which the referral should be received has not been met and the CNSs assume responsibility for contacting the participant. There is a formal process in place for when a participant is unable to be contacted at all.

Number	Section	Requirement	Results
5	FIT Kit QS 4, 5	• 100% of FIT logged within 1 working day of receipt in laboratory.	• 100% - LabPlus provide BSP CC with a quarterly report and this standard has been met consistently for the period to 30 June 2013. This is not an MOH reporting requirement but is a requirement for LabPlus to report to the BSP under the terms of the Agreement with WDHB to provide BSP lab services
		• 100% of correctly completed test kits received by the screening laboratory are tested and results released within 2 working days of receipt in the laboratory.	• 100% - as above
		• 95% of individuals returning a correctly completed screening test are advised of their results by the GP or endoscopy unit within 10 working days of receipt of the test result from the laboratory.	• Difficult to measure as it is not known whether the date of advice is the same as the date of referral. The Register records only the date of referral. The standard is certainly met by the Endoscopy Unit (when the person does not want their GP involved) – dependent on whether the participant is able to be contacted. This standard will be subject to review in 2014. BSP CC have recently conducted 'audits' within specific general practices and if these practices are typical then the standard is being met.
		• 100% of laboratory staff performing FIT testing must be appropriately qualified and receive relevant training before undertaking unsupervised work.	• 100% - IANZ accreditation requirement
6	Pre-Assessment QS 6	• The time interval following a positive result being entered into the BSP IT system and date of initial contact, for colonoscopy is within 15 working days for at least 95% of individuals.	• Not reported this to the MOH but data can be accessed. Difficult to measure as the date of initial contact depends on the ability to contact the participant (i.e. it is not always within the BSP control to meet this standard).
		• 100% of participants are documented to have received a pre -assessment interview.	• 100% of participants having a colonoscopy within the Pilot.
		• 100% of participants deemed fit for colonoscopy are appropriately referred for colonoscopy.	• 89.1% - note this result reflects participant behaviour and choices eg the denominator includes participants who decide to have their colonoscopy in private sector.
		• For all participants with a positive FIT result who do not proceed for colonoscopy there is documentation that appropriate pathways were followed and action taken.	• Yes, documented on the system
		• 95% of participants responding to patient satisfaction surveys report that they received appropriate information relating to colonoscopy and bowel preparation for the procedure.	• 97% rated very good or good 'provide clear information to prepare you for your colonoscopy'
		• 95% of participants responding to patient satisfaction surveys report that timely and appropriate advice regarding colonoscopy and bowel preparation was available.	• Covered above
		• For 90% of participants proceeding to colonoscopy there is evidence that a participant has completed the questionnaire relating to family history of bowel cancer. The questionnaire (yet to be finalised) is designed to facilitate on-referral to the New Zealand Familial Gastrointestinal Service, if appropriate.	• Commences in 2014

Number	Section	Requirement	Results
7	Colonoscopy QS 7	• In at least 95% of cases, the interval between the pre-assessment appointment and the first date offered for colonoscopy is within 15 working days.	• 100% - There is no interval because the date is offered at the time of the pre-assessment.
		• In at least 50% of cases, the interval between the notification (of the positive screening result and the date colonoscopy is completed is within 25 working days (5 weeks). In at least 95% of cases, the interval between the notification of the positive screening result and the date colonoscopy is completed is within 55 working days (11 weeks).	• 44.2% at 5 weeks • 97.8% at 11 weeks
		• 100% of screening colonoscopy outcomes site are reported in the BSP IT system.	• 100%
		• 100% of screening colonoscopy results (excluding histopathology) are reported within 5 working days after the procedure to the participants nominated GP and to the CC.	• 100% - Participant receives the procedure report to take home on the day and also on the same day it is put in the mail to the GP
		• 100% of participants will receive the results of all colonoscopy investigations (including histopathology) within 20 working days of the final procedure.	• Difficult to calculate as result letter not generated from BSP system. Estimated at 98%.

