

ALLEN+CLARKE

**MORE HEART AND DIABETES
CHECKS EVALUATION**

FINAL REPORT

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This report has been prepared by:

Dr Carolyn Hooper, Ned Hardie-Boys, Esther White
Allen + Clarke

Dr John Marwick
Sky Blue House

Professor Jackie Cumming, Dr Janet McDonald
Health Services Research Centre, School of Government
The Research Trust of Victoria University of Wellington

Professor Denise Wilson
Professor of Māori Health and Director of Tupuna Waiora Centre for Māori Health Research
Auckland University of Technology (AUT)

Associate Professor Stewart Mann
Associate Professor of Cardiovascular Medicine, Otago University

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EXECUTIVE SUMMARY

This report contains the findings and recommendations from an independent evaluation of the *More Heart and Diabetes Checks* health target (the *Checks* health target).

Background

Health targets are a set of national performance measures specifically designed to improve the performance of health services. They intend to provide a focus for action and to be indicators of progress against the government's strategic priorities, and have a particular focus on population health objectives and on reducing inequities.

The *Checks* health target has been operating since 2012 and includes a cardiovascular risk assessment (CVDRA) and a blood test for diabetes (HbA1c) delivered in primary care settings. The goal of the health target was for 90 percent of people in specified age and ethnicity cohorts to have had a CVDRA in the past five years. The *Checks* health target budget included national funding to support the target, and incentives and sanctions for district health boards (DHBs) and primary health organisations (PHOs) to achieve the target. The funding pool was spread over fiscal years 2013/14; 2014/15; 2015/16; and 2016/17. The amount available reduced each year.

Evaluation purpose, questions and methods

The purpose of the evaluation of the *Checks* health target was to provide robust evidence to inform future approaches to assessing and managing CVD and diabetes risk; and to inform planning and implementation of other health targets and performance incentive systems more generally.

The evaluation provides a summative assessment covering three components:

1. A **Process evaluation** to demonstrate how and why the *Checks* target implementation produced the results it did.
2. An **Outcome evaluation** to examine the impact of the *Checks* target on health outcomes and its effectiveness at refocusing the sector on CVD risk management.
3. An **Economic evaluation** to determine if health system resources have been allocated efficiently.

The evaluation was framed around five key evaluation questions that align with these three components (process, economic and outcome), and to sustainability and the future direction of the *Checks* health target:

1. How well was the *Checks* health target implemented?
2. What difference did the *Checks* health target make for health practices/service providers and for those whose risk was assessed?
3. What have been the economic implications of the *Checks* health target and is it likely that the programme provides good value for money?
4. To what extent are any gains made through the *Checks* health target likely to continue?
5. What should the Ministry of Health do to support CVD risk assessment?

The methods of data collection used for this evaluation were: document review, literature survey, 14 key informant interviews (including seven people from the Ministry of Health), seven PHO-based case studies, an on-line survey of primary care practitioners, and a postal survey of health consumers.

Findings, conclusions and recommendations

How well was the *Checks* health target implemented?

Nationally, the coverage goal for the health target was met, with the coverage rate increasing from 49 to 90 percent of the population cohort. This represents more than one million risk assessments for cardiovascular disease and diabetes reported since 2012. It is a considerable achievement that the national coverage goal was reached, albeit later than originally specified (30 June 2014). Four DHBs achieved 90 percent coverage in the originally specified timeframe; with a further 11 DHBs achieving the coverage goal by 31 December 2015.

In terms of equity, the gap in the coverage rate between Māori and non-Māori grew over the implementation period. This may in part be explained by the inverse equity hypothesis, where the 'low hanging fruit' is gathered earlier than that which is 'harder to reach'; and possibly also by the predecessor health target (2007 to 2012) having focused more specifically on diabetes checks, which may have resulted in a high proportion of the Māori population being assessed early.

The evaluation found a number of factors critical to successful implementation, including:

- Investment in IT systems, which streamlined data collection and reporting as well as facilitating the delivery of assessments;
- Being able to scale-up service delivery to 'get over the hump' towards achieving the goal; and
- Achieving buy-in from practice nurses as the main deliverers of the assessments, and from clinical and managerial leadership within PHOs.

Improvements to implementation processes over time resulted in many PHOs and practices exhibiting these factors and overcoming the associated impediments.

While the majority of assessments were delivered opportunistically,¹ there was a need for outreach activities to engage with people who infrequently attend their doctor. There was widespread evidence of novel and successful approaches to reaching these groups, but the effort and cost required was sometimes considerable, with clinicians commenting that it took considerable effort to expand coverage beyond 80 percent.

Initiatives provided by the Ministry of Health (the Ministry) to support implementation showed mixed results. League tables that showed progress towards the coverage goal and were published quarterly in national newspapers, and also the provision of resources and training were found to have had a positive influence on implementation. On the other hand, the Target Champion role and a social marketing campaign were found to be less influential.

¹ 'Opportunistic' assessments occur when the enrolled patient visits their doctor on another matter, rather than specifically visiting their doctor to have their risk of cardiovascular disease and diabetes assessed.

Overall, the evaluation found that the *Checks* health target was implemented reasonably well, aided by the extended timeframe, which enabled PHOs and practices to improve their implementation processes over a longer period.

What difference did the *Checks* health target make for health practices/service providers and for those whose risk was assessed?

A goal of the health target was to heighten sector awareness of the importance of early detection of cardiovascular disease and diabetes; and the significant coverage gains achieved since 2012 are evidence that this goal has been achieved. Sector buy-in to the programme did take time and in places remains variable. Motivation to improve patient health, a sound clinical imperative, and funding to support implementation were all important factors to achieving sector buy-in to the programme. Two concerns raised by numerous research participants include: the limited scope of the health target, such as the decision to omit management of diagnosed elevated risk; and concerns about the clinical evidence behind the health target. Amongst clinicians who responded to the on-line questionnaire, 60 percent considered the programme to be supported by a sound evidence-base; and 69 percent considered the *Checks* health target to have been a worthy priority. It seems likely that the programme's aims were not well communicated initially but buy-in increased over time. Importantly, a number of nurses expressed their increased awareness, developed through the *Checks* programme, of their potential to make a difference to population health.

The programme has contributed to improvements to front- and back-office support processes and systems, such as systems to produce lists of patients due for assessment. These 'patient lists' were important to progressing coverage gains, and the capability to produce such lists has the potential to support the delivery of other population health programmes.

The greater attention on CVD risk and communication of that risk to individuals has helped to make the public more aware of their CVD risk and how to manage it. However, the evaluation found that communicating CVD risk well is difficult and time consuming, it is not always well-understood by consumers, the advice given is not always acted upon, and lifestyle changes were infrequently sustained over time by consumers who reported their actions through the patient perspectives survey. The evaluation found that significant extra work was required from PHOs and practices to deliver the *Checks* programme and many experienced shortfalls of capacity and capability. The programme's funding provided opportunities to address these shortfalls and, positively, opportunities to upskill some clinicians. Nevertheless, the evaluation found that delivering the programme resulted in some disruption to other services at the primary care level, and this was a concern to clinicians who participated in the evaluation.

Early detection of cardiovascular disease and diabetes is a 'long game', reaping health gains in the long term rather than becoming apparent in the four years since the inception of the programme in 2012. Consequently, at this time there is no evidence of improved health outcomes as a result of the significant increase in CVD and diabetes risk assessments. Evaluation participants, both practitioners and patients, reported lifestyle changes and medical treatment as a result of risk assessments, but this evaluation encountered no hard evidence to support a claim of improved health outcomes at a population level.

Overall, the evaluation found the programme has helped to focus the sector on CVD risk assessment, but the absence of an equivalent focus on CVD risk management remains a concern to some clinicians, and the population health outcomes are as yet unknown.

What have been the economic implications of the *Checks* health target and is it likely that the programme provides good value for money?

The financial incentives offered through the programme appeared to make a difference to its results, and the same result would probably not have been achieved for less. For many, the incentives signalled CVD and diabetes risk assessment as a priority and helped to focus attention. For others, the financial incentives were not a key motivator.

The evaluation found that health system resources were largely used efficiently. However, participants report that compliance/administrative costs associated with implementing the programme, such as in collecting and reporting data, were not insignificant and affected overall programme efficiency.

Costs associated with staffing to arrange and undertake risk assessments, particularly through outreach, were also not insignificant. The evaluation evidence shows that the programme funding was not always sufficient to meet the costs of implementation and the shortfall was often met through other means, for example, through unpaid work by nurses.

Overall, the evaluation is unable to determine whether the *Checks* programme provided good value for money. To be sure it is providing good value for money, more evidence is needed on the programme's benefits in terms of health outcomes.

To what extent are any gains made through the *Checks* health target likely to continue?

The evaluation found that the risk assessment process has become reasonably well embedded into most clinics as an opportunistic practice and, therefore, many of the gains made through the *Checks* programme are likely to continue. However, coverage rates would be expected to decline over time (although not to the pre-*Checks* health target levels) and there is a concern that any reduction is most likely to be among population groups at highest risk.

The establishment of processes and systems, and the integration of these into broader work programmes, has been critical to making CVD and diabetes risk assessments part of routine practice. Transitioning assessment reporting to the System Level Measures Framework and strengthening the focus on the management of diagnosed elevated risk is key to future sustainability.

What should the Ministry of Health do to support CVD risk assessment?

The evaluation has resulted in 12 recommendations; two that relate specifically to the *Checks* health target, and 10 that can be applied to existing and future health targets more generally.

For the *Checks* health target:

1. Continue to report risk assessment coverage under the System Level Measures Framework.
2. Complement the focus on risk assessment with greater attention on the *management* of elevated risk of CVD, stroke and diabetes.

For health targets more generally:

3. The Ministry of Health should provide clear messaging to the sector around future health targets and goals.
4. The Ministry of Health should engage with the sector early in the planning of future health targets.

5. The Ministry of Health should consider establishing separate coverage goals for high-risk populations.
6. The Ministry of Health should consider including an equity sensitive calibration in funding allocations to support a greater focus on high-risk populations.
7. The Ministry of Health should better utilise national target champions for building clinical support for health targets.
8. The Ministry of Health should invest in gaining an understanding of the full costs of delivering health targets, including the costs to health providers.
9. Before implementing further pay-for-performance funding models, the Ministry of Health should review the growing evidence on these funding models.
10. The Ministry of Health should seek to leverage off investments made in building systems and processes for health targets by utilising these for other targets and interventions.
11. The Ministry of Health should ensure health targets are well-integrated and take a long-term view.
12. When withdrawing or transitioning a health target, the Ministry of Health should send early signals to the sector about future plans for the target.

1. BACKGROUND

The Ministry of Health (the Ministry) appointed Allen and Clarke Policy and Regulatory Specialists Ltd (*Allen + Clarke*) to evaluate the *More Hearts and Diabetes Checks* health target. The *Checks* health target has been operating since 2012 and includes a cardiovascular risk assessment (CVDRA) and a diabetes test (HbA1c) delivered in primary care settings. The goal of the health target was for 90 percent of people in specific age and ethnicity cohorts to have been assessed in the past five years.

The Ministry is interested in learning from the implementation of the *Checks* health target and about its impacts. The evaluation findings are expected to inform future approaches to assessing and managing cardiovascular disease (CVD) risk and diabetes, and wider decisions relating to the implementation of health targets more generally.

1.1. About the More Hearts and Diabetes Checks health target

Health targets are a set of national performance measures specifically designed to improve the performance of health services. They provide a focus for action. The targets were intended to be indicators of progress against the government's strategic priorities, and had a particular focus on population health objectives and on reducing inequities.

The first iteration of health targets, in 2007, included the *Better diabetes and cardiovascular services* health target, which comprised a fasting lipid blood test, a diabetes assessment, and a diabetes management component. The indicator for this predecessor health target reads:

There will be an increase in the percentage of people in all population groups:

- *estimated to have diabetes accessing free annual checks*
- *on the diabetes register who have good diabetes management*
- *who have had their CVD risk assessed in the last five years.*

There will be improved equity for all population groups in relation to diabetes and CVD risk assessment indicators.²

When the Ministry evaluated the health targets programme after two years, they reported that “there had been five percent more free annual diabetes checks.”³

The health target was revised in 2012, and renamed *More Heart and Diabetes Checks* (the *Checks* health target). The revised health target placed greater emphasis on CVDRA, and it was no longer necessary to fast prior to the blood test. It is this latter iteration of the target, with an emphasis on CVDRA, which is the subject of this evaluation.

² Ministry of Health, ‘Results of the Evaluation of the 2007/08 Health Targets Programme’, 26.

³ *Ibid.*, 2.

The population cohort

The in-scope cohort for the *Checks* health target was purposefully designed to recognise the inequitable burden of CVD and diabetes experienced by particular ethnically-defined populations. The cohort includes:

- Māori, Pasifika, and Indian⁴:
 - men aged 35 – 74 years
 - women aged 45 – 74 years
- Other ethnicities:
 - men aged 45 – 74 years
 - women aged 55 – 74 years

The coverage goal

The coverage data was a count of everyone within the population cohort whose risk of cardiovascular disease and diabetes had been assessed through the approved *Checks* process within the past five years. The coverage goal of the *Checks* health target gradually increased over several years. The goal for 30 June 2012 was 60 percent coverage of the in-scope cohort. This increased to 75 percent by 30 June 2013, and then to 90 percent by 30 June 2014.

Performance incentives

The *Checks* health target budget included Ministry funding to support the target, and incentives and sanctions for district health boards (DHBs) and Primary Health Organisations (PHOs) to achieve the target. Ministry funding included around two full-time equivalents (annually) working on the target, including the Target Champion, with some funding to support travel (around \$5,000 p/a). In addition, the Health Promotion Agency (HPA) was provided with a \$500,000 contract to run a national campaign.

The *Checks* health target included a one-off bonus scheme and an on-going incentive scheme to promote health sector compliance with the Ministry's CVDRA coverage goals.⁵

The bonus was a pool of \$1m to be shared at the discretion of the Ministry between DHBs that achieved the 90 percent coverage goal by 30 June 2014. Four DHBs received an equal share of the bonus: Auckland DHB, Counties Manukau DHB, Northland DHB, and Whanganui DHB.

The incentive scheme arose from the 2013 Budget, which announced the provision of \$16.9m over four years from 1 July 2013 to support the achievement of the coverage goal through to the end of June 2017. The Ministry drew upon this funding to incentivise coverage increases, embedding these into contracts with DHBs. The DHBs were contractually obliged to pass this money entirely to PHOs unless there was a specific agreement to the contrary between the DHB and the Ministry. The distribution model applied to this funding saw the largest portion of the money distributed in

⁴ As agreed with the Ministry, 'Indian' ethnicity is used throughout the evaluation report in place of the original descriptor of 'South Asian'.

⁵ Documents were provided to the evaluation team by the Ministry, listed in Appendix B, for background and context. Much of the content of this section is derived from our review of that material, and particularly from the Standard Information Specification and Service Specification sections of the contract template used by the Ministry for its contracts with DHBs.

the first year, with decreasing amounts distributed each subsequent year. Further, the model recognised that financial incentives needed to extend beyond the initially planned date of 30 June 2014 for coverage goal achievement.

Further, the Ministry contracts with DHBs stipulated the incentive funding would be reduced if the DHB failed to meet the coverage goal. From June 2014, DHBs that missed the goal by more than five percentage points faced a reduction in their entitlement to target-specific funding. Each percentage point below the goal resulted in the loss of one percentage point from the *Checks* target funding incentives scheme entitlement. Thus, a DHB which achieved 80 percent coverage instead of 90 percent stood to forfeit 10 percent of its full entitlement of funding specific to the *Checks* health target. The maximum penalty varied over time, being capped at a:

- 15 percent reduction at 30 June 2014;
- 20 percent reduction at 30 June 2015;
- 30 percent reduction at 30 June 2016; and
- 40 percent reduction at 30 June 2017.

Performance against the target is regularly reported publicly, including in newspaper advertisements and on the Ministry website. Thus, a key aspect of the initiative is to use public reporting as a means to encourage improved performance over time.

When this evaluation commenced in June 2015, the Ministry website showed that at the end of the third quarter of the 2014/15 year (Q3 2014/15) eight of the 20 DHBs were reporting 90 percent or above coverage, up from four at Q4 2013/14. As the evaluation comes to a close, the most recent data is for Q2 2015/16 (i.e. 31 December 2015), at which point 15 DHBs reported being at or above the 90 percent coverage goal. There are no DHBs that are more than five percentage points below the goal, and so no DHBs will be experiencing financial sanctions.

Ministry efforts to support the *Checks* health target

The Ministry provided support to assist DHBs and PHOs to progress toward the coverage goal. Support included workshops promoting collaboration and shared learning, public awareness campaigns, data and analysis to help understand performance, and the appointment of target champions: subject-matter experts with sector-wide networks. The *Checks* health target was also underpinned by guidelines designed to give providers support and information about how to provide high quality care and improve performance.⁶

The Ministry also commissioned some related review and evaluative work, including a review of the Primary Health Organisation performance programme (PPP),⁷ and an evaluation of 'chain of custody' for the data collection process.⁸ There was also an internal evaluation of the 2007/08 Health Targets programme which raised several questions around the effectiveness and perceptions of offering financial incentives to achieve specific goals.⁹ The outputs from these works were reviewed in the early stages of this evaluation, principally to inform the establishment of the key evaluation questions and the criteria for case study site selection.

⁶ New Zealand Guidelines Group, *Cardiovascular Disease Risk Assessment: Updated 2013: New Zealand Primary Care Handbook 2012*.

⁷ 'PHO Performance Programme Evaluation: Draft for Review'.

⁸ Ministry of Health, 'Primary Provider Performance Data Capture and Reporting Processes'.

⁹ Ministry of Health, 'Results of the Evaluation of the 2007/08 Health Targets Programme'.

1.2. The purpose of the evaluation

The purpose of the *Checks* health target evaluation was to provide robust evidence:

- To inform future approaches to assessing and managing CVD risk; and
- To inform planning and implementation of other health targets and performance incentive systems more generally.

In fulfilling its purpose, the objective of the evaluation is to provide a summative assessment of the *Checks* health target covering three components:

1. A **Process evaluation** to demonstrate how and why the Checks target implementation produced the results it did.
2. An **Outcome evaluation** to examine the impact of the *Checks* target on health outcomes and its effectiveness at refocusing the sector on CVD risk management.
3. An **Economic evaluation** to determine if health system resources have been allocated efficiently.

Through each of these components, the evaluation included a focus on understanding the impact that the *Checks* health target has had on reducing health inequities. In recognition that the *Checks* programme was only implemented four years ago (and more recently in some areas), the assessment of outcomes and impacts focused on results that might be expected in the short to medium term, as opposed to longer term impacts.

