National Bowel Screening Programme

2018/19 Business Case

This business case:

This business case seeks approval of the joint Ministers of Health and Finance, to utilise the $54.085 million for the National Bowel Screening Programme (NBSP) established in Budget 2018 to fund the further roll out of the NBSP to five District Health Boards: Hawke's Bay, Lakes, MidCentral, Nelson Marlborough and Whanganui.

It provides an update on the NBSP Programme Business Case and sets out sets out the approach for the next phase of the implementation.

FINAL version 1.0

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1 Executive Summary

1.1 Purpose of this Business Case

This business case seeks approval of the joint Ministers to utilise the $54.085 million tagged contingency for the National Bowel Screening Programme established in Budget 2018 [CAB-18-MIN-0158.14 refers], to fund the roll out of the National Bowel Screening Programme (NBSP) to a further five District Health Boards in the 2018/19 financial year: Hawke's Bay, Lakes, MidCentral, Nelson Marlborough and Whanganui.

This business case reconfirms the strategic and economic cases detailed in the NBSP Programme Business Case and describes the approach to the 2018/19 implementation of the NBSP.

1.2 Updates to the Programme Business Case

Updates – 2017/18

The Programme Business Case detailed the design and planned implementation approach for the NBSP. The 2017/18 Business Case noted the revisions to the NBSP design and implementation approach, including:

- **Alignment with the National Cervical Screening Programme (NCSP),** as there is strong correlation between the long-term technology needs of NCSP and the NBSP, and there is an opportunity to align the service delivery models across NCSP and NBSP.
- **Source data for the National Screening Solution (NSS):** The NBSP has confirmed that the National Health Index (NHI) will be used to populate the NSS, for those people who have accessed health services in the last three years.
- **Revisions to responsibilities:** The contract with the laboratory for the analysis of returned Faecal Immunochemical Test (FIT) kits will be held by the Ministry of Health rather than the National Coordination Centre (NCC). Responsibility for active follow-up of participants who have not returned their FIT kit has been transferred from the Regional Centres to the NCC. The flow of funding for screening colonoscopies is now directly to District Health Boards (DHBs) rather than through the Regional Centres, and the responsibility for the education of General Practices and for promoting equitable participation has transferred to DHBs.

Updates – 2018/19

No material changes have been made to the NBSP design since the 2017/18 business case update. An enhancement has been made to include an additional post-activity follow up, which will be undertaken by the DHBs. This follow up activity will use the DHB local networks to target priority populations (e.g. Hui and Marae).

Information Technology

A fit for purpose national screening information IT solution is critical for the safe delivery of the NBSP. This will provide a centralised invitation and recall system and will track the participants' journey through the screening pathway. The IT solution is also critical in the ongoing monitoring and evaluation of the NBSP.

As the NBSP is rolled out nationally, the pilot IT system cannot be scaled to meet the needs of the DHBs and the NCC safely. IT options analysis completed in March 2017 concluded that there may be a number of IT solutions that meet the NBSP technology needs, with technology partners in the market able to offer these solutions.

A procurement process to secure the national information technology solution and associated technology partner commenced in March 2017 and concluded in April 2018. The procurement has taken longer than originally anticipated due to an expansion of scope (to position the solution as an integrated screening platform) and an extended period of clarification with vendors during the request for proposal evaluation. The capital contingency for the IT solution has been extended to 31 December 2018 in acknowledgement of this change in timeframe [CBC-17-MIN-0081 refers].

Design and discovery for the National Screening Solution (NSS) is being completed in conjunction with the submission of the NSS business case, as this will provide critical information around implementation approach, timeline and costs. This approach is in line with recognised best practice for IT implementations, and this approach was supported by Treasury, MBIE and GCDO. The process, options, preferred approach and costs will be described in the IT business case which is to be presented mid-2018.

The implementation date for the NSS does not impact on the roll out of the NBSP in the first eight District Health Boards (DHBs). In 2017/18, Hutt Valley, Wairarapa, Waitemata, Southern and Counties Manukau DHBs went live using the interim IT solution (an enhanced version of the system designed for the bowel screening pilot). In 2018/19, the next three DHBs (Hawke's Bay, Lakes and Nelson Marlborough) will go live on the interim IT solution. The timing of the availability of the National Screening Solution does impact on the final two DHBs to offer bowel screening in 2018/19 and has led the Ministry to reduce the number of DHBs rolling out bowel screening in 2018/19 from nine to five.

Implementation Timeline

The NBSP rollout is progressing, with the successful implementation of the NCC and rollout to the first five DHBs. Hutt Valley and Wairarapa DHBs went live as planned in July 2017. The Regional Centres went live from October 2017. The National Coordination Centre assumed responsibility for inviting eligible people to participate in bowel screening and monitoring participants' progress along the screening pathway, from the Waitemata DHB interim coordination centre, on 27 November 2017 (a month ahead of schedule). Waitemata DHB transitioned as planned from the pilot to the NBSP on 1 January 2018. Southern DHB commenced screening in mid-April, and Counties Manukau DHB commence screening in June 2018.

In March 2017, a re-baselined timetable was presented to Cabinet [SEC-17-MIN-0016], indicating a six-month delay to implementation of DHBs 9 to 14, and a subsequent six-month delay for DHBs 15-20, with the completion date moving from December 2019 to June 2020.

In December 2017, the implementation timeline was revised again [CBC-17-MIN-0081 refers]. Six additional DHBs will commence bowel screening in 2018 as planned, however the remaining 10 DHBs will commence bowel screening over the next two financial years (2019/20 and 2020/21). The revised timeline means the final five DHBs will start screening by the end of June 2021 and the full roll-out will now be completed a year later than originally planned. The extended timeline provides greater surety of delivering a safe and high-quality Programme, given the proposed deployment date for the NSS, and the capacity and capability pressures being experienced by DHBs, including managing colonoscopy wait times.

Programme Management and Delivery

The NBSP team at the Ministry has expanded as planned to meet the increasing demands of detailed implementation planning. Programme Management, Governance and Assurance arrangements are in place to ensure successful delivery.

Monitoring and Reporting

NBSP is monitored internally and externally. The key monitoring and reporting events are:

- **Major Projects Monitoring:** The Corporate Centre delivery confidence assessment for the NBSP is currently Amber. Treasury continues to be closely engaged with the NBSP, through regular meetings including business case clinics.
- **Gateway Review:** s 9(2)(g)(i) [redacted]
- **Independent Assurance Review of NBSP:** An independent assurance review was undertaken in April - June 2018 to consider how well positioned the NBSP is for successful delivery, what changes might be required and what the Ministry can learn to support the design and roll out of further national initiatives. The review concluded that "[t]he panel is fully supportive of the National Bowel Screening Programme and endorses its continued roll-out as planned. The National Bowel Screening Programme is in a good position and has considerable strengths." A summary of the key findings from the review, and actions being undertaken in response, is attached as Appendix 1.

1.3 Funding

In August 2016, Cabinet agreed $39.3 million for the NBSP Programme Business Case to implement the NBSP over four financial years, including delegating the approval of future business case to the Minister of Health and the Minister of Finance (the joint Ministers) [SOC-16-MIN-0108 refers].

Budget 2017 approved $26.119 over four years, for the roll-out of the NBSP in the Hutt Valley, Wairarapa, and Waitemata district health board (DHB) regions, to establish the NBSP National Coordination Centre (NCC) and four Bowel Screening Regional Centres (regional centres), and to extend existing Quality Assurance contracts [CAB-17-MIN-0185.12 refers]. Budget 2017 allocated $12.430 in contingency funding for the roll-out of the NBSP to Southern DHB and Counties Manukau DHB [CAB-17-MIN-0185.12 refers].

[1] Gateway 0: Strategic Assessment (to review of the overall Programme) and Gateway 3: Investment Decision (to review the proposed investment in the NSS).

Following the change of Government in November 2017, the Programme budget bid for 2018 was considered as a new initiative under the Labour-led government. Budget 2018 allocated $54.085 million in contingency funding over the next four financial years for the rollout to the next five DHBs, as well as the costs of servicing this additional population for the National Coordination Centre, laboratory testing and Bowel Screening Regional Centres. The funding is contingent on the approval of the 2018/19 NBSP business case by the Minister of Finance and the Minister of Health (the joint Ministers).

The NBSP remains within the agreed funding. The financial position and projection will be revisited with the business case for the national information technology solution, and for future business case for DHB implementations.

1.4 DHB Implementations

The NBSP will be implemented in five DHBs during the 2018/19 financial year. Nelson Marlborough, Lakes and Hawkes Bay DHBs are scheduled to go live in the first half of the 2018/19 year, with Whanganui and MidCentral DHBs planned to go live in May and June 2019 respectively. The first three DHBs in 2018/19 will go-live with the existing BSP+ IT support, with Whanganui being the first DHB to go-live with NBSP using the NSS.

The Ministry is working closely with the DHBs to ensure they meet all requirements prior to go-live. If any issues are identified with achievement of requirements or clinical safety, the Ministry will work with the DHB to revise their go-live date.

The timeline for the 2018/19 DHB implementations is shown in Figure 1.

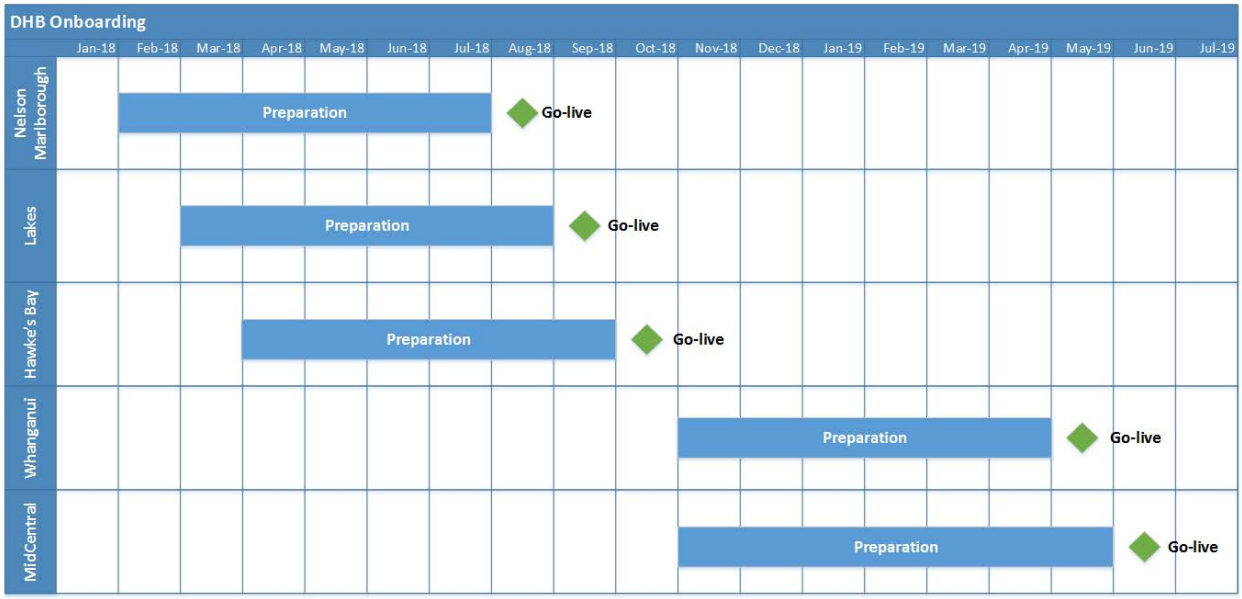

Figure 1: 2018/19 Implementation Timeline

2 Purpose and Format

2.1 Purpose of this Business Case

This business case seeks approval of the joint Ministers to utilise the $54.085 million tagged contingency for the NBSP established in Budget 2018 [CAB-18-MIN-0158.14 refers], to fund the roll out of the NBSP to a further five District Health Boards in the 2018/19 financial year: Hawke's Bay, Lakes, MidCentral, Nelson Marlborough and Whanganui.

This business case does not seek funding for the national information technology solution (the National Screening Solution, NSS). A separate business case has been prepared for the NSS.

This business case builds on the NBSP Programme Business Case and the linked Tranche 1 Business Case which was approved by Cabinet in August 2016, and the 2017/18 Business Case which was approved by the joint Ministers for Health and Finance in August 2017. Figure 2 depicts the relationship between this business case (highlighted) and the other NBSP business cases.

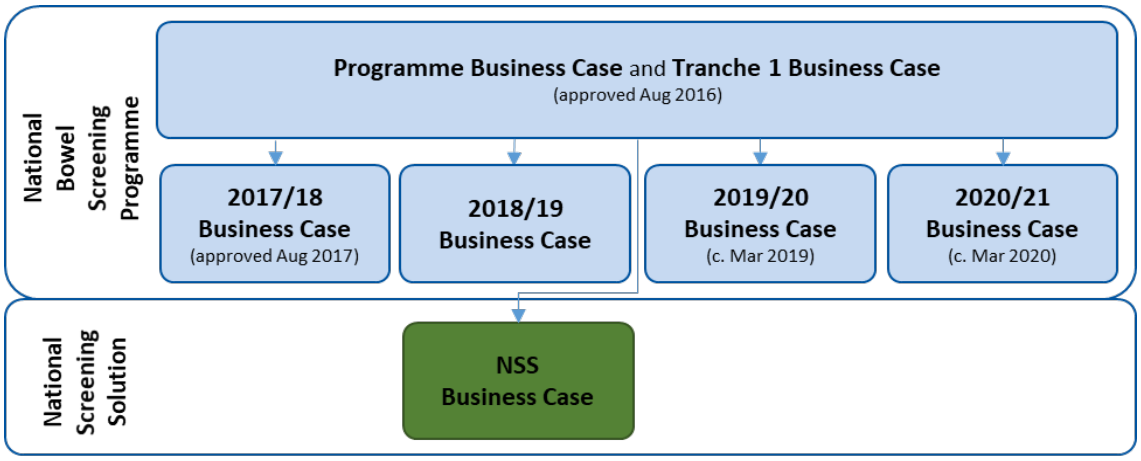

Figure 2: NBSP Business Cases

2.2 Format of this Business Case

This business case comprises two elements:

- Programme update;
- Implementation planning for the five DHBs implementing NBSP in 2018/19:
    - Nelson Marlborough DHB, Lakes DHB and Hawke's Bay DHB (August, September and October 2018). Rollout utilising the interim IT solution.
    - Whanganui DHB (May 2019) and MidCentral DHB (June 2019). Rollout using the NSS.

The New Zealand Treasury, the Government Chief Digital Officer (GCDO) and Ministry of Business, Innovation and Employment (MBIE) have been actively engaged throughout the development of this business case. The format and approach are as agreed with Treasury and are in line with Better Business Case requirements.

3 Update to the Programme Business Case

3.1 The Need for Investment

There are no significant changes to the Strategic Case for a National Bowel Screening Programme, as outlined in the 2016 Programme Business Case and reconfirmed in the 2017/18 business case. The Programme scope and underlying assumptions remain unaltered.

New Zealand continues to have one of the highest rates of bowel cancer in the developed world. Bowel screening aims to reduce the mortality rate from bowel cancer, by diagnosing and treating bowel cancer at an early curable stage, as well as identifying and removing pre-cancerous advanced adenomas from the bowel before they become cancerous, which can, over time, lead to a reduction in bowel cancer incidence.

Bowel screening programmes are estimated to reduce mortality in the population offered screening from bowel cancer by at least 16-22 percent, and potentially up to 30 percent, after 8-10 years. A national bowel screening programme is expected to result in significant cost-savings from reduced treatment of bowel cancer, which outweigh the cost of screening. Bowel screening is an investment with health, social and economic benefits with a Programme Net Present Value (NPV) estimated at [redacted], as per the updated Programme Business Case financial analysis (Appendix 2).

The Net Present Value of [redacted] is a 6.7% reduction from the [redacted] in the 2016 NBSP business case. The principle contributors to this change are: the change to the discount rate from 7% to 6%; increase in programme timing from 20 to 21 years; changes to the order, timings and cost of the each DHB rolling out bowel screening; and the changed cost structure of the National Screening Solution including the change from a largely capital-based development to a largely subscription-based Software-as-a-Service. Of note is the deferral of large DHBs from the 2018/19 rollout tranche to the 2020/21 tranche to avoid them having to be migrated from the BSP+ system to the NSS. The impact is a one year delay in realising benefits for twenty percent of the eligible population.

3.2 Alignment with Other Programmes

As described in the 2017/18 business case, the National Screening Unit (NSU) has identified an alignment between the NBSP and the proposed move to Primary Human Papilloma Virus (HPV) screening in the National Cervical Screening Programme (NCSP). There is a strong correlation between the long-term IT needs of NCSP and the NBSP and there may be opportunities for the opportunities to collaborate on IT across two programmes. Any investment in IT to support the NCSP will be subject to a separate business case process. There may also be an opportunity to align the service delivery models across the NCSP and NBSP, allowing the NSU to utilise a shared service delivery infrastructure, particularly the NCC function, across the two screening programmes.

More broadly, the Ministry sees an alignment between the NBSP and other population health initiatives and opportunities to deliver more holistic services for consumers. The Ministry of Health has a range of population health initiatives in place, aimed at reducing the incidence and severity of conditions and diseases within the New Zealand population. These initiatives include screening programmes, immunisation and health checks.

Each population health programme currently has its own set of business processes, information and IT platforms to support programme delivery and the monitoring of activity. It is envisaged that using one IT solution across all population health initiatives (subject to business case approval and subsequent funding) would increase efficiency, support information sharing across programmes and the use of standardised business processes and practices. It would also enable greater flexibility when targeting, delivering, and monitoring current and future population health programmes.

3.3 Programme Costs

Overall Programme Costs

The overall level of investment required to implement the NBSP was initially indicated at [redacted] whole of life (20 years). The Programme Business Case to implement the NBSP over four financial years was approved in August 2016 [CAB-16-MIN-0189.14 and SOC-16-MIN-0108 refer]. The NBSP funding is allocated through annual budget bids supported by the respective business cases. Funding announced in each Budget is held in contingency until the associated business case has been approved by the joint Ministers of Health and Finance.

The NBSP remains within the agreed funding, although within the overall NBSP budget some changes to budget lines have been made to reflect the detailed implementation planning.

Budget 2016 and Budget 2017

Budget 2016 approved $39.3 million over four years to fund the design, planning and set-up phases of the NBSP, as well as contingency capital funding of $15.969 million for the IT development and infrastructure needed for a national Programme. This contingency is subject to Cabinet approval of the business case for the preferred option for the NBSP long term end-to-end national information technology solution. The contingency period was extended from February 2017 to 1 February 2018 [SOC-17-MIN-003] and further extended to 31 December 2018 [CBC-17-MIN-0081, CAB-18-MIN-0001].

Budget 2017 approved $26.119 over four years, for the roll-out of the NBSP in the Hutt Valley, Wairarapa, and Waitemata DHBs; to establish the NBSP National Coordination Centre (NCC) and four Bowel Screening Regional Centres; and to extend existing Quality Assurance contracts [CAB-17-MIN-0185.12 refers]. Budget 2017 also allocated $12.430 for the roll-out of the NBSP to Southern DHB and Counties Manukau DHB.

In January 2018, Cabinet approved a drawdown of $2 million in the 2017/18 financial year against the NBSP capital contingency, to meet the anticipated costs for the discovery and design phase of the national information technology solution (the NSS) [CBC-17-MIN-0081, CAB-18-MIN-0001]. The business case for the NSS will be submitted for approval in June 2018, once the procurement process has been completed and the end-to-end solution approach and costs confirmed.

The NBSP approved Budget bids for 2016 and 2017 are shown in Table 1.

Table 1: NBSP Approved Budget Bids

National Bowel Screening Project Cost	2016/17 $'M	2017/18 $'M	2018/19 $'M	2019/20 $'M	2020/21 $'M	2021/22 $'M	Total 6 Years to 2021/22 $'M
Total Ministry DE	[redacted]						
Information System Costs DE							
National Co-ordination Centre							
National FIT Laboratory							
Bowel Screening Regional Centre							
DHBs							
Training, Quality & Communication							
Waitemata 50-60 transition cost							
Total Budget 16	**11.901**	**11.761**	**7.987**	**7.660**	**6.961**	**6.961**	**53.231**
National Co-ordination Centre		[redacted]					
National FIT Laboratory							
Bowel Screening Regional Centre							
DHBs							
Training, Quality & Communication							-
Total Budget 17	**-**	**9.054**	**9.995**	**9.286**	**10.198**	**10.198**	**48.731**
Total Operating Cost	**11.901**	**20.815**	**17.982**	**16.946**	**17.159**	**17.159**	**101.962**
Total Capital Funding		**2.000**	**13.969**				**15.969**
Total NBSP Funding as at 17/18	**11.901**	**22.815**	**31.951**	**16.946**	**17.159**	**17.159**	[redacted]

Budget 2018

Budget 2018 allocated $54.085 million in contingency funding over the next four financial years [CAB-18-MIN-0158.14 refers], contingent on the approval of the 2018/19 NBSP business case by the Minister of Finance and the Minister of Health (the joint Ministers).

This funding was for the rollout of the NBSP to Hawke's Bay, Lakes, MidCentral, Nelson Marlborough and Whanganui DHBs. The Budget also made provision of an additional $13 million for the Information System (NSS), as well as ongoing funding for the NCC, Regional Centres and the National FIT Laboratory. Further funding was approved to support Waitemata DHB with the additional costs of providing screening to participants aged 50 to 60 who had been part of the Waitemata Bowel Screening Pilot.

The Budget 2018 for NBSP is summarised in Table 2.

Table 2: Budget 2018

National Bowel Screening Project Cost	2016/17 $'M	2017/18 $'M	2018/19 $'M	2019/20 $'M	2020/21 $'M	2021/22 $'M	Total 6 Years to 2021/22 $'M
Information System Costs DE	[redacted]						
National Co-ordination Centre							
National FIT Laboratory							
Bowel Screening Regional Centre							
DHBs							
Training, Quality & Communication							
Waitemata 50-60 transition cost							
Total Budget 18							
Total Operating Cost as at 18/19	**11.901**	**20.815**	**35.373**	**34.130**	**32.973**	**33.855**	**169.048**
Total Capital Funding as at 18/19		**2.000**	**13.969**				**15.969**
Total NBSP Funding as at 18/19	**11.901**	**22.815**	**49.342**	**34.130**	**32.973**	**33.855**	[redacted]

3.4 Programme Benefits and Disbenefits

The benefits and disbenefits described in the Programme Business Case remain unchanged. The NBSP will deliver four key benefit outcomes:

- Improved health outcomes;
- More cost-effective healthcare;
- Improved service delivery (including improved IT infrastructure supporting service delivery); and
- Better social and economic outcomes.

These benefits and the agreed measures were described in the approved 2016 NBSP Programme Business Case. The Benefits Realisation Plan (version 1.0) was finalised in April 2017 and is available at https://www.health.govt.nz/system/files/documents/pages/nbsp-benefits-realisation-plan-27april-2017.pdf

Since this time there have been changes throughout the NBSP, including changes to Quality Standards, processes and NBSP timelines. In addition, the NBSP has commenced and data is being collected for those DHBs which are now live. The original IT system used for the Bowel Screening Pilot has been upgraded and there have been numerous changes and improvements relating to the collection, storage, analysis and reporting of NBSP data.

The NBSP Benefit Register has recently been developed to store point-in-time benefit realisation data. Collection of data is currently a manual process but there are plans to automate this process and produce automated reports in the near future.

Seven main benefits will be monitored during the roll out of the NBSP, and during the ten-year period following the last DHB going live. It is expected that the final evaluation will take place in 2031.

The key NBSP benefits and disbenefits, and measures, are summarised in Table 3.

Table 3: NBSP Benefits and Disbenefits

		Screened Population	Total Population	Future Evaluation
Benefits	Improved health outcomes	Maximise detection of bowel cancers within the NBSP parameters	Reduction in bowel cancer mortality	Decrease in total bowel cancer treatment costs
		Increase in the proportion of screening-detected bowel cancers detected at TNM Stages I and II	Increase in 5-year relative survival rate for bowel cancer	Contribution to society (estimated at [redacted] over the 20-year modelled period)
	Cost effective healthcare	Appropriate rate of screening-detected advanced adenomas	Benchmarking improvement with international comparisons (smaller variance from OECD average)	Quality improvements to DHB endoscopy unit services
			Reduction in bowel cancer incidence	Quality improvements to DHB endoscopy unit services
Disbenefits	Health Outcomes	Anxiety arising from participation in the NBSP (for some participants)	Widening of equity gap for bowel cancer mortality, incidence and survival rates	Quality of Life Years (QALYs) saved (estimated at [redacted] over the 20-year modelled period)
		Adverse physical health outcomes from the screening process (for some participants)		

Each of the main benefits has at least one measure identified. For some of these measures it is appropriate to assess them multiple times per year (e.g. cancer detection rates). For other measures any trends in the data can only be seen over an extended period (e.g. cancer mortality rates) and monitoring annually is more appropriate. In addition, some of the data being collected does not become available regularly. Cancer survival analyses, for example, are only produced every 4 to 5 years by the Ministry of Health. For some benefits (such as interval cancers) a long lag time is required before the necessary data is available in Ministry data stores.

Some of the information is based on very small numbers, particularly when disaggregated into some of the smaller population groupings. Where possible, information is assessed using confidence interval values to assess whether there are statistically significant differences between data points. There are regional differences across the DHBs, these are related to a range of factors including when the DHB joined the national programme, the size of the DHB population as well as differences in its population makeup. For these reasons the data below reports national programme benefits/dis-benefits and only highlights DHB level issues where they are both statistically significant and have important implications for the programme.

Analysis of the benefits and dis-benefits for DHBs that were part of the national programme between 1 July 2017 and 31 March 2018 identified that:

- During the period, 24 cancers were identified in the national programme. These numbers are too small to calculate rates per 1000 screens. Of the cancers that were found in the NBSP for the period, around 21 percent (five cancers) were found at stage I or II. This percentage is likely to increase as more complete staging information becomes available for the period. Advanced adenoma positive predictive value was 42% for initial screens (target range is 25-35%).
- Bowel cancer mortality rates and incidence rates of bowel cancer are only available annually and will be presented in a future report. Benefits relating to changes in five-year colorectal cancer survival and assessing mortality rates against OECD counterparts were not able to be measured at this time. These measures can only be assessed when data becomes available.
- With regards to monitoring disbenefits, many of the measures are still in development and in some cases not enough time has elapsed to enable analysis. The disbenefit of anxiety caused by long waits for colonoscopy procedures was measured however, and there was a 100% compliance rate with the target of 95% of participants with a positive FIT being offered a diagnostic assessment within 45 days.
- The disbenefit of whether the NBSP will increase disparities in colorectal cancer outcomes between population groups has been evaluated with respect to participation. There are significant differences in participation rates between most population groups, including significantly lower participation for Māori compared with the Other (includes European) ethnic group.

3.5 Programme Implementation

Programme Delivery Approach

There are no material changes to the NBSP delivery approach since the updates provided in the 2017/18 Business Case. The NBSP offers bowel screening using the Faecal Immunochemical Test (FIT) to eligible participants aged 60-74 years. Both the FIT and the age range are aligned with other countries with a national bowel screening programme. The screening pathway is based on international best practice and largely mirrors the Bowel Screening Pilot pathway. The full pathway consists of five stages: identification, invitation, FIT kit, and, where required, colonoscopy and treatment. Eligible participants are invited to participate every two years. Participants with positive screening results are referred by their GP to their DHB for further investigation and treatment as required.

An enhancement to the Programme since the 2017/18 business case update is that additional follow up will be undertaken by the DHBs. This follow up activity will use the DHB local networks to target priority populations who have not responded to an invitation to participate (e.g. Hui and Marae).