Number	Section	Requirement	Results
8	Colonoscopy Procedure QS 7	• All colonoscopists working in BSP are approved to work in the programme by the BSP Endoscopy Lead.	• Yes
		• The minimum standards for performance of colonoscopy are met and reviewed three monthly by the Lead Endoscopist. These records are available for external audit as de-identified data. Minimum Standards for performance of colonoscopy are:	• Yes – noted by all relevant stakeholders
		• The caecal intubation rate for each proceduralist is 95% or greater for screening patients.	• 97.2%
		• The mean colonoscope withdrawal time from the caecum is 6 minutes or greater for procedures where no polypectomy performed.	• 7.2 minutes
		• The polyp detection rate for each proceduralist is in line with the average polyp detection rate being documented in participants proceeding to colonoscopy within the WDHB bowel screening pilot	• The number of polyps detected is recorded on the register within the participant's record, and the name of the proceduralist is not captured. An aggregated polyp detection rate number is therefore used for the proceduralists as a group
		• The Adenoma detection rate for each proceduralist performing colonoscopy within the bowel screening pilot should be ≥ than 35% of screening colonoscopies	• Standard is met on the aggregated data
		• The rate of polyp recovery for pathological examination for each proceduralist is more than 95% for polyps > 5mm.	• Standard is met on the aggregated data
		• All colonoscopists working in BSP receive performance feedback from the BSP Endoscopy Lead and these records are available for external audit as de-identified data.	• Yes – noted by all relevant stakeholders interviewed.
		• 100% of screening colonoscopy results are reported in the BSP IT system	• 100%
		• 100% of screening colonoscopy results are reported within 5 working days after the procedure to the participant's nominated GP and the BSP IT system	• 100%
		• All adverse events and hospital admissions within 30 days following performance of colonoscopy within the BSP are documented and appropriately reviewed at a minimum of monthly intervals. The severity categorisation, root cause analysis and information to be recorded as per the United Kingdom NHS Quality Assurance Guidelines for Colonoscopy.	• Yes - The BSP adheres to the National Policy for the Management of Healthcare Incidents. All incidents are entered onto the RiskPro system and managed, recorded and reported according to a standardised process.
		• These records are available for external audit as de-identified data.	• All hospital admissions reported to MOH in de-identified form/ record of participant readmission review retained at endoscopy unit/ adverse events reviews, subsequent reports and other actions are undertaken in accordance with MOH requirements of DHBs for management and reporting of adverse events.
		• 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 BSP shall be <10:1000 colonoscopies (this number is based on the fact that 70% of participants proceeding to colonoscopy in the WDHB Pilot have a lesion detected).	• Perforation or bleeding 5.7 per 1000 • Other than perforation or bleeding 0.4 per 1000

Number	Section	Requirement	Results
9	Alternative Investigation QS 7	• 95% of participants requiring a CT Colonography are given a date for the procedure on the day they are deemed unfit for colonoscopy or within 5 working days if pre-assessment is carried out by telephone.	• No data, but the process is that when the CNS pre-assesses and is of the view that the participant may be unsuitable for colonoscopy the Lead Colonoscopist will make a decision within 5 days and refer for CTC. Data is not kept on whether the Radiology Dept contacts the participant with an appointment within 5 days.
		• 95% of participants requiring CTC receive the examination within 20 working days (4 weeks) from the day they are deemed unfit for colonoscopy/pre-assessment.	• No data kept on this – the date of the CTC appointment is not captured on the system
		• 95% of radiological reports will be sent to GPs within 7 working days from completion of the examination.	• No data kept on this – letters not generated by the system therefore unable to report.
		• A date for CT Colonography is offered within 5 working days of the incomplete colonoscopy.	• In most instances the person receives the CTC on the same day or the next day. This is not able to happen for people from a Friday afternoon list who are referred for an appointment – again. The date of the appointment is not captured on the BSP system
		• 90% of participants will be notified of their results of all final investigations within 7 working days.	• As above – letters not generated from BSP system so unable to report
		• 100% of providers of CT Colonography comply with the CT Colonography Standards as endorsed by RANZCR.	• 100%
10	Histopathology QS 8	• 100% of BSP pathology specimens obtained during BSP colonoscopy or surgery are reported using BSP standardised/synoptic reports.	• 100% – this is the only report used by LabPlus for the BSP
		• 95% of specimens submitted from colonoscopy are reported and relayed to the referring endoscopist/surgeon within 10 working days of receipt of the specimen in the laboratory.	• This standard is reported by LabPlus to BSP as part of their quarterly contract report and ha been consistently met for the period to 30 June
11	Referral Pathways QS 9	• 95% of BSP participants requiring clinical follow-up have been referred and seen by an appropriate consultant within 10 working days of diagnosis (2 weeks).	• This data can now be reported from the system due to recent system upgrade[24]. The standard is also subject to a review because in effect the 'seen by an appropriate consultant' occurs at the time of cancer identification at the time of the colonoscopy.
		• 95% of BSP participants diagnosed with cancer are referred to the appropriate consultant for presentation at an MDT management meeting within 20 working days from diagnosis (4 weeks).	• Can now report this from the system – but have yet to do so.