Five key evaluation questions (KEQs) were identified in the planning and design phase. These are the high-level questions that the evaluation needed to answer. The questions align with the three evaluation components (process, economic and outcome), and to sustainability and future direction of the *Checks* health target. The KEQs are:

1. How well was the Checks health target implemented? (Process component).
2. What difference did the Checks health target make for health practices/service providers and for those whose risk was assessed? (Outcome component).
3. What have been the economic implications of the Checks health target and is it likely that the programme provides good value for money? (Economic component).
4. To what extent are any gains made through the Checks health target likely to continue? (Sustainability).
5. What should the Ministry of Health do to support CVD risk assessment? (Future direction).

1.3. Structure of this report

The remainder of this report is structured as follows:

- **Section 2** sets out the evaluation methodology, including the overall design, specific methods and data sources, and the strengths and limitations of the design;
- **Section 3** provides a summary of key literature relating to the *Checks* health target in New Zealand as well as to pay for performance systems more generally;

- **Sections 4 to 7** set out the main evaluation findings organised under the first four KEQs; and
- **Section 8** sets out our evaluation conclusions, including KEQ 5, which addressed future directions; and our recommendations for future approaches to assessing CVD risk and for health targets and performance incentive systems more generally.

2. METHODOLOGY

This section sets out our approach to the evaluation; summarises the information sources, methods and analyses; and identifies the key strengths and limitations of the evaluation design.

The evaluation methodology was set out in the evaluation plan at the beginning of the project, and was agreed with the Ministry.

2.1. Evaluation approach

The evaluation adopted a summative approach, recognising that the *Checks* health target was well established at the time of the evaluation and that the evaluation’s purpose was not about informing the ongoing implementation of the initiative. However, as discussed, it did not only focus on outcomes; but also included a focus on processes (i.e. how well the *Checks* programme had been implemented).

The three evaluation components – process, economic, and outcome – were considered concurrently, with data being collected against each of the corresponding evaluation questions through the same mixed methods approach.

The evaluation involved four main phases of activity, as shown in Figure 1. The approach was established during the first two phases of activity, which also included the development of a set of evaluation rubrics that described different levels of success for various dimensions or outcomes associated with the *Checks* health target. These rubrics are shown in Appendix A: Evaluation Rubrics, and have been used to inform judgements about how well the initiative performed across these dimensions.

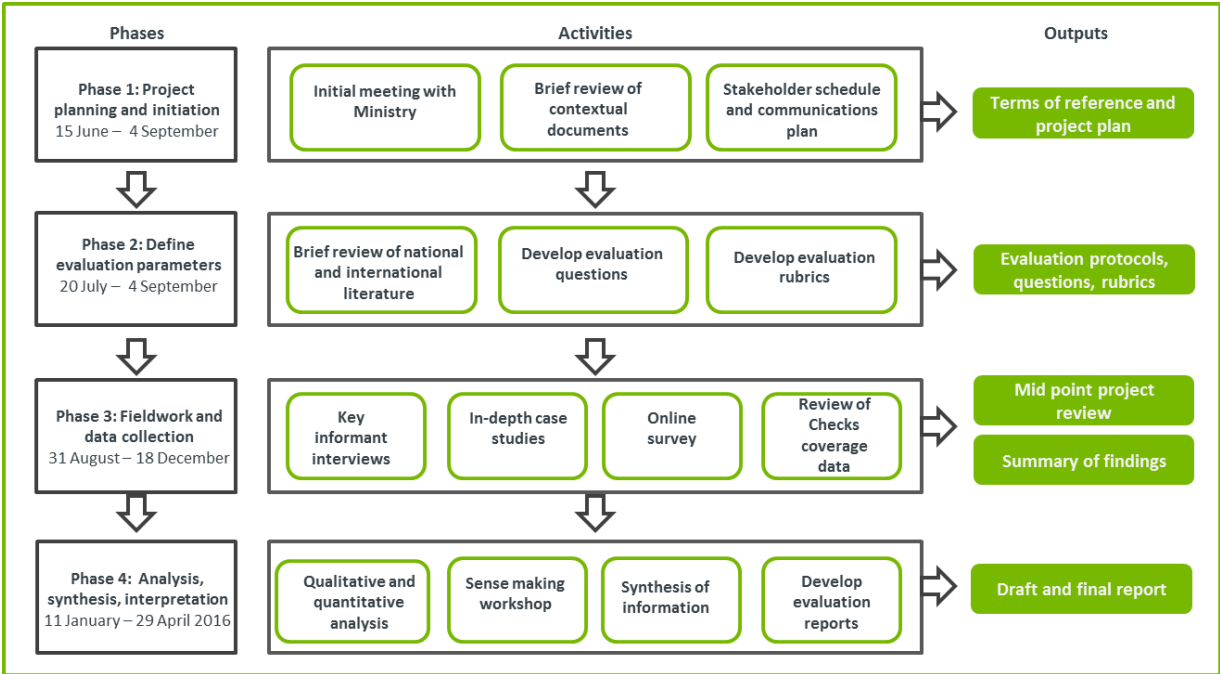


Figure 1: Evaluation phases, activities, and outputs

During data collection, the evaluation engaged with participants at four levels:

1. Key informants from national agencies and organisations with a stake in the Checks health target who had expert knowledge of the initiative, but not necessarily an understanding of how well it was being implemented.
2. Regional level stakeholders, often staff of DHBs and PHOs, who provided support to providers who were responsible for delivering the risk assessment.
3. Primary health care professionals involved in delivery and administering the hearts and diabetes risk assessments.
4. Health care consumers who had received a heart and diabetes risk assessment.

In-depth engagement occurred through PHO-based case studies, which included people from the associated DHBs and from one or two associated practices as well as from the PHO. Seven case study sites were selected on the basis of:

- **Ethnic diversity:** aiming to include PHOs that have a large proportion of people who identify as Māori, Pasifika, or Indian ethnicity within their enrolled population;
- **Deprivation:** aiming to include PHOs that have a large proportion of their enrolled population living in neighbourhoods of relatively high deprivation;
- **Coverage:** aiming to include PHOs that had achieved the coverage goals set for the Checks target, and also PHOs where these goals had not been achieved;
- **Coverage improvement:** aiming to include PHOs that had made rapid progress toward the coverage goals, and others where progress had been more gradual; and
- **PHO size:** aiming to include a range of sizes, from very large to very small on the basis of PHO registered patient numbers.

Wider engagement occurred through an online survey of primary care clinicians that was distributed through networks that have national coverage, and through a postal survey with people whose risk had been assessed through two of the case-study practices.

The Ministry, including current and past national Checks target champions, were engaged during the evaluation design phases as participants in key informant interviews, and through a 'sense making' session to support joint analysis and participatory interpretation of the emerging evaluation findings.

2.2. Information sources and methods

The methods of data collection that were undertaken as part of this evaluation were:

- Document scan;
- Literature survey;
- Key informant interviews;
- Case studies;
- An on-line survey of primary care clinicians; and
- A postal survey of health consumers.

Details of the information sources and methods of analysis are attached as *Appendix B: Information Sources and Methods*.

The analysis involved looking across the information sources, corroborating findings from the document review and literature survey with those from the interviews and the surveys. This enabled a body of evidence to be progressively built from the multiple sources and the mixed-methods we employed. Emerging findings were revisited as further evidence was gathered and incorporated into the analysis. As analysis drew to completion, the findings were compared against the evaluation rubric to determine the degree to which our findings correlated with the predefined indicators suggesting excellence, adequacy, near-adequacy, or a poor outcome. This process of triangulation adds to the strength and validity of the evaluation findings.

2.3. Strengths and limitations

The main strengths of the evaluation approach and methodology are that it:

- Captured perspectives on the *Checks* health target implementation and impact at all levels in the system, from the Ministry and other national organisations through to people whose risk had been assessed;
- Was able to draw upon health target data provided by all PHOs and DHBs, and information provided by clinicians working in practices across the country through the clinician perspectives survey;
- Collected context-rich information through seven in-depth case studies which could explore implementation and impact ‘at the coalface’. The number of case studies allowed these issues to be explored in a range of contexts that is reasonably representative of New Zealand as a whole, giving greater confidence that the case study findings are generalisable; and
- Enabled a strong degree of corroboration of data across various information sources and methods of collection through the use of a consistent framework of KEQs across the mixed methods.

The main limitations of the evaluation approach and methodology are that:

- It is difficult to isolate the difference that the *Checks* health target made from other local initiatives that were also aimed at improved understanding and engagement with the target population in identifying and managing risks associated with chronic diseases;
- Some of the improvement in coverage may have resulted from better recording over time as opposed to changed practices that adherence to the expectations of the *Checks* health target;
- The revised *Checks* health target outcomes will in part have derived from the earlier programme;
- It is likely that the practices visited as part of the case studies represent a positive bias, given these practices were selected by their associated PHO. Nevertheless, at least one PHO overtly nominated a practice that had been struggling to make coverage gains but whose situation reversed with a change in clinical staff;
- Primary care clinicians have limited time to participate in activities outside their core scope of practice and while the evaluation was able to achieve reasonable engagement

overall, the number of participants in some case study PHOs and in the practitioner survey is a limitation;

- The approach to engaging with health consumers (postal survey) limited the ability to explore issues such as their understanding of the risk assessments in a more interactive way; nevertheless, the survey did enable 70 consumers to participate. While a response rate of 70/300 was lower than hoped, it was nevertheless sufficient to indicate individual lay perceptions.¹⁰ Consumers who were approached but opted not to participate may have different views to those who completed and returned the questionnaire. Further, although the 300 consumers we contacted had all been assessed during 2015, only a subset of those assessments will have suggested elevated risk. It is possible that a proportion of those we contacted had little awareness of the assessment process and no awareness at all of the follow-up activities associated with elevated risk;
- Those interviewed for the evaluation found it particularly difficult to comment on the economic questions;
- Some personnel initially intended for key informant interviews were unable to participate due to scheduling conflicts; and
- Just as the evaluation was commencing, it was decided that the programme would cease from July 2017. This may have affected the views reported through the evaluation.

¹⁰ Visser et al., 'Mail Surveys for Election Forecasting? An Evaluation of the Columbus Dispatch Poll'.

3. LITERATURE SCAN

The following section provides some background about heart disease and diabetes as health issues of major importance to New Zealand, and then outlines findings around key themes identified from the contextual review and through discussions with the Ministry during evaluation start-up. For example, an emphasis on equity was important to the Ministry, as was developing an understanding of if and how the Ministry should continue with or further develop the concept of using bonus payments and/or payment incentives to motivate early adoption and/or coverage gains in relation to health targets more generally. The literature introduced below in turn informed the development of the key evaluation questions, the sub-questions, the evaluation rubrics, the interview guides and the survey instruments.

We sought literature with an equity focus. We also requested and reviewed literature which looked at programme design and enhancements, the use of pay for performance incentives, the context of the *Checks* health target in Christchurch, value for money, and the experiences of the United Kingdom with their Quality and Outcomes Framework. The review that follows is structured around these key themes.

3.1. Problem definition

In recent decades, there has been a dramatic reduction in the number of people who die as a result of a cardiovascular event. The reduction is attributed to population-level lifestyle changes (such as reduced cigarette smoking) and to improved medical care following an event.¹¹ Nevertheless, about 6,000 people die each year in New Zealand from heart disease or diabetes,¹² and heart disease is still “the leading cause of death for Māori males and both non-Māori males and females, and the second leading cause of death for Māori females.”¹³

3.2. Method

As described in *Appendix B: Information Sources and Methods* academic articles were accessed through the Ministry library service using a key terms search. Full-text articles were selected from abstracts and reviewed by two members of the evaluation team who used a critical appraisal process to ensure the quality and relevance of the selected articles and papers.

3.3. Equity

The inverse equity hypothesis¹⁴ proposes that in the early stages of implementation of an intervention where there is no specific equity target, population health interventions often widen the gap between affluent and disadvantaged populations. In particular, the hypothesis suggests that people living amidst greater affluence (the ‘low-hanging-fruit’) take up or are drawn in to the intervention earlier in its lifecycle than are people who carry the greater burden of disease living in areas of greater deprivation. As the intervention matures and the low-hanging fruit has been

¹¹ Holland et al., ‘Effectiveness and Uptake of Screening Programmes for Coronary Heart Disease and Diabetes’.

¹² Ministry of Health, ‘Targeting Prevention’.

¹³ ‘Major Causes of Death’.

¹⁴ Victora et al., ‘Explaining Trends in Inequities: Evidence from Brazilian Child Health Studies’.

attended to, there is a ‘catch-up’ period where the harder to reach population comes more sharply into focus. The catch-up period then results in a reduction in the coverage gap, which draws closer to that of the generally more affluent and lower-risk group. This phenomenon has been observed in relation to deprivation indices similar to the New Zealand Deprivation Index (NZDep).¹⁵ As we show below, our research highlights further support for the hypothesis.

The design of the *Checks* health target accounted for the well-established fact¹⁶ that people of Māori, Pasifika, and Indian ethnicities experience CVD earlier in the life-course compared to people of other ethnicities. For this reason, people identifying with these ethnicities enter the in-scope cohort for the *Checks* programme ten years younger compared to those of other ethnicities.¹⁷ Reasons suggested for the earlier onset of CVD amongst Māori in particular include the greater prevalence of cigarette smoking and obesity – risk indicators that are also associated with Type 2 diabetes and hypertension.¹⁸ Māori with Type 2 diabetes are 30 percent more likely than non-Māori with Type 2 diabetes to experience a cardiovascular event, despite receiving pharmacological treatment similar to ethnicities with lower prevalence of smoking and obesity.¹⁹ Drawing together the lower age of the risk profile, the higher prevalence of smoking and obesity, and the 30 percent worse outcome (fatal or non-fatal cardiovascular event), researchers have recommended that high risk populations should not only enter the CVD risk assessment cohort earlier, but that more aggressive efforts should be made from an even younger age to identify pre-diabetes and reduce the future risk of CVD.²⁰

3.4. Programme enhancements

Early detection

Early detection is advocated as a principal means for reducing the likely development of Type 2 Diabetes and CVD. The New Zealand Medical Association has called for diabetes screening from age 25 years for cigarette smokers, those with either dyslipidaemia or hypertension, and those with a family history of diabetes or CVD.²¹ They have also called for socio-economic factors to be included as risk indicators when identifying populations with greater risk of CVD.²²

To influence outcomes, early detection must be followed by lifestyle changes – changes that are not universally welcome or easily achieved, especially by people who are asymptomatic. The adoption (or not) of lifestyle changes following early detection is influenced by patient perceptions of illness and/or wellness, coupled with prioritisation: present priorities can make

¹⁵ Boeckxstaens et al., ‘The Equity Dimension in Evaluations of the Quality and Outcomes Framework’ for example.

¹⁶ Elley et al., ‘Cardiovascular Risk Management of Different Ethnic Groups with Type 2 Diabetes in Primary Care in New Zealand’ for example.

¹⁷ Māori, Pasifika, and Indian males are in-scope from age 35, compared to age 45 for males of other ethnicities; and Māori, Pasifika, and Indian females are in-scope from age 45, compared to age 55 for females of other ethnicities.

¹⁸ Elley et al., ‘Cardiovascular Risk Management of Different Ethnic Groups with Type 2 Diabetes in Primary Care in New Zealand’.

¹⁹ Ibid.; Kenealy et al., ‘An Association between Ethnicity and Cardiovascular Outcomes for People with Type 2 Diabetes in New Zealand’.

²⁰ NZMA, ‘NZMA Submission on Diabetes, July 2015’.

²¹ Ibid.

²² NZMA, ‘NZMA Submission_CVD Guideline Update’.

the future possibility of disease assume less importance than one's medical provider might consider ideal.²³ One Netherlands-based study has observed that the patient's partner has an important role to play in the adoption (or otherwise) of lifestyle changes, especially when the patient is male.²⁴ Recognising that 'lifestyle changes' have household-level implications, the inclusion of the patient's partner in treatment planning discussions is an intuitive step for the promotion of health-enhancing lifestyle changes.

Engaging with hard-to-reach populations

A programme enhancement aimed at enticing hard-to-reach populations to undergo risk assessment used novel settings for assessment clinics,²⁵ and the use of non-medical but specifically trained people to conduct the risk assessment.²⁶ Specifically, the value of engaging community leaders, especially the leaders of minority group communities, as 'champions' for health initiatives and facilitators of local outreach opportunities has been demonstrated to be efficacious for engaging hard-to-reach populations.²⁷ Community buy-in through close liaison with local religious leaders of an at-risk minority group, running 'own language' clinics in settings of cultural significance, resulted in high participation rates by an at-risk community.²⁸ Locating assessment clinics in pharmacies, rather than general practice clinics, has also been shown to be useful, with hard-to-reach populations becoming more accessible, with a high percentage of those taking advantage of the risk assessment opportunity being from less-advantaged communities.²⁹

Christchurch: the primary care environment following the Canterbury earthquakes

To explore possible factors influencing the slow uptake of the *Checks* programme in Canterbury, we sought literature exploring the context of Canterbury's primary health system after the earthquakes in 2011 and 2012. The literature we encountered, although limited, does indicate that the earthquakes have placed significant strain on health services in Canterbury, and this may have led to other activities being prioritised over the *Checks* health target.

General practitioners were placed under a lot of pressure following the earthquakes. Challenges they faced included dealing with an increased and different workload, balancing personal and work demand, emotional exhaustion, damage to personal property, and damage to their practices.³⁰

Quality and Outcomes Framework

An example of a more developed incentives scheme that has been running for considerably longer than the New Zealand Health Targets programme is the Quality and Outcomes Framework (QOF), which was introduced in the United Kingdom in 2004. The QOF is a performance management

²³ Klein Woolthuis et al., 'Patients' and Partners' Illness Perceptions in Screen-Detected versus Clinically Diagnosed Type 2 Diabetes'.

²⁴ Ibid.

²⁵ Donyai and Van den Berg, 'Coronary Heart Disease Risk Screening'; Jones et al., 'Feasibility of Community-Based Screening for Cardiovascular Disease Risk in an Ethnic Community'.

²⁶ Jones et al., 'Feasibility of Community-Based Screening for Cardiovascular Disease Risk in an Ethnic Community'.

²⁷ Ibid.

²⁸ Ibid.

²⁹ 'Coronary Heart Disease Risk Screening'.

³⁰ Johal et al., 'Coping with Disaster'.

system in which a portion of the payment received by general practitioners is tied to their performance against more than 120 indicators.

The 2012 report *Pay-for-Performance in the United Kingdom*, identified five key characteristics of successful pay-for-performance initiatives.³¹ Below, these five characteristics are used to group the literature concerning the Quality and Outcomes Framework.

Effectiveness: Modest improvements have been made as a result of the QOF, and improvements have been significantly lower for conditions not included in the QOF. A 2012 estimate suggests that the framework has seen a potential 11 lives in 1,000 being saved per year³². There is also evidence to suggest that the QOF has led to improved services and better glycaemic control for people with diabetes, however improvements were smaller in deprived areas with poorly organised services.³³

Efficiency/ Value for money: There is limited data on the efficiency of the QOF.³⁴ On the other hand, a review of the cost-effectiveness of nine QOF indicators found that most indicators are likely to be cost-effective, even if only a modest improvement in care is reported.³⁵ This conclusion should be treated cautiously, however, as the study does not account for administration costs to the government, is based on a limited sample size, and the opportunity costs of the financial incentives are unclear.