Ensuring equity in delivering bowel screening services nationally is a shared responsibility. It is led by the NBSP and involves collaboration with the NCC, regional centres, the DHBs, and Māori and Pasifika Peoples networks. As part of each DHB's planning for rollout, the DHB, assisted by the NBSP and their regional centre, has developed an approach for ensuring equity. This includes the use of the NBSP-developed tools such as the Equity Checklist. Following the initial phase rollout to the Hutt and Wairarapa DHBs the NBSP undertook a Lessons Learned review (detailed in Appendix 3) which, amongst a number of other changes, resulted in additional resourcing being directed to the regional centres and the Māori and Pasifika Peoples networks.

Financial expectations of DHBs with respect to their funding from the NBSP will be managed as they have been to date. That is, each DHB will receive clarity up front as to what funding they can expect and when, including the funding for colonoscopies based on their population size and demographics. The NBSP will support each DHB through their planning process, including allocation of funding to assist their planning and establishment. The DHB's plans are then jointly reviewed, with the NBSP ensuring resourcing matches allocated funding, amongst other things. The agreed plan then becomes the basis of the service delivery contract between the NBSP and the DHB.

A key enabler of the NBSP is a fit for purpose Information Technology (IT) system. The roll out to DHBs has commenced using an interim IT system, whilst the design of the procured NSS is underway to enable support of all 20 DHBs. The IT solution (the NSS) will provide a centralised invitation and recall system and will track the participants' journey through the screening pathway. The NSS is also critical in the ongoing monitoring and evaluation of the NBSP.

Lessons Learned

The NBSP has been incorporating the lessons learned from independent advice received, for example EY's review of the pilot IT system, as well from the NBSP Change Implementation team's readiness assessments and change support of the DHBs who have been brought on to the NBSP to date. In addition, it has been recognised that existing governance structures for the NBSP were not sufficient to support the major technology change programme required to replace the pilot IT system with a nationally scalable screening solution. Consequently, the governance structures for the NBSP have been revised, with additional roles, amended escalation paths and decision-making authorities, and continuous independent external NBSP assurance in place.

Implementation Timeline

The Programme Business Case described the planned roll-out of the Programme across four years, commencing in 2016 and concluding in 2020 with handover to business as usual. In March 2017, a re-baselined timetable was presented to Cabinet [SEC-17-SUB-0016 refers]. This indicated a six-month delay to implementation of DHBs 9 to 14, and a subsequent six-month delay for DHBs 15-20, with the completion date moving from December 2019 to June 2020.

At the Cabinet Committee Meeting in December 2017, a further change was approved to the planned implementation timeline to allow more time to develop the National Screening Solution (NSS) technology required to support the NBSP [CBC-17-MIN-0081 refers]. Under the revised timeline, six additional DHBs will commence bowel screening in 2018 as planned, however several others will be later than originally scheduled. The remaining 10 DHBs will commence bowel screening over the next two financial years (2019/20 and 2020/21), using the NSS. The revision means the final five DHBs will start screening by the end of June 2021 and the full roll-out will now be completed a year later than originally planned. The extended timeline provides greater surety of delivering a safe and high-quality Programme, given the proposed deployment date for the NSS, and the capacity and capability pressures being experienced by DHBs, including managing colonoscopy wait times.

Two DHBs have fully implemented the NBSP. On 17 July 2017, Hutt Valley and Wairarapa DHBs began bowel screening, and Waitemata DHB transitioned on schedule to the NBSP on 1 January 2018[2]. Southern DHB commenced screening on 24 April 2018, and Counties Manukau DHB commences screening in June 2018.

The National Coordination Centre assumed responsibility for inviting eligible people to participate in bowel screening and monitoring participants' progress along the screening pathway, from the Waitemata DHB interim coordination centre, on 27 November 2017 (a month ahead of schedule).

The four Regional Centres established by Waitemata DHB (Northern Region), Hutt Valley DHB (Central Region), Southern DHB (Southern Region) and HealthShare (the shared services agency for the Midland Region DHBs) went live from October 2017.

Nelson Marlborough DHB, Lakes DHB[3] and Hawke's Bay DHB are planned to go live in August, September and October 2018 respectively. The NSS is expected to be ready for initial deployment by March 2019 to support the rollout to the remaining twelve DHBs. Whanganui and MidCentral DHBs are expected to commence screening from May and June 2019 respectively, once the NSS is fully functional. The implementation approaches for these five DHBs are detailed in this business case.

The first eight DHBs (Hutt Valley, Wairarapa, Waitemata, Southern, Counties Manukau, Nelson Marlborough, Lakes and Hawke's Bay), which commenced bowel screening using the interim IT solution, are expected to migrate to the NSS in 2019/20. This timing of the transitions will be finalised once there is greater certainty on the development timeline for the NSS, and in discussion with the NSS solution provider about the best timing for transition of these DHBs.

The implementation, transition and deployment approach for the NSS is attached as Appendix 4.

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[2] From 1st January 2018, Waitemata DHB is inviting new participants aged 60 to 74 years. Those who are aged 50 to 59 years, who continue to live in the Waitemata DHB region and who have previously been invited to participate in the bowel screening pilot, will continue to be invited to screen every two years.

[3] Following a request from Waikato DHB in September 2017 to delay to 2019/20 as a result of a number of pressures facing the DHB, it was agreed that implementation at Lakes DHB would be brought forward to 2018/19.

DHB Implementation Order 2019/20 and 2020/21

The Ministry is managing the ongoing development of the NBSP carefully, consistently testing its approach to ensure delivery of a safe and high-quality Programme. Implementing bowel screening is a complex process with several operational, technical and clinical dependencies, including facilities, equipment, information technology and staffing. Roll out of the NBSP is reliant on the ability of each DHB to provide clinically safe and appropriate services. If a DHB is not ready, its go-live date will be altered, and this may impact on the completion date for NBSP implementation. The Ministry is re-evaluating the DHB roll-out order, based on the five performance criteria used to assess readiness:

- Colonoscopy Wait Time Indicators
- Faster Cancer Treatment targets
- Financial Performance
- DHB Impact Assessment
- DHB Electives Performance.

The current anticipated grouping of DHBs is shown in Table 4. The order and timing for the final ten DHBs remains subject to their readiness to commence bowel screening.

Table 4: Phase Order for DHB Implementations[4]

Phase 1 DHBs (July 2017)	Phase 2 DHBs (Apr – Jun 2018)	Phase 3 DHBs (2018/19)	Phase 4 DHBs (2019/20)	Phase 5 DHBs (2020/21)
Waitemata (pilot)	Waitemata (NBSP)	Nelson Marlborough	Auckland	Bay of Plenty
Hutt Valley	Southern	Lakes	Canterbury	Northland
Wairarapa	Counties Manukau	Hawke's Bay	Capital and Coast	Taranaki
		MidCentral	South Canterbury	Waikato
		Whanganui	Tairawhiti	West Coast

3.6 Programme Management and Delivery

Governance

There have been no further changes to the updated governance arrangements, as described in the 2017/18 business case. The NBSP continues to be governed alongside the NCSP-HPV project, to ensure consistency and alignment of the service delivery models and associated technology requirements, as well as prioritisation of deliverables and management of potential resource and timing conflicts between the two initiatives.

Programme Management

There have been no significant changes in the NBSP approach or team, as described in the Programme business case and the 2017/18 implementation case.

[4] For Phases 4 and 5, the DHBs are listed alphabetically. This is not to be interpreted as the implementation order.

Reporting and Assurance

The NBSP is subject to Treasury Major Projects Monitoring and Gateway reviews. This provides assurance within the Ministry, and to the central agencies, on Programme progress and delivery.

- **Major Projects Monitoring:** The Corporate Centre delivery confidence assessment for the NBSP is currently Amber. Regular reporting to the Corporate Centre is ongoing as part of Treasury Major Projects Monitoring Assurance. Treasury continues to be closely engaged with the NBSP, through regular meetings including business case clinics.

- **Gateway Review:** s 9(2)(g)(i) [redacted]

- **Continuous Independent NBSP Quality Assurance:** In addition to the review points through Gateway and Major Projects Monitoring, the NBSP also has in place ongoing IQA through Destin Consulting Ltd, who sit on the Governance Group.

- **Independent Assurance Review of NBSP:** An independent assurance review was undertaken in April-June 2018 to consider how well positioned the NBSP is for successful delivery, what changes might be required and what the Ministry of Health can learn to support the design and roll out of further national initiatives. Professor Gregor Coster led the review team that included Dr William Rainger, Professor Graeme Young and Dr Mary Seddon. The review team also included input from a Public Health Medicine Specialist to provide expertise on population health systems and the impacts of these systems on the quality and safety of the roll out with a focus on future improvements. The Health Quality and Safety Commission (HQSC) provided expert project management and secretariat support to the review team to ensure timely delivery of the findings.

  The Independent Assurance Review reported formally in July 2018. The review concluded that "[t]he panel is fully supportive of the National Bowel Screening Programme and endorses its continued roll-out as planned. The National Bowel Screening Programme is in a good position and has considerable strengths." The key recommendations from the Review, and the actions being taken to address these findings, are summarised in Appendix 1.

  Any final recommendations from the Independent Assurance Review that have a material financial impact on the NSS Programme will be required to go through Change Control involving the Corporate Centre and Joint Ministers of Health and Finance.

[5] Gateway 0: Strategic Assessment (to review of the overall Programme) and Gateway 3: Investment Decision (to review the proposed investment in the NSS).

NBSP Key Risks and Risk Management

The key risk areas for NBSP are captured in the NBSP Risk Register and are monitored regularly. The highest rated risks and issues are reviewed monthly by the Governance Group. The current key NBSP programme-level risks and the actions being taken to address these risks are summarised in Table 5.

Table 5: Key NBSP Risks and Risk Areas

Risk	Risk Management Strategy
If the BSP+ register does not contain accurate information about eligible participants, there is a risk that some eligible individuals will not be invited to screen. This could result in eligible participants who are not screened, subsequently developing bowel cancer.	• A robust invitation strategy has been implemented. • It is recognised that <100% of data available to identify eligible participants will be accurate. • National Health Index (NHI) is updated with contact information from specific sources such as the National Coordination Centre (NCC) who are tasked with contacting eligible participants during active follow up process.
If BSP+ data is lost and cannot be recovered, the NBSP will not be able to manage new participants or monitor and process existing participants through the screening pathway. This could result in a loss of data quality and have a negative impact on benefits monitoring and forecasting.	• Risk escalated to the NBSP Governance Group with supporting documentation around impacts of not taking action on this risk. • Longer term solution (12-18 months) is to replace BSP+ application with the new National Screening Solution (NSS) system.
If functional limitations on managing participant personal information and error protection are not addressed, there is a risk that the NCC will not be able to operate safely and eligible population will not be invited to screen or may not be recalled on schedule.	• Address management changes, including access to NHI database address information and the ability to update those details for individuals.
If the NBSP has inequitable participation rates, participation will not be optimal and inequity between population groups increases. When Māori, Pacifica and/or other populations have lower participation rates the NBSP is not offering screening to the required level of eligible participants.	• Both NCC and DHBs are required to have plans and act to engage with priority populations through active follow up processes and equity plans. This is at the DHB and Regional Centre level of NBSP operation.
Current remuneration negotiations with groups of health professionals may drive NBSP outyear operating costs beyond what the Programme has budgeted.	• Close monitoring and, where achievable, agreements on outyear unit prices with DHBs.

As the NBSP is rolled out across the DHBs, the Ministry is continually monitoring the DHB performance against the colonoscopy waiting time indicators. In order for the NBSP to be delivered safely, it is critical that participants identified as requiring further investigation receive this in a timely manner. Some DHBs are experiencing challenges in meeting the waiting time indicators, and the Ministry is working closely with these DHBs to ensure that appropriate mitigation planning is underway to ensure the targets are met prior to NBSP go-live, and maintained post go-live. The Regional Centres have a role in managing capacity across the region. Performance in this area will continue to be monitored closely to ensure that the risk is effectively managed.

4 DHB Implementations: 2018/19

4.1 2018/19 Implementations

The assessment of the IT solution supporting the bowel screening pilot[6] (known as BSP+) indicated that it could be maintained and strengthened sufficiently to accommodate a small number of additional DHBs, but that it could not safely be used to support all of the DHBs. It was therefore decided that, to maintain the safety and integrity of the NBSP, a maximum of eight DHBs would commence bowel screening using the Interim IT solution (a strengthened BSP+). Subsequent DHBs would not commence screening until the NSS is available.

As a result of greater complexity and time required for the procurement of the NSS, the procurement process concluded in April 2018 with the selection of a preferred vendor. A Discovery and Design phase commenced in late April 2018 and the completed NSS is due to be delivered by March 2019. To allow time for adequate testing, it was agreed that only two DHBs would commence screening in 2018/19, once the NSS is live.

As a result, the number of DHBs implementing NBSP in 2018/19 has been revised from ten to five, including Hawke's Bay, Lakes, MidCentral, Nelson Marlborough and Whanganui.

The Ministry is working closely with the DHBs to ensure they meet all requirements, prior to go-live. If any issues are identified with achievement of requirements or clinical safety, the Ministry will work with the DHB to revise their go-live date.

The timeline for the 2018/19 implementations is shown in Figure 3.

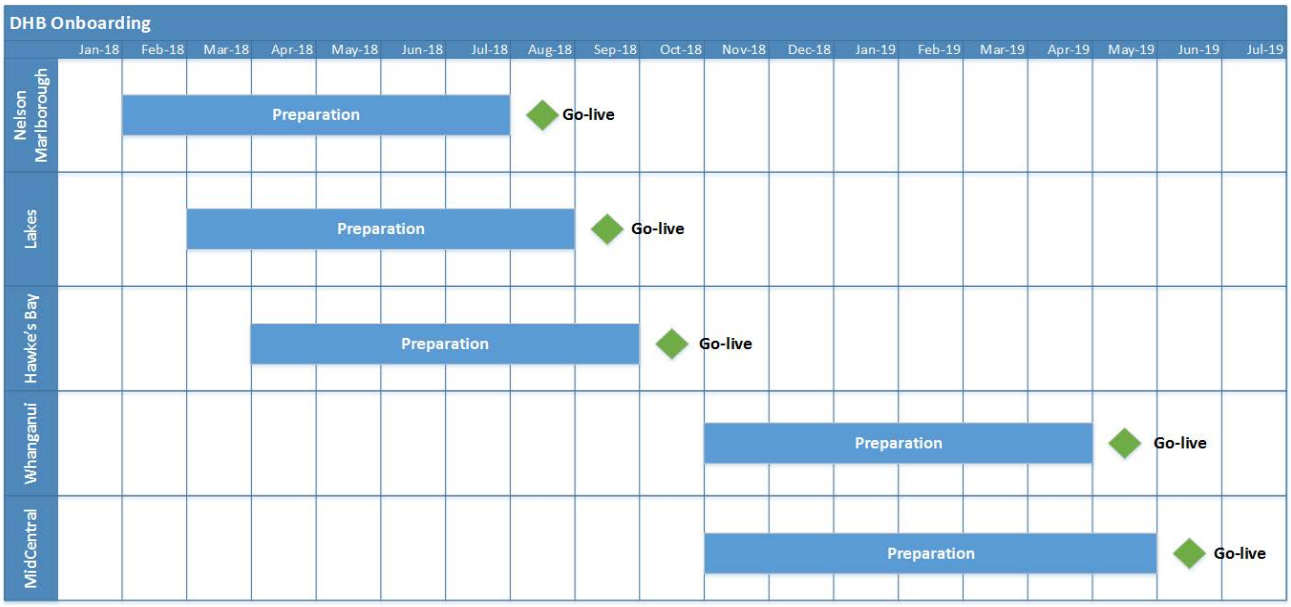


Figure 3: 2018/19 Implementation Timeline

[6] "BSP Due Diligence Interim IT Solution Assessment, 12 May 2017", by EY, accepted by the Ministry of Health May, 2017.

4.2 DHB Implementation Approach

Planning for NBSP Implementation

As part of preparing for the NBSP, each DHB has provided the Ministry NBSP team with their analysis of existing services and how the NBSP will be implemented locally. A summary of each DHB approach is attached as Appendices 5-9.

Service Delivery Options Analysis

In determining how the NBSP will be implemented in each DHB, initial analysis was undertaken for existing services and the anticipated impact of the NBSP on these services. Services considered were those impacted directly by the NBSP (e.g. endoscopy) as well as those which will be impacted indirectly (e.g. oncology and surgery). This approach is to ensure that participants receive an appropriately prompt service for both the NBSP and DHB funded elements and that other patients are not disadvantaged as a result of the additional demands arising from the NBSP.

Where the DHB identified more than one potential approach for meeting the additional demand, options analysis was undertaken to evaluate the options and determine the preferred approach. Options were evaluated against five standard criteria, as well as local criteria (where applicable).

The standard evaluation criteria are:

- **Strategic fit and business needs:** How well the option meets the NBSP objectives, related business needs and service requirements, and integrates with other strategies, programmes and projects.
- **Potential value for money:** How well the option optimises value for money (i.e. to deliver the optimal mix of potential benefits, costs and risks).
- **Supplier capacity and capability within timeframe:** How well the option matches the ability of potential suppliers to deliver the required services, and likelihood of a sustainable arrangement that optimises value for money.
- **Potential affordability:** Likelihood that the option can be afforded within likely available funding, taking into account other funding constraints.
- **Potential achievability:** Likelihood that the option would be successfully delivered, given the organisation's ability to respond to the changes required, and the level of available skills required for successful delivery.

4.3 Financial Summary for 2018/19 Implementations

The DHBs preparing to implement NBSP in 2018/19 have been provided with indicative budgets, to inform implementation planning. An initial high-level indicative budget was provided to the DHBs in December 2017. This was followed in early 2018 with a more detailed breakdown by funding line, to provide a greater level of clarity to the DHBs about areas of expected spend. Each DHB has undertaken financial analysis to reconcile its planned implementation approach with the funding indicated by the Ministry.

As part of Budget 18, additional funding of $67.085 million over four years was agreed to fund the NBSP Year Two.

The financial summary for the NBSP, including the five DHBs going live in 2018/19 is shown in Table 6.

Table 6: NBSP 2018/19 Costs

MoH Programme Costs, Nelson-Marlborough, Lakes, Hawkes Bay, MidCentral & Whanganui DHBs	2018/19 $'M	2019/20 $'M	2020/21 $'M	2021/22 $'M	Total 4 Years to 2021/22 $'M	2021/22 & Outyears total $'M	Total to 2036/37 $'M
Total Ministry DE	[redacted]						
Information System Costs DE							
National Co-ordination Centre							
National FIT Laboratory							
Bowel Screening Regional Centre							
DHBs							
Training, Quality & Communication							
DHB Treatment Costs							
Waitemata 50-60 transition cost							
Total Budget 18 Operating Cost	**19.052**	**19.242**	**16.971**	**17.769**	**73.034**	**137.379**	**210.413**
Total Capital Funding					**-**		**-**
Total NBSP Funding	**19.052**	**19.242**	**16.971**	**17.769**	**73.034**	**137.379**	**210.413**
DHB Funded Cost	[redacted]						
Total NBSP Cost							

Financial analysis for each DHB and the full NBSP is included in Appendix 5.

Appendix 1: Independent Assurance Review - Summary Recommendations

Critical: within six months. Essential: within twelve months.

High level recommendation		Priority	Action Plan / Comment
1	MoH should strengthen the population health governance of the NBSP population register to ensure that every effort is made to avoid a repeat of the issues that led to eligible participants missing out on bowel screening during the pilot.	Critical	• A number of activities have been undertaken as a result of the Bowel Screening Pilot register issues these include: o Any issues arising from the NBSP population register are reported to the Governance Group, Clinical Oversight Group and the National Screening Advisory Committee, as appropriate. o The Ministry and National Coordination Centre (NCC) hold monthly clinical and operational meetings to monitor performance. o The NCC is supported by a population health clinician and there is oversight from the NCC Clinical Governance Group. o The Ministry will continue to act on lessons learned as the NBSP is rolled-out. o Extensive fail-safe reporting is in place to identify invitation of pathway issue. This reported and monitored through the NCC operational and clinical governance groups. o NBSP has a stringent IQA process in place.
2	MoH should review the functionality and operation of the population register, to increase its accuracy and completeness.	Critical	• The Ministry will undertake a further risk assessment of the interim IT solution, this will be completed by the end of October 2018. • To ensure NBSP is using a comprehensive dataset, data for the preceding 36 months is mined from the following sources: o National Health Index database, Mental Health database, National Minimum Dataset for Hospital Events, National Non Admitted Patient Data Collection, Pharmaceutical Claims Datamart, Laboratory Claims Collection, Cancer Registry, National Maternity Collection, PHO Data Warehouse and latest visit date in General Medical Services. • The NCC Standard Operating Procedures document the use of any manual overrides and failsafe reporting.

High level recommendation		Priority	Action Plan / Comment
			• Any learning points from issues arising with the NBSP population register are formally notified to and actioned by the other screening programmes within the NSU which may be affected by the same issue. • Failsafe processes implemented by the NSU and NCC will be reviewed to ensure that any anomalies identified are investigated immediately and remedial action is taken to resolve the issues and prevent its recurrence.
3	Urgent consideration of 'real-time' integration with primary care IT systems should be given in order to increase participation in the programme through primary care's access to a participant's full screening process.	Critical	• The requirement to integrate with primary health was identified in the RFP and is included as part of the current NSS Universal design. • Integration between the systems is included in the design of the NSS however is not real-time. The real-time integration with primary care IT systems has been explored as part of the process for the NSS for bowel screening, however this would (potentially) become available where cervical screening is implemented on the NSS. • Current processes provide full transparency of screening progress for participants for Primacy Health, other than notification of registration (prior to the completion of the first screening round) • This requirement will be revisited through the design phase, where any requirement will be tested against feasibility, quality, time and cost. The NBSP's Primary Care Lead will support this process to ensure there is input and advice from Primary Care into this process • Direct real time access is currently out of scope for the NSS, is not funded and would therefore be subject to a further budget bid.
4	MoH needs to continue to monitor and manage carefully the ongoing risk that limited functionality of the BSP+ presents.	Critical	• Monitoring is in place and ongoing, across both the NSU and NCC. • The eight DHBs using the interim IT solution (BSP+) are expected to migrate to the NSS in 2019/20. The timing of the transitions will be finalised once there is greater certainty on the development timeline for the NSS. • DHBs implementing screening from March 2019 onwards will utilise the NSS from the time that they commence screening under the NBSP.

High level recommendation		Priority	Action Plan / Comment
5	MoH should continue to strengthen project management during the design, build and implementation of the NSS to ensure deliverables are met within the planned timeframes. It should review IT governance arrangements to ensure they are fit for purpose.	Critical	• The project and governance structure are currently under review to ensure appropriate support and skillset is available for the delivery of the NSS and NBSP operations. The recommendations from the Independent Assurance Review and Gateway Review will be incorporated into the structure to be discussed at the July 2018 Governance Group meeting. • The requirement for a Programme Manager, to manage all aspects of the NBSP, has been identified and recruitment of a suitable resource is underway. • Recruitment for a Senior IT Project Manager has been completed with a start date of early August 2018.
6	DHBs, the primary care sector and NCC should be appropriately involved during the design, build and subsequent phases of the NSS.	Critical	• The Ministry is actively engaging with DHBs, NCC and other stakeholders as part of NSS design. • Change Management plan developed in support of the NSS business case sets out the stakeholder engagement strategy and approach. This will guide the sector and other stakeholder consultation during the build phase of the NSS and will ensure appropriate engagement during the validation (business acceptance testing). • The NSS Clinical Reference Group (CRG) and Design Authority (DA) are now operational. Terms of reference for the DA are defined and CRG terms of reference is in draft. • A Technical Reference Group is being established to oversee technical governance across the sector. • NCC have been engaged and will continue to be engaged through the design phase of the NSS: o Budget has been identified within the business specifically to support this engagement. o A Terms of Reference that defined their engagement requirement throughout the whole NSS delivery life cycle has been defined. • Engagement with stakeholders is led by the NBSP Sector Deployment Team to ensure consistent and robust messaging across screening programme and technology rollout. • It is proposed that a DHB CEO is invited on the NBSP Governance Group.

High level recommendation		Priority	Action Plan / Comment
7	To achieve equitable outcomes, NBSP should strengthen its approach to, and accountability for, equity at all levels. This includes increasing leadership and engagement of Māori, Pacific people and consumers. Funding to achieve this outcome should be budgeted for and directed.	Critical	• This recommendation will be considered as part of the review of the Governance structure. o The Executive Lead for Māori Leadership is currently a member of the NBSP Governance Group. She is also the Ministry's lead on for equity across the health system. o Bowel Screening Advisory Group membership includes the Ministry Chief Advisor for Pacific Health, a senior clinical external Pacifica representative, the Chair of the Hei Āhuru Mōwai, and a Māori academic. • Further areas to strengthen leadership and equitable outcomes continue to be explored in conjunction with stakeholders. Any funding requirements associated with equity initiatives will be subject to funding approval, and potentially a future budget bid. • Māori and Pacific networks were established in 2017, as part of the Bowel Screening Regional Centres, to support and inform those working in the NBSP. • All written materials, and any significant changes to these materials, have been reviewed and informed by, Māori and Pacifica focus groups. • Māori Hui and Pacifica Fono are ongoing within each DHB area as the programme is being rolled out.
8	MoH should note the health and disability sector's concern about the current age-range restrictions, in particular in relation to the equity impact for Māori. MoH should continue to closely monitor programme data and review the programme parameters, including age range, as more DHBs join the programme.	Essential	• A position paper endorsed by Bowel Screening Advisory Group will shortly be released on the Ministry website which clearly articulates current evidence in relation to the equity impact for Māori. This will be shared with the sector, accompanied by a letter of the Dr John Child, Chair of the Bowel Screening Advisory Group. • The Ministry will continue to monitor programme data and international evidence. This will inform a review of programme parameters, including age range, once the programme has been fully implemented from 2021. • Any changes to programme parameters would be subject to a future budget bid.
9	A workforce development plan needs to be developed to ensure availability (and funding) of a sufficiently skilled workforce into the future.	Essential	• The NBSP will work with Health Workforce NZ to review the workforce development plan in collaboration with stakeholders to support a sufficiently skilled workforce. • Assumptions in the 2017 Health Workforce Model (created by Health Workforce New Zealand to plan for the required capacity for full rollout of the NBSP) will be tested to ensure they remain valid. • Funding of workforce development for Nurse Endoscopist training is ongoing

High level recommendation		Priority	Action Plan / Comment
10	The current governance structure for the NBSP should be refined and more clearly articulated, ensuring appropriate pathways exist for escalation of issues and risks.	Essential	• The governance structure is currently under review. The recommendations from the Independent Assurance Review will be incorporated into the structure to be discussed at the July 2018 Governance Group meeting. • Membership of the Governance Group is likely to be expanded to include a DHB Chief Executive Officer.
11	Stronger evidence of clinical governance is needed across all aspects of the NBSP and at all levels, including within IT governance arrangements. This includes the programme Clinical Director formally and regularly reporting to the relevant executive governance groups to ensure clinical sector feedback.	Essential	• The revised governance structure will clearly articulate how and where clinical governance is provided across the Programme, including: o Chief Medical Officer membership on the Governance Group will remain, with the NSU Clinical Director and NBSP Clinical Director will continue to attend as ex officio attendees o The Clinical Directors have a standard agenda item to discuss clinical matters on the Governance agenda o Clinical membership of the Bowel Screening Advisory Group (BSAG), National Screening Advisory Committee, National Bowel Cancer Working Group, National Endoscopy Quality Improvement Programme (NEQIP) o National Coordination Centre Clinical Governance Group, plus screening expertise (currently provided by the NSU Clinical Director) on the Homecare Medical Ltd Clinical Leadership Group o Clinical oversight at the NSU operational level through the Clinical Oversight Group (COG) o Clinical oversight and input in the NSS through clinical membership of the Design Authority and the Clinical Reference Group. o Ongoing liaison between the NBSP Clinical Director and the clinical leads for the DHBs to ensure any clinical issues are identified and reported back into the NBSP.
12	The NBSP must use robust programme management to ensure all aspects of this complex programme, including risk, stakeholder engagement and quality assurance, are closely monitored and well managed.	Essential	• Project structure is currently being reviewed and this recommendation will be incorporated into changes being considered. • The NBSP is using adapted PRINCE2 and MSP methodologies

High level recommendation		Priority	Action Plan / Comment
13	A full set of protocols and policies supporting the readiness and roll-out of the NBSP should be developed as a matter of urgency, to provide greater support and clarity to the sector.	Essential	• The NBPS deployment team have developed a full set of protocols and policies supporting readiness have been finalised and are available on the shared workspace. This is accessible by the relevant DHB staff. • This has been developed based on feedback from DHBs and the deployment team's knowledge developed as part of the deployment process.
14	The MoH and NSU should strengthen partnerships with external agencies and organisations, to ensure effective knowledge sharing. This includes partnerships with the Corporate Centre (State Services Commission, Treasury, and Department of Prime Minister and Cabinet), Waitemata DHB (WDHB), Bowel Cancer New Zealand and Hei Āhuru Mōwai (Māori Cancer Leadership Group).	Essential	• High profile nature of the NBSP requires careful risk management across the corporate centre as well as its regular reviews. • Ongoing engagement is underway with the Corporate Centre. Engagement with Treasury is through the Vote Health team, the Better Business Case process, Gateway Reviews and the Major Projects Team. The NBSP is in regular contact with MBIE regarding procurement. Engagement with GCDO provides assurance on the IT elements of the NBSP. Regular meetings are held with central agencies, the SRO and the NBSP team to share information and seek advice. The Ministry will explore with central agencies how this could be further enhanced. • The need to strengthen relationships with key stakeholders will be incorporated into the NBSP structure review as well as through the Sector Deployment team including the Stakeholder Engagement role currently being recruited. • The Ministry and the NSU are working with the Ministry of Education and the Ministry of Social Development on social licence issues. These discussions are within the framework set by GCDO. • The Deputy Chair of the NSUs Māori Monitoring and Equity Group is also a member of Hei Āhuru Mōwai and opportunities are being explored for these groups to be closer connected. • Membership of the Governance Group is likely to be expanded to include a DHB Chief Executive Officer
15	A single set of national quality assurance standards for colonoscopy (including colonoscopy units) should be endorsed, with clear agreement on accountability. This involves bringing together the Endoscopy Governance Group for NZ's (EGGNZ) quality	Essential	• The NBSP Interim Quality Standards are currently being reviewed to ensure that the EGGNZ standards are adopted as a minimum. (In some instances, Screening requires a higher standard than that recommended by EGGNZ). • NBSP is working with EGGNZ to develop a sustainable delivery model for colonoscopy going forward. This includes continued financial support to NEQIP which will ensure the clinical safety of all colonoscopy procedures undertaken in the public health system.