[24] Currently data is being transferred from a spreadsheet into the Register. On completion these data points will be calculated.

Appendix 6: Issues reporting in biannual WDHB reports

Table 8: Issues summary January – June 2013

Description	Open	Closed	Total
Use of date that letter was sent as a proxy for date sample taken – when no date provided and sample received within 7 days of date of letter.		1	1
Kits registered at LabPLUS (and consent form received at CC) but no results on register		4	4
Clinical advice given to potential participant by an information line staff member		1	1
Participant gave test kit to brother-in-law to complete but signed the consent form herself. Result was positive – but went to the wrong GP.		1	1
Referral received for participant with a PO Box address and Booking and Scheduling refused to accept.		1	1
People receiving two consent forms (one of which is not theirs) in their test kit		1	1
Result not going to GP because participant did not advise of change		1	1
Ineligible person booked for colonoscopy – non resident		1	1
Person sent spoilt test kit after which is was discovered that she had had a colonoscopy in 2011. CD reviewed report and person did not participate		1	1
Notice from Booking and Scheduling of referrals where intended service was not clear		1	1
DN turned up at home to give clexane expecting medication to be there – but should have collected from DN office prior to by GP visiting		1	1
Letter sent to GP who did not have the person registered		1	1
Private provider sending colonoscopy report and expecting BSP to take responsibility for advising re surveillance		1	1
Spoilt test kit received but person now out of area.		1	1
Referral for colonoscopy sent to Middlemore because patient had not advised GP of new address		1	1
TOTAL		**18**	**18**

Source: WDHB (2013b)

Table 9: Issues summary July – December 2012

Description	Open	Closed	Total
Damaged sample collection bottles received at LabPLUS		2	2
GPs charging patients for consultation/referral		2	2
GPs faxing referrals to Coordination Centre		3	3
GPs referring to Gastroenterology		2	2
Patient with a positive iFOBT but moved out of area		1	1
Two samples received at the same time from one participant		1	1
Invitations sent to deceased persons	2		2
Patient with negative iFOBT followed by positive gFOBT	1		1
Patient with positive iFOBT followed by negative gFOBT – declined colonoscopy		1	1
Clexane bridging process issues		2	2
No result received by GP	1		1
Result received by wrong GP	1		1
Two different colonoscopy discharge letters re one patient sent to GP		1	1
CC incorrectly advised person re previous CTC being an exclusion		1	1
Some lab staff using date letter sent as proxy for date sample taken.	1		1
Delay in receipt of samples from endo at LabPLUS		1	1
Person with 2 NHI and 2 different names – neither of which were on the register		1	1
Unacceptably long wait for CTC appointment after failed colonoscopy with polypectomy		1	1
Husband provided specimen instead of wife – as wife met exclusion criteria		1	1
TOTAL	**6**	**20**	**26**

Source: WDHB (2013a)

Table 10: BSP issues summary January – June 2012

Description	Open	Closed	Total
System generated ‘ immediate contact’ participant wanted GP involvement		12	12
Participants with positive result - GP not referring and arranging for gFOBT	1	10	11
GP referred patient without advising of result		7	7
Participant not advised of result and not referred		6	6
Participant advised of result but no referral received		6	6
Faxed referral received at Coordination Centre		6	6
Incorrectly addressed electronic referral		2	2
GP referred but not received at NSH		3	3
GP seeking earlier access to histology results	3		3
GP invoice for result management sent to Coordination Centre		2	2
GP charged patient for management of result		2	2
Referral made to surgical services		2	2
Two specimens with same BSP number received		2	2
GP charging for Clexane bridging	2	0	2
Other ‘one off’ issues	1	7	8
TOTAL	**8**	**67**	**75**

Source: WDHB (2012a)