Equity: While the QOF was not explicitly designed to address inequities, it has reduced health inequities based on deprivation, but has had variable effects on inequality of care based on age, gender, and ethnicity.³⁶

Patient experience: Patients reported no significant changes in quality of care after the introduction of the QOF.³⁷ However, there is some suggestion that an emphasis on "box ticking" may have distracted from patient-led consultations and responsiveness to patient needs.³⁸ There is also some evidence to suggest that continuity of care worsened for patients with chronic disease.³⁹

Professionalism and team working: Interviews with clinical staff suggest that the QOF has had positive effects on practice organisation, with almost all participants in a study of UK practice staff reportedly feeling positive about the impacts of introducing pay for performance in England.⁴⁰

The QOF has changed workplace structures and responsibilities by creating new hierarchies in teams and increasing the role for nurses in the management of long term conditions.⁴¹ Some

³¹ Gillam, Siriwardena, and Steel, 'Pay-for-Performance in the United Kingdom', 1 September 2012.

³² Ibid.

³³ Gulliford et al., 'Achievement of Metabolic Targets for Diabetes by English Primary Care Practices under a New System of Incentives'.

³⁴ Gillam, Siriwardena, and Steel, 'Pay-for-Performance in the United Kingdom', 1 September 2012.

³⁵ Walker et al., 'Value for Money and the Quality and Outcomes Framework in Primary Care in the UK NHS'.

³⁶ Gillam, Siriwardena, and Steel, 'Pay-for-Performance in the United Kingdom', 1 September 2012.

³⁷ Ibid.

³⁸ Lester et al., 'Implementation of Pay for Performance in Primary Care'.

³⁹ Gillam, Siriwardena, and Steel, 'Pay-for-Performance in the United Kingdom', 1 September 2012.

⁴⁰ Lester et al., 'Implementation of Pay for Performance in Primary Care'.

⁴¹ Gillam, Siriwardena, and Steel, 'Pay-for-Performance in the United Kingdom', 1 September 2012.

practice staff have also reported that the QOF has given structure to the practice year, with more time dedicated to working toward targets in the second half of the practice year.⁴²

Changes to QOF targets, especially when frequent, may have a negative impact on practitioners. Some practice staff consider that there is a need for greater consistency over the timing and extent of changes to indicators, and the communication around this. Frequent, inconsistent and poorly communicated changes to health targets can create a sense of uncertainty for practitioners.⁴³ Some general practitioners felt that removing a target but continuing to expect the same level of performance was inconsistent and unfair.⁴⁴ We note also the relatively recent announcement that QOF is to be removed in Scotland in 2016.

3.5. Pay for performance

Using payments as an effective incentive, while avoiding unintended consequences

Lorincz, Lawson and Long (2013) list five common criticisms of pay for performance (P4P) programmes:

- 1. P4P programs may simply lead to better documentation, rather than improved care itself.*
- 2. P4P might increase healthcare disparities by incenting [sec] providers to focus efforts only on the patients closest to target.*
- 3. Targeting certain disease conditions has the potential to lead to declines in the quality of care for non-incentivized conditions.*
- 4. The high fixed cost of these programs brings into question their cost-benefit as compared to other interventions.*
- 5. The long term sustainability of programs is unknown, and some data suggests that improvements are lost when financial rewards are withdrawn.⁴⁵*

In addition, outcomes are harder to influence through pay for performance programmes than process measures, and there is little known about long-term health outcomes resulting from these programmes.⁴⁶

Scott and Connelly⁴⁷ explain that healthcare providers are motivated by a range of factors. Financial incentives must be significant enough to effectively motivate performance. However, incentive programmes must be carefully designed so as to avoid extrinsic financial incentives overshadowing intrinsic incentives such as the health and wellbeing of patients, autonomy, and intellectual satisfaction.

If an incentive payment is too low, or the administration and opportunity costs of meeting performance targets are too high, they will be ineffective. The likelihood of behavioural change is

⁴² Lester et al., 'Implementation of Pay for Performance in Primary Care'.

⁴³ Ibid.

⁴⁴ Ibid.

⁴⁵ Lorincz, Lawson, and Long, 'Provider and Patient Directed Financial Incentives to Improve Care and Outcomes for Patients with Diabetes', 7–8.

⁴⁶ Lorincz, Lawson, and Long, 'Provider and Patient Directed Financial Incentives to Improve Care and Outcomes for Patients with Diabetes'.

⁴⁷ Scott and Connelly, 'Financial Incentives and the Health Workforce'.

higher when the difference between the payment and the cost of providing the activity is larger.⁴⁸ If incentive payments are significantly higher than the costs of providing the activity, however, this can lead to unintended consequences. These may include 'gaming' the system and prioritising some patients over others, and focusing on activities that are associated with financial rewards at the expense of responding to the needs of individual patients.⁴⁹ Buetow⁵⁰ notes that this may be especially applicable to aspects of personal and holistic care that are not easily measurable, and are not rewarded financially.

Pay for performance programmes for diabetes care

Pay for performance programmes for diabetes care have been instituted in varying forms in a number of countries, with some evidence that they may improve quality of care.

In 1999, Australia introduced a pay-for-performance programme (the Practice Incentive Programme or PIP) which remunerates GPs for markers of quality of care in chronic disease management.⁵¹ Modelling of data from 2002 to 2007 showed the PIP had increased the probability a GP would order an HbA1c test for diabetes care by 20 percentage points.⁵² This study also highlighted the importance of the support of regional primary care organisations in encouraging general practices to participate in the programme and assisting them to improve their practice infrastructure.⁵³

An Italian study considered the effect of financial incentives on GPs' provision of diabetes care.⁵⁴ In the region of the country that was studied, the incentives comprised two parts. The first was 'pay for participation' which paid GPs a bonus for taking greater responsibility for patients with diabetes, with the assumption patients would have regular health care reviews with their GPs and measurements of HbA1c; however, the amount of the bonus depended only on the number of patients with type 2 diabetes enrolled with the GP. A second 'pay for compliance' incentive payment was made on the basis of GPs' involvement in additional activities such as audit meetings and taking part in a process to develop regional evidence-based guidelines for best-practice diabetes care. Modelling of data for the year 2003 showed that the patients of GPs who received a greater proportion of their income from pay-for-participation payments had a lower likelihood of being admitted to hospital with a hyperglycaemic emergency. This was also true of pay-for-compliance payments, but only the pay-for-performance payments had a significant association. Thus the authors concluded financial incentives could improve quality of care even without ex-post verification of performance.

The same Italian authors further examined data between 2003 and 2005, linking hospital records with GPs' participation in the incentive programme for diabetes management.⁵⁵ They found participation in the programme was associated with reduced hospitalisation rates for

⁴⁸ Ibid.

⁴⁹ Buetow, 'Pay-for-Performance in New Zealand Primary Health Care'.

⁵⁰ Ibid.

⁵¹ Scott et al., 'The Effects of an Incentive Program on Quality of Care in Diabetes Management'.

⁵² Ibid.

⁵³ Ibid.

⁵⁴ Bruni, Nobilio, and Ugolini, 'Economic Incentives in General Practice: The Impact of Pay-for-Participation and Pay-for-Compliance Programs on Diabetes Care'.

⁵⁵ Iezzi, Bruni, and Ugolini, 'The Role of GP's Compensation Schemes in Diabetes Care: Evidence from Panel Data'.

ambulatory-sensitive conditions for patients with diabetes, although there were no comparison data from before the incentive programme.

The quality and variation of process and outcome measures of care in patients with type 2 diabetes was examined in a cohort study of patients with type 2 diabetes in the Tayside region.⁵⁶ As part of the UK QOF, practices in this area had four process measures for diabetes care, namely recording HbA1c, cholesterol, blood pressure and smoking status in the previous 12 months. Data from 2006 showed 95 percent of all the recommended processes were carried out in the previous 12 months and 88 percent of patients had all four measures. Intermediate outcome targets were also set, for the level of HbA1c ($\leq 7.4\%$), blood pressure ($<140/80\text{mmHg}$), cholesterol ($\leq 5\text{mmol/l}$) and smoking status (not smoking) (Guthrie et al., 2009). Overall, 50 percent of the intermediate outcomes targets were achieved, with achievement of all in only 16 percent of patients.⁵⁷ Regression analyses showed achievement of both process and outcome targets was worse in patients aged under 55 years, HbA1c and blood pressure targets were less likely to be achieved as patient's body mass index increased, and cholesterol targets were less likely to be achieved in women.⁵⁸ There were no associations with socio-economic status except smoking status and no practice variables were associated with outcomes.⁵⁹

The cost-effectiveness of pay for performance diabetes management programmes

The section above provides some evidence financial incentives may be able to improve health care for diabetes. A further question as outlined in this section is whether such programmes are cost-effective.

Walker et al.⁶⁰ argue that for incentives to represent value for money, they must meet three criteria:

- The intervention must itself be cost-effective;
- The intervention must lead to an increase in eligible patients receiving the intervention; and
- The payment must be proportionate to the net health gain achieved.

Walker et al. reviewed nine indicators within the UK primary care (QOF) against these criteria, concluding that for most, QOF payments would be cost-effective even if there were only small improvements in care. However, they cautioned their conclusions were drawn from evaluating only nine of 109 indicators (those with direct therapeutic effects and likely to have cost-effectiveness evidence available); administrative costs of collecting QOF data had not been accounted for (and cost-effectiveness could therefore have been over-estimated); and the opportunity costs of implementing indicators were unclear.

In the US, Curtin et al.⁶¹ investigated the costs and savings of a pay for performance diabetes programme instituted in 2003, including inpatient and outpatient care, pharmacy and

⁵⁶ Guthrie, Emslie-Smith, and Morris, 'Which People with Type 2 Diabetes Achieve Good Control of Intermediate Outcomes? Population Database Study in a UK Region'.

⁵⁷ Ibid.

⁵⁸ Ibid.

⁵⁹ Ibid.

⁶⁰ Walker et al., 'Value for Money and the Quality and Outcomes Framework in Primary Care in the UK NHS'.

⁶¹ Curtin et al., 'Return on Investment in Pay for Performance: A Diabetes Case Study'.

administrative costs of the programme. Compared with two years of baseline data prior to the introduction of the programme, costs of diabetes care reduced over the following two years, most significantly for hospital costs. In 2003, the return on investment was calculated at 1.6 percent and for 2004, 2.5 percent.⁶² However, there was no control group for this intervention.

Two Taiwanese research groups⁶³ have used national population-based, longitudinal datasets to examine the cost effectiveness of a diabetes pay for performance programme that began in 2001. Both followed cohorts of patients enrolled in the programme and used propensity score matching to create comparison cohorts. Cheng, Lee and Chen⁶⁴ followed the groups for four years (2005 to 2009) and found that patients enrolled in the programme had more diabetes care than their comparison peers (most notably in the first year; lessening thereafter but remaining significant); significantly more diabetes-related doctor visits in the first year only; and fewer diabetes-related hospitalisations throughout. Although overall health care expenses for the enrolled group were higher in the first year, they were significantly less in the remaining years, suggesting initial additional costs would be offset by future savings.

Hsieh et al. conducted two analyses. In the first, they explored the effect of two different financial incentives on the P4P programme: payment for process-of-care measures (phase 1, from 2001) and additional payment for intermediate clinical outcomes (phase 2, from 2006), again with comparison cohorts.⁶⁵ Their results showed programme effectiveness (as measured by life-years saved [LY] and quality-adjusted life years [QALY]) and cost savings were significantly higher for the P4P groups compared with non-P4P groups. The return on investment as calculated as 1.8:1 in the first phase and 2:1 in the second and the authors concluded the programme was cost-effective regardless of whether a bonus for intermediate outcomes was added to process indicator incentives or not.⁶⁶

In a second analysis, Hsieh et al. examined two subsets of diabetes patients enrolled in the P4P programme: those with diabetes alone and those with comorbid hypertension and hyperlipidaemia in addition to their diabetes, each with propensity score matched controls, followed from 2007 to 2012.⁶⁷ The results showed both P4P groups had significantly more effective care than the controls (as measured by LY and QALY gained) and also significantly higher cost savings.⁶⁸ Return on investment was calculated at 2.6:1 for the diabetes only group and 3.48:1 for the group with diabetes and comorbidities.⁶⁹

⁶² Ibid.

⁶³ Cheng, Lee, and Chen, 'A Longitudinal Examination of a Pay-for-Performance Program for Diabetes Care: Evidence from a Natural Experiment'; Hsieh et al., 'Cost-Effectiveness of a Diabetes Pay-For-Performance Program in Diabetes Patients with Multiple Chronic Conditions'; Hsieh et al., 'Cost-Effectiveness of Diabetes Pay-for-Performance Incentive Designs'.

⁶⁴ Cheng, Lee, and Chen, 'A Longitudinal Examination of a Pay-for-Performance Program for Diabetes Care: Evidence from a Natural Experiment'.

⁶⁵ Hsieh et al., 'Cost-Effectiveness of Diabetes Pay-for-Performance Incentive Designs'.

⁶⁶ Ibid.

⁶⁷ Hsieh et al., 'Cost-Effectiveness of a Diabetes Pay-For-Performance Program in Diabetes Patients with Multiple Chronic Conditions'.

⁶⁸ Ibid.

⁶⁹ Ibid.

A further Taiwanese study⁷⁰ used a different data set (Taiwan's National Health Interview Survey) to identify patients with diabetes who had been enrolled in the P4P programme during 2004 to 2005, with propensity score matched controls who were not enrolled. Linked claims data were used to assess health care costs for the groups. Patients who were enrolled in the programme had higher health care costs than those who were not enrolled and an increase of 0.09 life years and 0.08 QALYs, which produced an incremental cost-effectiveness ratio (ICER) of US\$5,414 per QALY gained.⁷¹ This was similar to the ICER of intervention costs calculated by Hsieh et al.⁷² at US\$5,575 per QALY gained for patients with diabetes only and US\$4,849 per QALY gained for patients with diabetes and comorbidities.

A German study⁷³ used a different methodology (a Markov Monte Carol microsimulation) to model the cost-effectiveness of a potential screening programme for type 2 diabetes. In this model, screening would identify those with pre-diabetes as well as established diabetes and both groups would be treated with either lifestyle intervention or medication (metformin). The model predicted slightly higher average life expectancy for people whose diabetes was found early by screening compared with the status quo of diagnosis following symptoms, and significantly reduced diabetes-related adverse events. Screening and treatment of the general population would cost €562 per QALY gained for lifestyle intervention and €325 for treatment with metformin (2006 values), which the study authors considered to be cost-effective.

Pay for performance programmes for cardiovascular care

Two American studies suggest P4P incentives can improve cardiac care. The first, Chen et al.,⁷⁴ studied a P4P programme for physicians in Hawaii which included two cardiovascular disease quality measures: at least 1 low-density lipoprotein (LDL) test in a year and at least one statin prescription in a year. Patients were followed from 2000 to 2006, with comparisons between those cared for by P4P-participating physicians and those with physicians who did not participate in the P4P programme. The results showed patients with P4P-participating physicians were more likely to receive quality care and less likely to have new coronary events or be hospitalised.⁷⁵ However, this was not a randomised, controlled trial and there were major limitations. Participation in the P4P programme was voluntary, but most physicians took part (87.4 percent in 2000, rising to 97.9 percent in 2006); to account for this, sensitivity analyses were performed limiting analysis to 2000-2003 when fewer physicians were participating in the P4P programme, which also showed an effect for participation.⁷⁶ There may also have been selection bias from higher-performing physicians choosing to participate in the P4P programme.⁷⁷

⁷⁰ Tan et al., 'Is a Diabetes Pay-for-Performance Program Cost-Effective under the National Health Insurance in Taiwan?'

⁷¹ Ibid.

⁷² Hsieh et al., 'Cost-Effectiveness of a Diabetes Pay-For-Performance Program in Diabetes Patients with Multiple Chronic Conditions'.

⁷³ Schaufler and Wolff, 'Cost Effectiveness of Preventive Screening Programmes for Type 2 Diabetes Mellitus in Germany'.

⁷⁴ Chen et al., 'Does Pay for Performance Improve Cardiovascular Care in a "Real-World" Setting?'

⁷⁵ Ibid.

⁷⁶ Ibid.

⁷⁷ Ibid.

Barduch et al.⁷⁸ conducted a cluster-randomised trial of P4P for a series of quality improvement measures in primary care clinics in New York city over a one-year period. All participating clinics received computer software supporting chronic disease management and regular visits from quality improvement specialists; in addition, the intervention clinics received a payment for each patient who received particular quality measures for cardiovascular care, with higher payments for patients with comorbidities, on Medicaid or uninsured. Both control and intervention clinics showed improvement on all measures at the end of the study compared with baseline, but the intervention clinics showed significantly greater absolute improvement in five of the seven measures (appropriate antithrombotic prescription [12 percent vs 6.1 percent]; blood pressure control with no comorbidities [9.7 percent vs 4.3 percent]; blood pressure control with diabetes [9 percent vs 1.2 percent]; blood pressure control with diabetes or ischaemic vascular disease [9.5 percent vs 1.7 percent]; and smoking cessation interventions [12.4 percent vs 7.7 percent]) but differences between the groups were not significant for blood pressure control with ischaemic vascular disease, or cholesterol control.⁷⁹ Further, the intervention clinics showed greater improvement on all measures except cholesterol control for Medicaid and uninsured patients, although these differences were not statistically significant.⁸⁰

Pay for performance in disease management

De Bruin, Baan and Struijs⁸¹ undertook a systematic review of pay for performance programmes which were aimed at encouraging improved disease management for chronic conditions. Eighteen papers published between 2000 and 2010 were reviewed. These related to eight P4P schemes (six in the USA, one in Germany and one in Australia). Three of these schemes were stand-alone programmes; the other five were only one part of a wider quality improvement programme and outcomes cannot therefore be attributed solely to the P4P component. In one, the target population was unclear; the remainder all included patients with diabetes, along with a variety of other conditions (including cardiovascular disease, asthma and chronic obstructive pulmonary disease). In seven programmes, the financial incentive was a reward, with just one programme framing it as a penalty if quality targets were not achieved. Most (six) used structure and/or process (six) indicators; four included outcome indicators in determining eligibility for receiving the financial incentives. Four papers reported the effects of the incentives on quality of healthcare, which was generally positive. There were no papers about the effect of P4P on healthcare costs. The authors particularly point to the few papers showing no effect of P4P and hence raised concerns over publication bias. They note that this makes it difficult to assess the characteristics of programmes that support success. They also note difficulties in disentangling the effects of P4P from other programme components introduced at the same time as P4P.

The effects of pay for performance in health care

The burgeoning use of P4P programmes and the associated increase in literature about them led Eijkenaar et al.⁸² to conduct a systematic review of systematic reviews of P4P. They included 22

⁷⁸ Bardach et al., 'Effect of Pay-for-Performance Incentives on Quality of Care in Small Practices with Electronic Health Records: A Randomized Trial'.