High level recommendation		Priority	Action Plan / Comment
	assurance standards and the NBSP interim quality standards.		
16	A comprehensive multi-year funding pathway should be developed to help embed the programme throughout the sector.	Essential	• Programme funding was sought in 2016 for the full implementation. The Cabinet decision was to fund the NBSP incrementally. • Operational funding is provided for multiple years for those DHBs implementing the NBSP in each financial year.
17	MoH should provide regular written communication to all parties involved in the roll-out. This would include a technical section updating issues related to the IT systems (BSP+ and NSS), as well as reports on clinical standards development, performance measures and learnings from other DHBs during the roll-out.	Essential	• NBSP will review its quarterly stakeholder update to implement this recommendation o The NBSP newsletter is produced as an e-letter. This is available to all DHBs, including those who have not yet implemented NBSP. It is publicly available on the Ministry website and subscribers are automatically notified of each new issue. • The NBSP will work with stakeholders on opportunities for sharing of information across DHBs and the NBSP Regional Networks.
18	A strong learning culture at the MoH and across the NBSP needs to be promoted. This includes an openness to feedback, involvement of external expertise, transparency in decision-making and shared ownership of issues.	Essential	• Opportunities for learning will be reviewed to give effect to this recommendation, including: o Continued engagement with colleagues in other agencies to receive feedback and identify any learning opportunities from other programmes. o Greater use of Bowel Screening Regional Centres to share and disseminate learnings o Continued use of external expertise to inform the NBSP both national and international. Bowel Screening in NZ has been supported by a range of international advisors, including the NHS lead and the lead for the Canadian bowel screening programme. In addition, the NSU through its Clinical Director and Group Manager has ongoing engagement with screening in Australia. o Proactive release, on the Ministry/NSU website, of Health Reports, Cabinet Papers, business cases and research papers on NBSP, as well as the minutes of BSAG. o Greater use of the Time to Screen website for sharing with participants.

High level recommendation		Priority	Action Plan / Comment
19	Innovation and continuous quality improvement should be encouraged to achieve equitable access. This includes the provision of additional resources to develop, test and disseminate this learning.	Essential	• The NBSP continues to consider ways of improving quality and equity of access as outlined in recommendation 7. • The Ministry will continue to work with DHBs, NCC and stakeholders on developing plans to support equity within current resources.

Appendix 2: Programme Cost Benefit Analysis

Assumptions:

1. The CRC mortality rate would decrease due to more cancers being found earlier, which would impact on survival. This would start to impact mortality rates approximately 8-10 years after the commencement of screening
2. The CRC incidence rate would decrease due to pre-cancerous lesions being removed from the population during screening colonoscopies. The decrease in incidence would occur approximately 10 years following the commencement of screening.
3. Participation rate assumed at 62%.
4. Cancer that would have been found without screening would have been found earlier. This would result in a stage shift and the corresponding savings in treatment costs. The average first year and remission cost for cancer patient treatment of [redacted] had been used.
5. The stage shift is expected to create a short-term increase in treatment cost during the first and second round of screening. This has been estimated based on the numbers of cancers identified from screening at 33% of the average first year and remission cost for cancer patient treatment.
6. Costs to the Ministry, regarding surveillance colonoscopy, will increase. Costs to the Crown, however, remain the same.
7. QALY gain based on Waitemata pilot study of 0.0607 had been assumed.
8. Increase superannuation cost based on difference between average life expectancy of 81 years with the average age of CRC deaths of 68 years for the projected reduction in mortality.

Appendix 3: Lessons Learned – Hutt & Wairarapa DHBs

The lessons learned from Hutt and Wairarapa DHB Go-Lives were distilled in October 2017 (Table 7 below).

Table 7: Lesson Learned from Hutt and Wairarapa DHB Go Lives

Category	Recommendation
Stakeholder Engagement with all your stakeholders is important at the early stages of commencing any work. This includes DHBs, service providers, business owners and other departments within the Ministry	Early engagement through workshops allows introductions of key personnel and stakeholders This fosters a sense of collaboration and ensures a shared vision for the work to be completed. Having everyone together allows networking, introductions and key roles to be identified
Stakeholder A collaborative approach to delivery is important to stakeholders	Actively seek involvement and input from DHBs and other stakeholders on key deliverables and artefacts during the discovery phase and planning. This ensures that there are no surprises and allows everyone to have their specialist knowledge and requirements considered in solution design.
Documentation Documentation needs to be in place before the programme of work starts	Providing finalised versions of contracts, templates and PID type documentation ensures that the work can begin with a clear vision of what is expected and how outcomes can be measured as achieved
Documentation Contracts need to be clear on what is expected	Formal binding documentation such as contracts or Statements of Work, need to clearly state what is expected and what the responsibilities of each party are. This ensures accuracy in budget forecasting and work planning
Planning DHBS may rely on the Ministry for guidance and support	DHBs may not have a specific resource for project management. They will rely on the Ministry to provide documented guidelines and supporting documentation to ensure they deliver required reporting and key artefacts during the project work
Resources Roles and responsibilities	Roles and responsibilities need to be determined early and be shared with all stakeholders. A RASCI type table and agreement from everyone on it as to what they are Responsible, Accountable, Supporting, Consulting, or just Informed about - needs to be documented and agreed.
Planning Include key stakeholders in governance and steering group membership.	If DHBs and other stakeholders are included in the membership of steering and governance committees, they can provide insight from their perspective and work collaboratively to develop solutions and achieve shared goals
Support DHBs can network and support each other during bowel screening project development	When DHBs that have been through the development and go-live process for bowel screening are able to provide support to new DHBs they can assist with DHB specific questions and answers based on their experience.

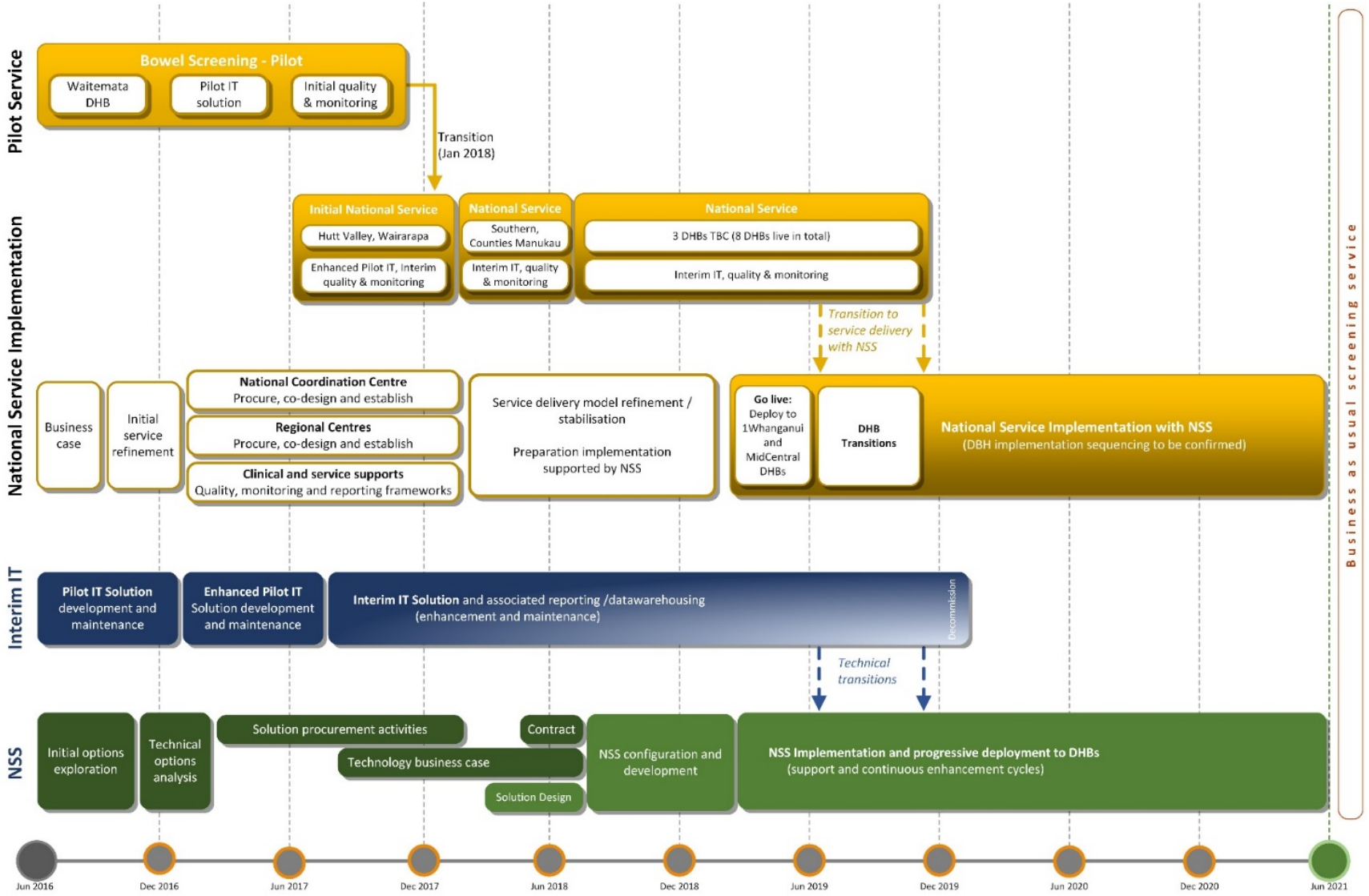
Category	Recommendation
Deliverables Know what is expected	Provide clarity to DHBs on expectations for deliverables that are not specific e.g.: equity The Ministry needs to be clear and able to communicate requirements for this deliverable
Planning Timeframes for delivery must be reasonable	Ensure that DHBs are involved early and consistently for delivery of key documentation such as contracts. Agree timeframes and provide draft documentation for ongoing review.
Stakeholder DHBs have key relationships with service providers, such as labs and PHOs	The Ministry can work with DHBs to ensure successful interactions with local PHOs and other service providers, as DHBs may already have contracts and networks with these providers
Documentation Keep your stakeholders informed	Develop and agree a RASCI early. Get agreement from those on it as to their responsibilities for this process
Planning Tell DHBs what they are in for	Ensure that the DHBs are advised early and completely what lies ahead. The change programme for bowel screening is a major piece of work for a DHB - they need to be well informed and supported from the earliest stages of preparation
Resources Key people and contacts	Provide a clear list of key people for contact and processes to communicate. This should include agreed timeframes for response, format, regular meeting schedules, and purpose of the meetings.
Planning What about BAU?	After the screening programme is in place, ongoing guidance and collaboration is required for successful embedding and BAU provision of services. The structure and requirements of that service need to be planned for and established during the project phase
Culture Define and agree cultural definitions	DHBs and the Ministry operate in two different cultures. Agreeing a culture for success early provides an easier working relationship where expectations and obligations are understood. This includes how information is shared, what each party can decide and what is open to negotiation.
Process Testing can have an impact on production	The Ministry completed end to end testing on the production environment at Waitemata. Impacts on the registry caused concern to Waitemata. A better approach would be to clarify what is currently known to work and adjust the testing for any system changes in collaboration with the DHB or service provider.
Planning Workshop with stakeholders	Day 1 activities for projects should include workshops with BAs, IT and other stakeholders to ensure everyone is on the same page and working towards the same deliverables and timelines.
Resources Changing roles	Ensure transparency and awareness of roles and responsibilities when there is high staff turnover. Keep this information updated and ensure wider team knows of any changes
Documentation Know your dependencies	Before signing off on a document, know the dependencies that exist. These should be detailed on the front page of the document in a summary table and be part of the sign-off process

Category	Recommendation
Culture Transparency between projects	Part of working collaboratively is ensuring transparency between projects and work streams. Keep communicating and sharing updates to avoid impacts due to unknown dependencies and double-up of work
Planning Know your stakeholders	Identify who is involved, RASCI matrices are useful. Get the right people involved and ensure they understand what their involvement is with the work.
Communication DHB Relationship Management	DHBs need consistent relationship management. The RMs role is to keep their DHBs informed and on track for delivery. Need to work closely with the RMs to ensure collaboration and success. RMs should always be the key point of contact for working with the DHBs (this goes both ways)
Planning Key deliverables	At a high level, DHBs need to know: what are the key deliverables for each work stream/project Deliverables need to be documented and agreed. This is a key element of project management. Who is responsible for delivery? High level plan for delivery Is there a product catalogue that includes the deliverables?
Planning Display key programme information on a wall	Get some wall space, use it to display key summary documentation. Programme structure Timeline for the programme Key people - their roles and responsibilities
Culture Create the right culture	Need to move away from a 'need to know' culture and share information and planning with the wider team. Sharing should be the default state. Trust other team members to provide support and contribute to success. Consider a statement of cultural intent
Process Iterative Change	Change in the NBSP is iterative - it is parcelled and delivered in an agile way. Key things to identify are the MSP/MVP (minimum safe/viable product)
Process Test environments	IT test environments need to be accessible and available for BAs and other key users to work iteratively
Process Document sign off process and timing	A sign off process for documentation needs to be agreed, documented and followed. Who signs off? What timeframes? What forum does the document need to go through for approval?
Process Assumptions and Dependencies	At the front of document artefacts - include a table of known dependencies and assumptions. This will reduce the likelihood of surprises and provides a clear indication of other work is connected to this deliverable
Planning Early Planning	For projects such as the National Coordination Centre early planning is important to success. Avoid information dumps. Engage all stakeholders in the planning. Give people time to plan and provide information. Avoid the panic of short-time frames and drop-dead-dates

Category	Recommendation
Planning Regular review of planning at a programme level	Work with the PMO and key stakeholders to do a regular review of high-level programme planning. This ensures everyone has visibility of the entire programme progress and targets
Process Entry and Exit Criteria	Know what the starting point is (current state) and what the required deliverable is for the exit point (future state). Documenting the entry and exit criteria provides a clear understanding for requirements, deliverables, work required, and dependencies
Process Agree a testing methodology	Have a testing methodology - and work with it. Keep the right stakeholders informed and have agreed processes for high priority fixes and management of testing
Resources Assigned desks	Having teams sitting together allows for networking and updates. Although a hot-desking system is used, a desk allocation system could be agreed internally that will improve productivity and access to key co-workers Securing a 'War Room' space allows for project teams to workshop and have a place to illustrate key information (things on the walls)
Communication Document Sharing	Utilise the DIA shared workspace to provide a space for service providers, DHBs and MoH teams to share documents prior to final versions
Culture Disconnected between Management and Work	Avoid the disconnect between leadership and work. Leadership needs to keep the teams informed. This reiterates that the team are trusted and helps them know when changes are coming and what to expect when planning and executing work Having actual knowledge prevents false assumptions, which can create confusion and rework
Communication Regular meetings with DHBs and Service Providers	Schedule regular updates and meetings with DHBs and service providers. Keep them informed of progress and what is coming up. This is a key role of the Relationship Managers
Planning Regional Centres	Include Regional Centre key personnel in planning meetings for DHB rollouts. They have an important role to play in bringing DHBs in their regions online. Include National Coordination Centre, SDHB and CMDHB in the planning workshops for the next go-live
Support Readiness Assessments	A wider team for site visits as part of the readiness assessment process proved effective. Make sure the right people are involved and the DHBs are given support to ensure best outcomes.
Process Agree change processes	If a process or documented standard is to change, engage with the affected parties and agree a time frame for this change to take effect At the same time, regular communication with DHBs will alert them to critical changes that may have to occur with short notice.
Process Active Follow Up	More emphasis on what DHBs propose for managing participants who do not respond to active follow up. How will they assess and manage those participants? Proposed structured plan – could be included in the service establishment contract

Category	Recommendation
Stakeholder Clinical Leadership	Engagement with clinical leadership in DHBs needs to be regular and have multi-disciplinary representation Note that clinicians require 6 weeks' notice for meetings.
Stakeholder Primary Care	Engage with primary care early. John McMenanmin is the Ministry liaison for PHOs. Having to go through the DHBs to engage with the PHOs was time consuming and caused delays. Going forward the Ministry requires key contact details in PHOs and John McMenanmin can support this contacting PHOs directly
Stakeholder Onsite visiting schedules	Manage the visiting schedules for DHB visits – so they know who is coming and what the purpose of the visit is. Visits can be streamlined so the team know who has recently been in and to avoid duplication and disruption for providers.
Risk Data Quality	Data quality management is critical. This needs to be managed carefully across the wider team (IQE, IT, DHBs)
Deliverables	Provide the DHBs with all the information possible including budgetary constraints, service specs and other key information to allow them to plan effectively
Stakeholder 3rd Party Service Providers	When outsourcing lab services, ensure the service provider is engaged early and have a clear link to clinical governance and planning forums
Documentation DHB Reports	Provide a list of monitoring reports to DHBs. This includes what BSP+ reports are going to be available to them to manage their quality and performance.
Issues PAT Testing	PAT testing was a point of contention with Waitemata, however testing did reveal unknown faults and points of concern. Future testing in production environments needs to be managed carefully with the service provider
Documentation Understand the Functionality of the IT system	Ensure that the DHBs understand the function and capability of the IT solution – letters that are sent by the DHB through their PMS. This is on the agenda for the 5 DHB workshop.
Documentation Guidance Documentation	Deliver the guidance documentation for each DHB in a form that is useable and appropriate for them
Communication Community Engagement	Community engagement is a critical part of the success of the programme. Proactive management and education of health sector professionals and the public has proven effective.

Appendix 4: NBSP Implementation Timeline



Appendix 5: Financial Details

NBSP Total

Total Budget 18	18/19	19/20	20/21	21/22	2022/23 & Outyears	Total
Ministry of Health departmental costs						
IT	[redacted]					
Interest, Depreciation and Capital Charge						
Total Ministry DE	**4,000,000**	**4,000,000**	**2,500,000**	**2,500,000**	**101,000,000**	**50,500,000**
DHB Bowel Screening Programme Related Costs						
National Co-ordination Centre Costs						
NCC one off set up costs	-	-	-	-	-	-
Postage of kits per year	[redacted]					
Postage for resending kits to people who spoilt their previous one						
Postage for faecal occult blood test kits returned per year						
Development and printing of local promotional resources, running of website etc						
Staffing costs and overheads						
Active follow up calls for priority population groups who have not returned kits						
0800 Number Phone system						
Sub-total NCC						
National FIT Laboratory						
One off set up costs						
Overheads for FIT blood test analysers						
Staffing costs (Spec reception, FIT analysis)						
Faecal occult blood test kits						
Sub-total National FIT Lab						
Bowel Screening Regional Centre costs						
BSRC one off set up costs						
Regional delivery of services (communications, staffing, DHB support, travel)						
Sub-total BSRC						
DHBs local services						
DHB one off set up costs						
DHB IT integration one off						
Supporting local colonoscopy service provision, including clinical leadership, training GPs and project management						
Colonoscopy service provision						
Histology of polyps and adenomas found during colonoscopy excl surveillance						
CTC following positive faecal occult blood test result excl surveillance						
Colonoscopy service provision - Surveillance						
Payment of GPs for positive result management						
Funding to PHOs: Primary care liason role, PHO support for GPs, passive followup of priority populations that do not return kits (after NCC attempts)						
Community incentives programme (participant recruitment & health promotion)						
Advertising						
Interest, Depreciation and Capital Charge						
Sub-total DHB						
Other						
GRS/accreditation/qlty improvement						
Social media						
Ongoing training requirements - nurse endoscopists						
NBSP sector training (IT, clinical, process)						
Sub-total Other						
Total DHB Bowel Screening Costs						
Funding from Ministry (Ministry NDE)						
Brought Forward DHB Treatment Cost						
Cancer						
Historical Cancer Costs						
Additional Symptomatic Cols						
Electives Funding						
Net Brought Forward DHB Treatment Cost						
Total NDE & DHB Funded Cost						
Total Cost (Including Capital but excluding Waitemata Transition)						
Waitamata Transition to national						
- Cols Pilot Surveillance						
Total Waitemata Transition to National						
Total Programme Cost						

MINISTRY OF HEALTH
MANATŪ HAUORA

Hawkes Bay DHB

Hawkes Bay	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36	36/37
Total national population																			
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Eligible Population																			
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Number of cols																			
Number of cancers																			
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Number of surveillance cols																			
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Number of cancers																			
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Histology %																			
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Colonoscopy Price																			
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Brought Forward DHB Treatment Cost																			
Cancer																			
Historical Cancer Costs																			
Additional Symptomatic Cols																			
Electives Funding																			
Net Brought Forward DHB Treatment Cost																			
Total NDE & DHB Funded Cost																			
Net Cost/(Surplus)																			
Total Appropriation (excl DHB Funding)																			

Lakes DHB

Lakes	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36	36/37
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MidCentral DHB

MidCentral	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36	36/37
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Nelson Marlborough DHB

Nelson Marlborough	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36	36/37
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Whanganui DHB

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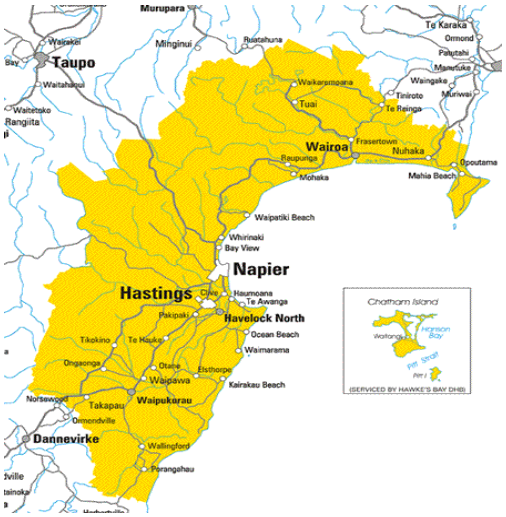
Appendix 6: Hawke's Bay DHB



Organisation Overview

In 2017/18 Hawke's Bay DHB provided health services to an estimated 163,580 people across Wairoa, Napier City, Hastings District and Central Hawke's Bay. 81.3% of the population lives in the two cities of Hastings and Napier. Hawke's Bay DHB is geographically wide spread with pockets of rural settlements with high deprivation, particularly in the Wairoa District.

Hawkes Bay DHB has a higher proportion of Māori and Pacific peoples in its population, at 30% compared to 22% nationally.

Hawkes Bay overall population growth is expected to be modest (0.5% growth per year over the next 10 years). However, growth is higher in the population 65 years and over and is projected to increase on average 3.1% per year over the next 10 years.

Bowel Cancer in Hawke's Bay DHB

Cancer Rates

Hawke's Bay Colorectal cancer age standardised registrations rates over the 5 years (2010-2014) in the non-Māori population are 44.4 per 100,000 population which is similar to the national rates (43.7 per 100,000). Hawke's Bay Māori rates are slightly lower 35.6 per 100,000 but not significantly different to national Māori rates or Hawkes Bay non-Māori rates.

Hawke's Bay DHB has higher colorectal mortality rates compared to national rates. Mortality age standardised rates (ASR) in Hawke's Bay Māori are lower than non-Māori (the Māori ASR is 16.2 per 1000,000 compared to non-Māori ASR of 18.6 per 100,000 in 2013). The colorectal cancer mortality rates are not statistically significantly different between Hawkes Bay Māori and Hawkes Bay non-Māori.

Eligible Population

27,480 people are currently eligible (60-74 years) for the bowel screening programme in Hawke's Bay DHB. Of the eligible population, approximately 13% is Māori, 2% Pacific peoples, 3% Asian and 83% Other. Whilst the eligible population is expected to increase on average 2% per annum over the next 10 years, the Māori and Pacific Island eligible populations are projected to increase by an average 4% and 5% per year respectively, over this period.

Just over 27 % of the eligible population live in areas classified as socio-economically deprived. Hawke's Bay DHB Māori and Pacific population is particularly impacted by socioeconomic disadvantage, with 56.8% of Māori and 73.6% of Pacific peoples living in areas classified as high deprivation.

Existing Colonoscopy and Treatment Services

Colonoscopy: Colonoscopy is undertaken at Hastings hospital, with the construction almost complete of a standalone gastroenterology facility to support an integrated gastroenterology service. This will be in place prior to NBSP go-live in Hawke's Bay. The gastroenterologists will be responsible for all the NBSP colonoscopies and patients will be scheduled on a "screening" list. The systems and process for referral management, the dedicated NBSP endoscopy sessions, specimen management and patient tracking will be developed and operational during the initial five months. Protocols and guidelines will be aligned to the

relevant BAU policy documents and new ones developed as required. The NBSP RN role will also work with IT to establish the NBSP KPI data base.

Surgery: The colorectal (CR) consultants with the surgical service have scheduled endoscopy sessions, and the colorectal clinical nurse specialist visits any colonoscopy patients if the findings indicate a referral to the CR team. Both speciality teams work closely together resourcing endoscopy sessions, registrar training lists, and acute cover. The Elective Surgical services is planning for the additional demand for assessment and treatment which will arise from the implementation of NBSP.

Oncology Services: The gastroenterology service is part of the Medical Directorate, linking to all the medical subspecialties. Oncology services are provided through a contract with MidCentral DHB. There is a Medical Oncologist and MOSS on site supported by visiting clinics for radiation oncology and haematology. All referrals to the Oncology services are prioritised by MidCentral DHB. The referral to FSA pathway is monitored and tracked by the HBDHB Oncology nursing team, according to the prioritisation score.

Multi-Disciplinary Meetings (MDMs): The Medical Oncologist is available for cross consulting and the oncology service provides a resource for the HBDHB MDMs, either through VC or attendance at the meetings.

Radiology: The pathway for failed colonoscopy to CTC has been confirmed between the endoscopy suite staff and the CT radiologists and radiographers. The goal is to have an efficient and safe transfer with minimal delays. Referrals for CT Staging and MRI will be processed as part of the referral to CR consultants as soon as the endoscopy assessment indicates. The radiology department has recently increased the radiologist resource which has enabled improved compliance with the Ministry production targets for CT and MRI wait times.

Laboratory: Planning is underway to implement a safe and efficient process to collect, identify and document specimen containers at the time of discovery. There will be a specific resource accountable for the transfer of the specimens to the laboratory and documentation of the laboratory acceptance of the specimens.

Colonoscopy Waiting Times: Colonoscopy wait time indicators are monitored monthly to assess percentage of colonoscopies performed within target. The colonoscopy waiting time performance targets are urgent (performed or waiting 14 days or less) 90%, non-urgent (performed or waiting 42 days or less) 70% and surveillance (performed in 84 days or less) 70%. The DHB performance against these targets is shown in Figure 4.

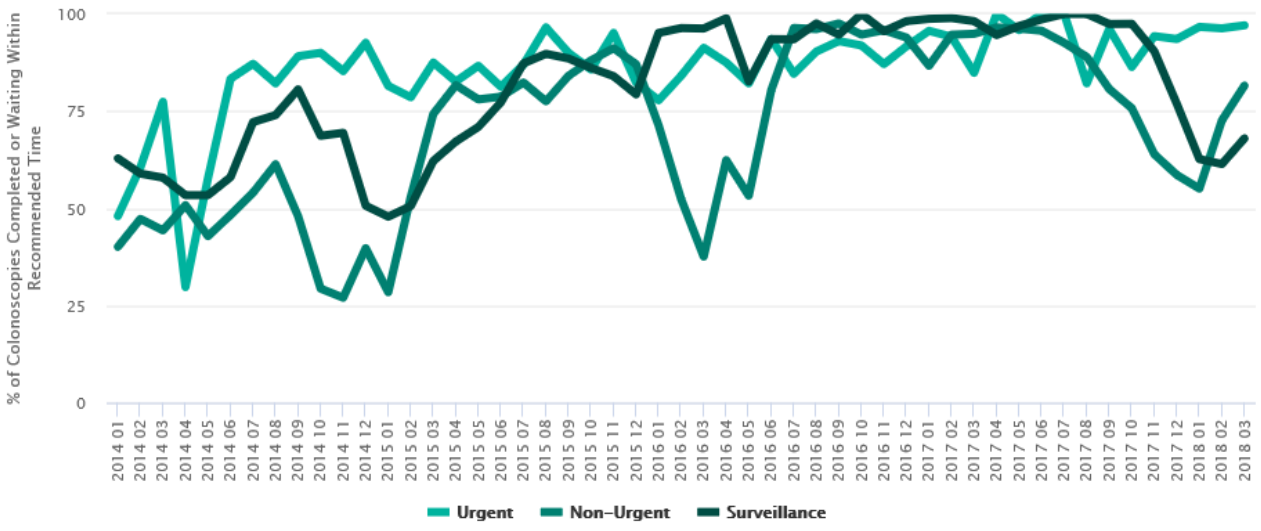


Figure 4: Colonoscopies completed or waiting within recommended time, Jan 2014-Mar 2018

Colonoscopy wait time indicators and the production targets are monitored weekly and reported monthly through the CEO office to the organisation and governing bodies. In order to achieve and maintain targets, measures have been/are being put into place, including: the merger of medical outpatient services and endoscopy services into a single gastroenterology clinical speciality; weekly operational meetings to monitor performance and implement actions as required and regular reviews of performance by the EUG; establishment of regular Saturday colonoscopy sessions; implementation of a week of procedures in February, March and April; and locum cover as required. The new facility has been designed to support increased demand.

Surgical Waiting Times: Within the last 2 years there have only been 6 instances of wait times for bowel surgery exceeding 4 months, with the last of these being March 2017. Within the last year, waiting times have been minimal with most patients waiting less than 2 months. Faster cancer treatment performance for lower gastrointestinal patients is good.

Investment Alignment with Local and Regional Strategies

The NBSP is aligned with local and regional strategies and plans, including the HBDHB Our Sector Vision, HBDHB Transform and Sustain, the Long Term Investment Plan, Annual Plan and Central Region Regional Services Plan.

Benefits and Disbenefits

In addition to contributing to the Programme-wide benefits, Hawke's Bay DHB has identified specific further local benefits and disbenefits, as summarised in Table 8.

Table 8: Benefits and Disbenefits of Implementing NBSP for Hawke's Bay DHB

Benefit	Summary
High quality, more integrated services	• Engagement of population through screening promotion and primary care partnerships. • Primary care clinicians have more confidence in the system meeting the requirements of the enrolled population. • More comprehensive service response enhances access to treatment. • National quality leaders working in Hawke's Bay positively influence quality of local service through strong leadership. • Reduced clinical risk.
Greater efficiency and effectiveness	• Earlier patient engagement and more self-care. • New purpose-built facility improves diagnostic efficiency and increased capacity will cope with demand • Long-term, better ability to meet acute and elective demand and meet the Ministry targets for faster cancer treatment and diagnostic colonoscopy. • Lower intensity of intervention enables more people to be treated
Disbenefit	**Summary**
Opportunity cost	• Prioritisation of capital and operating funds to implement NBSP will preclude investment in other priority areas. • Increased endoscopy suite/theatre and consultant time allocated to NBSP activity will reduce capacity available for other patients/activities.
Disruption to services	• Implementation requires change that will be disruptive to status quo. • New processes for NBSP will add "change-stress" during commissioning of new facility. • Introduction of new information system requirements and the need to re-visit when the NSS is rolled out.

Increase in volumes	• Previously unidentified cases now require response. • Increase in "worried well" seeking service – raises additional concerns for people who do not have bowel cancer; increased anxiety. • Increased awareness resulting in up to a 20% increase in demand for colonoscopy, where symptoms have previously ignored.
Increased reported incidence of bowel cancer	• More cancers detected earlier leads to higher incidence rates which could be interpreted negatively in comparative statistics.
Impact on other services	• Increased colonoscopy activity will increase demand on other parts of the system e.g. laboratory, surgical and community. • Staff shortfall as clinicians transfer between departments and screening-related roles are filled.

Key Risks

The risks assessed as being the highest probability and highest impact, post mitigation, for Hawke's Bay DHB are summarised in Table 9. As noted previously, the risk of not meeting colonoscopy waiting time indicators is being monitored closely and specific actions are underway to ensure achievement, this risk is therefore not included in the following table.

Table 9: Hawke's Bay DHB Key Risks

Key Risks	Risk Management Strategies
Recent implementation of the Bowel Screening Regional Centre will limit extent of learning which can be shared	• Work with Regional Centre to integrate effort and influence introduction of change management where possible. • Ensure close liaison between Regional Centre and HBDHB.
Lack of stakeholder buy-in may constrain availability for implementation	• Establish meetings early and ensure membership of groups covers all stakeholders. • Provider regular updates.
National communication resources may not meet specific local needs	• Communication resources may require localisation and local launches. • Equity to be embedded and made appropriate for local communities. Requires close work with Regional Equity Champion.
Insufficient funding may result in financial pressure	• Ensure full participation of stakeholders in working groups to identify the expected impact and raise concerns early with those responsible for budget management. • Ensure implementation approach aligns with allocated funding.
Inability to recruit to the required roles in Hawke's Bay may impede effective launch	• Identify appropriate mix of staff across the system and ensure workforce planning highlights deficiencies and plans for filling the gaps. • Provide project management support until appropriate personnel recruited. • Ensure co-ordination of end-to-end system is adequately resourced and has appropriate protocols/processes implemented.
Age Range for Māori and Pacific may impact uptake and equity	• Monitor incidence of colorectal cancers and await direction of national outcomes. • Engage a diverse workforce with understanding of equity and cultural competency to contribute to reducing screening inequities and increase screening uptake.

Key Constraints and Dependencies

The key constraints and dependencies for Hawke's Bay DHB are summarised in Table 10.

Table 10: Hawke's Bay DHB Key Constraints and Dependencies

Constraints	Notes
Timelines	• Contract timelines for the deliverables are short.
DHB FTE cap	• Non-clinical roles must be managed within the administration cap.
Consistent operating model	• Acknowledging the need for national consistency, there is also a need to localise elements of NBSP that can be tailored.
Primary care time to implement changes	• Within limited time to prepare for implementation, primary care must achieve a good understanding of change needed, ensure engagement of different primary care roles on working group, clarify resourcing requirements and agree roles and responsibilities.
Primary care funding for the programme	• System of claiming and reimbursement required to be managed, and impact to be clarified and agreed.
Resource availability to implement changes	• Clinical time must be released for leadership of the implementation, steering group and working group participation. • Resource requirements for the various parts of the service delivery t be determined.
Information Technology priorities	• Competing priorities and resources with Regional IT programme, as implementation of NBSP coincides with Clinical Portal implementation. • NSS will not be available by the DHB go live date. HBDHB will be required to implement interim BSP+ solution, with subsequent transition to NSS.
Dependencies	**Notes**
National Coordination Centre (NCC)	• Invitation to screening comes from NCC. Will need to ensure that NCC is fully aware of HBDHB progress and timelines.
Regional Bowel Screening Centre	• Need support of RBSC to complete local implementation.
IT Solution	• Regional Clinical Portal must support the required business process for NBSP. • Interim BSP+ solution must be compatible with IT infrastructure, applications and processes. • NSS must be developed and implemented to allow subsequent transition.
Budget	• Budget and implementation approach must reconcile.

Stakeholder Identification, Engagement and Communication

The most influential and impacted stakeholders include endoscopy and gastroenterology teams, the gastroenterology build programme, Facilities, IT and IT services, diagnostics and support services (including imagine), the NSS and Bowel Screening Regional Centre (BSRC), general practice teams and Primary Health Organisation (PHO), and public health.

Key engagement and communication activities to date include: implementation planning meetings; attendance at national NBSP and regional fora; establishment of a sector-wide HB Bowel Screening Advisory Group; stakeholder workshops; and engagement with Māori Relationship Board, Pasifika Leadership Group, HBDHB Clinical Council and HBDHB Consumer Council.

All key stakeholders are supportive of implementing the bowel screening programme in Hawke's Bay and awareness of the work to be done in readying the system is strong. The Hawke's Bay Bowel Screening Advisory Group (which includes wide representation of the key stakeholders) is the main forum for direct stakeholder communications and engagement.

Management of Projected Demand

Colonoscopy demand is modelled at between 419 and 430 NBSP colonoscopies in the first two years, reducing to between approximately 310 per year thereafter, with a slow growth in NBSP surveillance colonoscopies. The anticipated number of bowel cancers which will be detected is approximately 32 per year in the first two years, and approximately 17 per year in subsequent years.

Colonoscopy: Two options for service delivery were identified:

1. HBDHB provision of symptomatic and NBSP colonoscopy within purpose-built facility (Hastings hospital), and all preparation, diagnostics and tracking provided by DHB
2. Outsourcing of colonoscopy to private provider with all preparation, diagnostics and tracking provided by DHB.

Both options were evaluated against the criteria (see section 4.2). Option 1 was preferred as it is aligned strategically with HBDHB service planning and will utilise the capacity which has been developed. The option is achievable as the increased capacity will accommodate the additional demand arising from NBSP, and the facility is on track to be available prior to go-live.

Option 2 was rejected as although it would build on the existing relationship with the local private provider, and the private facilities are high quality, the service split would be unwieldy and could result in risks of patient delays, incomplete data capture and resource fragmentation.

Surgery: Additional surgical volumes will be absorbed within existing capacity. No alternative options were considered.

Oncology: This service is contracted through MidCentral DHB, supported with a visiting consultant model. No alternative options were considered as the additional demand is expected to be absorbed with existing capacity.

Histopathology: The additional volumes will be managed through the DHB laboratories. The alternative approach, to use the community contract, was rejected as the community volumes are processed through the DHB laboratories and therefore this would not be a real alternative.

Radiology: The preferred approach is to absorb the additional volumes into the existing service, and the radiology department has recently increased the radiologist resource to support this activity. This approach allows immediate access to particular capability (CTC) and pre-surgical imaging (MRI & CT) for staging available in secondary care.

Laboratory Services: These are provided via a secondary/community contract with a volume sharing agreement. No alternative options were considered, and the existing contract will be amended as required, to encompass additional volumes arising from NBSP.

Facility requirements

HBDHB embarked on development of a stand-alone Gastroenterology suite as part of a larger expansion of surgical service that began in 2011. In February 2017, negotiation of the construction contract was completed, and construction began in early March 2017. The project is on-track to commission the building in August 2018 with service transition, staff facility training and orientation in September 2018 and operational go-live planned for October 2018.

As the facility has been designed taking into account the expected demand arising from NBSP, no alternative facility options were considered.

Workforce Requirements

The requirement for additional resource to support NBSP has been identified and planning is underway to ensure adequate resources are in place. An additional gastroenterologist has been recruited to support service delivery.

The planned nursing resource for the additional colonoscopy demand will be recruited by early 2018. The training of the nursing team for comprehensive management of the endoscopy pathway has been in place since mid-2017. At this time, HBDHB does not have a role for a nurse endoscopist. There is funding support for nurses to pursue post graduate study. The NBSP RN role (0.8FTE) is to be recruited and in place by May 2018. The role is envisaged to be fixed term for 5 months and increase to 1.0FTE for 12 months. An NBSP tracker/navigator nursing role will be part of the clinical team within the gastroenterology service and will be recruited when funding is released.

IT Capability

HBDHB will commence NBSP using the existing Interim IT solution. Once the NSS is established, all DHBs using the Interim IT solution will transfer to the NSS. The timing of this will be confirmed once the NSS development is further progressed.

Initially, HBDHB staff will be entering data manually into BSP+ through a secure network. The DHB will make use of the current secure file transfer solution to accommodate the transfer of files between various parties, including the Ministry and the NCC, if necessary. The current HBDHB patient administration system requires enhancements to support the national bowel screening pathway.

During the NBSP implementation, HBDHB will also be in the process of migrating to the Regional Clinical Portal. The HBDHB BSP+ solution will accommodate this migration and support multiple transition scenarios to reduce project dependencies.

An upgrade of ProVation is required to support national bowel screening requirements and improved support for colonoscopy tests. The DHB will liaise with the Canterbury DHB to upgrade ProVation to the required level.

Engagement with NCC, BSRC, Primary Care and Laboratory

Through the establishment phase for NBSP, engagement with the NCC will be the responsibility of the Project Manager. Post “go-live”, responsibility will move to the Team Leader of Population Screening team within the Population Health service.

Hawke’s Bay DHB will work closely with the Central Region Bowel Screening Centre, initially via the Project Manager. Post go-live, there will be a number of roles with formal links to the Regional Centre, including the Manager of Gastroenterology Services and the Team Leader of Population Screening.

Health Hawke’s Bay, the single PHO in Hawke’s Bay, will continue to be represented at the Advisory Group. Primary Care, and particularly General Practice, are identified as key stakeholders and the importance of the role played by that part of the system will be reflected in the communications plan for the roll-out and post-go live periods.

The Project Manager (and clinical lead where appropriate) will be responsible for engagement with the Laboratory. Initial engagement will be through the Laboratory Relationship Group and a specific working group will be established for this stakeholder group. The DHB Laboratory manager will be part of the working group. Formal links for Laboratory to the Steering Group will be established. Communications and reporting will be confirmed through the working group and by using links to the Steering Group and the Portfolio Manager – Laboratory who is a member of the HB Bowel Screening Programme (HBBSP) Advisory Group.

Quality and Equity

HBDHB Quality programme for Gastroenterology Services will include the NBSP interim standards, as well as the primary care interim quality standards. The HBDHB is contracted to lead the national programme, NEQIP. A key stakeholder is the Northern Regional Alliance hosting the Endoscopy Governance Group (EGGNZ). Currently the contracts are being negotiated to extend to 2020. The focus is to support all endoscopy units within the DHBs as they roll out NBSP, to implement and comply with the GRS protocols and audit.

A Quality Improvement team will establish an internal audit programme aligned to the Interim Quality Standards, using KPIs that defined by the NBSP. The appointment of the Equity and Quality Managers will facilitate improved understanding of the quality standards for NBSP and the endoscopy services. Clinical performance of colonoscopy procedures is captured and reported through ProVation. Colonoscopy waiting time performance will continue to be monitored. The laboratory will implement relevant KPIs as part of their established performance reporting. Events and incidents will continue to be reported and monitored through the established system and process within the DHB.

HBDHB will take a multi-faceted approach to ensuring equity. Targeted approaches will be used to reach Māori and Pacific priority populations, through awareness raising and improving health literacy, with special emphasis on vulnerable and transient populations not enrolled in the PHO. Māori and Pacific with positive results will have access to transport and support to attend colonoscopy and treatment appointments if required.

Key actions to ensure equity include:

- **Māori:** Strengthening of relationships with Māori health Services kaitakawaenga/Pacific kaitakawaenga and Māori providers in the community. A training and education regime with HBDHB bookers will be developed, to better engage with Māori and Pacific participants and their whanau. NBSP brochures and information may be revised using imagery and Māori words to increase engagement. Māori Health Services will make contact with Māori and Pacific whanau when appointments are due and, where appropriate, visit whanau at their homes prior to appointments. The DHB will engage with Post Settlement Governance Entities to communicate intentions with their registered members and will formulate an engagement contract directly with whanau to empower them to take control of their daily lives.

- **Pacific:** Meetings will be held with health services, the DHB communications team and Pasifika Health service to clarify key messages and the need for language and human resourcing. Engagement with the Pasifika Health Leadership Group and Nuanua Pasifika Health Workforce group to plan for reducing barriers to participation. Messaging will be tailored to the community, including potential for language messages via social media, radio and via posters. Community engagement fono will be established for Samoan, Cook Island, Tongan, Fijian, Tuvalu, Kiribati and Niue ethnic groups. The capacity and capability of DHB services to work effectively with Pacific people will be considered, including a review of physical spaces to ensure that a welcoming and supportive environment is provided for Pacific families. Engaging Pasifika workshops will be held for those services who have requested support to work effectively with Pacific people.

Financial Arrangements

The indicative whole of life (21 years) capital and operating financial profile for the DHB is set out in Table 11. A more detailed financial analysis is attached as Appendix 5.

Table 11: Hawke's Bay DHB Indicative Whole of Life Costs

Hawkes Bay DHB	2018/19 $'M	2019/20 $'M	2020/21 $'M	2021/22 $'M	Total 4 Years to 2021/22 $'M	2021/22 & Outyears total $'M	Total to 2036/37 $'M
National Co-ordination Centre	[redacted]						
National FIT Laboratory							
DHBs							
Training, Quality & Communication							
DHB Treatment Costs							
Total Budget 18 Operating Cost							
Total Capital Funding							
Total NBSP Funding							
DHB Funded Cost							
Total NBSP Cost							

Management Arrangements

Governance: The Senior Responsible Owner (SRO) for NBSP implementation is the Executive Director of Primary Care. The Steering Group has overall responsibility for governance of the project and is linked to the Executive Management Team and DHB Board through the SRO. An Advisory Group has been established to provide advice and direction between the Stakeholders and Programme Executives. Post go-live, governance will be added to the responsibilities of the existing Population Screening Steering Group, who currently provide Governance to breast and cervical screening programmes.

Project Management: NBSP will be implemented in line with Prince 2. NBSP implementation will be a registered project within the DHB Project Management Office (PMO). The Project Manager will have an indirect link to the PMO, which will track progress via reporting mechanisms that are reported to the DHB Executive and Board.

Project Monitoring and Reporting: The project will be subject to internal monitoring and review to assess that the project is on track to meet objectives deliver benefits. PMO monthly status reports will be made to the Project and Clinical Sponsors, SRO and the PMO as well as the Board. Regular reports will also be provided to the Ministry NBSP Implementation Manager.

Key Milestones: The key milestones and approximate timings are shown in Table 12.

Table 12: Hawke's Bay DHB Key Milestones

Key Milestones	Approx. Date
Output 4: Project Management and Governance Framework in place	April 2018
Output 5: Primary Care arrangements in place	August 2018
Output 6: Diagnostic Services in place	August 2018
Output 7: Histopathology Services in place	August 2018
Output 9: IT Integration Workplan confirmed	April 2018
Output 9: Readiness Assessment(s) completed satisfactorily	August 2018
Go-live	October 2018
Outputs 4-10: Final Report for Phase 2	November/December 2018

Change, Benefits and Risk Management: The Project Manager will oversee change management processes. Working Groups will be established in alignment with specific tasks and, where applicable, aligned to the Change management requirements of any specific group. The leads of these groups will link with regional and national resources through the Project Manager to ensure completion of change management processes.

The Sponsor will be responsible for identification, measurement and tracking of benefits to ensure that the expected outcomes are realised. Benefits tracking will be the responsibility of the Project Manager for the duration of the project and will be handed over to the services on completion of the post-go live evaluation.

A Risks and Issues Register will be maintained during the project lifecycle as a living document. Risks and issues will be monitored, and the Project Manager will notify the Project Sponsor and Clinical Leads of issues and risks that cannot be managed within the Project Manager's delegated authority.

Monitoring and Evaluation: The planning and roll-out will be supported and monitored by the Ministry team. The project will be subject to Treasury Major Projects Monitoring and Gateway review as part of the overall Programme monitoring and assurance. A Readiness for Service Review will be scheduled prior to go-live, to assess the preparations for go-live and to ensure that the DHB is well placed for a successful implementation. Post Go-Live evaluation will also be undertaken, to review the implementation process and identify any learning points which could be incorporated into planning for subsequent DHB implementations.

Appendix 7: Lakes DHB

Organisation Overview

Lakes DHB serves a population of 105,700 and covers 9,570 square kilometres. It stretches from Mourea in the north to Mangakino in the west down to Turangi in the south and across to Kaingaroa village in the east. The major centres of population are Rotorua and Taupo and the main smaller communities are Mangakino and Turangi. The DHB boundaries take in the two main iwi groups of Te Arawa and Ngati Tuwharetoa.

The Lakes DHB population is older than the national average, especially for those aged within the eligible bowel screening population. In 2017/18, 11 percent of its population is aged 60-69 years and around 7 percent is aged 70-79 years. Additionally, Lakes DHB has around 13% of its population in the pre-eligible age group of 50-59 years old which may result in Lakes DHB experiencing an increased demand on the Lakes DHB NBSP over the 10 years of the NBSP when compared to other DHBs.

Lakes DHB's population exhibits some of the highest levels of health inequality in the country, with an average life expectancy of 79.52 years (2.57 years lower than the national average). Lakes DHB has a higher proportion of people in the most deprived sections of the population, compared to the national average, 35% in quintile 5 and 21% in quintile 4.

Māori make up 34.7 percent of the Lakes DHB population currently (compared to the national average of around 15%) and this is expected to increase slightly to 35.1 percent by 2026. Although the Lakes DHB Māori life expectancy of 73.6 years (2013 NZ Statistics data) is comparable to DHBs who have similar deprivation such as Northland, Tairawhiti and Whanganui it is significantly different from the life expectancy for Māori in DHBs in the less deprived areas such as Auckland, Waitemata, Nelson, Canterbury where Māori life expectancy is approximately 80 years.

Annual growth rate of the region is small with the population expected to have increased by only 1.0 percent between 2016 and 2026. The overall growth rate for Māori over this same period is predicted to be higher, at 1.7 percent.

Bowel Cancer in Lakes DHB

Cancer Rates

Between 2010 and 2015 the Lakes DHB experienced a total of 399 colorectal cancer registrations. 59 new cancer registrations were identified as Māori. In 2015, 31 of the 65 new colorectal cancer registrations were within the NBSP age range and of the 31, two were identified as Māori. Lakes DHB has a low number of colorectal cancer registrations for Pacifica, three between 2010 and 2013. In 2013, Lakes DHB had 34 colorectal cancer related deaths, seven of these were Māori.

Eligible Population

Based on Statistics New Zealand's population projections 2016 update the Lakes DHB eligible population for the NBSP would be approximately 17,280 in the 2018/19 financial year and rising to approximately 19,090 by 2022/23.

Māori and Pacific People are priority populations for NBSP. The projections for the first year of bowel screening in Lakes DHB (financial year 2018/19) indicate that Māori will make up approximately 20% of the eligible bowel screening population. The impact of cancer is much higher for Māori than the general population. More Lakes DHB people are living in socio-economically deprived areas as well as rural/remote compared to national averages.

Lakes DHB provides hospital and outpatient medical services to the 540 capacity medium-low security male Tongariro prison in Turangi. Lakes DHB will work with the Tongariro prison corrections and medical staff to enhance existing pathways to include bowel screening.

Existing Colonoscopy and Treatment Services

Diagnostic Services: Colonoscopy provision is based on the national direct access prioritisation guidelines. Referred patients who meet the criteria receive diagnostic services and those who do not are referred back for further information, suggested alternative management or an alternative diagnostic test.

Colonoscopy: Upper and lower gastrointestinal and respiratory endoscopy symptomatic and surveillance services are provided at Rotorua and Taupo Hospitals. The services are currently delivered by 5 general surgeons (one of whom only undertakes upper GI endoscopies) and 2 gastroenterologists.

Surveillance Colonoscopy: Since 2015 there has been an agreement between Waikato DHB and Lakes DHB that Tokoroa non-urgent and surveillance colonoscopies are undertaken by Lakes DHB at Rotorua Hospital. This enables Tokoroa domiciled patients to be treated closer to home. If further treatment (surgery or chemotherapy) is required, this is undertaken within the Waikato DHB.

Surgical Services: Lakes DHB provides colorectal surgical services to patients at Rotorua hospital with tertiary level support from Waikato Hospital if required. The DHB has 2 general surgeons that sub-specialise in colorectal surgery, supported by two other general surgeons who provide bowel surgery on a regular basis. Lakes DHB surgical services has strong regional links and in particular to Waikato DHB, the tertiary services provider.

Oncology Services: Medical oncology FSA's are currently undertaken at the Waikato Regional Cancer Centre (Waikato RCC) with chemotherapy and subsequent follow up undertaken within Lakes DHB. Lakes DHB, in partnership with Waikato DHB, is now well advanced in recruiting a resident medical oncologist to undertake the majority of the FSAs and manage those colorectal cancer patients requiring medical oncology within Lakes DHB while continuing to be supported by Waikato RCC visiting service. All radiation oncology services are provided by Waikato RCC, with visiting clinical services at Rotorua Hospital and treatment services at Waikato RCC.