⁷⁹ Ibid.

⁸⁰ Ibid.

⁸¹ de Bruin, Baan, and Struijs, 'Pay-for-Performance in Disease Management: A Systematic Review of the Literature.'

⁸² Eijkenaar, Emmert, and Scheppach, 'Effects of Pay for Performance in Health Care: A Systematic Review of Systematic Reviews'.

papers in their review, mainly covering studies carried out in primary care. The reviewers sought answers to six overarching questions, shown below with summarised results:

- To what extent has P4P been effective?
 - Many studies show an effect, but only a few have strong designs and these show mixed effects. The authors therefore concluded there is insufficient evidence currently to support using or not using P4P.
- To what extent has P4P been cost-effective?
 - It has the potential to be cost-effective, but many study designs have had weaknesses.
- Which unintended consequences of P4P have been observed?
 - Unintended consequences have been noted, including effects on the intrinsic motivation of health care personnel, risk selection of patients, spill-over effects and gaming.
- To what extent has P4P affected inequalities in the quality of care?
 - There is some evidence P4P programmes have reduced socioeconomic inequalities but not other sources of inequality (age, gender, ethnicity).
- To what extent has P4P been more successful when combined with non-financial incentives?
 - There is limited and inconclusive evidence about the effects of performance feedback and public reporting on P4P outcomes.
- Which specific design features contribute to (un)desired effects?
 - Five design features that are suggestive of greater effectiveness are “measures are used that have more room for improvement and are easy to track; directed at individual physicians or small groups; rewards are based on providers’ absolute performance; the program is designed collaboratively with providers; larger payments are used.”⁸³

The largest review considered in the review of reviews by Eijkenaar et al. was that by van Herck et al.⁸⁴ which considered 128 P4P studies (111 in primary care, 30 in a hospital setting and 13 in both settings) published between 1990 and 2009. This review found that overall, there was about a 5 percent quality improvement from P4P programmes but this varied considerably, depending on the programme and measures used.⁸⁵ The authors noted concerns over publication bias, the difficulties in separating the effects of P4P from other factors, and the degree of voluntary participation in programmes as limiting the ability to draw conclusions from the literature. The authors concluded with six recommendations: “(1) select and define P4P targets on the basis of baseline room for improvement, (2) make use of process and (intermediary) outcome indicators as target measures, (3) involve stakeholders and communicate information about the programs

⁸³ Ibid., 127.

⁸⁴ Van Herck et al., ‘Systematic Review: Effects, Design Choices, and Context of Pay-for-Performance in Health Care’.

⁸⁵ Ibid.

thoroughly and directly, (4) implement a uniform P4P design across payers, (5) focus on both quality improvement and achievement, and (6) distribute incentives to the individual and/or team level.”⁸⁶

In summary, assessing the cost-effectiveness of pay for performance is difficult, in part due to the variation in context and components of the various schemes introduced. The literature suggests that there is potential for pay for performance to be cost-effective, but the overall evidence base is weak.

⁸⁶ Ibid., 1.

4. PROCESS EVALUATION FINDINGS

The findings from the process evaluation are presented below. These findings have been reached through an analysis of data that relate to KEQ 1: 'How well was the *Checks* health target implemented', providing insight into how the target was implemented, identifying issues as well as successes, and identifying what factors influenced the achievement or otherwise of the expected outcomes.

The analysis was informed by an assessment against the evaluation rubric for KEQ 1 (see Appendix A: Evaluation Rubrics) which included seven criteria. The first two criteria were addressed through the coverage data publicly reported by the Ministry; and the remaining five criteria were addressed through the fieldwork component of the evaluation. Briefly, the evaluation criteria were:

- Achievement of coverage target;
- Achievement of coverage target (equity);
- Quality of service delivery;
- The influence of the national Target Champion;
- The influence of the national league tables;
- The influence of promotion and awareness campaigns; and
- The influence of collaboration and learning opportunities.

The section concludes by drawing together the findings in relation to each sub-question in order to address the key evaluation question of how well the *Checks* health target was implemented.

4.1. The national coverage goal was achieved, but later than initially specified

The *Checks* health target reached its national coverage goal of 90 percent approximately 15 months later than initially specified. The achievement was reported in the end-of-quarter data Q1 2015/16 (30 September 2015). 1.1 million people are estimated to have had their cardiovascular health assessed in the last five years.⁸⁷ This is a considerable achievement. Nevertheless, the graph below, Figure 2, shows that actual coverage consistently lagged behind the coverage goals throughout the intervention, being 11 percentage points below the goal at the end of the 2011/12 reporting year, eight

Evaluation Rubric
Criterion: Achievement of coverage goal

Excellent

Adequate

Almost Adequate

Poor

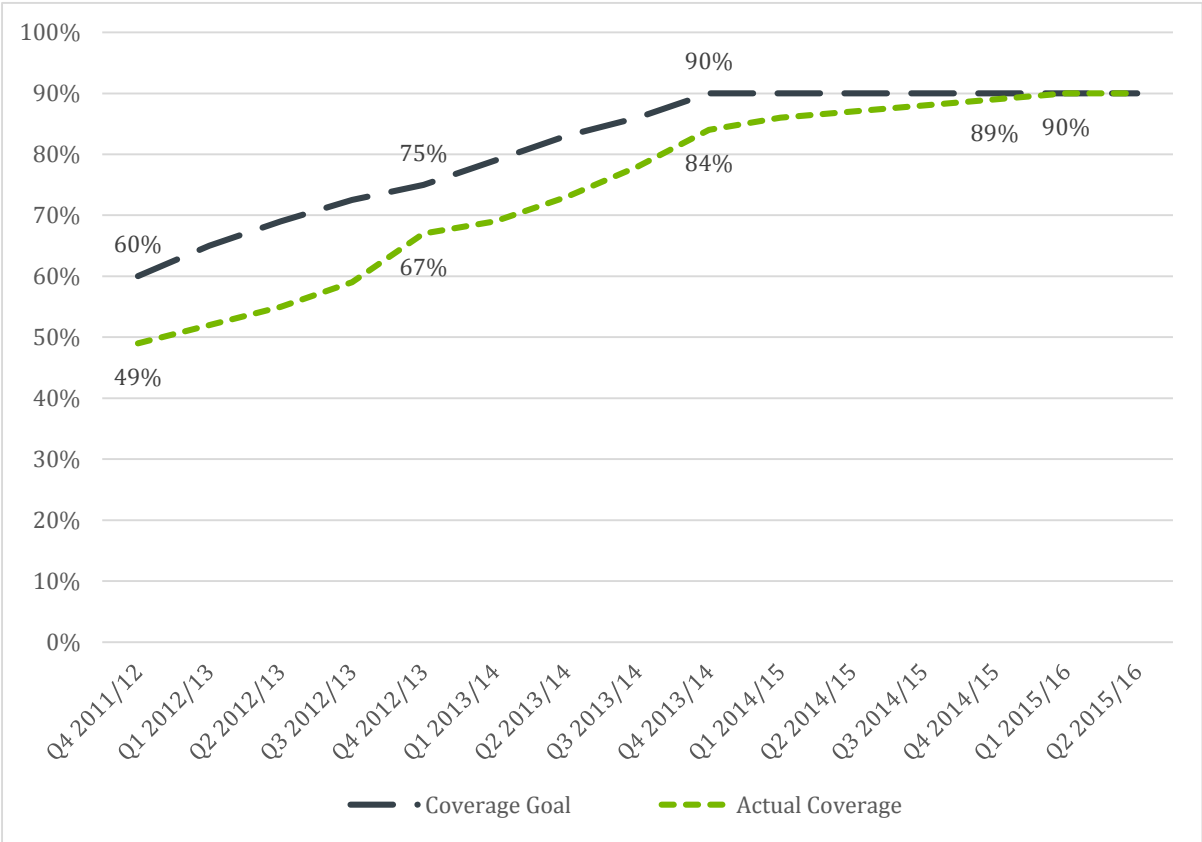


Figure 2: National coverage overtime, compared to incremental goal changes
 Data sourced from Ministry of Health website: <http://www.health.govt.nz/new-zealand-health-system/health-targets> How is my DHB Performing?

percentage points below the 75 percent goal set for the end of June 2013, and six percentage points below the 90 percent goal set for the end of June 2014. These data show a slower uptake compared to the uptake projected in 2012. They also show the very gradual increase during the 2014/15 year compared to earlier more dramatic gains: a point that is reiterated below in participant comments about how much effort was required to extend coverage from 80 percent to 90 percent – engaging the hard-to-reach populations in their catchments.

⁸⁷ 'Health and Independence Report 2015: Ministry of Health', ix.

Furthermore, as illustrated in the graph below (Figure 3), reporting for Q4 2013/14 (30 June 2014), which is the date at which the health target initially aimed, shows that just four of the 20 DHBs had achieved the coverage goal. When this evaluation commenced one year later, in mid-2015, 11 DHBs had achieved the coverage goal. This increased to 15 DHBs during the second quarter of the 2015/16 year, as reported in the data to 31 December 2015.

The evaluation focused more on PHOs than on DHBs, and so it is pertinent to also consider the PHO coverage data – also illustrated in Figure 3. As at Q4 2013/14 (30 June 2014), when the coverage goal increased to 90 percent, the data from five of the 36 PHOs showed the goal to have been achieved. One year later, this had risen to 21 PHOs, and by 31 December 2015 (Q2 2015/16) 29 of the 36 PHOs were reporting their achievement of the goal.

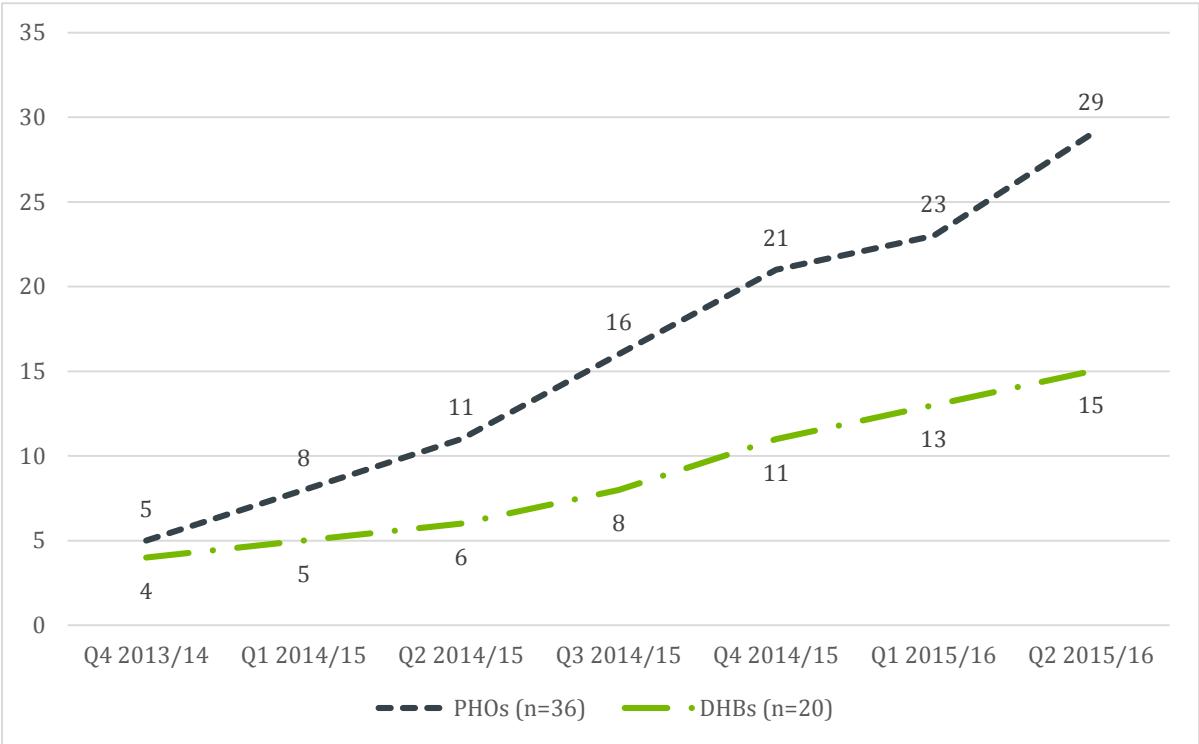


Figure 3: The number of PHOs and DHBs which had achieved the coverage goal of 90 percent by reporting quarter.

Data sourced from Ministry of Health website: <http://www.health.govt.nz/new-zealand-health-system/health-targets> How is my DHB Performing? How is my PHO Performing?

In sum, the data show that coverage increases have considerably lagged behind the projected uptake expectations set in 2012 when the *Checks* health target was revised and relaunched.

Taking a point-in-time view of the extent of the national coverage, ‘excellence’ has eventually been achieved, but much later than anticipated, and the considerable lag behind expectations since 2012, illustrated in Figure 2 (page 28) tells a different story about coverage achievement over time, resulting in an Evaluation Rubric ranking of ‘Almost Adequate’.

4.2. Equity of coverage remains unachieved

National coverage data for the *Checks* health target show that populations identified as at greater or earlier risk of cardiovascular disease (Māori, Pasifika, and Indian ethnicities) had slower increases in coverage compared to other ethnicities. In line with the inverse equity hypothesis,⁸⁸ a reduction in the gap was observed during 2013 and early 2014. On a national scale, the gap completely closed for Pasifika, despite some smaller PHOs still having a coverage gap between Pasifika and non-Māori, discussed further below.

For Māori, as illustrated in Figure 4, whilst the coverage gap initially widened and has begun to reduce (4 percent as at 31 December 2015), it is far from closed. The data shows the coverage gap to have been comparatively small (0.7 percent) when the *Checks* health target commenced in 2012, then expanding, plateauing, and more recently beginning to reduce. One possible explanation for the

Evaluation Rubric
Criterion: Equitability of coverage

Excellent

Adequate

Almost Adequate

Poor

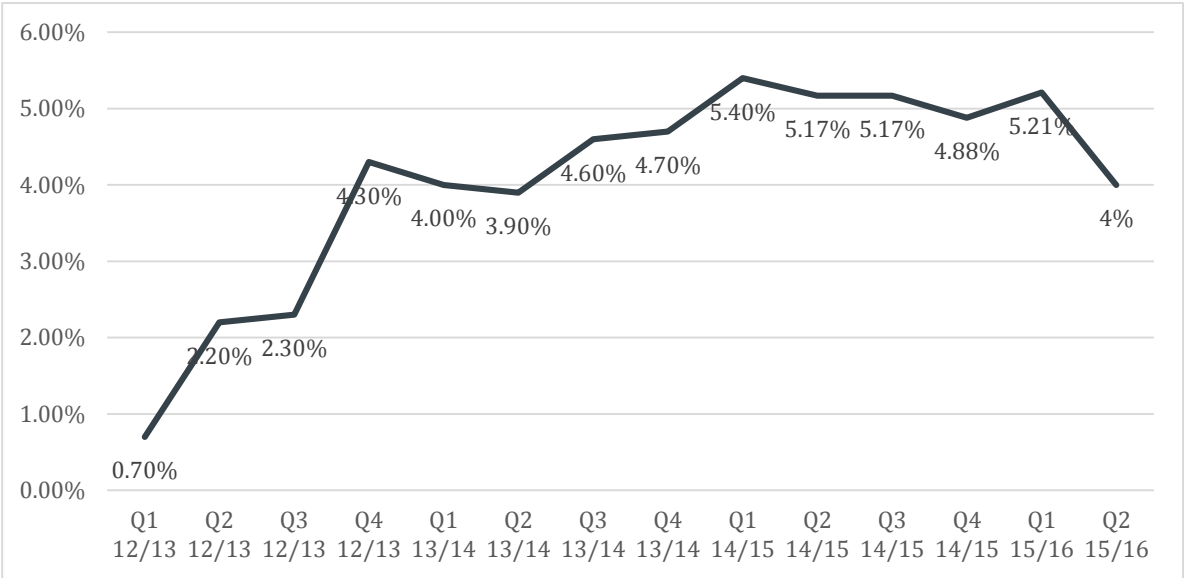


Figure 4: Coverage gap between Māori and non-Māori

comparatively small gap at the beginning of the *Checks* health target is that the predecessor health target placed considerable emphasis on diabetes, with ‘significant outreach’ to Māori populations noted by the Ministry. If, as the data suggest, many in-scope Māori had already been assessed for diabetes, accessed through outreach activities, there would be an appreciable reluctance or resistance to attending for further assessment (for CVD) in the short term. The data show that from about mid-2014, a plateau was apparent, suggesting that without conscious, ethnicity-specific, culturally aligned efforts, future reductions in the equity gap associated with ethnicity may be negligible. In this regard, the Ministry reports that a new indicator for younger Māori men has been added to the Quarterly Reports for the 2015/16 year, bringing additional DHB, PHO and

⁸⁸ Victora et al., ‘Explaining Trends in Inequities: Evidence from Brazilian Child Health Studies’.

practice level focus to this population group, and possibly explaining the considerable improvement observed in the most recent data reported here.

The five PHOs that have not achieved the coverage goal as at Q2 2015/16⁸⁹ collectively account for 10.5 percent of the national population cohort whose ethnicity include Māori, Pasifika, or Indian. However, on average, 30.5 percent of the *Checks* population cohort within these five PHOs identify as Māori, Pasifika, or Indian.

Further, the New Zealand Medical Association has called for socioeconomic status to be included in the guidelines for assessing CVD risk, recognising the association between socioeconomic factors and health outcomes.⁹⁰ With this in mind, a further equity concern is apparent in data on the five PHOs that have not yet met the coverage goal: high proportions of their enrolled populations live in the poorest areas, with 30.4 percent (on average) of their enrolled population living in quintile five areas, as classified through the New Zealand Deprivation Index 2013 (NZDep13). These data suggest that the portion of the population cohort yet to be assessed might include a disproportionate subset of people who are more likely to be have an elevated risk of CVD, stroke, or diabetes.

The late upsurge in coverage by many PHOs reflects the impediments (discussed below) confronted as PHOs worked toward incorporating the CVDRA into everyday practice through opportunistic assessments, that is, carrying out the assessment whilst the patient is attending the clinic on another matter. Importantly, these impediments took time to identify and mitigate. Even now, with a further 18 months of data on hand, the data suggest that many of those who remain unassessed are likely to be amongst the most vulnerable. Our finding is consistent with the inverse equity hypothesis⁹¹ where the gap between the vulnerable and the affluent widens as health interventions ramp up, only narrowing and then reducing as the intervention matures. Withdrawing the intervention too early results in increased inequity.

4.3. There were impediments to increasing coverage

Through the evaluation fieldwork, three main themes emerged about why the advance toward the coverage goal was initially relatively slow: data issues, the need for blood tests, and the need for outreach activities to engage patients who clinicians have had difficulty reaching – referred to in this report as ‘hard-to-reach’ patients.⁹² These themes are developed below, drawing upon the case study interviews, the lay informant interviews, and the survey responses.

⁸⁹ Two of the seven PHOs yet to achieve the coverage goal are associated with the Canterbury DHB. There is a well-established cause for the low coverage recorded for these PHOs and so these PHOs and their data are excluded from this discussion.

⁹⁰ NZMA, ‘NZMA Submission_CVD Guideline Update’.

⁹¹ Victora et al., ‘Explaining Trends in Inequities: Evidence from Brazilian Child Health Studies’.

⁹² The term ‘hard-to-reach’ is often used to signify people of marginalised status. In this health initiative, that was not usually the case. Many patients who proved hard to reach were infrequent attenders at the clinic - having relatively good health - and they were reluctant to prioritise assessment in their free time, reducing the possibilities for opportunistic assessment. People at the younger end of the population cohort who were in fulltime work often fell into this category – men more-so than women.

A significant technical challenge hindered early coverage gains and reporting

Prior to the revised health target coming into effect on 1 January 2012, DHBs were advised by the then Minister of Health that the new health target:

...measures the number of completed cardiovascular risk assessments for all eligible persons within the last five years.

The national goal associated with the new target is 90 percent, to be achieved in steps over three years. DHBs are expected to achieve at least 60 percent by 1 July 2012.

DHBs' performance in relation to the new target will be publically recorded based on 2011/12 quarter three results, from May 2011.⁹³

The extract above implicitly suggests an important implementation challenge: DHBs required accurate data on the extent of the present coverage within their catchment. This required practices to be able to provide such data to PHOs, and PHOs to provide the data to DHBs. As the evaluation findings reported below demonstrate, this was a very significant challenge for most DHBs, PHOs and practices.

Infrastructure developments were necessary

Case study participants were clear that successful implementation depended upon significant IT developments. These developments provided PHOs and practices with timely access to accurate and complete data. Through these data PHOs and practices were able to systematically pursue those for whom assessment was indicated, and then track and report progress toward the coverage goal.

Using what one participant referred to as “engine room developments”, PHOs could provide practices with information that assisted the practice to engage with “missing patients”: those identified as still needing to be assessed. Case study participants engaged in risk assessment delivery generally considered that the coverage gains over time were greatly enhanced by the information gathering and distribution functions of the PHO.

Key informants added to the above point that the IT developments arising through the lifecycle of the *Checks* programme in some PHOs has resulted in a much clearer picture of the health of the population, which can be used for planning ongoing assessment for and management of CVD and diabetes risk, using tools such as the patient dashboard.

The current support provided to practices by their respective PHOs depends upon how they devolved, or did not devolve, funding to general practices. We found that those PHOs which retained some of the funding were in a better position to develop the sorts of infrastructure necessary to support practices. PHOs with an established infrastructure available and skilled staff were better positioned to offer the necessary guidance and support to practices.

Enhanced guidelines and systems that aim to reduce errors in the administration and reporting of targets were also necessary for improving quality. Cumbersome data collection systems, the capacity to analyse and report on data, and then implementing changes is challenging for practices. Consequently, general practices received diverse information about not only their own

⁹³ Ryall, ‘Letter of Agreement to New Health Target - More Heart and Diabetes Checks’.

performance but also their performance in relation to other practices. Functional data collection and reporting systems encouraged quality improvement.

Getting over 'the hump' was an important milestone

The perception that the task set by the health target was unachievable or at least extremely difficult to achieve was a barrier to implementation for many clinicians who participated in the evaluation. Many case study participants talked about 'the hump': the realisation early in the *Checks* health target life-cycle that a very large number of people needed to be assessed in order to achieve the coverage goal. Nurses described feeling demoralised when faced with the enormity of the task. Morale improved through the realisation that much of the work was in fact already being done, but on a smaller scale, and that it was not being recorded in a way that enabled health target reporting. PHO support, described above, was essential, even throughout the phase where coverage advances were predominantly “gathering the low-hanging fruit” via opportunistic assessments. Many PHOs provided nursing back-fill into practices, enabling considerable effort to be directed toward contacting people and arranging an appointment for the assessment, or tracking down information needed to complete an assessment.

In many case study sites practical PHO support remains essential. Within such PHOs, as the end of each reporting quarter nears, the PHO delivers “a big push”, providing hands-on assistance to advance, maintain, or at least try to prevent a slip in coverage. In this respect 'the hump' has been managed, but it persists despite efforts to integrate and systematise the assessment processes.

In PHOs that did not provide nursing back-fill, it was relatively common for practices to take on an additional nurse to help 'get over the hump'. Other practices took a graduated approach, avoiding 'the hump' by staggering the bring-up lists so that the backlog was gradually addressed without overwhelming frontline clinicians, or giving the *Checks* health target a special focus seasonally, avoiding very busy periods such as when winter ailments put additional stress on patients and clinicians.

Managing 'the hump' and embedding the assessment (in its reportable form) into business-as-usual at the general practice level appears to have been more readily achievable when the portion of the enrolled population that was within the target population cohort was relatively small. Conversely, several participants described the difficulties of attempting to maintain attentiveness to non-urgent matters, such as CVDRA, when the practice was short-staffed through staff illness, leave, or when a staff member resigned. At such times distal matters recede into the background, with the present, pressing needs of patients taking all of the attention: "We do the best that we can."

"We do the best that we can."

Nurse buy-in was necessary for successful implementation

Another barrier to implementation was the assumption that clinicians would adopt the health target without questioning its value for their patients. The fieldwork evidence suggests that the majority of the assessments are carried out by practice nurses through opportunistic assessment, and it is understood from the Ministry that this was the intention. There is a strong perception amongst key informants and PHO-based case study participants that it was essential to 'get practice nurses on board' if the *Checks* health target was to be implemented as intended. If the practice nurses did not 'buy-in' to the intrinsic value of the assessment, the coverage goal was not going to be achieved. Thus, managing and eradicating their sense of being overwhelmed by the enormity of the task was a very important aspect of handling capacity challenges. Most of the practice nurses who participated in the case studies were unaware of financial incentives paid for

coverage achievement, and so getting their 'buy-in' required an intrinsic motivation based upon a medical need that outweighed the perceived additional effort required on their part. In some case studies, nurses commented that coverage would not be as extensive as it is without their putting in considerable after-hours effort - effort for which they were not paid. Amongst survey respondents, 75 percent reported that workload increased in the drive toward the coverage goal, with this increased workload addressed in 60 percent of cases, but left unaddressed in 40 percent. Where workload was addressed, it was almost equally likely to be by hiring an additional staff member (23 percent) as it was to restructure the present workflow (20 percent). Equally likely, staff were simply called upon to work harder and for longer hours (20 percent).

Correspondingly, there were perceptions from some DHB and PHO participants that those working in general practice can be 'selective' in their prioritisation choices, not always willingly following the direction desired by the Ministry, the DHB, or the PHO. Such a view echoes the point above, that the imperative to get the buy-in of practice nurses should not be overlooked when they are the principal delivery point of the intervention. Nor should it be assumed that those working in general practice are motivated by the same things that motivate those in non-clinical roles. This is especially relevant to situations where capacity is perceived to be stretched by external 'demands' that may seem to have little relevance to the immediate needs of the patient.

A number of nurses interviewed within case studies noted their personal pride, and the pride of nurses more generally, for the role that nursing has played in the implementation of the *Checks* health target. They noted the "increased autonomy" for nurses brought about by their involvement as the main delivery point for the assessment, and this was especially marked amongst those who had received phlebotomy training as a means of overcoming the need for a patient to visit a laboratory for a blood test. This perception of increased pride and value to the sector reflects the findings of others, reported above, such as Lester et al.⁹⁴ who reported perceptions of enhanced teamwork and positive changes to practice organisation.

Nurse-led clinics were also seen by case study participants as a valuable resource. There is a general acceptance of nurse-led approaches in reaching people and some utilise innovative approaches to reach and follow-up people. Nurses have a pivotal role in undertaking the CVD risk assessments, nurses work in collaboration with general practitioners, making better use of available resources and nurses' and general practitioners' time. Nonetheless, nurse-led clinics alone will be unable to sustain CVD risk assessments, particularly the management of those identified with elevated CVD risk. Supporting collaboration and integration could be seen in the use of nurses in outreach clinics, for example, to improve the access of those who do not attend the general practice with any regularity. Where elevated risk is identified, collaboration with the general practitioner for management of the risk is essential.

Many impediments concerning data were overcome

A lack of accurate and timely data was considered a major impediment by case study participants and by key informants. This is of considerable importance because it immediately calls into question the major assumption underlying the implementation plan: that there was a readily accessible data chain flowing from practices, to PHOs, to DHBs, to the Ministry that could provide the information necessary to accurately report the extent of CVDRA coverage amongst the eligible population. Practices needed to be able to readily identify everyone amongst their enrolled population who was expected to be assessed; and then to identify those who had been assessed,

⁹⁴ Lester et al., 'Implementation of Pay for Performance in Primary Care'.

those who had been partially assessed, and those who had not been assessed at all. Further, practices needed to provide these data to their PHO to enable reporting. The data needed to be up-to-date to avoid unnecessary, time consuming and costly repeat assessments. When the *Checks* health target got underway, the systems and processes necessary for this level of detail were generally poorly developed.

A further complication was population churn: the constantly shifting nature of the in-scope population,⁹⁵ with a steady stream of people entering the target population as they turned 35, 45, or 55 years of age (depending upon their ethnicity and sex), and another stream moving out of the target population as they reached 75 years of age. Adding to this complexity is the relatively high mobility of the New Zealand population in general, with many people changing health provider upon a change of address.⁹⁶ ‘Churn’ adds to the difficulties of accurately identifying the population cohort at DHB level, at PHO level, and at practice level.

The resolution came through IT developments, centred at the PHO level. Importantly, developments within most PHOs enabled the PHO to periodically provide practices with ‘patient lists’: people registered with the practice who were due for risk assessment. In some PHOs the data integration was sufficiently complex that these lists highlighted outstanding aspects of the assessment, simplifying the process of completing assessments where these were partially complete. In some instances, the data feed from the PHO also interacted with the practice’s daily appointment schedule, facilitating simplified opportunistic assessment by triggering alerts on the computer monitor. Nurses delivering the assessment and its associated aftercare reported it to be a tremendous advantage to have a computer monitor that alerted them to the assessments and procedures indicated for the patient before them. They report that alerts facilitated proactive engagement with their patients, enabling greater rapport as nurses got to know each patient’s particular needs much better.

A second IT-based resolution to the problem of inaccurate data was the agreement, achieved by some PHOs but not all, to data-mine the databases of external organisations such as blood testing services to gather patient data pertinent to the CVDRA. This was especially relevant to those aspects of the assessment that required a blood test: the blood test component was problematic, as we explain further in the following section.

Importantly, some PHOs continue to struggle with the problem of inaccurate, incomplete, and out-of-date data, particularly those PHOs that did not make an early decision to invest in IT development.

The need for blood tests impeded coverage

Also impeding coverage growth was the logistical problem that drawing blood for a blood test has generally moved from a within-practice exercise to a laboratory exercise. With the exception of the blood test component, everything else necessary to the assessment could be completed at the practice. Thus, the practice remained dependent upon the patient attending a laboratory to have their blood drawn to enable a blood test: “we would have ‘fingers-crossed’ that they [the patient] would get the blood test done.” When this ‘trust’ system failed, the practitioner needed to contact the patient and remind them to visit the laboratory. Case study participants reported that this was a time-consuming exercise that occurred repeatedly at

“We would have ‘fingers-crossed’ that they [the patient] would get the blood test done.”

⁹⁵ Hanham, ‘PHO Churn Analysis: CVD Risk Assessment Cohort & Associated Analysis’.

⁹⁶ Ibid.

considerable opportunity cost. However, the consumers' survey suggests that going elsewhere for a blood test was 'a nuisance' to relatively few people. Fifty-one people (72.85 percent) reported going elsewhere for their blood test, six (8.6 percent of the sample) of whom said this was a nuisance. This finding suggests that those who responded to the survey (70/300) were predominantly those who were relatively motivated to proactively participate in preventative health. It is plausible that those for whom it was 'a nuisance' to go elsewhere to have a blood test might also consider completing and returning the questionnaire to be 'a nuisance'.

A work-around enacted by some practices was to invest in phlebotomy training for some of the nurses. Having the capability to take blood 'on the spot' was considered by case study participants to be highly advantageous, especially in situations where the clinician considered the patient could not be reasonably relied upon to attend the laboratory. A bonus for nurses who received phlebotomy training was their perceived value to the practice (or to the PHO): they could single-handedly eliminate an impediment to advancing toward the coverage goal.

Another work-around trialled in some case study sites was the use of 'point-of-care' capillary blood testing – a system that participants reported to be effective but extremely expensive and so its use was limited to exceptional circumstances.

There was a need for outreach activities in order to engage with people who were hard-to-reach

"Fabulous outcomes for small numbers of people."

A third factor contributing to coverage gain delays was the need for practices and PHOs to develop outreach services in order to engage with the hard-to-reach portion of the population cohort. Generally, outreach programmes were considered by case study participants to be expensive and time-consuming, but nonetheless necessary if the practice or PHO was to progress beyond 80 percent coverage, resulting in "fabulous outcomes for small numbers of people." Meanwhile, some key informants commented that the use of outreach activities and actively pursuing people on the patient list who had not been reached opportunistically was a new and useful aspect to primary health care. The effort required was acknowledged, as was the 'psychological shift' necessary to initiate health care compared to providing patient-initiated care. Some key informants, and also some case study participants, drew upon this psychological shift to illustrate a developing awareness that population health concerns are legitimate matters for direct engagement by primary care nurses.

Examples of outreach activities included holding clinics at rugby clubrooms, at marae, at workplaces (including truck-stops), and at community events including A&P Shows. Memorably, one nurse described an occasion when she made a home visit to find not only the household but also their neighbours, friends, and relatives had all come along to have their risk assessed and discuss lifestyle choices that could impact not only their own health but also that of younger family members, many of whom were also present and deeply interested in the process.

Case study participants identified four barriers that rendered some health consumers more difficult to assess than others:

- Time poverty;
- Perceptions of cost;
- Rurality; and
- Language and ethnic differences.

The work to mitigate these barriers was time-consuming and costly for PHOs and practices. The tendency to focus firstly on the 'easy wins' or 'low hanging fruit' also meant that attempts to engage with the hard-to-reach population were delayed. Nevertheless, most case study participants described innovative approaches that helped lessen these barriers.

Time was an issue for those who rarely or infrequently visited their doctor, making opportunistic assessment unlikely. Younger men and people employed fulltime were quite well catered for by hosting evening or weekend clinics, but nevertheless needed to be lured to the clinic, many being reluctant to spend their free time having a health check that they considered unnecessary to maintaining their present health status.

The cost implications were complex. Clinicians and those at PHOs reported that there was no charge to the patient for having the assessment. Nevertheless, some health consumers reported that they paid for their assessment. It is possible that these people were assessed opportunistically whilst attending the clinic on another matter, and it was this other matter that resulted in the need for payment. Whilst free CVDRA was considered a 'carrot' or lure, there was also a 'stick': being identified with elevated risk necessitates an on-going care requirement that would not routinely be free of charge. In some practices and PHOs, this was largely overcome through the use of Care Plus.⁹⁷ However, some nurses reported that the demonstrated need for Care Plus within their practice or PHO was greater than the allocated funding could service.

Sometimes problems of distance were attended to through home visits from PHO-based nurses, and transportation assistance schemes. These measures were considered expensive and time consuming.

Language barriers were a major issue at two of the case study sites, and both made considerable effort to ensure patients were attended by clinicians fluent in the patient's language. The benefit of using patients' first languages has also been noted in other research contexts.⁹⁸ Similarly, case study participants reported that where particular ethnic groups were identified as hard-to-reach, considerable improvements in coverage were gained by working closely with ethnicity-based health providers, or by enabling clinicians of the same ethnicity to conduct outreach in culturally relevant ways. For example, a very large clinic serving a large Pasifika population assigned a practice nurse to each local church community.

Putting aside the age and ethnicity selection criteria for this intervention, the characteristics of the population cohort in one PHO can be quite different to those of another PHO. Such differences mean that an outreach programme that worked well in one place might not be as successful when it is transferred to another PHO. Thus, many PHOs faced unique challenges to meeting the *Checks* health targets. Promoting a community focused approach overcame some of the barriers that some practices had in achieving their targets, and enabled them to better reach their targets. Some case study participants reported resorting to local solutions contextualised to their community's distinctive circumstances and needs. For example, attending local community gatherings to reach those who would be otherwise hard-to-reach – whether they were farmers working rurally or Māori men who avoid using health services. In some practices, they engaged nurses in other roles

⁹⁷ Care Plus is a primary health care funding initiative to support people with high health needs due to chronic conditions, acute medical or mental health needs, or terminal illness. See: <http://www.health.govt.nz/our-work/primary-health-care/primary-health-care-subsidies-and-services/care-plus>

⁹⁸ Jones et al., 'Feasibility of Community-Based Screening for Cardiovascular Disease Risk in an Ethnic Community'.

to make home visits for those people who were difficult to contact by mail or phone. Virtual CVDRAs were also cited as another way of using information already held about people needing a CVdra but who were not regularly seen. The need for a bottom-up contextualised approach to the CVD risk assessments was argued by case study sites. Case study sites that had a sense of control over the systems and processes they set up to reach their targets were more likely to report success. However, others reported that issues related to resource capacity and capability made it difficult for them to utilise strategies outside of usual practice approaches.

4.4. Over time, there were considerable improvements in the delivery process

On the basis of the fieldwork carried out for this evaluation, the evidence suggests that the quality of service delivery dramatically improved throughout the life-course of the intervention, with excellence being achieved by most providers by mid-2015.

Infrastructure improvements considerably aided implementation

As discussed above in *Infrastructure developments* on page 32, a development that had a major influence on implementation was the IT advances. Case study participants emphatically agreed that IT developments made a tremendous difference to their ability to deliver and report upon the *Checks* programme because previously there had been no mechanism to report the collective elements of the CVD risk assessment. As one key informant noted, the ability of the PHO to ramp up their IT development depended upon the skills on-hand and the financial liquidity to supplement those skills if need be. However, it was apparent to the evaluation team whilst carrying out case studies that some PHOs were either unaware of the need for IT development, or they were unable or unwilling to invest in the IT development necessary to meet the coverage goal. There is more about IT development above, in the section *Infrastructure developments were necessary* on page 32, where comments about the introduction of computerised systems are discussed.

Practice nurses and PHO-based nurses took on the role as principal deliverers of the CVdra

As stated above, the case studies reported that nurses, especially practice nurses, were the main clinicians delivering the CVdra. Above, in the section *The need for blood tests impeded coverage*, on page 35, we noted that the ability of most nurses to deliver the assessment was constrained by their dependency upon health consumers to go elsewhere for the blood test. Phlebotomy nurses were at a distinct advantage in this respect, as were nurses whose patients had recently undergone a blood test for another purpose that was able to be used for the assessment. Through the case study interviews we also learned how nurses who had received phlebotomy training considered this a professional gain that also boosted their personal esteem, feeling very good about the considerable contribution their new skill made to achieving hard-fought gains, especially with hard-to-reach populations.