Multi-Disciplinary Meetings (MDMs): Weekly regional MDMs are held for numerous cancer streams, including colorectal. During the MDMs patient cases are discussed and a holistic plan of treatment care is agreed upon by the multidisciplinary team.

Radiology: The service is mainly provided through Rotorua Hospital, with Taupo Hospital providing limited ultrasound and plain films. All Lakes DHB radiology results are reviewed by an external provider. The DHB is working with the external provider to ensure Lakes DHB radiology results continue to be reviewed and reported on in a timely manner through already established pathways and processes.

CT Services within Lakes DHB: Rotorua Hospital radiology service provides CT, including staging and CTC, MRI, ultrasound and plain films on site with positron emission tomography (PET) scans being undertaken at Midland PET-CT in Hamilton.

Laboratory services: Lakes DHB has utilises the Pathology Associates Limited Group (PAL) for its laboratory requirements. Lakes DHB and PAL have worked in partnership for around 15 years and have well established clinical pathways.

Supportive and palliative care: Community-based services (e.g. psychologist and social worker via hospice, pastoral care support and loss, Waikato/BOP Cancer Society Hospice) provide counselling support to families. Lakes DHB also utilises the Rotorua based Aroha Mai Cancer Support Services, which extends the support to cancer patients and their families. The DHB utilises numerous services to deliver out of hospital palliative care. Lake Taupo hospice and Rotorua hospice provide home visits and have shared service agreements with Lakes DHB District Nursing Services, who deliver additional services such as wound care. Lakes DHB also utilises Aged Residential Care Facilities to deliver palliative care services for patients undergoing end of life care.

Waiting Times: Colonoscopy wait time indicators are monitored monthly to assess percentage of colonoscopies performed within target. The colonoscopy waiting time performance targets are urgent (performed or waiting 14 days or less) 90%, non-urgent (performed or waiting 42 days or less) 70% and surveillance (performed in 84 days or less) 70%. The DHB performance against these targets is shown in Figure 5.

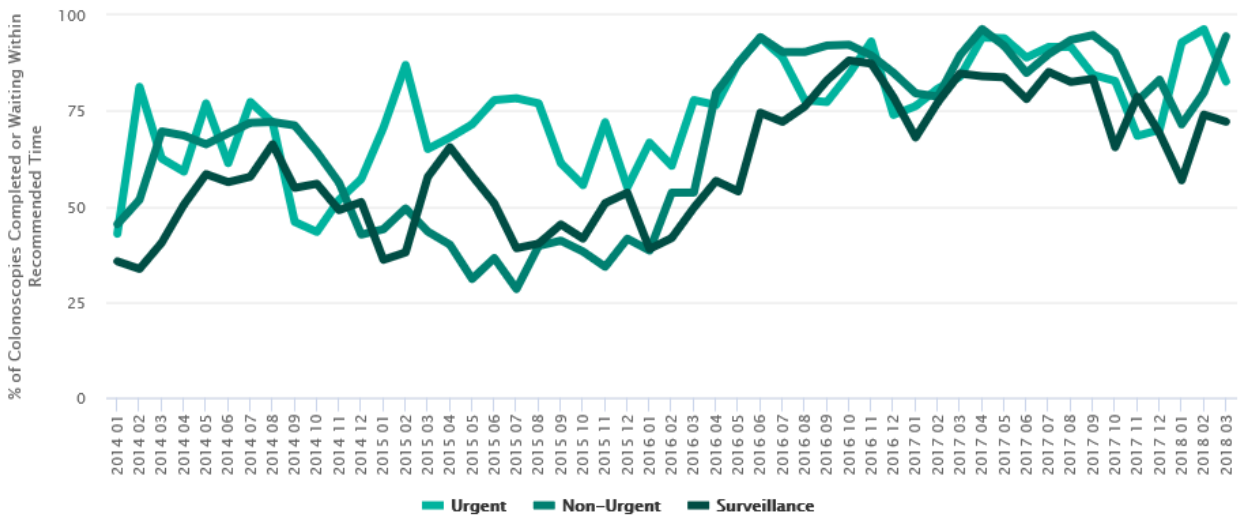


Figure 5: Colonoscopies completed or waiting within recommended time, Jan 2014-Mar 2018

Increased endoscopy sessions and detailed production planning have been implemented to ensure colonoscopy wait times targets are achieved and sustained.

Investment Alignment with Local and Regional Strategies

The NBSP is aligned with local strategies and plans, including the 2016/17 Annual Plan, Lakes DHB Te Maheretanga Hauora Māori – Māori Health Plan and Toi Te Ora – Public Health Service Annual Plan 2016/17. At a regional level, the NBSP is aligned with the Midland Regional Services Plan Strategic Direction 2017-2020 and 2017/18 RSP Initiatives and Activities, the Midland Cancer Strategy Plan 2015-2020, Midland BSRC & Māori BS Network, Midland MDM Systems Gap Analysis Project 2017-18 and the Midland Dendrite system feasibility project 2017-18.

Lakes DHB Benefits and Disbenefits

In addition to contributing to the Programme-wide benefits, Lakes DHB has identified specific further local benefits and disbenefits, as summarised in Table 13.

Table 13: Benefits and Disbenefits of Implementing NBSP for Lakes DHB

Benefit	Summary
Opportunity to further enhance Lakes DHB end to end colorectal cancer pathway	• Primary care and secondary care interaction is streamlined with the implementation of the regional direct to colonoscopy e-referral. • Quality improvement in endoscopy services as the unit aligns with interim bowel screening quality standards and works to gain an overall B grade in GRS. • Symptomatic colonoscopy service is enhanced because of colonoscopy production planning, workforce planning and waitlist management planning required for NBSP roll out. • Involvement of Lakes DHB cancer services in NBSP planning will provide opportunity to undertake production planning and service improvements required.
Increased awareness of bowel cancer in community and primary care	• Awareness raising and educational sessions with primary care and the wider community will increase knowledge of bowel cancer symptoms and the bowel screening programme. • Increased awareness and use of colorectal cancer services such as the NZ Familial Gastrointestinal Cancer Service.
Strengthened primary care and secondary care integration	• NBSP planning and service model development will provide further interaction and strengthening of relationships between primary and secondary care. • Lakes GPs will have increased awareness of gastroenterology and colorectal cancer services.
Bowel cancer in some population groups will be prevented or identified early	• Reduction in incidence of bowel cancer, and bowel cancer morbidity and mortality. • Reduced treatment costs through earlier identification. • Reduced social and financial impact of bowel cancer on patient's whanau and community. • Reduced attendance at Lakes DHB emergency departments for bowel screening eligible population age group.
Disbenefit	**Summary**
Exclusion of the Lakes DHB 50-60 age range	• Age exclusion will miss the age of presentation for some of the Lakes DHB population such as Māori and Pacifica incidence of bowel cancer is at a younger age than European/Other age groups.
High proportion of the eligible population who are part of the priority population will impact on access and achievable coverage	• Issues such as socioeconomic status, poor health literacy, health status and the diversity of languages spoken will impact on programme success. • Access to the programme also impacted by highly mobile population, issues with transport and access and use of communication technology.

Key Risks

The risks assessed as being the highest probability and highest impact, post mitigation, for Lakes DHB are summarised in Table 14.

Table 14: Lakes DHB Key Risks

Key Risks	Risk Management Strategies
If quality standards for equity are not met the DHB will not achieve the NBSP interim quality standard of ≥60% participation.	• Engage with local Iwi and utilise existing network pathways. • Robust community awareness and engagement strategies. • Work with Ministry and NCC to explore alternative strategies to maximise invitation uptake for Māori, Pacifica and high deprivation populations. • Midland bowel screening equity plan and localised plan for Lakes DHB. • Participate in regional and national Māori/Pacifica fora to share learning and ideas.

Key Risks	Risk Management Strategies
Without adequate staffing the DHB will not be able to meet expected activity levels.	• Commence recruitment of additional staff early to ensure they are in post and oriented before go-live. • Develop a robust and comprehensive workforce plan to inform strategies to further enhance current resources, to reduce additional resourcing requirements where appropriate.
Poor data quality and manual transcription errors may compromise patient care and result in adverse clinical events.	• DHB will work with the NSU to ensure a seamless pathway to minimise identified risk. • Midland BSRC to explore the feasibility of regional implementation of Waikato Dendrite colorectal cancer system to manage the colorectal cancer MDM and treatment component of the pathway.
If sufficient additional colonoscopy equipment for NBSP and symptomatic demand is not available this will impact the DHBs ability to go-live with NBSP.	• Taupo Hospital and Health Society approached to explore options of the Society funding the additional equipment. • Rotorua Hospital additional equipment to be funded through existing budgets.
Breakdowns in communications along the care pathway may result in a break in the continuum of care or adverse clinical events.	• Development of robust and comprehensive communication pathways along the end colorectal pathway. • Work with Pinnacle and RPAHS to further strengthen existing relationships and communication pathways between primary and secondary sectors. • Provide clear and concise documentation of agreed pathways to key stakeholders.

Key Constraints and Dependencies

The key constraints and dependencies for Lakes DHB are summarised in Table 15.

Table 15: Lakes DHB Key Constraints and Dependencies

Constraints	Notes
Lakes DHB workforce and endoscopy capacity	• Gastroenterology Services nationally will be trying to access staff (colonoscopists, pathologists and endoscopy nurses) from the same pool nationally and internationally. • Facility capacity will need to increase over the next 5 years in order to be able to provide services for the standard growth and additional volumes from the NBSP as well as symptomatic patients.
Budget	• Budget may not be adequate to ensure equity of access for population and additional DHB resources may be required to ensure engagement. • Implementation of IT system/s may incur costs for which Lakes DHB does not have a budget. • Capital budget constraints to purchase all the necessary endoscopy equipment and additional human resources required.
Dependencies	**Notes**
NSS or enhanced pilot interface to local IT systems	• Lakes DHB primary care software interface with enhanced pilot database must be in place and functioning prior to go live • Lakes DHB secondary care must have access to enhanced pilot database (and subsequently NSS) reporting module
Active follow up of non-responders to address inequalities in the priority population.	• This is an NCC responsibility initially, with the DHB responsible for subsequent follow up.

Stakeholder Identification, Engagement and Communication

The most influential and impacted stakeholders include eligible participants, the Taupo and Rotorua Hospital Endoscopy Unit, general surgeons and gastroenterologists, Endoscopy Users Group, Pathology Associates Ltd, Rotorua Area Primary Health Services, NCC and Pinnacle. Highly influential stakeholders include the DHB Executive, Iwi Relationship Board, Ministry NBSP team, Midland Bowel Screening Regional Centre, NGOs, Māori and Pacifica networks, National Laboratory and the Waikato Regional Cancer Centre.

Key engagement and communication activities to date include: ongoing engagement between the clinical, project, IT and financial leads and the Ministry NBSP team; engagement with the Midland BSRC; Midland regional bowel screening hui attended by the Lakes DHB GM Māori and iwi relationship board member, to discuss strategies to increase participation for Māori and Pacific and ways to establish strong regional and district level Māori and Pacific governance for bowel screening; establishment of Governance Group to provide vision and leadership for local implementation; and engagement with Lakes Endoscopy User Group.

The key internal and external stakeholders have indicated their support for the implementation of the NBSP locally. Strategies and initiatives are being developed to address issues (including the NBSP age-range, funding, challenges with achieving uptake) raised by stakeholders.

Management of Projected Demand

The DHB has reviewed the modelled demand (based on the bowel screening pilot) and has identified that, due to the unique demographic within Lakes DHB this may not reflect actual volumes. The DHB has identified that if volumes differed significantly from modelled levels, there would be insufficient capacity within the proposed service delivery model to accommodate the demand. The modelling and financial analysis completed by the DHB is based on the Ministry modelled demand levels.

Service delivery: Three options for service delivery were explored:

1. Symptomatic colonoscopy service and NBSP to be undertaken within Lakes DHB
2. Symptomatic colonoscopy service to be undertaken in a shared service agreement with a private provider and the NBSP to be undertaken within Lakes DHB
3. Symptomatic colonoscopy service to be undertaken in a shared service agreement with a private provider and the Lakes DHB bowel screening programme is to be outsourced to the private provider.

Analysis of the options determined that the preferred approach was Option 1. It meets the evaluation criteria, ensures no additional Lakes DHB resourcing is required to achieve and sustain the NBSP interim quality standards and the NZEGG Endoscopy Unit Standards. Options 2 and 3 would require additional resourcing to work with the private provider to ensure the outsourced component of the Lakes DHB NBSP meets the NBSP Interim quality standards and the NZEGG Endoscopy Unit Standards. Lakes DHB does not believe that outsourcing of colonoscopies should become “business as usual” due to numerous challenges including financial costs and in some instances potential for increase of clinical risk. For Option 3, the NBSP has high standards and it may be more difficult to ensure this is achieved if the NBSP screening colonoscopies are outsourced.

Primary Care: The screening and symptomatic services will run as parallel, but separate, clearly identifiable systems. For GPs this will mean that separate streams of patients will be identified via clinical records, and in the referral process/form to diagnostic services. GPs will liaise with the NCC for patients who do not respond. Mechanisms to achieve this will be confirmed. A Liaison role would be developed, along with Māori, Health Support (through existing systems) to assist with identification, active follow-up and navigation through the system.

Diagnostic Care: Symptomatic referrals will be managed as business as usual. NBSP referrals will be separated and sent to the endoscopy nurse lead to assess for suitability for a procedure and whether it that should be a colonoscopy or CTC based on the guidelines. The BSP patients will then be put on the waiting lists as per the guidelines. The colonoscopy will be performed on identified separate BSP procedure lists, at a Lakes DHB facility. It is proposed at this stage that the BSP lists will be done at the Rotorua or Taupo Hospital procedure rooms. CTC will only be offered for NBSP participants for failed colonoscopy and where clinically appropriate. A positive result will trigger a referral for further treatment either surgical and/or oncology treatment. In both gastroenterology and radiology for CTC, there will continue to be a separate NBSP group running in parallel with the symptomatic patient group. The colorectal nurse specialist will also be notified of the positive result for patients and support the patient through the programme. Patients who require referral to the New Zealand Familial Gastrointestinal Cancer Service at ADHB will be referred (as per referral guidelines) by a gastroenterologist/general surgeon at time of colonoscopy.

Secondary Care: Referrals will be received by the general surgeons and the Colorectal CNS. Additional tests will be ordered as appropriate, whilst the Colorectal CNS organises a clinic appointment with the patient. If active treatment is decided, the patient will be discussed at the multidisciplinary meeting (MDM) and referrals made for oncology/surgery as appropriate. The NBSP treatment pathway will run parallel to the standard symptomatic bowel cancer treatment pathway, but again will be clearly identified as NBSP. It may not be feasible to assign a specific general surgical list to NBSP if the volume of patients does not warrant this. This would be monitored, but potentially lists will be absorbed into normal list schedules.

Oncology: Oncology treatments, including radiation oncology/radiation treatment and medical oncology/chemotherapy, bowel cancer patients will be managed by the Waikato Regional Cancer Centre with specialist visiting services at Rotorua Hospital and supported by both Taupo and Rotorua hospitals (for chemotherapy, nursing care coordination, psycho-social support options). Patients may also be referred to the Familial Gastrointestinal Cancer Service.

Facility requirements

Lakes DHB NBSP will be delivered within the existing Rotorua Hospital endoscopy rooms and the Taupo Hospital endoscopy rooms. No alternative options were considered as there is capacity within existing resource for the volumes projected.

Some additional equipment will need to be procured prior to the commencement of NBSP. The capital costs for this equipment is not part of the NBSP funding envelope and will be funded by the DHB.

In time, the DHB will need to explore developing a standalone dedicated endoscopy unit, to meet the expected increase in demand from the symptomatic service and with the projected NBSP activity.

Workforce Requirements

The DHB has identified that additional symptomatic colonoscopy sessions are required to achieve and maintain the Ministry colonoscopy wait time indicators. These additional symptomatic colonoscopy sessions have been delivered by the two Lakes DHB gastroenterologists, providing three additional sessions each per week.

Additional resourcing requirements include General Surgeon, endoscopy nurse, healthcare assistant, day stay and post anaesthetic care unit registered nursing and booking clerk. Each of these roles is part time only and is based on the projected demand and expected number of resulting lists. These roles will be part of the overall DHB staffing complement but will have dedicated time committed to NBSP.

IT Capability

Lakes DHB will commence NBSP using the existing Interim IT solution. Once the NSS is established, all DHBs using the Interim IT solution will transfer to the NSS. The timing of this will be confirmed once the NSS development is further progressed.

The DHB will ensure that the ProVation version will support the NBSP. A spreadsheet template will be supplied for Lakes DHB to manually enter and send to the NBSP solution; as this has been identified as a clinical risk it is included in the NBSP risk register. As part of the NBSP "Phase two planning" Lakes DHB NBSP project team will continue to work with the Ministry to access template and develop local Lakes DHB business rules and process through the Lakes DHB NBSP IT work stream.

The NBSP solution is proposed to be web based therefore provision of remote access is required for DHB staff who may not have this capability already. Possible firewall and authentication changes will be required as per Lakes DHB existing policies and protocols. Midland BSRC is exploring the feasibility of adopting the Waikato DHB general surgery Dendrite system to capture quality general surgery MDM and clinical data. In addition, Midland DHBs do not have a MDM management system and are currently undertaking the Midland MDM System Gap Analysis Project 2017-2018 commissioned by the Ministry of Health CHIS cancer team.

Engagement with NCC, BSRC, Primary Care and Laboratory

The Lakes DHB Surgical Service Manager and Clinical Lead are responsible for communication with and reporting to NCC. DHB clinical and service leads are members of the Midland BSRC Governance Group and will engage routinely to share learning and ensure ongoing quality. Strong links will be developed with primary care, including membership of primary care representatives on the DHB Screening Governance group. The laboratory clinical lead will be a member of the Lakes DHB bowel screening governance group and the NBSP project manager will work with the laboratory clinical lead and laboratory manager to establish strong links with the laboratory sector, including assisting with ensuring the NBSP interim quality standards are met and the laboratory passes the Ministry readiness assessment.

Quality and Equity

Lakes DHB will work with the Ministry, NCC and the Midland BSRC to ensure the Lakes DHB endoscopy service delivery remains of a high standard. This work will include (but not limited to):

- Ensuring the Lakes DHB endoscopy service aligns to the NBSP interim quality standards;
- Undertaking regular GRS self-assessment to ensure the Lakes endoscopy unit achieves and then maintains the minimum B standard required for bowel screening as recommended by the New Zealand Endoscopy Governance Group;
- Work with Midland BSRC to develop an overarching Lakes DHB endoscopy quality and equity plans that includes bowel screening and end to end colorectal cancer pathway;
- Establish bowel screening as a standing agenda item on the Lakes DHB Endoscopy User Group.

Equity is a high priority for Lakes DHB and detailed work will be undertaken during the development and implementation of the Lakes DHB NBSP to ensure participation rates across the end to end colorectal pathway. The DHB has a higher Māori population, people living in socio-economically deprived areas and living across large geographical rural/ remote areas. This will require the DHB to implement a service delivery model with adequate resourcing and staffing at the outset to achieve equity for the Lakes DHB population. Lakes DHB proposes to develop services for the bowel screening programme including:

- Community awareness campaigns;
- Local media promotions including Te Reo;
- Provision to provide active follow up of non-responders to support activities of the NCC and primary care;

- Support for patients with a positive result who need to see their GP travel etc.;
- Following up and supporting patients people with a positive result to encourage attendance at colonoscopy and other appointments as required;
- Supporting and working with GPs to identify non-responders.

The national Equity of Health Care for Māori: a framework tool and He Pikinga Waiora Implementation Framework will be applied to all phases of the Lakes DHB bowel screening project.

Lakes DHB will also utilise a co-design approach to ensure local and regional engagement in development, building on existing activities and involving consumers.

Financial Arrangements

The indicative whole of life (21 years) capital and operating financial profile for the DHB is set out in Table 16. A more detailed financial analysis is attached as Appendix 5.

The financial modelling is based on the NBSP modelling projections and funding approach, taking into consideration the additional complexity of implementing the Programme in a DHB with unique demographic challenges. The financial modelling recognises that the NBSP funding envelope does not include downstream surgery, treatment costs or resourcing.

Table 16: Lakes DHB Indicative Whole of Life Costs

Lakes, DHB	2018/19 $'M	2019/20 $'M	2020/21 $'M	2021/22 $'M	Total 4 Years to 2021/22 $'M	2021/22 & Outyears total $'M	Total to 2036/37 $'M
National Co-ordination Centre	[redacted]						
National FIT Laboratory							
DHBs							
Training, Quality & Communication							
DHB Treatment Costs							
Total Budget 18 Operating Cost							
Total Capital Funding							
Total NBSP Funding							
DHB Funded Cost							
Total NBSP Cost							

If NBSP funding exceeds DHB costs, this will be utilised for reinvestment into the Lakes DHB NBSP to enable numerous targeted activities to increase participation, across the end to end colorectal pathway. Additional Waikato RCC oncology volume and associated costs will also need to be factored into budgetary and inter-district flow conversations. This will occur as part of the Lakes DHB NBSP evaluation at 6 months and 1-year post implementation.

Management Arrangements

Governance: The implementation will be overseen by the Lakes DHB Bowel Screening Governance Group, which reports directly to the Chief Executive. Once the NBSP is implemented, governance of business as usual will be through the wider colorectal cancer governance structure which includes primary care and laboratory services.

Project Management: The DHB will utilise a modified Prince2 project management methodology and approach, including a continuous quality improvement approach such as PDSA cycle and/or lean methodology to ensure optimisation. Six workstreams (primary care, secondary care, histopathology, equity media and communications, and community awareness) will be established for the implementation, to ensure adequate planning for each element. These workstreams will report to the DHB Bowel Screening Manager, with oversight from the Lakes DHB Bowel Screening Governance Group.

Project Monitoring and Reporting: The Bowel Screening Project Manager will provide monthly reports to the Screening Governance Group and to the Ministry NBSP Programme Manager.

Key Milestones: The key milestones and approximate timings are shown in Table 17.

Table 17: Lakes DHB Key Milestones

Key Milestones	Approx. Date
Output 4: Project Management and Governance Framework in place	March 2018
Output 5: Primary Care arrangements in place	July 2018
Output 6: Diagnostic Services in place	July 2018
Output 7: Histopathology Services in place	July 2018
Output 9: IT Integration Workplan confirmed	March 2018
Output 9: Readiness Assessment(s) completed satisfactorily	July 2018
Go-live	September 2018
Outputs 4-10: Final Report for Phase 2	October/November 2018

Change, Benefits and Risk Management: The Bowel Screening Project Manager will be responsible for change management as per established Lakes DHB change management process. The Ministry relationship manager is a standing member of the Lakes DHB bowel screening governance group. The Lakes DHB bowel screening project manager will be responsible for developing and maintaining the robust stakeholder communication and engagement plan.

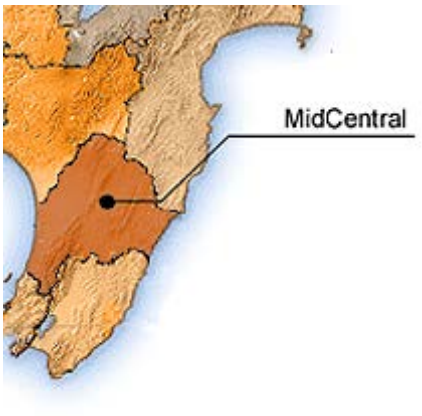
The Lakes DHB bowel screening governance group will be responsible for the identification and measurement of benefits to ensure that the expected outcomes are realised. The Lakes DHB bowel screening project manager will be responsible for tracking the benefits and will present exception reports to the Lakes DHB bowel screening governance group for recommendations if required.

Risk management for the implementation of the Lakes DHB NBSP will be undertaken utilising the Lakes DHB risk management process. The Ministry of Health will provide national risk management for the NBSP.

Monitoring and Evaluation: The planning and roll-out will be supported and monitored by the Ministry team. The project will be subject to Treasury Major Projects Monitoring and Gateway review as part of the overall Programme monitoring and assurance. A Readiness for Service Review will be scheduled prior to go-live, to assess the preparations for go-live and to ensure that the DHB is well placed for a successful implementation. Post Go-Live evaluation will also be undertaken, to review the implementation process and identify any learning points which could be incorporated into planning for subsequent DHB implementations. Lakes DHB will utilise a modified local and national approach and process to evaluate the Lakes DHB bowel screening programme.

Appendix 8: MidCentral DHB

Organisation Overview



MidCentral DHB serves a population of approximately 175,000 people across a geographical area stretching across the centre of the North Island, encompassing five local authority districts (Horowhenua, Manawatu and Tararua districts, Palmerston North city and the Otaki ward of the Kapiti Coast district.

MidCentral DHB provides secondary medical and surgical hospital services alongside community-based health care. The main facility is at Palmerston North Hospital which has 260 beds.

Around 18% of the DHB population is aged 65 years or older, with the population aged 60–74 approximately 2-3% higher than the national average. Māori comprise over 20% of the DHB's population, above the national average of approximately 15%, with a lower than average proportion of Pacific Island people. MidCentral is one of five refugee settlement areas in New Zealand, and the number of refugee status residents, particularly in Palmerston North city, is growing steadily.

MidCentral has a higher proportion of people in the more deprived sections of the population when compared to the national average particularly seen within the Horowhenua and Kapiti Coast areas. This includes the townships of Levin and Otaki, where there are significant levels of poverty as well as an older than average population.

Bowel Cancer in MidCentral DHB

Cancer Rates

Whist yearly cancer mortality rates are declining, cancer mortalities in MidCentral DHB are higher than the New Zealand average. Between 2006 and 2010, cancer mortalities in MidCentral DHB were approximately 7% higher than rates for New Zealand overall.

Eligible Population

The population eligible for the NBSP would be approximately 27,250. This population includes the Ministry of Defence base at Linton (and possible air base in Bulls) and the inmates at Manawatu prison. The eligible populations within the prison and MoD bases are small; nevertheless, the DHB will work closely with these populations to ensure appropriate access to NBSP is achieved.

Within the eligible population, the DHB has identified three priority groups: Māori, Pacific Island people, and males living in rural areas. The DHB will focus on ensuring access for these populations, to improve equity of access and outcomes.

With a significant proportion of the MidCentral DHB classified as 'rural', much of the male population residing in rural areas may not be actively accessing health services. Men's health, particularly rural men's health, is a key health focus for some services in the region. The implementation of NBSP will provide access to bowel screening for rural males, but also provides potential opportunities to increase the engagement of this population with a range of other health services.

Existing Colonoscopy and Treatment Services

Diagnostic Services: Referrals come into the organisation via MidCentral Health's Central Referrals and are forwarded to the specialist services to be triaged for a high suspicion of cancer. A Map of Medicine pathway for referrers has been developed from a regional perspective with Hawke's Bay, Whanganui and MidCentral DHBs for suspected colorectal cancer. If referred patients do not meet criteria, the referrer receives a letter either requesting more information, suggesting alternative management or an alternative diagnostic test is arranged.

Colonoscopy: The majority of colonoscopies are undertaken in the Gastroenterology Department on the first floor of Palmerston North Hospital, where there are two endoscopy theatres. All endoscopy sessions have a mix of upper and lower endoscopy. This service is provided primarily by the gastroenterology team, with support from surgical endoscopists (four general surgeons). The departmental nursing staff, Surgical Endoscopists and the day to day running of the department is overseen by Surgical Services. As one of the endoscopists is a general physician, the specialty has strong focus on medical based clientele and conditions. There is also a gastroenterology registrar. A CNS Lead position was established for the service in June 2012, to assist in providing clinical leadership including using the GRS to its full potential and leading service improvements. Nurse discharge of patients from the department occurs 90% of the time and nurse consenting will be explored as part of NBSP implementation.