Amongst most nurses who participated in the case studies there was a view that their role as principal deliverer of the intervention had been positive for their perceived value within the practice. The experiences reported through this evaluation support the point identified through research reported above, that population health-based care tends to bring about changes in

**Evaluation Criterion:
Quality of service delivery**

Excellent

Adequate

Almost Adequate

Poor

workplace structures and responsibilities.⁹⁹ In the case of the *Checks* programme, these changes in responsibility have been welcomed by many practice nurses.

At some PHOs and practices however, investment in staff was not sufficiently prioritised to provide nurses with the capacity to take up training and collaboration opportunities. Nurses in this situation reported feeling obliged to take up such activities in their own time, without pay.

Most of the case study nurses reported that doctors were more likely to refer the patient to the nurse when desktop alerts highlighted assessment needs. Unless a patient was found to have a risk level that indicated that medication or a referral might be necessary, for the most part doctors were not deeply engaged with the delivery of the assessment or the follow-up discussion. Doctors who responded to the Clinician survey also reported that practice nurses usually carried out the assessment.

Not everyone accepts the benefit of having their CVD risk assessed or communicated – and we heard of a few cases where individuals had strongly objected to the feeling that they were being monitored and ‘bullied’ about risks without their consent.

Creative approaches were useful for getting ‘over the hump’ and for engaging with ethnic minority populations

“In their blood-red scrubs, they looked like elves at Christmas!”

Some novel approaches to delivery were described, many of which were very successful at reaching their intended audience.

One memorable example was the formation of a team of multi-lingual medical students from within the community who spent their summer in blood-red scrubs talking with everyone who attended a clinic within the PHO and carrying out assessments as needed.

In communities with large numbers of patients identifying as Māori or Pasifika, liaison with ethnically-based healthcare providers was useful for increasing coverage amongst that part of the population. Some case study participants commented that increasing communication between providers helped increase coverage not only with CVDRA but also with other important health initiatives such as immunisations.

Some PHOs had nursing staff whose work included home visits, especially but not exclusively in remote locations. One key informant commented that ‘smart’ PHOs were innovative, having their nurses deliver multiple health target interventions simultaneously in outreach situations.

Another approach to assessing hard-to-reach populations that was frequently used was the introduction of late-night clinics, making visiting the clinic easier for people whose work hours made it impractical to visit the practice for assessment (rather than for a medical event).

In other communities, we heard about workplace outreach programmes where employees were encouraged by their employers to have their risk assessment carried out whilst at work. There were logistical difficulties with this latter approach, and some PHOs were more successful than others at overcoming difficulties such as the need to get risk assessment results back to the person’s registered practice. PHOs that were more successful were those that valued relationship development between organisations, putting aside ideas of competition or questions of ‘which provider supplied the service’ and ‘which provider stood to gain (in terms of coverage increases) from the service’.

⁹⁹ Gillam, Siriwardena, and Steel, ‘Pay-for-Performance in the United Kingdom’, 1 September 2012.

‘Virtual Assessments’ considerably aided implementation

Being able to use historical blood test results was another important change. Indeed, some case study participants attributed this change with a rapid acceleration in coverage that saw their practice or their PHO ‘cross the line’, achieving the coverage goal for the first time. Fifty-six percent of survey respondents reported that being able to use blood test results up to five years old changed the approach to CVDRA in their practice, with the change improving efficiency, being convenient, and enhancing the drive toward the coverage goal, especially when attempting to assess those who were hard-to-reach.

Virtual assessments were described by one key informant as being a balance between what was politically palatable and what was clinically credible. Virtual assessments were used quite sparingly at practice level, but more frequently in some PHOs. Several case studies reported having staff dedicated to trawling through data in order to locate and bring together the various aspects of the assessment. This enabled some assessments to be completed without engaging the practice at all, and it allowed other assessments to be partially completed and then passed on to the practice for completion. This process is reported to have been used as a tactic to hasten the advance toward the coverage goal, but case study participants reported that virtual assessment are no longer used, having served their purpose of helping get ‘over the hump’. From the point of view of most case study participants, historical blood test results were the main aspect of the assessment achieved through ‘virtual’ assessment. It was noted by key informants and also at DHB level that virtual assessments may have prevented a degree of over-testing. Contrastingly, a number of practice nurses noted their frustration upon realising that the effort they were putting into assessments was sometimes found to be unnecessary, because the data were later found to be on-hand.

For Pegasus PHO, the agreement that an informed discussion with a patient on their CVD risk could be recorded as a CVDRA made a tremendous difference to implementation. Prior to this, clinical leaders at the PHO had not bought in to the *Checks* target, essentially seeing it as a screening programme and not strongly evidence-based (much of the debate appears to have been around the validity of the assessment algorithm, which they felt over-estimated risk, and the logic of focusing on assessment). An informed discussion was seen as shifting the focus away from assessment only, to a more balanced discussion on the management of risk. While only around 12 percent of the PHO’s CVDRA’s were recorded as informed discussions, critically, this “enabled the PHO to sell it [the *Checks* target]” and bring the clinical leaders on board.

The ‘real work’ starts with the post-assessment follow-up

Delivery of post-assessment services was very important to most case study participants, and we often heard within case studies and at key informant interviews that the real work starts once the results of the assessment are known.

“This is when the real work starts!”

Follow-up after the CVD risk assessment theoretically occurs for everyone whose risk is elevated to or above the threshold, and some practices or PHOs have a policy that everyone who is assessed is to have a follow-up conversation as a means of prevention. However, just 30 percent of clinicians who responded to our on-line survey reported that everyone who has their CVD assessed is advised of the assessment result. A follow-up appointment with all those whose risk is elevated was reported by 85 percent of respondents, with people usually contacted by telephone to schedule an appointment to discuss the assessment result. Health consumers, however, reported different recollections. Twenty percent of respondents reported that they

found out their assessment results when they visited their doctor on another matter. This discrepancy may illustrate an issue with communicating results to patients through non-face-to-face means.

Practice nurses interviewed in the case studies universally reported an extensive engagement in recall activities when the assessment indicated risk at 15 percent or greater. Survey findings paralleled these sentiments: 97 percent of survey respondents reported that post-assessment follow up is routinely provided by a nurse. Risk assessment results were usually conveyed face-to-face, and usually at the practice but sometimes in people's homes. There was a general pattern of recalling the patient for a conversation with the practice nurse, followed by an appointment with the doctor when elevation is sufficiently high that medication is indicated. The conversation is widely considered an 'education' opportunity, during which the nurse seeks to find out more about the patient's lifestyle and to explain the need for changes and suggest changes that might reduce risk. At the same time, in many practices, the patient is also assessed for Care Plus eligibility. Just over half of the patient survey respondents reported that after the follow-up consultation they felt they had a good understanding of what they needed to do to avoid a heart attack, stroke, and diabetes. Just two people reported feeling that there were a lot of things they were told at the follow up consultation that they did not understand.

As reported above, some case study participants stated that they made a concerted effort to have the follow-up conversation in the first language of the patient – a practice that is aligned with the observations of others, reported in Jones et al.¹⁰⁰ that patients benefit from health communications in their first language. Many nurses who 'have the conversation' with their patients described using the computer or 3D models to help explain the situation, asserting that visual tools were better at enabling many people to understand the information and why particular changes are being suggested. One nurse described how patients returning for periodic follow-up care benefit from the visual presentation that shows them the effects of their efforts to modify their lifestyle.

The Consumer Experience Survey sought information on lifestyle changes people had made in response to the risk assessment. Of the 70 survey respondents, 28 reported that they were given written information to take home. Of these 28, two people reported that they did not read the material at all, 17 read it, and nine people read it themselves AND 'other people' also read the material. Some interesting findings emerged regarding dietary changes and weight loss from our comparison of the two subsets: those who read it, and those who not only read it themselves but also shared it with others who also read it.

Amongst respondents who reported reading and also sharing the written information with others (n=9):

- Seven reported sustained dietary changes, compared with less than half of those who did not share the written information (8/17); and
- Four reported having lost weight, compared to less than one third of those who did not share the written information (5/17).

This observation hints at the role of other household members when lifestyle changes are called for that require household cooperation. For example, dietary changes require the cooperation of

¹⁰⁰ Jones et al., 'Feasibility of Community-Based Screening for Cardiovascular Disease Risk in an Ethnic Community'.

the household cook and grocery shopper, and sometimes also of others who customarily eat alongside the person whose diet requires modification. Our finding aligns with that of Klein Woolhouse et al.¹⁰¹ who observed that treatment of seemingly asymptomatic adults through lifestyle changes can be enhanced by including life-partners in the treatment plan. Whilst that research concluded this finding to be especially true when treating males, reflecting a female household caretaker role, the consumer experience survey for this present report has very small numbers and makes no such distinction based upon reported sex. Instead, we suggest that sharing the information may enhance the possibility of successful behavioural change by setting up an expectation of encouragement and practical support. Written information, backed with the authoritative distribution by a primary care clinician, leaves little room for ambiguity, enabling the patient to present a claim for the need for change: the sought after lifestyle modification is justified as a health necessity.

Interesting, though, changes to individual behaviours, such as smoking or physical activity, that do not require (but could benefit from) a cooperative approach, were not influenced by the written material being read by others as well as the patient. This reflects the communal nature of household eating behaviours, and it suggests these may be more amenable to change when backed by the authority vested in the written material.

When patients wanted more information, a medical person was their source of choice, with the internet a close second choice. Information about managing cardiovascular risk is widely available to the public but not always accurate or credible – for example, as noted by several case study participants, there are conflicting opinions and advice about the importance of animal fats, the best exercise regimes and the place of stress management. These not only make it difficult for people to know what advice to follow but, since often there may be conflicting advice from authoritative sources, it can also be a challenge for practitioners. Providers generally agreed that, while the assessment process is reasonably straightforward, changing attitudes, knowledge and behaviour is a long and difficult process and ends up in the too hard basket for many people.

Just one case study noted that follow-up had sometimes included specialist referral – and this is not something we specifically prompted for.

People who responded to the health consumer experience survey generally held a strong perception that they had a good understanding of how to avoid heart attack, stroke, and diabetes following the risk assessment follow-up consultation. This finding contrasts with findings that suggests quality of care might suffer in target-driven health care,¹⁰² suggesting, moreover, that the practice nurses who carried out the bulk of the delivery of this intervention did not consider this a ‘box ticking’ exercise.

4.5. National initiatives provided by the Ministry of Health had a mixed influence on coverage gains

The Ministry provided several initiatives intended to support the *Checks* programme, as discussed above in the section *Ministry efforts to support the Checks health target* on page 8. Below we report participant perceptions of these initiatives.

¹⁰¹ Klein Woolthuis et al., ‘Patients’ and Partners’ Illness Perceptions in Screen-Detected versus Clinically Diagnosed Type 2 Diabetes’.

¹⁰² Gillam, Siriwardena, and Steel, ‘Pay-for-Performance in the United Kingdom’, 1 September 2012.

Things that helped

League tables

To support awareness of progress toward the coverage goal, the Ministry made available for publication quarterly reports at DHB and PHO level showing progress, ranked from highest percentage coverage to lowest by DHB or PHO. These 'league tables' included the *Checks* health target alongside the other five health targets; and they were frequently published in newspapers.

League tables at DHB and at PHO level were familiar to most of the people we interviewed, and for many these were considered motivating or disheartening according to the position of the position of the associated DHB or PHO on the table. For those organisations at the bottom of the league table, it was hard to make sense of the lowly position given all of the work that had gone into attempting to boost coverage. On the other hand, a change of leadership at two PHOs was the catalyst for an upsurge of motivation to get out of the bottom quartile of the league table. At interviews within these PHOs participants reporting considerable investment in changing the mind-set of personnel within the PHO and within practices, as well as making infrastructural investments that supported coverage increases and improved reporting. In these PHOs the poor position on the league table was a major motivation for action, and both achieved their goal of rising to the upper quartile of the league table, with one achieving the bonus payment.

The size of these two PHOs (one large; the other mid-sized) meant they had the financial means through which to pursue the goal, including hiring staff who were qualified and experienced in change management, and to empower those people to invest in activities, processes and developments considered necessary to bring about significant organisational change. The considerable size of one of the PHOs also contributed to their understanding, reported within the case study interview, that coverage gains at *their* PHO would make a considerable difference to coverage achievement nationwide, articulating a sense of social responsibility. Smaller PHOs did not and do not have the luxury of scale that can enable a 'big push' of the nature described above, and some continue to battle, trying seemingly in vain, to increase their coverage.

Performance on a national scale by DHB or by PHO was more important to participants working directly at the PHO or DHB than it was for practice-based participants. However, most PHOs developed this concept further at a local level.

Local league tables increased awareness of advances toward the coverage goal amongst practice nurses and managers. Whilst some PHOs named the practices within the table, others provided anonymity: each practice was told where it stood on the local league table but did not know 'who was who' of the other data points. This approach was felt to protect those at the bottom – a situation that DHBs, PHOs, and practices alike that were further down any of the leagues tables told us to be demoralising for staff, many of whom put in a tremendous effort but seemingly made little headway compared to others.

In other PHOs, there was agreement to name the practices, allowing each practice to find itself on the local league table and to compare coverage with the progress of other known practices. In some larger PHOs, practices formed smaller 'peer-groups', and the position of others in the peer

**Evaluation Criterion:
Influence of performance
information**

Excellent

Adequate

Almost Adequate

Poor

"Nobody likes seeing themselves at the bottom of the league table."

group was made known. These latter two models enabled both a degree of inter-practice competitiveness coupled with inter-practice camaraderie and support between practice nurses. Knowing which practices were struggling and which were doing well facilitated and fostered greater support through sharing of ideas – what works, and what hasn’t worked. It was apparent from comparing PHOs where practices were named against those that favoured anonymity, that seeing one’s practice named on the list, hierarchically according to coverage for the reporting period, was a motivating experience. It should be borne in mind, though, that most of the practices included in the case studies were doing well in terms of their coverage. Where anonymity was favoured, activities such as peer support and the associated camaraderie that sees good ideas being shared, were less apparent or absent.

Training opportunities

The Ministry invested in the Heart Foundation to provide resources and training to support the health target in its early stages. Many case study participants spontaneously recalled the Heart Foundation efforts as a major motivator and supporter of practices and PHOs, especially as the *Checks* health target got underway. Heart Foundation key informants also noted considerable enhancements to the capabilities of the organisation through their engagement with the *Checks* programme. The on-line tool for calculating risk continues to be well-used, which was suggested by case study participants to indicate that the CVDRA was taken seriously.

The response to survey questions suggests that when practice nurses were offered training, they tended to take up that offer. Whilst doctors reported declining training offers relating to the *Checks* health target, no nurses reported declining such an offer. Roughly half of the respondents reported accepting an opportunity for more training (59/114). Of these 59 people, roughly half reported their role as nurses (30), with 11 doctors and ten people reporting either ‘other’ or practice manager roles. A further 8 people did not respond to the question about their role in the practice. However, 39 percent of respondents reported that they were not offered further training.

Funding enabled the development of computerised systems that supported systematic targeting as well as reporting. This is discussed further in the section *Infrastructure developments were necessary* on page 32.

Finally, there was a feeling, expressed by several case study participants, that the health targets in general created a ‘shared task’ perception, where DHBs, PHOs, and practices can and do work toward a common goal, strengthening those relationships for the betterment of population health.

**Evaluation Criterion:
Influence of collaboration
and learning opportunities**

Excellent

Adequate

Almost Adequate

Poor

Things that were less helpful

Target Champions

The concept of a Champion was considered useful, but operationalising the idea on a national scale seems to have been less relevant than having local champions. Few interview participants were aware of the national Target Champion role, and fewer still could name the current target champion, although several named champions associated with other targets. Three people held the role at different times during the implementation period and it is possible that this relatively high turnover has contributed to the low awareness and mistaken identification. On the other hand, case study participants who had direct contact with target champions considered the engagement had been worthwhile.

***Evaluation Criterion:
Influence of the Target
Champion role***

Excellent

Adequate

Almost Adequate

Poor

Further, and perhaps more importantly, several PHO Target Champions were interviewed, some of whom had encouraged each practice to appoint its own in-house target champion, and over 75 percent of clinicians who responded to the on-line survey of primary care practitioners reported such an informal appointment. It was apparent, though, that those who were appointed as 'champion' needed support, such as through peer camaraderie for sharing ideas and renewing motivation, accessing resource supplies, and an allocation of time in which to carry out 'champion' activities. Being the 'champion' needs to be more than a title. Participants reported that Champions need to be well supported by their manager and empowered to act, whether that is at the practice level or at PHO level. The appointment and success of community-based champions associated with local church congregations by a large multi-clinic practice reiterates the findings of other studies that have shown the importance of generating community buy-in through existing local entities of cultural significance.¹⁰³

Social Marketing

Unprompted talk of the national social marketing campaign, spearheaded by former All Black Captain, Wayne 'Buck' Shelford, came about in just one interview. The PHO concerned had adopted particular images from the campaign and these were painted on the exterior of their building, keeping the campaign fresh in their own minds and presumably also in the minds of the local community. Elsewhere, some people recalled the campaign when specifically reminded, but even this was relatively uncommon.

***Evaluation Criterion:
Influence of promotion and
awareness campaign***

Excellent

Adequate

Almost Adequate

Poor

Other critiques of the implementation process

Other comments received from case study participants generally concerned perceptions of fairness, perceptions that the day-to-day workload of clinicians in general practices seems to underestimated by those outside of general practice, a very strong perception that the management of elevated risk is worthy of greater attention as a health measure, and the

¹⁰³ Jones et al., 'Feasibility of Community-Based Screening for Cardiovascular Disease Risk in an Ethnic Community'.

perception that a more holistic approach to preventative healthcare was a possible and practical way forward.

Some participants reported that it was unhelpful and demotivating to repeatedly experience other practices being acknowledged and rewarded for attaining or maintaining coverage rates while their own practice was struggling. This was especially the case where there was a perception that the patients at one practice were more likely to be compliant compared to the patient list at another practice. In such cases it was possible that staff had worked very hard indeed only to fall short, whilst others might have had comparatively little to do in order to attain or maintain the coverage goal, simply because of the attributes of their patient list.

Several case study participants were keen to impress upon us that those administering health targets need to keep in mind that practices have a great deal to do besides tracking progress toward health targets.

Generally, evaluation findings suggest that expansion of the coverage of the CVD risk assessment as part of the *Checks* health target needs to occur in a number of ways and be more focused on particular areas. While CVD risk assessments are an important tool for identifying people 'pre-vent', there was an overwhelming sentiment expressed by case study participants that CVD risk management should be a more central focus and natural consequence of CVD risk assessments. Without including management of elevated risk as part of the *Checks* health target, the real value of assessing risk alone was questioned. Some case study participants were reticent or indicated that they lacked the necessary resources for establishing risk management practices when the *Checks* target and their energy was directed towards CVDRA. Expanding the coverage of the CVD risk assessment to include risk management was favoured by many case study participants.