CT Colonography (CTC): CTC is performed in the Medical Imaging Department on the ground floor of Palmerston North Hospital.

Surgical Services: Surgery for bowel cancer is generally provided at Palmerton North Hospital. Patients with bowel or rectal cancers are seen for their first appointment at MidCentral Health and thereafter an attempt is made to accommodate them at regional clinics in Dannevirke and Levin if possible. Six surgeons provide surgical services for bowel patients, supported by two full time stoma CNS staff. A collaborative approach exists between gastroenterology and surgical services. Once a scope reveals a cancer, the endoscopist organises a staging CT and a pelvic MRI (for rectal cancer). For urgent cases, patients are booked into the next available clinic appointment, otherwise arrangements are made for the referral to be triaged as soon as possible.

Oncology Services: Treatment for bowel cancer is provided at the Regional Cancer Treatment Service (one of six in New Zealand) based at Palmerston North Hospital. This includes both radiation and oncology treatments for patients living within the MidCentral DHB.

Pathology: Specimens are analysed by the Laboratory Services at MedLab Central, based at Palmerston North Hospital. Most work is performed by histopathologists, with technicians performing the preparation of the specimens for examinations and reporting.

Multi-Disciplinary Meetings (MDMs): These occur in the areas of lung, breast, bowel and urology. Bowel MDMs occur on a weekly basis. The gastroenterology and general surgical teams describe themselves as having a very good connection between their two departments, with patients receiving very proactive care.

Waiting Times: Colonoscopy wait time indicators are monitored monthly to assess percentage of colonoscopies performed within target. The colonoscopy waiting time performance targets are urgent (performed or waiting 14 days or less) 90%, non-urgent (performed or waiting 42 days or less) 70% and surveillance (performed in 84 days or less) 70%. The DHB performance against these targets is shown in Figure 6.

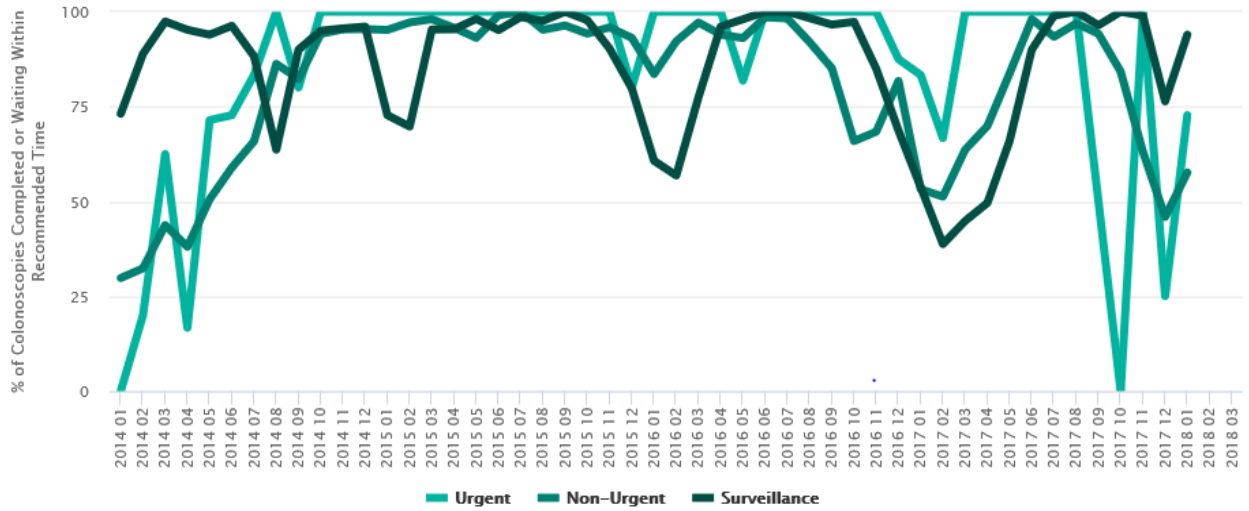


Figure 6: Colonoscopies completed or waiting within recommended time, Jan 2014-Mar 2018

Prior to September 2017, performance was generally good, with targets achieved. Since that date, performance has deteriorated but has seen a recent improvement. It is recognised that some (but not all) of the reported performance issues are due to data issues arising from the implementation of a new WebPAS patient information system in early December 2017.

Ensuring good performance against colonoscopy waiting time targets is a priority for the DHB, both for improvement in services overall and for the implementation of NBSP. Prior to NBSP go-live, additional scoping sessions are being undertaken and performance will be monitored regularly by the Steering Group to ensure progress is on track. The Ministry will consider performance against the targets as part of the readiness assessment prior to approval to go-live with NBSP.

With respect to waiting times for bowel surgery, data on every cancer identified via scoping is being kept on a colorectal cancer database. The key data (date referral received, triaged, scoped etc.) is captured, as well as a summary of information provided by the original referral. The goal is to use the data to help determine where delays exist; limited analysis of this has been possible in recent years but this is an area which could be resourced in future if surgical waiting times become an issue.

Investment Alignment with Local and Regional Strategies

The NBSP is aligned with local and regional strategies and plans, including Ka Ao, Ka Awatea 2017-2022 (the Māori Health Strategic Framework), the District Annual Plan 2016/17, the MidCentral DHB Strategy and the Central PHP Strategy.

In addition to contributing to the Programme-wide benefits, the DHB has identified specific further local benefits and disbenefits, as summarised in Table 18.

Table 18: Benefits and Disbenefits of Implementing NBSP for MidCentral DHB

Benefit	Summary
Improved endoscopy service quality	• Increase overall endoscopy quality and standards with a likely flow-on improvement in symptomatic service provision as seen in other screening programmes e.g. breast screening
Increased awareness of bowel cancer	• Raising the awareness of bowel cancer in both the eligible and general population is expected to increase the number of early symptomatic self-referrals, resulting in improved health outcomes.
Increased awareness and uptake of other screening programmes	• The promotion of NBSP and associated increased awareness of screening may increase awareness and uptake of other health screening initiatives, e.g. breast and cervical screening.

Disbenefit	Summary
Opportunity cost	• Increased endoscopy suite/theatre and consultant time allocated to screening programme activity will reduce capacity available for other patients/activities. • Prioritisation of funding to implement the Programme will preclude investment in other priority areas.
Exclusion of the 50-60 year age group will result in increased inequity	• Increased inequity between population groups where some cancers will not be identified due to the NBSP parameters.
Impact on associated services	• NBSP activity will put further pressure on staff and services, including endoscopy and surgical interventions during the initial 'treatment' hump as part of the roll out timing. This increased demand will increase the risk that elective targets are not achieved. • NBSP demand will result in restrictions of activity in other surgical disciplines, e.g. through reduced access to theatres.
Focus moved from existing targets	• Unintended consequences of moving the focus/priority from one group of health targets to another, especially within the primary sector

Key Risks

The risks assessed as being the highest probability and highest impact, post mitigation, for the DHB are summarised in Table 19.

Table 19: MidCentral DHB Key Risks

Key Risks	Risk Management Strategies
If the NSS is not available or cannot be implemented by MDHB, NBSP go-live may be delayed	• Early engagement with Ministry working group for the development and implementation of the NSS. • Good governance and oversight of the NBSP implementation and rigorous management of scope and schedule. • Good understanding of the DHB IT systems integration environment.
Lack of clarity on the IT interface with the NSS and therefore implementation and testing timelines may impact go-live date	• Early engagement with Ministry working group for the development and implementation of the NSS. • The Ministry to provide the confirmed IT service specifications as soon as possible to MDHB IT team. Clear and detailed IT requirements documented by the Ministry. • Ensure availability of local IT resources to support the development and interface for the NSS when information/system service specifications are available.
Constrained endoscopy facility footprint may not be able to meet increased demand resulting from NBSP	• Review current workflow to identify efficiencies and improved flow management of the endoscopy unit. • Locate some of the proposed and current support roles for the unit outside of the Endoscopy unit (possibly off-site).

Key Constraints and Dependencies

The key constraints and dependencies for the DHB are summarised in Table 20.

Table 20: MidCentral DHB Key Constraints and Dependencies

Constraints	Notes
Budget	• Identified costs exceed Ministry funding for implementation and ongoing operation. Excess costs above those funded by the NBSP will be met by the DHB. • Financially constrained environment with DHB required to absorb ongoing diagnostic and treatment costs.
Timeline to go live	• The NSS is proposed to be available from March 2019 to support both Whanganui and MidCentral DHBs to 'go-live' with the implementation of the NBSP from May and June 2019 respectively. This places time constraints on interface developments and the integration of NSS with DHB systems.
Dependencies	**Notes**
NBSP IT Solution	• Availability of NSS, which is under development. No alternative IT solution is available to extend NBSP roll-out beyond the 8 designated DHBs. The NSS must be operational prior to go-live. • NSS must be interoperable with existing DHB IT systems and required degree of integration in place prior to go-live.
Laboratory services	• High quality laboratory services for iFOBT testing and histology are fundamental to the safety of NBSP. Agreement for the provision of additional histology must be in place prior to NBSP go-live.
Primary care engagement/pathway	• The role of primary care practitioners in positive results notification is a new role for them. Primary care will need support and be active participants in the NBSP. • Primary Care arrangements must be in place for bowel screening to commence
Theatre access and workforce to deliver surgery	• In order for NBSP to be delivered successfully, the DHBs must ensure adequate access to theatres and surgery. This must be in place prior to go-live

Stakeholder Identification, Engagement and Communication

The most influential and impacted stakeholders include: endoscopists, general and colorectal surgeons; endoscopy nursing staff including pre-assessment nurses; GPs, Practice Nurses and admin staff; the Central PHO; Te-tihi o Ruahine Whanau Ora Alliance Charitable Trust; IT services; the NCC and BSRC; Māori/Pacific Health Units and local Iwi; pathology and laboratory staff; and radiologists.

Key engagement and communication activities to date include: implementation planning meetings; Central Region Bowel Screening Regional Forum; NBSP Steering Group; endoscopy user group meetings; engagement with gastroenterology and medical imaging staff, Māori health services, primary care and laboratory services

Overall there appears to be good support for the implementation of the NBSP in the MidCentral DHB region from key stakeholders, as observed at meetings with key clinicians, support for the release of relevant staff to attend meetings and participation in the project as well as protected time to work on the implementation of the NBSP.

Management of Projected Demand

Colonoscopy demand is modelled at between 300 and 430 NBSP colonoscopies in the first two years, reducing to approximately 312 per year thereafter, with a slow growth in NBSP surveillance colonoscopies. The anticipated number of bowel cancers which will be detected is approximately 16 in the first year rising to 33 in year two and approximately 17 per year in subsequent years.

Colonoscopy: NBSP is expected to result in approximately 2.75 screening lists per week, assuming 4 colonoscopies per list (based on Hutt Valley DHB experience which found that NBSP lists are more time-consuming due to the high number of polypectomies required).

Initial service modelling completed to support the NBSP indicated a 20% increase in symptomatic referrals, which would see an additional 200 colonoscopies per annum. Symptomatic referrals will be managed as business as usual, and referrals identified as NBSP will be separated and follow the NBSP referral pathway. The service is looking to adopt the Whanganui DHB referral form for referrals to the Endoscopy service.

Two options for the provision of screening colonoscopies were considered:

1. Bowel screening provided within the DHB alongside symptomatic endoscopy;
2. Outsourcing of some endoscopy patients.

Analysis of the options against the criteria determined that Option 1 is preferred. It is the most affordable option and is good value for money, as facilities can accommodate the workload and costs are limited to the additional staff required. The DHB can control and monitor all aspects of the endoscopy service, especially in relation to quality standards. Integration of systems, strategies and programmes is assured. By providing services within the DHB, Information technology integration only needs to occur with the DHB systems and no third-party system involvement.

Option 2 was rejected as it was determined to be poorer value for money, and the DHB would have less control over quality. Outsourcing of screening colonoscopies is a low strategic fit.

Oncology: Oncology demand arising from NBSP will be absorbed into current service provision within the Regional Cancer Treatment Service. No alternative options were identified for increase provision of radiation and medical oncology. It was noted there would potentially be a spike in bowel cancer referrals to oncology and radiotherapy as the NBSP is implemented at MidCentral DHB.

Surgery: Three options were considered to meet surgical demand arising from NBSP:

1. Provision of these surgical procedures within the DHB whilst maintaining current service volumes;
2. Provision of resource for these surgical procedures within the DHB by reducing surgical activity in other areas;
3. Outsourcing of surgical procedures

Option 1 was preferred as sufficient capacity has been identified within the service to accommodate the additional volumes expected.

Option 2 was rejected as it was deemed unnecessary to reduce other surgical activity to accommodate the relatively low number of surgical cases expected to arise from NBSP screening. Option 3, outsourcing, was considered due to the availability of an endoscopy procedure room at a local private facility. This option was rejected as it was assessed as not meeting affordability criteria.

Radiology: Based on the project volumes for CTC referrals, the DHB has assessed that the radiology service has sufficient capacity to undertake the additional volumes estimated (<5%) into current services. No alternative options were identified.

Histology: No alternative options were identified as the DHB has identified that there is sufficient capacity to undertake the additional volumes estimated to be 2,100 histological samples (based on the additional annual 420 colonoscopies) as a direct result of NBSP with the current laboratory agreement.

Facility requirements

The NBSP colonoscopies will be provided within current Gastroenterology facilities on the first floor at Palmerston North Hospital. The facility footprint is very small (163 m^2 excluding corridors) old and not fit for purpose. The procedure rooms do not meet standards for size, patient flow is inefficient, and privacy is also compromised, as pre- and post-procedure patients are managed within the same area. Historically therefore the two procedure rooms have rarely been used concurrently.

A review of workflow is underway with the aim of improving the throughput of the department so that both procedure rooms can be used concurrently every day in a way which is sustainable and enhances the patient experience. It is noted however, that this does not replace the real need for a total revamp if not complete re-build of the gastroenterology department (which it outside the remit of NBSP).

Within the limited footprint of the facility there will be no additional office space available and therefore the NBSP nurse will be located outside of the department.

Additional scopes and another tower will be required, to support both procedure rooms working simultaneously. To ensure sterile service standards are met and to achieve a reduction in the processing of scopes (and therefore wear and tear), a HEPA filter drying cabinet will be required. Investment in additional clinical and office equipment will be funded internally.

Workforce Requirements

The DHB has identified the additional capacity required to deliver NBSP. This includes programme management, clinical lead and additional endoscopist time, nursing and Allied Health, primary care support and administration.

No additional laboratory workforce will be required for the number of projected additional histology studies required to support the annual NBSP colonoscopies and ongoing surveillance.

The existing Radiologist workforce within Medical Imaging will be able to support any increase in the CTC referrals to the department based on the projected demand.

A new general surgeon has also now commenced employment at MidCentral DHB and will be completing an endoscopy list once a week, supporting the achievement and maintenance of colonoscopy waiting time targets.

In the future, the DHB is keen to explore the creation of a nurse endoscopist role which would free up SMO time, allowing for increased efficiency within the department. This would be an exciting opportunity but planning for and establishing the training needed for this type of position will have significant ramifications for the existing medical and nursing team in the department. Another nursing role opportunity for consideration would be that of a Primary Care Nurse Co-ordinator for bowel screening, similar to a current role within BreastScreen Coast to Coast. This role is the link between the Primary Care services and the service provider and offers numerous of opportunities to support the primary sector with participation in NBSP.

IT Capability

MidCentral DHB is expected to be the second DHB to go-live with NSS, the new IT system for NBSP. The DHB will work with the Ministry to assess IT capability and requirements, following development of the NSS. The DHB will also liaise closely with Whanganui DHB, which will be the first DHB to go-live with NBSP using the NSS, to ensure that any lessons identified are accommodated in the planning for MidCentral go-live.

Engagement with NCC, BSRC, Primary Care and Laboratory

The project manager will be responsible for engagement with the NCC and BSRC, including communication, reporting etc.

The Central PHO will have an identified Programme Manager to support the implementation of the NBSP in the MidCentral DHB region, specific to the primary sector. MidCentral DHB will provide support and education to GPs within the as part of collaboration with the Central PHO. This will include supporting local co-ordination of awareness raising activities and other health promotion opportunities to encourage the community to participate in NBSP.

The project manager (and clinical lead where appropriate) will engage with MedLab Central for the provision of relevant histopathology services to support the NBSP implementation at the DHB. It is noted additional histology volumes will be managed by a contractual variation to the current Laboratory service provision Agreement between MedLab Central and MidCentral DHB.

Quality and Equity

Quality will be guided by the Interim Bowel Screening Quality Standards and the DHB will work with the Ministry NBSP team, NCC and Regional Centre on quality reporting and initiatives to ensure the quality of services is high and maintained. At a local level, the quality components for NBSP will be overseen by the DHB clinical and nursing leadership as well as the Quality and Clinical Risk team. The focus and approach of the equity plan will be to increase screening participation in the MidCentral DHB region through community engagement and the development and implementation of innovative cross-program and evidenced-based strategies. It is recognised that Māori Leadership and community leaders will play a key role in this work.

The Ministry has identified Māori, Pacific peoples and those living in deprived areas as priority populations for NBSP. MidCentral DHB has identified rural males as an additional priority population. Key actions to promote equity will include: intensive promotion of NBSP in populations that are known to be under-screened, engagement and consultation with priority populations, ensure current equity activities within the pathway are maintained, participation of priority groups at governance level, working in partnership with primary care support to screening services, active follow up of non-respondents and ongoing monitoring and evaluation.

Financial Arrangements

The indicative whole of life (21 years) capital and operating financial profile for the DHB is set out in Table 21. A more detailed financial analysis is attached as Appendix 5.

Table 21: MidCentral DHB Indicative Whole of Life Costs

MidCentral DHB	2018/19 $'M	2019/20 $'M	2020/21 $'M	2021/22 $'M	Total 4 Years to 2021/22 $'M	2021/22 & Outyears total $'M	Total to 2036/37 $'M
National Co-ordination Centre	[redacted]						
National FIT Laboratory							
DHBs							
Training, Quality & Communication							
DHB Treatment Costs							
Total Budget 18 Operating Cost							
Total Capital Funding							
Total NBSP Funding							
DHB Funded Cost							
Total NBSP Cost							

Management Arrangements

Governance: The Operations Executive, Cancer Services has overall governance for the implementation of the NBSP, reporting directly to the Chief Executive Officer. The project will be governed by a Project Steering Group chaired by the Operations Executive, Cancer Services. The Clinical Lead for NBSP at MidCentral DHB is included in the Steering Group, as well as wider stakeholder representation. The Steering Group is accountable to the Executive Leadership Team of MidCentral DHB. Whanganui DHB may be included in the Governance Group, due to its proximity and the close association between the two DHBs.

An Advisory Group will support implementation, with representation from the DHB as well as BreastScreen Coast to Coast, the Breast Imaging Service, the Regional Cancer Treatment Service, Support to Services Iwi Provider and Central Cancer Network.

Project Management: The project implementation will be supported by the Prince2 project management methodology. The project will have an over-arching project 'programme' approach with each identified workstream having an individual project structure with a corresponding project lead. Dedicated project management support will be provided by the Manager, BreastScreen Coast to Coast and Breast Imaging Service, supported by a project implementation team.

A senior clinician will provide clinical leadership for the implementation as well as for the post go-live. A Gastroenterology senior nurse will have responsibility for the delivery of the nurse pre-assessments, delivery of the screening colonoscopy and the monitoring required for implementation.

Whilst NBSP implementation will be a stand-alone project, it will have linkages with other local work being completed e.g. the endoscopy accommodation review. The NBSP will need to integrate with existing components, systems, technologies and processes as well as the day-to-day operations of the service and must to so with the minimum of disruption.

Project Monitoring and Reporting: The Project Manager will provide monthly reports to the Project Board/Steering Group and to the Ministry NBSP Implementation Manager. The implementation project will also provide regular reports to the MidCentral DHB Board.

Key Milestones: The key milestones and approximate timings are shown in Table 22.

Table 22: MidCentral DHB Key Milestones

Key Milestones	Approx. Date
Output 4: Project Management and Governance Framework in place	November 2018
Output 5: Primary Care arrangements in place	March 2019
Output 6: Diagnostic Services in place	March 2019
Output 7: Histopathology Services in place	March 2019
Output 9: IT Integration Workplan confirmed	September 2018
Output 9: Readiness Assessment(s) completed satisfactorily	April 2019
Go-live	June 2019
Outputs 4-10: Final Report for Phase 2	July/August 2019

Change, Benefits and Risk Management: The project will follow an identified change control and approval process with key roles and processes outlined currently being developed. This will be based on the Prince2 project methodology principles and the project manager will oversee the change management process and escalate accordingly.

Benefits tracking will be undertaken by MidCentral DHB in support of the national monitoring of benefits realisation. The Clinical Lead for NBSP will track benefits of the NBSP at a local level.

A Risks and Issues Register has been developed. Any risks or issues deemed significant enough to impact on the implementation of the overall Programme will be captured in the Programme Risk Register and monitored accordingly.

Monitoring and Evaluation: The planning and roll-out will be supported and monitored by the Ministry team. The 2018/19 implementation is subject to Treasury Major Projects Monitoring and Gateway review as part of the overall Programme monitoring and assurance. A Readiness for Service Review will be scheduled prior to go-live[7], to assess the preparations for go-live and to ensure that the DHBs are well placed for successful implementation. Post Go-Live evaluation will also be undertaken, to review the implementation process and identify any learning points which could be incorporated into planning for subsequent DHB implementations.

[7] This may be a formal Gateway review for the first two DHBs (MidCentral and Whanganui) going live with the NSS. Readiness for Service reviews for the remaining DHBs will be undertaken by the Ministry NBPS team.

Appendix 9: Nelson Marlborough DHB

Organisation Overview

Nelson Marlborough District Health Board (Nelson Marlborough Health, NMH) covers the top of the South Island, with the majority of the population living in the cities of Nelson, Richmond and Blenheim. The region includes rural areas such as Golden Bay, Nelson lakes, Murchison and the Marlborough Sounds where the remainder of the population resides. NMH serves a population of nearly 147,210 (as at 2016), covering 227,000 square kilometres and three territorial authorities or districts to which health services are provided.

Over the next 25 years, population growth is expected to rise to 161,000, at an average annual growth rate of 0.5 percent. The Nelson Marlborough region has the highest proportion of people aged 65 and over in New Zealand (20.5%) followed by the Tasman region with 17.9%. The three districts also account for the highest growth rate of people aged 65 and over in the country. The proportion of the population aged 65 years and over will increase from 20% in 2018 to 27% in 2028 and is likely to make up a third of the population in 2048.

Nelson Marlborough has a very low proportion of people in the most deprived section of the population compared to the national average, with only nine percent living in quintile 5 (most deprived). In contrast, eighteen percent live in quintile 1 areas (least deprived), similar to the national average of 20%.

NMH has a lower proportion of Māori (10%) and Pacific people (1%) compared to the national average. Nevertheless Māori, Pacific Island and Asian people are considered to be priority populations for NBSP. Currently at 3 per cent, the Asian population is projected to experience the largest percentage growth, more than doubling by 2033. Moreover, Nelson is one of six areas that takes resettlement refugees from the United Nations High Commission for Refugees (UNHCR).

Bowel Cancer in Nelson Marlborough DHB

Cancer Rates

Cancer registration and mortality data has been examined by the national Health Quality and Safety Committee (HQSC) for the five years 2009-2013 inclusive. NMH bowel cancer rates are statistically above the national average, with 604 patients per 100,000 people, and as such the region has the fourth highest rate in the country. However, nationally Nelson Marlborough has the lowest mortality rate of 18.1 per 100,000 in 2016.

Eligible Population

The population eligible for the National Bowel Screening Programme would be approximately 18,640 in the 2018 financial year. Almost five percent of the eligible population is Māori, 1.6% is Asian and approximately 1% Pacific Peoples. NMH has identified rural populations, those with disabilities and mental health issues as priority populations for NBSP. The DHB will focus on ensuring access for these populations and will work in close collaboration with Te Piki Oranga which is a free kaupapa Māori primary health provider for Te Tau Ihu o Te Waka o Maui (the top of the South), set up in collaboration with the Nelson Marlborough District Health Board and existing Māori Health providers.

Significant pockets of the NMH population are located outside urban areas and as such, close liaison and interaction with healthcare providers in these areas will be necessary to promote NBSP.

The Royal New Zealand Airforce has a joint civil/military airfield located 8km west of Blenheim, operated in conjunction with Marlborough Airport. The Woodbourne Base houses around 450 personnel, however NMH does not expect any challenges in providing access to NBSP for the very small number of people on the Base who would be eligible for NBSP.

Existing Colonoscopy and Treatment Services

Diagnostic Services: Symptomatic patients are referred through districtwide triaging utilising specified referral criteria. A standardised referral form requires completion by the GP through an Electronic Referral Management System (ERMS) accessible on the Health Pathway website. Access to colonoscopy is based on the National Direct Access Prioritisation guidelines and, depending on the triaging process and priority, referrals are made for either an outpatient colonoscopy or CT Colonography. For patients who do not meet the referral criteria, the referrer receives a letter either requesting further information, suggesting alternative management, an alternative diagnostic test is arranged, or the referral is declined. There is strong emphasis on equity and the Endoscopy team works closely with NMHs Māori Health and Vulnerable Populations unit to support their cultural needs.

Familial services: At present, the administration service is located at Nelson Hospital covering districtwide service delivery, however colonoscopies are performed on both sites. A questionnaire is sent to patients and upon return assessed against the New Zealand Guidelines Group 2012. The referral is forwarded to the New Zealand Familial GI Cancer Service for those with a high risk of colon cancer for formal registration.

Colonoscopy: This is undertaken at both hospital sites. Nelson Hospital has a separate Endoscopy Suite whereas Wairau Hospital facilitates endoscopy lists in a theatre environment. Most colonoscopies are performed by general surgeons with support from physicians. Currently, Nelson hospital has one dual trained physician/gastroenterologist and Wairau hospital one physician who recently commenced his position with the DHB. Most clinicians providing endoscopy services are specialised colorectal surgeons. In addition, Wairau Hospital has one GP-trained Endoscopist and trained nurse Endoscopists are currently not part of the DHB's development plan. All clinicians deliver colonoscopies in both a public and private arrangement. At present, no colonoscopy workload is outsourced, however, allocation of locum resources has been substantial over the past year to keep up with demand. Nelson Hospital is a teaching hospital for Resident Medical Officers and as such Registrars can deliver colonoscopies under direct supervision of a Senior Medical Officer however they will not take part in the Programme. Colonoscopy is also provided by the mobile surgical bus at rural sites when available.

Oncology Services: When a diagnosis of cancer is confirmed through a colonoscopy, referrals are sent to the appropriate services as well as to the Oncology Clinical Nurse Specialist who in turn provides support from diagnosis throughout treatment. The medical oncologists are part of the Nelson Marlborough Health team and Medical oncology services are available daily at Nelson Hospital and visiting clinics are held weekly in Wairau Hospital. Chemotherapy administration is delivered in both hospitals primarily supported by a specialist nursing team.

Radiology: A radiology referral is sent by the endoscopist for CT on the day of the colonoscopy if a colonoscopy has been unsuccessful. CT Colonography (CTC) is provided in both public hospitals (Nelson and Wairau) and at present patients receive a CTC preferably on the same day if capacity allows. The National Access Guidelines are applied for both sites. In case demand exceeds capacity, Nelson does have the option of outsourcing to Pacific Radiology.