While many participants suggested that the coverage goal should be expanded to include managing elevated risk, there was also a suggestion that a more 'holistic' approach to managing long-term conditions would minimise a seemingly artificial divide between CVD risk and assessing the risks for other long term conditions. That is, expanding the coverage beyond just CVD and diabetes risk assessments to opportunistically screening for other conditions and lifestyle factors, such as smoking and mental health for instance. In this way, the System Level Performance Framework could be used to promote assessment of other relevant health areas. Indeed, some case study participants indicated that they had opportunistically incorporated other areas of risk assessment into CVD risk assessments while they had people in front of them.

4.6. Summary

The question of how well the *Checks* health target was implemented has been shown, above, to be multi-faceted. In some respects, the intervention has been excellent; in others it has been adequate or almost adequate; and in other respects – most importantly to equity – it has been poor. The additional eighteen months' work toward the coverage goal (beyond that initially envisaged) has had a very beneficial effect on national coverage. Yet there is cause for concern that common characteristics of many of those whose risk has not been assessed is their identification with the population groups considered most at risk and/or their residing in areas of relative deprivation.

The relative success of the *Checks* health target implementation can largely be attributed to two factors. Firstly, in most PHOs the data logistics problems were eventually resolved. This need was apparent to most DHBs and PHOs reasonably early. Beyond recognising the problem, it took will, capability, and budget capacity to streamline and synchronise the data gathering. This facilitated patient identification and enabled reporting. But between those two steps is the all-important

work carried out by the nurses. PHO nurses and practice nurses tracked down 'missing' patients; opportunistically assessed those that they could, making appointments for return visits for others; and they chased up patients who had not yet made it to the laboratory for a blood test. And they did this concurrent with their everyday activity of attending to the immediate needs of patients whose front-of-mind medical concern is *not* for a heart attack, stroke, or diabetes diagnosis that may occur in the future.

5. OUTCOME EVALUATION FINDINGS

The findings from the outcome evaluation are presented below. These findings have been reached through an analysis of data that relate to KEQ 2: ‘What difference did the *Checks* health target make for health practices/service providers and for those whose risk was assessed?’ Information came mainly from interviews, case studies and patient and practitioner surveys along with some data about prescribing and referral rates.

The analysis was informed by an assessment against the evaluation rubric for KEQ 2 (see Appendix A: Evaluation Rubrics) which included three criteria:

- Sector buy-in;
- Consumer understanding and understanding and management of cardiovascular risk; and
- Improved processes and systems.

5.1. The degree of ‘buy-in’ varies within the sector

This was a multi-faceted question which elicited a wide range of discussion and opinion during case studies and key informant interviews. There were differing opinions about what the target was designed to achieve, how worthwhile it was seen to be, the extent to which it was supported by PHOs and by practices, and whether the focus on this target meant other important areas missed out. Findings about each of these questions are addressed below.

<p>Evaluation Rubric Criterion: Sector buy-in</p> <p>Excellent</p> <p>Adequate</p> <p>Almost Adequate</p> <p>Poor</p>
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What was the target aiming to achieve?

There was quite a variation in responses about what this health target was trying to achieve. These varied from PHO to PHO and, perhaps to a lesser extent, between individual people who met with the evaluators – often individuals at a single case study site gave similar answers. It seems also that understanding of the purposes of the *Checks* health target may have changed over time.

Participants at most of the case study sites said that the *Checks* target was initially seen by many as a centrally-imposed programme that focused solely on carrying out risk assessments on as many people as possible with little attention paid to following up results. Where PHOs attempted to raise levels of checks in their organisation they often found that practices at first thought that this was an imposition purely driven by wishing to meet government priorities.

Some people thought from the outset that the purpose of the target was to identify those people in the population who were at higher risk of CVD so that these individuals could be assisted to reduce their risk and so overall there would be better health outcomes. The number of people who viewed the target in this way probably increased over time as CVD risk assessment became a more established activity and wider coverage of the target population was achieved.

A few people also mentioned that another aim of the target was to increase PHO and practice focus on population health: being aware of the characteristics of their population, knowing about health needs at a population level, and taking some oversight and responsibility for population health.

Key informants also varied somewhat in how they described what they thought the target was trying to achieve. Some saw it as a way of getting more attention paid to CVD and in particular identifying the levels of risk across the population. Others talked about how this target had changed from the previous regime which had more emphasis on diabetes; since there was an overlap between diabetes and cardiovascular screening the new regime was a simpler approach. The target was also seen as a way to help develop systems for population health across primary care and as a first step to improving population health outcomes.

Comments were also received (including some from within the Ministry of Health) that the aim of the target had never been very clearly stated or 'sold'; an acknowledgement that its value was not widely accepted, at least in the initial stages.

Participants expressed concerns and reservations about several aspects of the *Checks* health target

Concern about the inequitable structure of the coverage gains incentives

There was some thought, both from key informants and within case studies, that the 'low-hanging-fruit' or the 'wealthy, well' who tended to be opportunistically assessed in the earlier stages of the intervention may be less likely to be at risk of CVD than those people who visit their doctor less often or are otherwise harder to reach. There was comment that the incentives were insensitive in this respect, failing to recognise that different subsets of the in-scope population are both harder to reach and more likely to have an elevated risk.

Concern about the lack of emphasis on the management of elevated risk

The programme was also sometimes reported to be seen as purely a 'tick-box' exercise – data gathering for its own sake rather than having an emphasis on changing behaviours and helping to manage elevated risk. The connection between assessing risk and actually doing something about it was seen by many as missing – the coverage goal could be achieved without making any difference to people's health.

"There was an 'us and them' mentality."

Concern that local priorities were being pushed aside by national priorities

Others resisted the checks because they were seen as a centrally-driven priority rather than something that practices or people themselves thought was valuable: "there was an 'us and them' mentality." There was concern that the effort needed to chase the coverage goal was taking away attention from the more important job of managing ill health.

Concern about the clinical evidence behind the *Checks* health target

Negative attitudes to the *Checks* health target were widely mentioned. Some participants were opposed because they felt that the clinical evidence for population screening for CVD risk was not well-established. People's position on this may have changed over time as a result of support by some authoritative local leaders. Influential in this may have been the 2013 update for the Primary Health Care Handbook which allowed for virtual assessment using earlier laboratory results. The Handbook was drafted by a group including some clinical leaders who had previously been reserved about the value of population risk assessments.

Further, some case study participants conveyed concerns about the quality of the current evidence that made the management of elevated risk far from a 'straight forward' endeavour, such as the recently updated evidence for the prescribing of statins. Revision of the current guidelines

would provide practitioners with clearer information on who to target, and how to approach risk management.

Buy-in improved over time

Despite the reservations and concerns reported above, buy-in to the programme generally seems to have strengthened over time. To some degree this may have been that PHOs and practices were strongly encouraged, badgered, or even shamed, into taking part – and then found that once they had put systems in place and been supported to reach coverage goals, it was not as onerous as they had envisaged. Or it may be a case of opposition fatigue – it’s hard to keep up opposition when you are clearly out of step.

Key informants confirmed the range of opinions that was shown in the case studies, particularly the negative responses early in the implementation of the intervention. Several participants considered that, perhaps especially in places with high need, practices and PHOs were already looking for those at high risk for CVD and diabetes before the target regime was put in place; this programme made little difference or was seen as a centrally-driven distraction focused on ticking boxes rather than reducing risk. Perhaps the early coverage goal of 60 percent – to be achieved in a relatively short time period - felt unachievable for many and created the early negative response.

Clinical support for the programme appears to have grown as PHOs helped practices to increase levels of coverage. Initially practices that were told they were lagging behind tended to distrust and sometimes ignore the data. As they received support and maybe pressure from their PHO they began to achieve coverage goals and attitudes gradually became more positive.

Another common comment was that at the practice and clinician level the financial incentives were not particularly influential. Clinician buy-in was more affected by a feeling that identifying those at high risk and working to reduce that risk was the right thing to do – not because it meant reaching a coverage goal or receiving a practice payment.

Most of the people we talked to and who responded to the survey thought the *Checks* health target was worthwhile but they also recognised there were those in the sector who thought differently and that views had changed over time with more people becoming positively inclined.

Clinicians responding to our survey mostly agreed, at least to a reasonable extent, that there was a sound evidence base supporting the *Checks* health target. As illustrated in Figure 5, 27 percent were fully in agreement; 34 percent were 75 percent convinced; 21 percent were 50-50; and a few disagreed or were unsure.

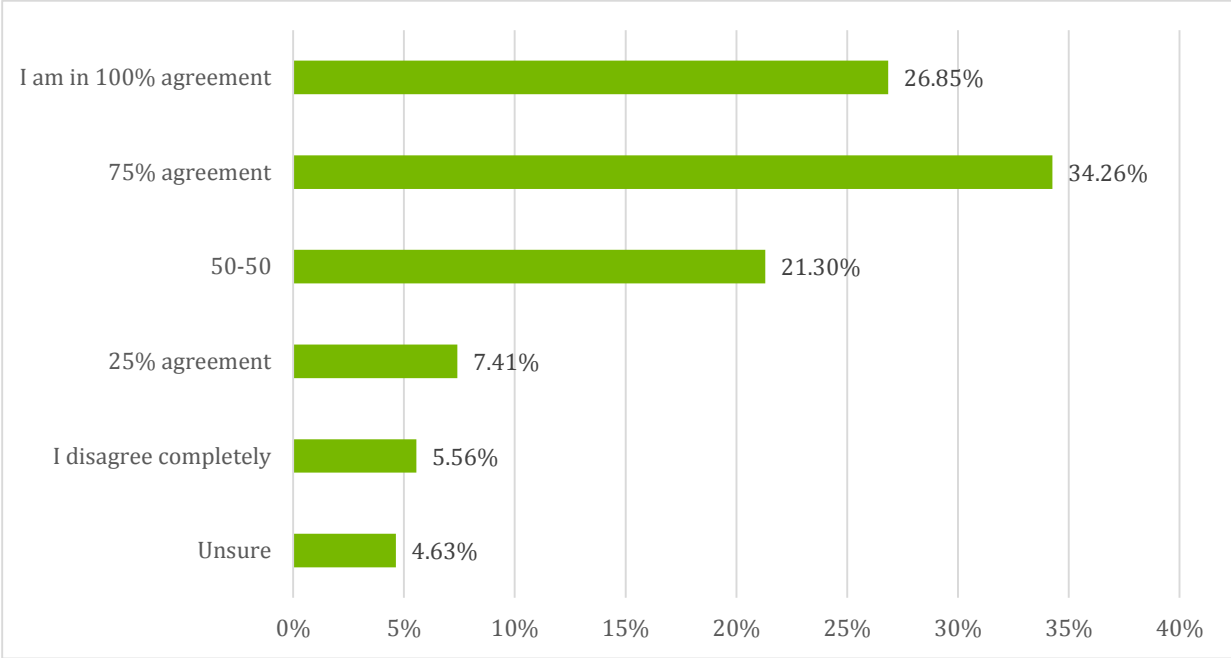


Figure 5: To what extent do you agree that there is a sound evidence-base supporting the health checks? (n=108)

Many survey respondents made comments about their answers to these questions. These generally showed that practitioners supported the value of checks but also noted the considerable effort required and the difficulty in being able to achieve lifestyle change where it was recommended. There was often a concern that checks required a lot of effort for people who “didn’t really need it.”

Prevention better than cure. Opens the door to encouraging positive lifestyle change.

They are good for picking up potential risk for patients that would not normally seem unwell.

Far too much time spent assessing and recording values for low risk patients (the majority); takes time away from patient centred consultations; expensive in staff time and not reimbursed; assessment ignores some important contributors to CVD risk e.g. poor diet, mental health problems, alcohol, inactivity, obesity.

A further survey question asked practitioners whether their medical colleagues generally thought the *Checks* were worthwhile. As shown in Figure 6, the results were very similar to the previous question with most people (about 70 percent) thinking their colleagues had positive attitudes and only 10-15 percent being negative.

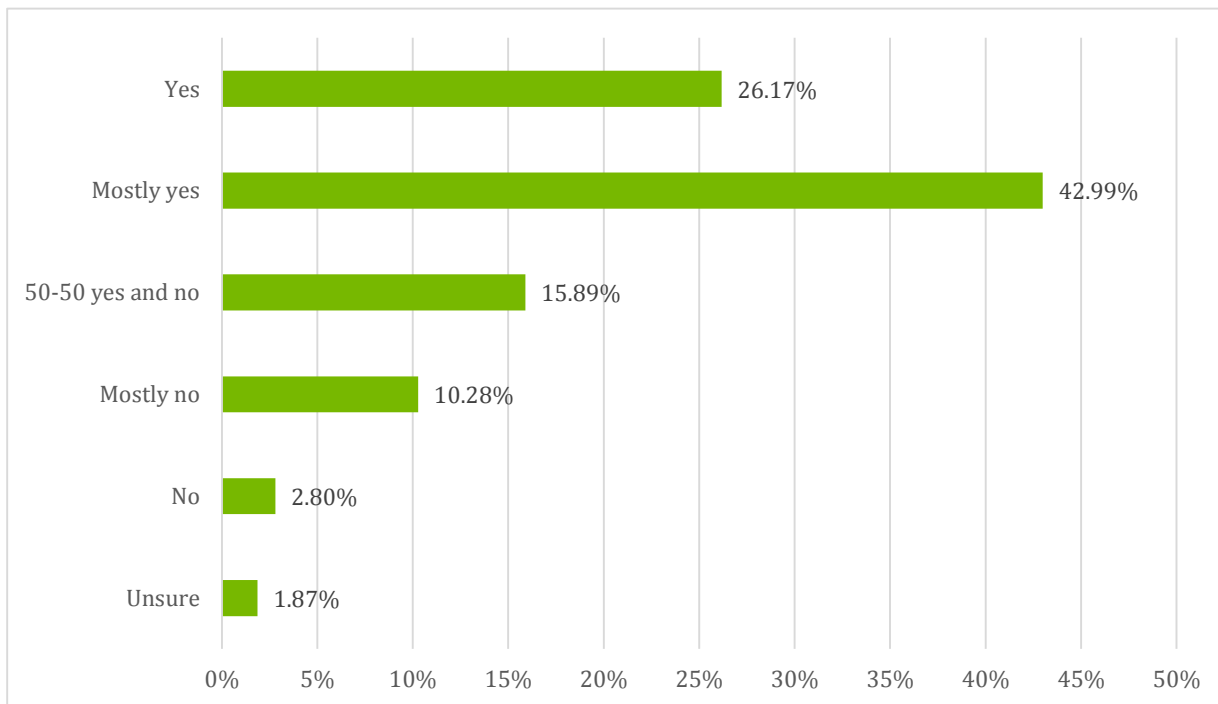


Figure 6: Do your medical colleagues generally consider the health checks to be a worthy priority? (n=107)

Leadership was essential to buy-in

It became apparent during the case study fieldwork that PHO leadership was crucial to PHO performance against the coverage goals. We heard of the impact of a new chief executive at two case study PHOs. When CEOs placed considerable importance on improving the organisation's ranking, they made coverage a high priority, enunciated its importance, focused attention, resourced relevant people and systems, encouraged clinical leaders, communicated progress, and celebrated success. PHO leaders needed to make decisions about whether or not to retain a portion of the funding specific to the *Checks* health target in order to develop PHO-wide systems and processes that supported the drive toward the coverage goal. Various PHOs applied different policies in this regard, and it was apparent that where little or no funds were retained for the provision of PHO-based services, the PHO in general achieved slower coverage gains. Without focus and conspicuous support from the top, PHOs were less likely to reach coverage goals even where clinical leaders were positive.

Clinical leadership is also important. Sometimes this is in the form of a single influential and vocal clinician within the organisation who champions the *Checks* programme – sometimes it is support from a broader team of clinical leaders. Conversely, in one instance an influential voice in opposition to health target also had a very significant effect on local response to the initiative, effectively stalling implementation for several years. Once a compromise was reached with the Ministry, coverage gains accelerated rapidly.

“The Board got behind it through our new CEO...drawing on ‘the clinical imperative’... We needed to screen as a first step to saving lives.”

Most practices are still doctor-owned and run, and consequently medical leadership can be very influential. If there is a respected General Practitioner who champions the programme this can be important in getting buy-in from other GPs. Similarly, if a respected GP leader expresses negative

opinions about the programme then it will be difficult for the PHO to influence practices to increase assessments. The importance of nurse leadership was also apparent, especially in a practice where coverage had been lagging but accelerated soon after the appointment of a new lead nurse who was empowered and supported to make process changes that brought the assessment into focus as an aspect of everyday practice. In less than a year the practice was leading the local league table. The point has been made elsewhere in this report about the necessity for formal and informal health target ‘champions’ to be practically supported in their work, and we repeatedly saw the coverage gains experienced when such support and empowerment was provided.

Clinical leadership and patient health were major motivators

The buy-in of clinicians was considered by clinicians themselves to be important to generating coverage gains. Through the survey of clinicians, we asked what things they thought were important in increasing CVDRA coverage – multiple selections were encouraged. Table 1 shows that four of the choices were considered almost equally important as motivators: the desire to reduce heart disease and diabetes, keen doctors and keen nurses, and funding for achieving the coverage goal. Interestingly, these four choices describe an intrinsic motivation, strong clinical backing for the intervention, and also an extrinsic motivation. The balance observed in these responses reflects well on the point that extrinsic motivations should not be permitted to overshadow intrinsic motivations, or an element of ‘gaming the system’ may arise.¹⁰⁴

Table 1: Which of these (if any) do you consider important to increasing the number of patients within your practice who have had the health check? (select all that apply) (n= 102)

Answer choices	Responses
Desire to reduce heart disease and diabetes	81
Keen nurse(s)	79
Keen doctor(s)	76
Funding for achieving target	75
Keen manager	48
Input from the PHO	40
Input from the DHB	26
Desire to do well in league tables	23
Input from the Ministry	19
Other	15
Unsure	3

¹⁰⁴ Buetow, ‘Pay-for-Performance in New Zealand Primary Health Care’.

Case study participants mentioned that the CVDRA helped promote a wellness approach with individuals, was a preventive activity, and was the basis for discussing healthy lifestyles with adults – particularly middle-aged men. For many participants, the risk assessment was the first step in reducing an individual’s risk of future cardiovascular events and of identifying those people who would benefit from early treatment to prevent problems. Others noted the importance of the programme in helping practices and PHOs to focus on the health of their enrolled populations, which built up very valuable data.

5.2. The Checks target had an impact on capacity and capability

The practitioner survey showed that significant extra work was involved to deliver the Checks programme. Of the 60 survey respondents who worked in practices that had achieved the coverage goal, 88.33 percent indicated that more work or considerably more work was required in order to reach the coverage goal.