Radiation Oncology: Radiation oncology is provided from both Wellington (Wairau) and Christchurch (Nelson and Wairau) as a visiting service. Radiation oncology clinics from Christchurch are held monthly in Wairau Hospital and fortnightly in Nelson Hospital. The Wellington radiation oncologists visit Wairau Hospital monthly. Patients receiving radiotherapy travel to either of these centres.

Pathology: Specimens are analysed by the districtwide hospital laboratory services provided by Medlab South. Most work is performed by histopathologists, with technicians preforming the preparation of specimens for examining and reporting. Currently, histology reports are followed up by endoscopic triage nursing staff located in Nelson who ensure a referral to MDM is in place or followed up.

Multi-Disciplinary Meetings (MDMs): Colorectal meetings occur weekly and are attended by surgeons from both hospital sites (via video conference) with involvement of a radiologist, pathologist, stoma nurse, and Clinical Nurse Specialist Cancer Care Coordination.

Surgery: Surgery is performed at either hospital depending on list and colorectal surgeon availability. Each colorectal surgeon has a minimum of one full day in theatre each week.

Waiting Times: Colonoscopy wait time indicators are monitored monthly to assess percentage of colonoscopies performed within target. The colonoscopy waiting time performance targets are urgent (performed or waiting 14 days or less) 90%, non-urgent (performed or waiting 42 days or less) 70% and surveillance (performed in 84 days or less) 70%. The DHB performance against these targets is shown in Figure 7.

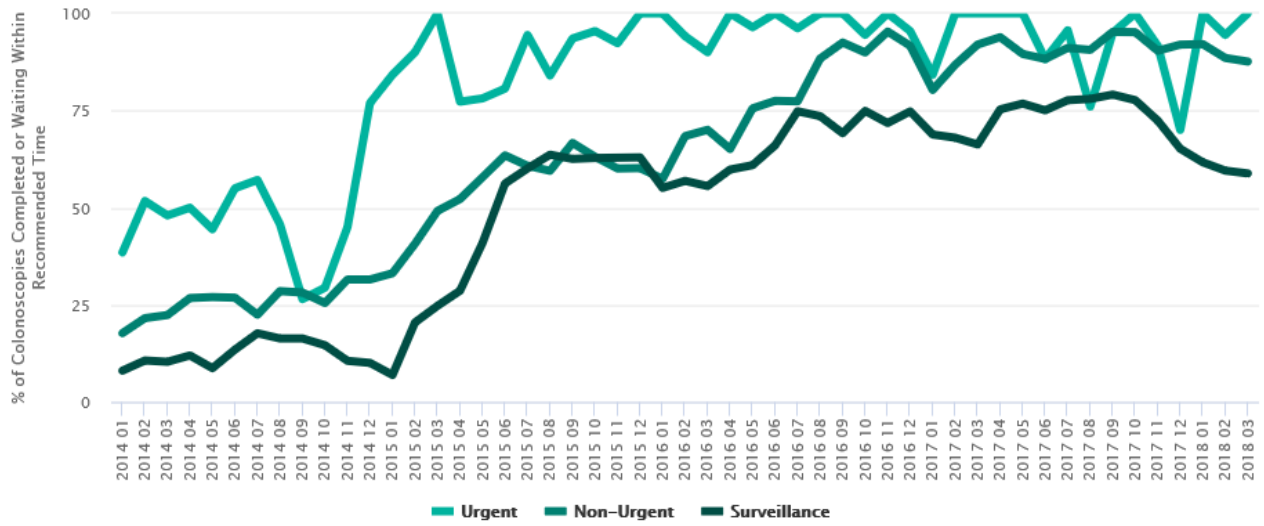


Figure 7: Colonoscopies completed or waiting within recommended time, Jan 2014-Mar 2018

Performance improvement measures to achieve and maintain waiting time targets include: centralised triaging, streamlining of systems and processes, increased nursing and administration workforce, and the introduction of a centralised Electronic Referral Management System (ERMS). Specialised training has been provided to technical and nursing staff. Some activity has been outsourced to private healthcare providers (2016 only), ad hoc additional endoscopy lists and out of hours/weekend lists have been run to increase capacity and throughput with allocation of locum resources. New Entry To Practice (NET-P) Registered Nurses commenced clinical placements in Nelson Hospital. A new gastroenterologist for Nelson Hospital has been employed. Discussions around agreed minimum of scope sessions covering leave and professional development are underway. Work is underway to ensure best utilisation of capacity on both sites.

Investment Alignment with Local and Regional Strategies

The NBSP is aligned with local and regional strategies and plans, including NMHs Māori Health Plan 2016/17, Nelson Marlborough Health Annual Plan & Statement of Intent 2016/17, NMH Primary and Community Health Strategy for the Top of the South Island (ToSHA) 2017-2027, Health for Tomorrow - A Strategy for the Future of Nelson Marlborough Health 2016, and the South Island Health Services Plan 2016-2019.

Benefits and Disbenefits

In addition to contributing to the Programme-wide benefits, the DHB has identified local benefits and disbenefits, as summarised in Table 23.

Table 23: Benefits and Disbenefits of Implementing NBSP for Nelson Marlborough DHB

Benefit	Summary
Improved relationship with Primary Care	• Implementation of NBSP will facilitate a reduction in barriers that may exist at the primary/secondary interface, by improving relationships across the sector. This will benefit the whole community across all services.
Support continued integrative models of care	• There will be increased interaction between primary and secondary care and increased awareness of gastroenterology services in the wider Nelson-Marlborough region.
Improved colonoscopy standards for symptomatic patients	• Implementation and strict adherence to quality standards for bowel screening will have a flow-on effect to symptomatic colonoscopy wait time indicators. • Implementation of strict clinical governance districtwide and adequate support from Endoscopy Users group, service management and nursing executives. • A colonoscopy standard of care will be defined and standardised for symptomatic patients across the district
Supporting the ongoing development of a single service, multi-site model and teamwork across NMH.	• Implementation of the NBSP will support this aim.
Timely introduction of NBSP can run concurrently with NMHs Cancer Pathways for Māori and Vulnerable Populations	• The Māori Health and Vulnerable Populations unit works to improve the health and wellbeing of Māori and high-needs population groups. These include Pacific people, new migrants, refugees, transient workers and people living in lower socio-economic circumstance. Implementation of this newly devised pathway is scheduled for 2018 and will help achieve greater participation in these minority groups.
IT Systems	• Enhancement of the reporting ability of the ProVation endoscopy reporting system will enhance quality for all patients undergoing colonoscopy. • NBSP will take advantage of planned IT improvements for NMH and the wider South Island, which will eventually include one patient management system (PICS) across the district.
Disbenefit	**Summary**
Increase in requests for colonoscopy from people not eligible for NBSP	• There will be an increase in requests for colonoscopy from people not eligible to participate in NBSP, due to increased awareness of bowel cancer and promotion of NBSP.
NBSP parameters will result in some cancers not being identified	• People outside the NBSP age range will not be screened and any bowel cancers in the excluded age ranges will not be identified through screening. • The FIT test positivity threshold will result in some cancers not being identified, which would have been detected with a lower positivity threshold.
Increased pressure on existing resources	• Implementation of NBSP will increase pressure on endoscopy and histology resource, until increased investment is made to improve workforce capacity.
FIT kit distribution process and Māori participation	• A significant proportion of the NMH population lives in rural areas. As rural postal services are slower in, this will slightly delay receipt and return of test kits. • Distribution of FIT kits using the postal system will discourage some Māori in participation in the Programme.
Inequalities of access districtwide	• Socioeconomic status, poor health literacy, health status and the diversity of foreign languages spoken will impact on a successful implementation. Access to NBSP is also impacted by a highly mobile population, issues with transport and access and use of communication technology.

Opportunity cost	• Prioritisation of Capex to implement NBSP (e.g. real estate alterations, procurement of scopes and inventory) will preclude investment in other priority areas. Australasian Sterilizing Services Standards determine significant alterations in workflow, storage and hardware quantities. • Increased endoscopy suite/theatre and consultant time allocated to screening programme activity will reduce capacity available for other patients/activities such as surgery or outpatient clinics. • Permanent increase in operational funds required to increase existing workforce in order to deliver increased demand and meet colonoscopy wait time indicators.
Surgical onward flow of treatment, scheduling and expenses	• Additional theatre capacity and resources (people and equipment) will be required. • Additional surgical procedures will need to be accommodated and funded from within existing budget. • Tension between colorectal surgical capacity to provide both colonoscopy services and other surgical services that meet DHB compliance targets, especially compliance with Faster Cancer Treatment indicators and Elective Services Patient Flow Indicators.
Increased oncology treatment scheduling and costs	• Oncology Services are currently dealing with treatment spike associated with Ministry Faster Cancer Treatment Indicators and PHARMAC decisions regarding the funding of new cancer treatments. NBSP will create an additional treatment surge of patients which will need to be accommodated into the service.

Key Risks

The risks assessed as being the highest probability and highest impact, post mitigation, for the DHB are summarised in Table 24. The Ministry is working closely with the DHB to ensure adequate capacity and the achievement of colonoscopy waiting time indicators, and therefore this is not included in the following table.

Table 24: Nelson Marlborough DHB Key Risks

Key Risks	Risk Management Strategies
Insufficient colonoscopy equipment may prevent the DHB undertaking the required volume of colonoscopies	• Approval for 2 additional scopes has been approved via capex. • Resource across the district will also be utilised as NMH may be able to move patients from one site to another and utilise additional capacity in this manner. (NB participants will only be treated in facilities that meet the NBSP requirements).
Insufficient endoscopist and nursing staff may impact on the volume of colonoscopies which can be undertaken	• Endoscopists are willing to be moved from (for example) clinic to scope and regular production plan meetings will allow NMH to move endoscopists to ensure sufficient capacity is available. • Endoscopists will be working across the district, allowing adequate capacity when demand increases. • Nursing staff may be able to prepare participants, if health and safety issues are addressed and budget provision has been allowed. • Additional nursing FTE to be appointed with funding provided.
If NBSP colonoscopies are performed in the Wairau hospital theatres this will not meet NBSP quality standards	• Increase current capacity at Nelson Hospital with existing Wairau resources and provide screening at Nelson Hospital only, or provide screening colonoscopies at Nelson hospital out of business hours until arrangements are made for full compliance. o These options have been considered but are unlikely to be financially sustainable and may be unsafe due to excessive working hours for staff. • Rearrange Capital Projects for 2017/18 to allow for adequate alterations. o The scheduled build of a new operating theatre at Wairau hospital (shared between Churchill Trust and NMH) will allow for adequate alterations and modifications to meet compliance, this is due to become operational in May/June 2018. Contractual agreements will allow NMH to utilise this new theatre for screening purposes at any time.

Key Risks	Risk Management Strategies
	○ If Wairau facilities remain non-compliant with expected standards, NMH will ensure all asymptomatic patients will receive their screening colonoscopy at Nelson Hospital only.
NBSP will place additional pressure on already stretched theatre capacity, which could result in failure to meet elective surgery indicators	• Options for increasing existing theatre capacity being considered, with a proposal for further growth of existing resources already under development • Outsourcing of theatre work to private providers may be required – This would significantly increase costs (this is not expected to occur at present time) • Re-allocation of existing procedures to other departments in the organisation. For example, skin lesions, dental extractions, caesarean sections, and Lletz procedures.
High levels of deprivation, poor health literacy, language barriers and the inability of new arrivals in the region to register with a GP may result in inequities are people miss the opportunity to participate in NBSP	• Invitations to NBSP will be based on NHI instead of PHO details only. • Extensive effort will be made to ensure NMH's population is well educated and knowledgeable about bowel screening and bowel cancer. • PHOs will reach out to the wider communities, especially rural and remote areas. Strong emphasis will be placed on rural health hubs to allow easy access for screening to be performed closer to home. • Emphasis must be on reaching populations through native language if required • Nelson Centralised referral and Triage Team to close the loop by following up on any people who have not responded in requested timeframe.

Key Constraints and Dependencies

The key constraints and dependencies for the DHB are summarised in Table 25.

Table 25: Nelson Marlborough DHB Key Constraints and Dependencies

Constraints	Notes
Marlborough PHO enrolment	• Marlborough PHO is not able to enrol new patients, visitors or migrated patients as they have reached their maximum capacity.
Workforce capacity	• Access to a specifically trained endoscopy workforce will be a challenge and constraint as other DHBs throughout the country are also trying to recruit from the same pool nationally and internationally. • Current FTE cap may not allow for the required flexibility to recruit new, appropriately trained staff.
Facility design and capacity	• Significant building alterations for Wairau hospital theatre suite are required for conformity with NBSP and (inter)national Standards. • The Australasian Sterilizing Services Standards: AS/NZS 4187:2014 determine significant alterations in workflow, storage and hardware quantities which requires additional facilitation of storage for both hospitals.
Budget	• The funding available for NBSP implementation has been determined based on expected volumes and may not match planned spend to ensure engagement with priority populations, or for IT implementation.
IT	• Shared IT services (including one patient management system throughout the South Island) are being implemented across the entire southern region and may impact on resource availability for NBSP implementation/transition to NSS.
Timeline	• The 'Go Live' date for NMH means that the DHB has less time than some other DHBs to prepare for implementation. If there is a delay (e.g. in approval of the Ministry business case) this may further reduce the time available for preparation.
Dependencies	**Notes**
Primary Care	• Primary Care agreements must be in place with the Ministry for bowel screening to commence, prior to go-live.
ICT systems and local interface	• BSP+ (NBSP interim IT solution) must be operational and adequate links in place with NMH systems, prior to go-live.

Active follow up to address inequalities in the priority population	• Active follow up of non-responders from the priority population is an NCC role and NMH has no control over this aspect of NBSP. • Further active follow up by Primary Care relies on the availability of timely electronic data to practices around patients who have not responded to invitation.
Access to translated information and interpreters	• Current national resources/invitations are in English. Provision of information in other languages is the responsibility of the NCC.
Completion of new theatre at Wairau hospital	• Required for additional volumes and to meet quality standards. Must be complete prior to go-live.

Stakeholder Identification, Engagement and Communication

The most influential and impacted stakeholders include the gastroenterologists, general and colorectal surgeons, triage and endoscopy nursing staff, secretarial/admin support (Clinical Support Services) and ultimately pathology and laboratory staff. Other highly impacted stakeholders include the NCC, the Regional Centre (SDHB), Southern DHB IS Group, South Island DHBs, practice nurses and district nursing, Information & Communications Technology, and eligible participants. Highly influential stakeholders include the Ministry NBSP team, Clinical Leads Oversight Group, Nelson Marlborough Health Board and Executive Leadership Team (ELT) together with the Iwi Health Board, Māori and Public Health Units, and the cancer networks in Nelson and Marlborough.

Weekly liaison in ongoing between the key stakeholders, including the clinical lead, endoscopy lead nurse, project manager and accountable person. Further engagement is taking place with stakeholders to ensure progress on equity and quality issues. Key engagement and communication activities to date include: implementation planning meetings; Endoscopy User Group meetings; Steering Group (including clinical leads and managers); South Island Clinical Leads Oversight Group; PHO meetings; and planning meetings for IT, equity and communications and engagement.

The key internal and external stakeholders have indicated their support for the implementation of the NBSP locally.

Management of Projected Demand

Projected colonoscopy demand is modelled at between 436 and 447 NBSP colonoscopies in the first two years, reducing to between 316 and 321 per year thereafter, with a slow growth in NBSP surveillance colonoscopies. The anticipated number of bowel cancers which will be detected is approximately 67 in the first two years (roughly 33 a year), and approximately 35 in the subsequent rounds (around 17 a year).

Colonoscopy: Five options for service delivery were explored:

1. Increase internal capacity and capability to manage the bowel screening programme alongside standard symptomatic demand and growth.
2. Increase internal capacity and capability with current workforce (nursing and admin staff only) and allocate locum capacity to deliver services to symptomatic patients while NMH Endoscopists manage the bowel screening programme.
3. Establish a mixed model approach through partially outsourcing of demand to private provider(s) as and when required.
4. Complete outsourcing of bowel screening to private provider(s).
5. Outsourcing of all symptomatic patients to private provider.

Analysis of the options determined that options 1 and 2 are not feasible, as current resources do not allow for increased capacity. Option 4 and 5 have not been incorporated in NMHs annual financial plan nor has this been forecast for future financial years and therefore these options are not deemed viable due to financial constraints.

The preferred approach is Option 3. This option would require additional resources to ensure all available sessions are staffed, and removal of other services currently using the Nelson Hospital endoscopy suite. Options at Wairau hospital could include a designated theatre for endoscopy or investment in a dedicated endoscopy suite. Option 3 is most likely to deliver necessary services through a holistic approach, established patient pathways, achieve better patient outcomes and provide space and time to grow symptomatic and more complex gastroenterology procedures. This option also optimises value for money and mitigates any financial risk to the organisation, as outsourcing can be prearranged (noting that outsourcing is not expected to occur at present) and allows for flexibility if workforce issues dictate. Option 3 allows the DHB to control and monitor all aspects of the endoscopy service, especially in relation to quality standards. Full integration with system, strategies and programmes is assured. Information technology integration only needs to occur with the DHB systems and no third-party systems. There is a single referral pathway and processes to colonoscopy for primary care. NMH will manage the competing demands from screening and symptomatic services by running each part simultaneously, but with separate, clearly identifiable systems.

Primary care: Nelson Marlborough General Practices will be notified by the NCC of participants who fail to respond, with the expectation that GPs will follow up any non-responders. GPs will be informed of positive and negative results, and as such will notify the participant by phone or consultation. All referrals will be generated electronically and sent to NMH's centralised Referral Centre for further triaging.

Diagnostics: Will be provided by NMH, alongside symptomatic endoscopy. No other alternative options were identified. Symptomatic referrals will be managed as business as usual. NBSP referrals will be separated, assessed for suitability for a procedure, placed on a waiting list and an appointment made as appropriate and in line with NBSP Quality Standards. The colonoscopy will be performed on separately allocated NBSP procedure lists at either Nelson or Wairau hospital, depending on geographic residence of a patient (and assuming that the Wairau facilities are confirmed as meeting the NBSP quality standards). A positive result will trigger a referral for further care either surgical and/or oncology treatment. The NBSP Cancer Nurse Coordinator will also be notified of the positive result for patients. Patients who require referral to the Familial GI Cancer Service will be referred by either a gastroenterologist or colorectal surgeon at this time.

Surgery: Six options were considered:

1. Provision of expected additional surgical procedures within current service volumes.
2. Provision of resource for these surgical procedures within current capacity by reducing surgical activity in other areas, i.e. surgical specialties that are well above the health target indicators.
3. Re-allocation of existing surgical procedures to other departments in the organisation, i.e. change model of care and patient pathways for certain surgical procedures that can be performed in an outpatient environment.
4. Provision of resource for these surgical procedures within current capacity and review current pathways for other surgical demands such as maternity, ophthalmology and dental surgery, to reduce demand.
5. Increase theatre capacity for the entire district.
6. Outsourcing of surgical procedures.

Evaluation against the criteria indicated that the preferred option was the provision of resource for these additional surgical procedures within current capacity and review current pathways for other surgical demands while maintaining current service volumes and incorporating expected annual increase mandated by the Ministry (Option 4).

Option 1 is unrealistic considering current pressures and demand on surgical services. There is no additional or available capacity to cover any increase in the short-term. Future forecasting has led to the request for an increase of surgical resources; this will not be available until 2020 at the earliest. Option 2 and 3 were rejected as all current capacity is fully utilised district wide. Option 2 therefore would only be viable on a monthly or even weekly base to backfill lists, which is not practical and does not provide any certainty BSP patients receive their surgery in time. Option 3 was rejected as NMH has already reviewed and reallocated procedures and any further change would be minimal. Option 5 was rejected as current capacity is fully utilised. Option 6 was rejected as the cost of outsourcing has not been budgeted for and would be either unaffordable, or poor value for money.

The preferred approach is Option 4. An increase in theatre workforce and capital investment (in equipment and instruments) would enable full utilisation of theatre capacity. Outsourcing of symptomatic patients could be considered if demand exceeds capacity, but this is considered unlikely and (as per Option 5) would be less cost-effective.

Radiology: Two options were considered:

1. Absorb volumes into current service delivery model and provide consistent CTC access across the district and reallocate resources as appropriate, i.e. redirect Nelson patients to Wairau if capacity is available;
2. Provide consistent CTC access across the district and outsource to Pacific Radiology in Nelson.

Option 1 is the preferred option. Utilising both sites allows greater possibilities for timely referral and completion of CTC. Radiology will provide for standard growth and additional CTCs that come from NBSP. Additional resources may be required in the short to medium term in order to enable the expansion to be absorbed and maintain adequate wait time indicators. CTC will be facilitated if a colonoscopy has failed or patients are deemed unfit for a colonoscopy.

Option 2 was not preferred as the NMH strategy is not to outsource, and this option may be unaffordable or less cost-effective.

Oncology: The preferred approach is to provide additional nursing resource (if required) in the short to medium term, in order to enable the increased volume to be absorbed and FCT waiting times maintained.

Histology: Additional histology volumes will be managed internally, with colonoscopy lists for NBSP being scheduled carefully in order to maintain reasonably constant volumes of samples on a day-to-day base, in order to cope with demand.

Facility requirements

The theatre at Wairau hospital, where endoscopies are currently undertaken, is at capacity and does not meet national standards for privacy and separation of pre and post procedure areas. NMH is working with Churchill Private Hospital to construct a new theatre which meets the NBSP requirements. The new theatre will be owned by Churchill and will be part of the existing Wairau Hospital theatre complex. Completion of this work prior to go-live is essential.

The Endoscopy Suite at Nelson Hospital complies fully with existing standards and no investment is required for compliance. Investment in office space will be required; this is not funded through NBSP and is being managed through internal NMH processes.

NMH has allowed for capital investment and installation of endoscope drying cabinets and a scope replacement programme is underway.

Workforce Requirements

NMH has identified that additional capacity will be required, including NBSP clinical lead, general surgeon and endoscopy nursing staff, increased triage/surveillance nurses and additional administrative and support staff. These roles are part time and are based on the projected demand and expected number of resulting lists. These roles will be part of the overall staffing complement but will have dedicated time committed to NBSP. Locum resources may be required for symptomatic endoscopy services, to allow NMH's endoscopists to undertake screening colonoscopies. It is not envisaged that Nurse Endoscopists will be involved in NBSP in the near future. Histology services have indicated available capacity to cope with the anticipated demand created by NBSP.

IT Capability

NMH is due to implement a South Island Patient Information Care System (SIPICS) in April 2018. SIPICS will be applied to manage patient demographics, inpatient and outpatient appointments, admissions and discharges, alerts and allergies, wait listing, preadmissions and more. All reports currently affecting and corroborating with NMH's Endoscopy Service delivery have been identified and NMH expects to be able to meet all reporting requirements at go-live.

Engagement with NCC, BSRC, Primary Care and Laboratory

The Project Manager will liaise with the NCC on performance and promotion of equitable participation. NMH will engage with the BSRC through the Steering Group, i.e. Clinical Lead, Project Manager, NBSP appointed Registered Nurse, Histology liaison and if required PHO representatives. Regular teleconferences will be held, and regular reporting implemented for all auditable outcomes and quality standards related to colonoscopy performance data.

Engagement with Primary Care is expected to continue through the Alliance Leadership Stakeholders (PHO and DHB Alliance Support Manager Primary & Community) and DHB Primary Care Liaison staff. Communication directly with GPs and Primary Care staff will be through the dissemination of information to GPs by communication with PHOs, utilisation of GP CME evening, Primary Care Clinical Governance, and cell groups, utilisation of DHB electronic newsletters and/or correspondence to provide updates, and provision of information via NMHs website.

The Clinical Lead and Project Manager will remain in close contact with the Manager Regional Laboratory Services and meet monthly meeting for updates.

Quality and Equity

NMH will work with the Ministry team, NCC and the South Island Regional Centre on quality reporting and initiatives, guided by the Interim Quality Standards. NMH's internal incident reporting system will amended to extract endoscopy specific incidents. Regional monitoring of events, incidents and trends will be carried out by the Regional Centre.

NMH has identified Māori, Pacific and Asian people, and rural populations as key target communities requiring additional support and attention to ensure equitable access and participation. Key actions to support equity underway or planned include: equity on the NBSP Steering Group meetings; 'by ethnicity' reporting of uptake, outcomes and referral to treatment; identification and monitoring of Māori via the invitation strategy (not a DHB task); identification and use of support networks and local champions; monitoring of Māori participants age (to ensure younger Māori are participating); monitoring of timely referrals for treatment for Māori; and Equity team to identify Māori participants that need socio/economic support to participate in screening and access any necessary appointments.

The South Island Regional Centre will support equity by ensuring consistent messages are published and appropriate support provided across the South Island DHBs.

Financial Arrangements

The indicative whole of life (21 years) capital and operating financial profile for the DHB is set out in Table 26. A more detailed financial analysis is attached as Appendix 5.

Table 26: Nelson Marlborough DHB Indicative Whole of Life Costs

Nelson-Marlborough DHB	2018/19 $'M	2019/20 $'M	2020/21 $'M	2021/22 $'M	Total 4 Years to 2021/22 $'M	2021/22 & Outyears total $'M	Total to 2036/37 $'M
National Co-ordination Centre							
National FIT Laboratory							
DHBs							
Training, Quality & Communication							
DHB Treatment Costs							
Total Budget 18 Operating Cost							
Total Capital Funding							
Total NBSP Funding							
DHB Funded Cost							
Total NBSP Cost							

Management Arrangements

Governance: The DHB Board is ultimately responsible for the governance of the project as part of its overall organisational governance responsibilities. The project will be governed by a Project Steering Group which will report on an exception basis to the Executive Leadership Team or Clinical Governance Group. The Steering Group is chaired by the Manager Surgical Services and is accountable to the General Manager Clinical Services. The Project Manager reports directly to the Manager Surgical Services and indirectly to the Bowel Screening Steering Group.

Project Management: NBSP will be implemented using evidence-based project management methodology. The implementation will be planned and delivered through workstreams including Primary Care, Secondary Care and IT. Furthermore, communication, facilities, workforce, capital and operational expenditure require individual consideration. The project will have identified resources for the duration of the project, i.e. from initial planning to the final implementation and transference to business as usual. Some of the resource will be in place for only one part of the project duration, as requirements will vary over time.

The NBSP ties in with NMH's other IT related initiatives and current projects including SIPICS and NMH's Electronic Referral Management System (ERMS). NMH is already in the progress of developing a centralised booking system for endoscopy. This may require more urgency with implementation of the NBSP.

Project Monitoring and Reporting: The Project Manager will provide monthly reports to the Steering Group and to the Ministry NBSP Implementation Manager.

Key Milestones: The key milestones and approximate timings are shown in Table 27.

Table 27: Nelson Marlborough DHB Key Milestones

Key Milestones	Approx. Date
Output 4: Project Management and Governance Framework in place	February 2018
Output 5: Primary Care arrangements in place	June 2018
Output 6: Diagnostic Services in place	June 2018
Output 7: Histopathology Services in place	June 2018
Output 9: IT Integration Work plan confirmed	February 2018
Output 9: Readiness Assessment(s) completed satisfactorily	June 2018

Key Milestones	Approx. Date
Go-live	August 2018
Outputs 4-10: Final Report for Phase 2	September/October 2018

Change, Benefits and Risk Management: The Project Manager will be responsible for change management throughout the planning and establishment and implementation of Service Delivery with the Steering Group and Accountable Person providing support and oversight.

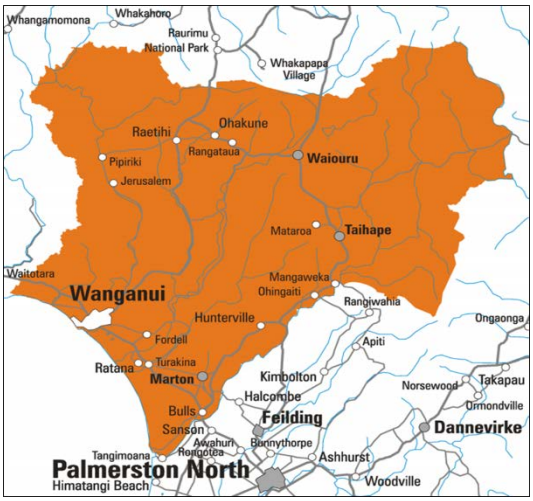
The NMH Senior Responsible Owner will have overall responsibility for the realisation of benefits within the DHB, and for ensuring regular reporting to NBSP.

A Risks and Issues Register has been developed for NMH by the Project Manager. In addition, NMH has an internal process for Risk Management and Incident Reporting and as such any adverse events related to colonoscopy will be captured and reviewed appropriately, linked to patient ID number and reported to the Ministry monthly in accordance with the essential criteria of the relevant standards in the NBSP Quality Standards.

Monitoring and Evaluation: The planning and roll-out will be supported and monitored by the Ministry team. The project will be subject to Treasury Major Projects Monitoring and Gateway review as part of the overall Programme monitoring and assurance. A Readiness for Service Review will be scheduled prior to go-live, to assess the preparations for go-live and to ensure that the DHB is well placed for a successful implementation. Post Go-Live evaluation will also be undertaken, to review the implementation process and identify any learning points which could be incorporated into planning for subsequent DHB implementations.

Appendix 10: Whanganui DHB

Organisation Overview



Whanganui DHB serves a population of approximately 60,000 people, across a large geographical area covering 9,742 square kilometres. The majority of the population lives in the two major centres of Whanganui city and Marton.

The Whanganui population is declining, with a fall of 3.4% between the 2006 and 2013 Census, including a decline of 12.5% in the proportion of younger people. Whanganui DHB has a much higher proportion of people over 65 (18.2%) than the national average (14.3%), with the proportion of people aged over 65 increasing by 11.6% between 2006 and 2013.

The district has high rates of deprivation and poor health status compared to the rest of New Zealand, with around 18% of Whanganui residents living in a decile 10 area. As there is a direct link between socio-economic status and health, the impact on the district's overall health is significant.

Whanganui Māori make up almost a quarter of the population, significantly higher than the New Zealand average of around 15%. Māori, as a group, are known to experience poorer health status than non-Māori ethnicities therefore greater commitment to Māori health issues and reducing disparities is required.

Bowel Cancer in Whanganui DHB

Cancer Rates

Whist yearly cancer mortality rates are declining, cancer mortalities in Whanganui DHB are higher than the New Zealand average. Between 2006 and 2010, cancer mortalities in Whanganui DHB were approximately 11% higher than rates for New Zealand overall.

Eligible Population

PHO enrolment volumes for the January – March quarter 2018 identify 11,557 people in the NBSP eligible age range of 60-74 years. The Whanganui DHB also provides health services to Kaitoke Prison and close liaison with the Corrections Facility medical staff will occur in order to ensure that eligible people within this population have access to the service

Approximately 13% of the eligible population is Māori and 1% Pacific Islanders. These groups have been identified as priority populations for the NBSP. Whanganui DHB has identified high socioeconomic deprivation and rural populations as additional local priorities, with approximately around 58% of the Whanganui population in Quintiles 4 and 5, and 28% of the eligible population being classified as rural.

Existing Colonoscopy and Treatment Services

Diagnostic Services: Diagnostic services provided locally include colonoscopy and imaging. Colonoscopy services are provided by the surgical workforce of four General Surgeons and are performed in the Endoscopy Clinic, located within Whanganui hospital's Theatre Services Unit. Diagnostic services for symptomatic patients are provided on referral for direct access colonoscopy via their GP. Colonoscopy provision is based on the national direct access prioritisation guidelines. Imaging services include CT

colonography, staging CT and MRI scanning and laboratory services (blood tests and histology). PET CT (where required) is available in Wellington.

Familial: Familial cancer services are provided by referral to either the regional genetics service in Wellington or the Familial GI Cancer Service. Whanganui based General Surgeons will do the initial assessment to determine if a patient meets criteria for genetics referral.

Radiology: Whanganui DHB has one full-time on-site radiologist, who is also contracted to report on examinations.

Laboratory, Histology and Pathology: Whanganui DHB and MidCentral DHB have a joint contract with Medlab Central to provide laboratory, histology and pathology services. Services are provided by Medlab Central laboratory in Palmerston North. Medlab Central has four laboratories across the central region. There are a total of 7 full-time and part-time Pathologists in the Medlab Central group.

Whanganui DHB is currently in the process of renegotiating its contract with Medlab Central, an individual contract between Whanganui DHB and MidCentral DHB may be considered. Additional services to be provided as part of the Bowel Screening Programme will be discussed as part of this process. Updated agreement to be finalised and signed in coming months. Allowances for the cost of additional laboratory services have been made in Whanganui DHB's Bowel Screening budget, if required.

Surgical Services: There are four General Surgeons locally who provide surgical care to patients with colorectal cancer at Whanganui Hospital. Surgical options include laparoscopic and open bowel resection. Emergency surgery is performed where required, for patients presenting via ED with bowel obstruction. Rectal cancer surgery is frequently performed with two consultant surgeons. Whanganui DHB has an established ERAS (Early Recovery after Surgery) programme for colorectal cancer patients to reduce morbidity and hospital stay. Post-operative support includes Oncology Nurses, Stoma Nurse, Oncology Social Worker and the Cancer Society. Hospice and Palliative care are available where required. Patients requiring more complex pelvic surgery, or surgery for colorectal cancer metastasis are referred to tertiary care via Wellington, Christchurch or Auckland.

Oncology: Oncology support is via Palmerston North Hospital, with access to neo-adjuvant chemoradiation preoperatively for rectal cancer, and adjuvant chemotherapy post operatively for advanced colorectal cancer (high risk stage 2, or 3, and palliative treatment). The oncology service is a regional service providing care to patients from Taranaki, Hawkes Bay, Masterton, Palmerston North and Whanganui. Some clinic appointments are held at Whanganui Hospital, but all oncology treatments (apart from home-based oral medications) are given in Palmerston North Hospital.

Multi-Disciplinary Meetings (MDMs): Patients with a colorectal cancer diagnosis can be discussed at the weekly Palmerston North multi-disciplinary team meeting via video link for optimal treatment planning. Meetings are delivered in line with the Central Cancer Network multidisciplinary meeting framework.

Waiting Times: Performance against wait time targets is monitored monthly by the Whanganui DHB Bowel Screening Steering Group.

Colonoscopy wait time indicators are monitored monthly to assess percentage of colonoscopies performed within target. The colonoscopy waiting time performance targets are urgent (performed or waiting 14 days or less) 90%, non-urgent (performed or waiting 42 days or less) 70% and surveillance (performed in 84 days or less) 70%. The DHB performance against these targets is shown in Figure 8.

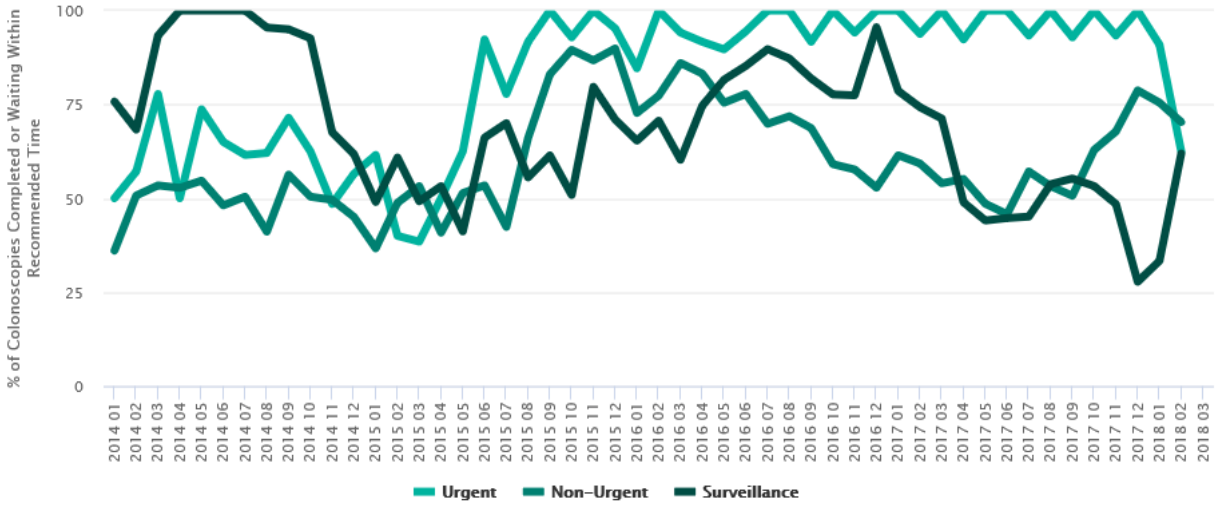


Figure 8: Colonoscopies completed or waiting within recommended time, Jan 2014-Mar 2018

Achievement against the non-urgent colonoscopy wait time indicator was below target between February and November 2017, however following implementation of additional colonoscopy capacity in July 2017, achievement increased to above the target level. Achievement of urgent wait time indicator has dropped in recent months and the Ministry is working closely with the DHB to ensure performance is improved prior to go-live.

Performance improvements measures include:

- Additional colonoscopy capacity has been implemented, with two extra lists per week (mixed with gastroscopy and flexible sigmoidoscopy). The extra capacity has been used to ensure current wait time indicators are being met, and in future will be used for bowel screening cases.
- A project is underway to ensure that the majority of symptomatic colonoscopies meet Direct Access Criteria. A registered Nurse has been contracted to provide further education on the use of the standardised referral form.
- Additional CT colonography capacity exists (up to five per week) and could be directed to either bowel screening participants who are unfit for colonoscopy, or symptomatic patients as required.

In quarter one of 2017/18, Whanganui DHB's achievement against the Faster Cancer Treatment (FCT) target was slightly below the 90% target level, at 87%. Whanganui DHB Bowel Screening Steering Group will also monitor ongoing performance against the FCT target, to ensure that any concerns about ability to achieve and maintain performance above the target level are identified and actioned with relevant stakeholders as soon as possible.

Investment Alignment with Local and Regional Strategies

The NBSP is aligned with local and regional strategies and plans, including the Whanganui DHB Annual Plan 2017/18, the Whanganui DHB System Level Measures Improvement Plan 2017/18, the Central Region Service Plan 2017/18 (which incorporates the regional strategy for cancer) and the Whanganui District Map of Medicine Bowel Cancer Pathway and Bowel Cancer Stream.

Benefits and Disbenefits

In addition to contributing to the Programme-wide benefits, the DHB has identified specific further local benefits and disbenefits, as summarised in Table 28.

Table 28: Benefits and Disbenefits of Implementing NBSP for Whanganui DHB

Benefit	Summary
Improved colonoscopy standards for patients referred for symptomatic reasons	• Implementation and use of the Interim Quality Standards and EGGNZ Endoscopy standards for bowel screening will improve colonoscopy standards for all patients, including those referred for symptomatic reasons. • Referral pathway quality standards for symptomatic patients will be reviewed and standardised.
Increase in quality of referrals received from GPs	• Colonoscopy referral form will be reviewed and updated to include additional prompts and mandatory fields. • Education provided to GPs on use of form provides opportunity to discuss direct access criteria for symptomatic referrals and overall quality of referrals.
Improved relationship with Māori and Pacific Island providers and communities.	• Engagement with Māori and Pacific Island communities and organisations to encourage equity in screening rates will strengthen their relationship with Whanganui DHB. • Māori and Pacific Island participants identified as not being enrolled with a PHO/General Practice can be provided with enrolment options and supported to enrol, improving access to overall healthcare.
IT Systems	• Enhancement of the reporting ability of the ProVation endoscopy system will enhance quality for all patients undergoing colonoscopy.
Disbenefit	**Summary**
Additional colonoscopies resulting from NBSP will add pressure to treatment scheduling and associated costs.	• Additional surgical procedures will need to be accommodated and funded from within existing resources, whilst compliance with other surgical services targets is maintained. Theatre capacity and FTEs will require review. • Additional pressure on laboratory services will need to be accommodated.
Additional oncology services resulting from NBSP will add pressure to treatment and scheduling and associated costs.	• Patients diagnosed with bowel cancer because of NBSP screening will need to be accommodated within existing oncology service capacity.

Key Risks

The risks assessed as being the highest probability and highest impact, post mitigation, for the DHB are summarised in Table 29.

Table 29: Whanganui DHB Key Risks

Key Risks	Risk Management Strategies
If additional volumes of surgical procedures generated as a result of NBSP cannot be managed within Whanganui DHB theatre services, some outsourcing will be required.	• Consider scope for increasing Whanganui DHB theatre capacity and develop proposal that addresses additional costs and FTE requirements. • Commence regular monitoring and review of current colonoscopy volumes to ensure projected additional volumes can be managed within allocated resource. • Complete colonoscopy process mapping to assess ability to manage additional volumes throughout whole process. • If demand cannot be met, outsourcing to local private provider Belverdale Hospital may be considered, however this will incur increased costs, placing further pressure on bowel screening budget. • Preferred approach is to manage additional volumes within Whanganui DHB. Outsourcing will only be considered if level of risk increases substantially, following monitoring and review of current colonoscopy volumes.

Key Risks	Risk Management Strategies
Resignation, retirement or sickness/health issues of surgical, endoscopy nursing or radiology staff members would place pressure on theatre capacity.	• Commence recruitment as soon as practical. • Succession planning. • Seek locum resource support. • Outsource to Belverdale Hospital.
Failure or required maintenance of Surgical equipment will limit delivery of scope capacity.	• Review Endoscopy assets annually. • Maintain a budget to replace end of life assets.
Insufficient oncology capacity to cope with increased demand may result in delays in patients being treated and failure to meet FCT targets.	Early cancer detection of patients will create a spike in patient numbers for the oncology services as well as ongoing increase in patients. The current waiting list is increasing and additional demand arising from NBSP will increase this problem. • Work with MidCentral DHB to ensure capacity by process mapping of the oncology service to identify areas for streamlining.
If sufficient endoscopy capacity is not available by the commencement date, this may result in delayed or poor implementation of NBSP.	• Identify available residual capacity. • Seek support through outsourcing endoscopy procedures. • Investigate non-bowel screening endoscopy procedures being referred for CTC.

Key Constraints and Dependencies

The key constraints and dependencies for the DHB are summarised in Table 30.

Table 30: Whanganui DHB Key Constraints and Dependencies

Constraints	Notes
Workforce capacity	• Additional staff will need to be recruited to meet increased demand generated by NBSP.
Business Case Sign-off	• Delay in approval of the 2018/19 NBSP business case will result in delays in the implementation of NBSP.
Funding	• Funding must be sufficient to cover costs associated with ongoing 'business as usual' operation of NBSP.
Dependencies	**Notes**
National Screening Solution (NSS) Technology	• The NSS must be operational and integrated with Whanganui DHB systems before go-live.
Laboratory	• Agreement for provision of additional histology must be in place for bowel screening to commence both in terms of cost and capacity. • Whanganui DHB is currently renegotiating its contract with Medlab Central. Additional histology and pathology services to be provided as part of NBSP will be discussed as part of this process. Updated agreement to be finalised and signed in coming months.

Stakeholder Identification, Engagement and Communication

The most influential and impacted stakeholders include endoscopists, colorectal and general surgeons, endoscopy and pre-assessment nurses, theatres, PHOs and GP practices, the Whanganui Cancer Network, Māori and Pacific health providers and communities, IT services, the NCC and BSRC.

Key engagement and communication activities to date include: implementation planning meetings with clinical, project, IT and financial leads; colonoscopy process mapping; communications and equity meetings; engagement with the Whanganui Cancer Network Group and Whanganui Cancer Society; meetings with primary care and PHO, laboratory and radiology; and a presentation to the Whanganui DHB Combined Statutory Advisory Committee.

Key internal and external stakeholders locally have indicated their support at the various meetings that have occurred. Strong engagement and support has been indicated by Whanganui DHB Clinical Leads, Lead Endoscopy Nurse, Director of Māori Health and Communications Manager. The Whanganui Cancer Network Group (which includes representatives from Whanganui Regional Health Network (PHO), Whanganui Cancer Society, Central Cancer Network and local consumer group) has indicated strong engagement and support of NBSP.

Management of Projected Demand

It is estimated that an additional 42 colonoscopies will be required for bowel screening in the 2018/19 year. This will increase to 173 in 2019/20 and 177 in 2020/21. Additional colonoscopies required will decrease to approximately 124 thereafter, with a slow growth in NBSP surveillance colonoscopies.

The anticipated number of bowel cancers which will be detected is approximately 13 each year in the first two years, and approximately 7 per year in subsequent years.

Diagnostic Colonoscopy: Four options were considered:

1. NBSP provided from within Whanganui DHB, alongside symptomatic referrals.
2. Mixed model, use of mobile surgical services unit in rural locations.
3. Mixed model of provision of bowel screening between Whanganui DHB and private provider, outsourcing low volume in first 2 years of NBSP.
4. Full outsourcing of NBSP screening colonoscopies to private provider.

Option 1 was identified as the preferred option, as it is consistent with NBSP objectives and current capacity can be configured to meet demand.

Option 2 was rejected as it is unlikely that mobile surgical services could meet the timeframe of required service provision for NBSP. Option 3 was rejected as is a poor strategic fit, there is an increased cost from outsourcing and additional work would be required to ensure quality standards are met and maintained. Option 4 was rejected as this is not a good strategic fit, there is an increased cost from outsourcing, and the private facility may have capacity issues.

Symptomatic colonoscopy: Two options were considered:

1. Symptomatic endoscopy provided from within Whanganui DHB alongside Bowel Screening.
2. Outsourcing of symptomatic patients to private provider.

Option 1 was preferred as this is a good strategic fit and current capacity can be configured to meet demand. Option 2 was rejected as this is not a good strategic fit, there is an increased cost from outsourcing, and the private facility may have capacity issues.

Oncology: Services will be provided by the regional service, via Palmerston North hospital. No alternative options were identified. NBSP demand will be absorbed within the existing service capacity and quality and performance will be monitored to ensure that the additional activity arising from NBSP does not have a negative impact.

Surgery: Two options were identified:

1. Surgery provided from Whanganui alongside surgery for symptomatic patients.
2. Mixed model of service provision between Whanganui DHB and private provider.

Option 1 was preferred as current capacity can absorb the expected demand. Option 2 was rejected as it is not a good strategic fit, outsourcing will be less affordable and additional work may be required to ensure quality standards are met and maintained.

Radiology: CT colonography, staging CT and MRI scanning services will be provided from within Whanganui DHB. PET CT is available in Wellington. As current capacity can be configured to meet demand, no alternative options were identified.

Laboratory / Histology / Pathology: Demand will be absorbed into existing capacity and no alternative options were identified. These services are provided under contract with MedLab Central and the contract will be revised for the additional demand.

Facility requirements

NBSP will be implemented within the Whanganui hospital endoscopy unit. Although some additional investment in scoping equipment will be required, this will be managed through the DHB capital budget. The alternative option, a mixed model using Whanganui DHB and a private provider, was not preferred as this approach had been considered and rejected in the analysis of service delivery options.

Workforce Requirements

The DHB has considered restructuring the current workforce to accommodate the additional demand, but this is not considered realistic as the extra activity cannot be absorbed. The DHB has therefore identified a need for additional resource, specifically for general surgeon, sterilisation nurse and endoscopy nurse time. Outsourcing symptomatic patients to balance NBSP demand with existing resource was considered but outsourcing as a service delivery approach has been rejected and therefore this option was not progressed.

IT Capability

Whanganui DHB is expected to be the first DHB to go-live with NSS, the new IT system for NBSP. The DHB will work with the Ministry to assess IT capability and requirements, following development of the NSS.

Engagement with NCC, BSRC, Primary Care and Laboratory

The DHB Bowel Screening Project Manager will be responsible for engagement with the NCC and will instigate in-person and remote meetings as required. The Project Manager and Lead Endoscopy Nurse will be responsible for engagement with the BSRC.

The Whanganui DHB Bowel Screening clinical lead and project manager will work with the radiology department to ensure that the required radiology quality standards for NBSP are known within the wider team, and potential concerns or risks related to quality are identified and actioned as soon as possible. Whanganui DHB radiology department has been awarded international accreditation (IANZ) and is committed to maintaining accreditation status.

The Whanganui DHB Bowel Screening clinical lead and project manager will work with Medlab Central laboratory services to ensure that required laboratory, histology and pathology quality standards for NBSP are identified, achieved and routinely monitored, so that any potential concerns or risks related to quality are identified and actioned as soon as possible.

Whanganui DHB has initially engaged with the two PHOs through the Whanganui Cancer Network meeting group, requests for data relating the eligible NBSP population, and discussions about equity. Whanganui DHB will engage with both PHOs through regular meetings with key staff PHO team members, in the run up to go-live and beyond. The Project Manager has very strong links with the Whanganui Regional Health Network and all Whanganui general practice teams, due to having previously been employed by their organisation as a Practice Liaison. He also has good links with the National Hauora Coalition, having previously communicated and engaged with them regarding shared PHO contracts and projects in the past.

Quality and Equity

Quality will be overseen by Whanganui DHB Bowel Screening clinical lead and lead endoscopy nurse. They will engage with theatre and endoscopy clinical staff to ensure quality requirements are known within the wider team, and potential concerns or risks related to quality are identified and actioned as soon as possible. Bowel screening quality requirements will be added as a standing agenda item for Endoscopy User Group meetings and will be reported monthly to the Whanganui DHB Bowel Screening Steering Group. The Whanganui DHB Centre for Patient Safety and Quality will be responsible for assessing and maintaining quality standards relating to patient safety.

Whanganui DHB has identified Māori, Pacific Island, Quintile 5 and rural populations as the target groups for achieving equity in uptake and outcomes for the NBSP. Key actions to ensure equity include:

- **Māori:** Early engagement with Māori leadership, through the Iwi Māori Relationship Board. A NBSP Māori Advisory Group will be established to identify concerns and barriers to screening, strategies for engagement with the Māori communities, identify champions in the communities and encourage Māori participation. A part-time Māori position may be established to support engagement with Māori communities. General practice teams, community providers and specialist services will be engaged to support Māori to participate. Active strategies will be used to contact eligible Māori to ensure correct contact details prior to the commencement of NBSP, to ensure invitations are received.
- **Pacific Island communities:** The WRHN outreach team will encourage engagement in NBSP through links with Pacific Island community groups in the area. Collaboration with Māori health providers, and general practice teams.
- **Rural communities**: Early engagement of rural populations, including attending established community meetings and information sessions in rural centres.
- **Quintile 5:** The project team will support general practice teams, Māori, local social services and community providers with education and information to build capacity and capability to engage, promote and support high deprivation population groups with NBSP. Community awareness sessions, media promotions, both ethnic and geographically specific will be localised using NBSP information formats.

Whanganui DHB has a team of haumoana/navigators that are available to support patients and whānau/families in their interaction and engagement with hospital services. The haumoana/navigator team will work with WDHB lead endoscopy nurse and Whanganui Regional Health Network Outreach team to locate and contact patients who do not respond to invitations to participate in NBSP or do not attend colonoscopy appointments, to discuss barriers and encourage participation.

Financial Arrangements

The indicative whole of life (21 years) capital and operating financial profile for the DHB is set out in Table 31. A more detailed financial analysis is attached as Appendix 5.

Table 31: Whanganui DHB Indicative Whole of Life Costs

Whanganui DHB	2018/19 $'M	2019/20 $'M	2020/21 $'M	2021/22 $'M	Total 4 Years to 2021/22 $'M	2021/22 & Outyears total $'M	Total to 2036/37 $'M
National Co-ordination Centre							
National FIT Laboratory							
DHBs							
Training, Quality & Communication							
DHB Treatment Costs							
Total Budget 18 Operating Cost							
Total Capital Funding							
Total NBSP Funding							
DHB Funded Cost							
Total NBSP Cost							

Management Arrangements

Governance: The implementation will be overseen by the NBSP Steering Group, which reports via the Executive Management and Chief Executive to the Board. The Whanganui DHB Business Manager Surgical & Procurement is the implementation project accountable person and is accountable to Whanganui DHB GM Service & Business Planning. The dedicated Bowel Screening Project Manager is accountable to Whanganui DHB Business Manager Surgical & Procurement.

Project Management: The project will be implemented using the Whanganui DHB approved project management methodology.

Project Monitoring and Reporting: The Project Manager will provide monthly reports to the Steering Group and to the Ministry NBSP Implementation Manager.

Key Milestones: The key milestones and approximate timings are shown in Table 32.

Table 32: Whanganui DHB Key Milestones

Key Milestones	Approx. Date
Output 4: Project Management and Governance Framework in place	November 2018
Output 5: Primary Care arrangements in place	March 2019
Output 6: Diagnostic Services in place	March 2019
Output 7: Histopathology Services in place	March 2019
Output 9: IT Integration Workplan confirmed	September 2018
Output 9: Readiness Assessment(s) completed satisfactorily	February/March 2019
Go-live	May 2019

Key Milestones	Approx. Date
Outputs 4-10: Final Report for Phase 2	June/July 2019

Change, Benefits and Risk Management: The Project Manager will be responsible for change management, with support and oversight provided by Whanganui DHB Bowel Screening Steering Group as required. The Project Manager will maintain regular communication with the NBSP team and Ministry Relationship Managers.

The Whanganui DHB Business Manager Surgical Services & Procurement will be responsible for identification, measurement and tracking of benefits to ensure that the expected outcomes are realised. Benefits will be tracked locally through regular reporting to both Whanganui DHB and NBSP teams as required.

Whanganui DHB has developed a NBSP risk register that will be used to identify and manage risk. Risks or issues that could have an impact on implementation of NBSP will be identified and recorded on the risk register by the Project Manager, with support from the Whanganui DHB Endoscopy User Group and Centre for Patient Safety and Quality. The risk register will be regularly review by the Project Manager. The Project Manager will escalate concerns regarding risk to Whanganui DHB Business Manager Surgical Services & Procurement and the Bowel Screening Steering Group for discussion and guidance as required.

Monitoring and Evaluation: The planning and roll-out will be supported and monitored by the Ministry team. The project will be subject to Treasury Major Projects Monitoring and Gateway review as part of the overall Programme monitoring and assurance. A Readiness for Service Review will be scheduled prior to go-live, to assess the preparations for go-live and to ensure that the DHB is well placed for a successful implementation[8]. Post Go-Live evaluation will also be undertaken, to review the implementation process and identify any learning points which could be incorporated into planning for subsequent DHB implementations.

[8] This may be a formal Gateway review for the first two DHBs (MidCentral and Whanganui) going live with the NSS. Readiness for Service reviews for the remaining DHBs will be undertaken by the Ministry NBPS team.

Appendix 11: Glossary

Acronym	Description
BSP	Bowel Screening Pilot
BSRC	Bowel Screening Regional Centre
CTC	Computed Tomography Colonography
DHB	District Health Board
FCT	Faster Cancer Treatment
FIT	Faecal Immunochemical Test
GCDO	Government Chief Digital Officer
MBIE	Ministry of Business, Innovation and Employment
MDM	Multi-Disciplinary Meeting
NCC	National Coordination Centre
NHI	National Health Index
NSS	National Screening Solution
NSU	National Screening Unit
PHO	Primary Health Organisations
SRO	Senior Responsible Owner