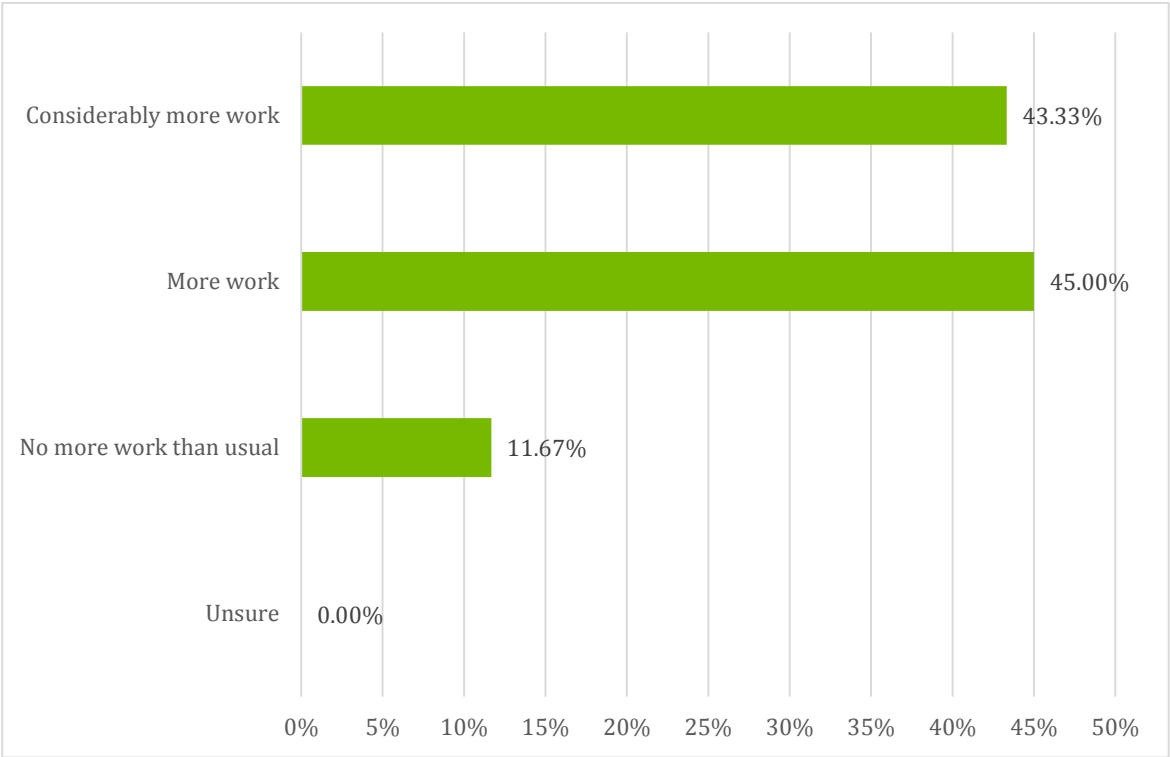


Figure 7: How much extra work was involved at the practice to reach the coverage goal for the health check? (n=60)

Comments detailed the range of extra work – both paid and unpaid.

Committed nurse time to upskill, review and recall, opportunistic catching of patients, practice aware as a whole, what our aim/target is to work smart, make a difference, as our society has changed, not for the best in this area. PHO provided training, guidance and good support. This was paid for. Some nurses also did some Volunteer work in the community on Festival days.

Nurses - paid work to run query builders and contact patients. Doctors - unpaid. To use the patient prompt as an alert with every consultation. To assist nursing staff with hard to reach patients.

It is part of what we do and whilst is more work making sure that the data is re-entered when redone measuring it is business as usual and what one would expect from good health care targets or no targets.

We had to divert scarce clinical and financial resources to this as we were threatened with budget cuts. Like many practices we therefore did the bare minimum to meet the requirements. Much of the work was around ensuring that checks were DOCUMENTED in such a way that they got counted so that our score went up.

A second question asked these same 60 respondents how much work was involved to maintain coverage and, as shown in the graph, responses suggest that the future work involved was considered only slightly less than that initially required to achieve the coverage goal.

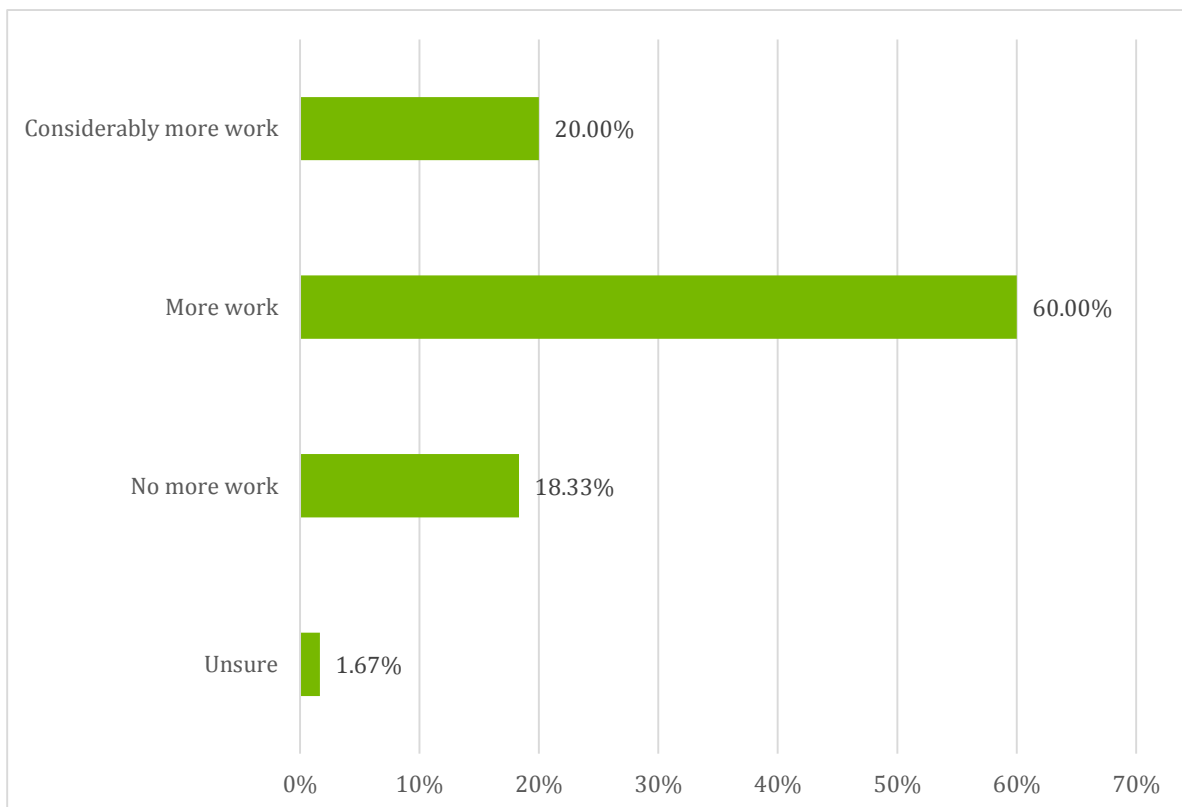


Figure 8: How much work is now involved for the practice to maintain coverage? (n=60)

Case studies indicated that a significant effort had been needed in most PHOs and practices to reach (or attempt to reach) the coverage goal required to achieve the bonus payment. Some PHOs had already identified CVD and diabetes as major problems for their population and had already set up some systems to identify those most in need and help them to reduce their risk. In these PHOs often the extra effort came by way of identifying and assisting those practices that needed help, and also by finding alternative ways to reach people who were enrolled but had not been checked and rarely visited a practice.

In most PHOs, capability needed to be built in the majority of practices. This involved support and training – mostly of practice nurses since in most cases it was the practice nurse who carried out most assessments and led the practice's efforts to reach coverage goals as well as communicating with enrolled people and following up with those who have higher risks. A variety of methods were used to upskill nurses: online training through the Ministry of Health programme, local nursing forums and DHB-led education, use of resources from the Heart Foundation and Diabetes New Zealand as well as diabetes nurse specialists and so on. We also heard of some practices where nurses initially had negative attitudes towards the programme and felt that they were busy enough without more work being imposed.

Capacity issues arose from various factors. A shortage of well-trained nurses was often an issue – to identify and contact eligible people, carry out assessments, communicate results and to follow up those with higher risk. Often PHOs supplemented practice staff or ran special clinics to help practices deal with large numbers of people who had never been assessed. Sometimes this was directly seeing people, sometimes it was by way of identifying people who could have virtual assessments because the practice already had the required data on file. In general, supplementary assistance to practices was limited to assessment, whilst follow-up for those who needed it – lifestyle advice and/or medication – was left to the practice.

The extra work involved for practices to reach the coverage goals often meant longer hours for staff, at least for a time, and we heard that in many cases nurses were not paid for this extra work. Practices also found important ways to build these assessments into their usual work such as by picking quieter times of the year to make the *Checks* target a particular priority (not during the winter flu season or when there was a drive on to ensure good vaccination coverage).

Practices organised themselves in various ways – depending upon the size, the number of practitioners, and the skills and interests of doctors, nurses and managers. Often one staff member (most commonly a nurse) was made the target champion but this was most likely to be successful when all the practice team was on board with the programme. If some team members were vocally opposed this could make the champion's task almost impossible.

Practice management tools were important. These take various forms depending upon the system that the practice uses. In general, they allow population reports to be produced, lists of people needing checks to be generated, and nurses, doctors and even receptionists to be reminded that an individual who may be attending for something else is due or overdue for an assessment.

Providers noted that the time and effort required for each assessment was substantial and that there were costs involved. It was often said that the financial incentive was not particularly a driver at the practice level, but nevertheless funding to offset the added costs was very useful.

One issue that impacted upon and was impacted by capacity and capability was the need to engage with hard-to-reach portions of the population cohort. Sometimes 'hard-to-reach' was used to refer to ethnic populations, and sometimes the phrase referred to people in fulltime employment who attended general practice less frequently – a situation seemingly more common to men than to women. As we have reported above, outreach activities were considered expensive and time consuming, but nevertheless have powerful educational and promotional value in spreading the word about the need for people to be assessed. While these methods were used during the effort to 'get over the hump' they are less used on an ongoing basis.

There was some disruption to other services

Another issue that we asked about was whether the effort required for the *Checks* target may have meant that other important matters were not given sufficient attention. The practitioner survey asked “To what extent has planning and delivery of other services at the practice been disrupted by the effort required trying to increase the number of health checks?” Only 20 percent of respondents said that there was no disruption with about 30 percent saying either ‘some disruption’ or ‘a small amount of disruption’ and 7 percent saying ‘major disruption’. Comments indicated that immunisations, other recalls and targets, and general nursing appointment time suffered. Within the case studies, a common answer was that inevitably “something else had to give” – although there was little agreement about whether any particular areas missed out. At the practice level it seems that general practice is used to responding to demands and the *Checks* target was another demand that was fitted in where and when it could be.

Some participants felt that the effort to reach coverage goals meant that some other long-term condition management (e.g. checks on established patients with diabetes) or preventive care (e.g. cervical screening) missed out. In some places it was felt that the *Checks* target work was something that would only be fitted in if there was time – “the last thing you’d do.” However, a contrasting view was that learning skills to manage the *Checks* target meant that there were policies and processes that could be used for other preventive and chronic disease management and education tasks. People attending the practice specifically for a *Checks* assessment presented an opportunity to see whether they needed any other lifestyle advice, referrals or preventive health checks.

Key informants often mentioned similar points to those found in the case studies. In particular, it was noted that the effort put in to achieving coverage goals had established systems and processes both at the practice and the PHO level that meant a range of population health approaches were now considered ‘business as usual’ and therefore more easy to accomplish. The empowerment of practice nurses to use more of their skills and take a larger role in preventive health was also seen as a positive effect of the *Checks* target programme.

Communicating risk assessment results also takes time to do well

The clinicians we interviewed overwhelmingly reported that ‘the real work’ starts once a patient has been assessed as having an elevated risk. Every practice described processes for managing patients with elevated risk, including using Care Plus where appropriate. Despite apparent inconsistencies about reporting the results of the CVDRA to people whose risk is not elevated, everyone reported that all patients whose risk is elevated are followed up. A process described by many practice nurses is for the doctor to review the results and then the practice nurse contacts the patient and arranges an appointment at which the practice nurse will lead a ‘conversation’ about lifestyle changes, whilst the doctor is likely only to become involved when medication or specialist referral is indicated.

Some PHOs encourage providers to advise everyone who has been assessed of their risk – whether or not it is elevated. However, even in these places, some providers said that they only contacted those people who had elevated risk – and there was no evidence of whether reliable systems for communicating with people were in place at the practice level.

Focusing on the positive outcomes for people is crucial to making the CVD risk assessments better. Case study participants indicated that not only does the risk assessment need to be clinically meaningful, but people also need to benefit from CVD risk assessment activities. Better

communication by both nurses and general practitioners was seen to be fundamental to improving people’s risk assessments. One area raised in the case studies was the lack of communication with people about the CVD risk assessments and the tests that they will have, or in some cases have had. This appeared to be perpetuated by focusing on reaching coverage goals and the use of virtual CVD risk assessments. People need to know that they have had tests taken, what they are for, and how they will hear the results for these.

Of 112 respondents to the practitioner survey 30 percent (34) said everyone was contacted following the Check; 65 (58 percent) said only those with an elevated risk were contacted; and 13 (11 percent) were unsure. Eighty-six percent of respondents said that those with a high risk were contacted to arrange a follow-up appointment with seven percent either saying No or Unsure. Virtually all respondents said nurses made these contacts – usually by phone through text, while email and post were sometimes used.

Challenges exist in how best to communicate risk especially given the varying levels of health literacy and how to help people determine what is important for them. Many providers said they thought some people struggled with the concepts, cultural and family factors were important, and overall the process can take significant time to do well. Tools such as the Heart Foundation CVD risk calculator were valuable in these conversations.

5.3. System and process improvements made a difference to clinicians delivering the CVDRA, and also to their patients

Back-office support systems development was very important to progressing coverage gains

A major process improvement at most PHOs was the ability to access records at the PHO level to identify the enrolled population within the *Checks* target cohort who were due for assessment. Some systems extended to remotely interrogating practice appointment books so as to identify people for opportunistic screening. The PHO *Checks* coordinator would provide lists to practices so that they could tag records or make contacts to get people to attend for a check-up. These ‘lists’ were reported to be somewhat or very motivating by 77.6 percent of respondents to the survey of practitioners. Many PHOs have now developed quite sophisticated ways to create these lists and communicate them to practice level and the lists seem to be a very useful and successful resource.

PHOs use several IT tools to assist in reaching coverage goals and managing population health. Several organisations provide IT support and many PHOs have their own in-house IT teams. While there are clearly different levels of sophistication – and larger PHOs tend to have more capabilities from greater resource – there was no clear relationship between various IT approaches and the achievement of *Checks* targets. IT systems were, of course, not developed solely for this target programme – but similarly tools that have first been used for this programme are of use in other programmes as well.

Another tool that has been widely used is to share a local ‘league table’, showing the results for local practices. Roughly half of the respondents to the clinician survey reported these intra-PHO

***Evaluation Rubric
Criterion: Improved
processes and systems***

Excellent

Adequate

Almost Adequate

Poor

league table to be somewhat or very supportive or motivating. For more information about use of league tables, see the section *League tables* on page 43.

Practice systems improvements were another frequently mentioned gain. New tools in practice management systems increase opportunistic screening and remind clinicians when assessments are due. Some practices are now introducing portals that allow individuals electronically to link into the practice, see their results and be more involved in their own health – including risk assessments.

Frontline support systems were very important to progressing coverage gains

Most PHOs have appointed coordinators to assist practices and these are generally very well received. They nearly always have a background in nursing – very often as practice nurses so that they are often well placed to work closely with nurses at practice level. These coordinators are organised in different ways from PHO to PHO depending upon the size of the organisation, the geography of the area, how much resource is made available and where the challenges are. There were no ways of operating that were always more effective than others. Coordinators often learnt from each other and sometimes from coordinators in other PHOs. Almost 60 percent of respondents to the survey of practitioners reported that the practical assistance provided by PHOs to practices was somewhat or very supportive or motivating.

Some PHOs increased levels of assessments by sending nurses into practices to do the assessments. While this successfully raised the levels of coverage there was a feeling that in the longer run this approach is less successful than PHOs where the emphasis was on supporting practice teams to learn how to advance their coverage without direct outside intervention. Sometimes directly carrying out assessments was used to get a practice ‘over the hump’ – that is, to carry out an intensive effort to reach the target and at the same time to establish systems and upskilling that allows the practice to maintain good coverage.

Late uptake of the programme by some providers slowed national coverage gains

Key informants spoke about the fact that PHOs did not all get on board with the programme at the same time. Those that started sooner have generally been the most successful at attaining the coverage goal and have now realised that the systems they have developed both at the organisational and the practice level will serve them well wherever the emphasis is needed in future. They and their practices have a better ability to track and impact on the health of their populations and also have systems for other initiatives such as improving safety and reliability of service.

PHOs that came on board later were to some extent influenced by seeing others making progress. There seems to have been some impact not only by example but also conscious encouragement through the various PHO and clinical leadership networks. This was perhaps especially important in some PHOs that had relatively lower percentages of high risk patients. These PHOs had often decided that the focus of their organisations should be on issues other than CVD and diabetes and it took some time to see both the financial benefits and other spin-off system benefits that are useful outside the target programme.

Other ways that PHOs supported and motivated practices

In the practitioner survey we asked how motivating or supportive various PHO activities were. Table 2 shows that the activity considered most supportive or motivating was producing lists for the practices of patients who needed a check. Other help for the practice was also valued, as was

promoting checks in the community and running clinics. Local and national league tables and the target champion were considered to be less useful.

Table 2: PHO activities perceived by practitioners as motivating or supportive (n=103)

	Very	Somewhat	Neutral	Unhelpful	Not aware of this activity
Facilitating access to the national Target Champion	7.77% 8	19.42% 20	32.04% 33	13.59% 14	27.18% 28
Helping to connect with patients who have been hard-to-reach	33.98% 35	22.33% 23	19.42% 20	8.74% 9	15.53% 16
Practical assistance within the practice	33.01% 34	25.24% 26	19.42% 20	6.80% 7	15.53% 16
Producing league tables that show where practice sits in relation to others	19.42% 20	31.07% 32	21.36% 22	23.30% 24	4.85% 5
Producing lists of patients in need of the check	50.49% 52	26.21% 27	9.71% 10	7.77% 8	5.83% 6
Promoting the checks programme in the community	34.95% 36	22.33% 23	20.39% 21	8.74% 9	13.59% 14
Promoting the national league tables (DHB and PHO level)	11.65% 12	21.36% 22	28.16% 29	26.21% 27	12.62% 13
Running checks clinics at community events	21.36% 22	30.10% 31	13.59% 14	16.50% 17	18.45% 19
Running checks clinics in community spaces such as churches or marae	21.36% 22	35.92% 37	14.56% 15	12.62% 13	15.53% 16

Each of the case study sites that we visited demonstrated the importance of the PHO in achieving the coverage goal. While each organisation took a slightly different approach there were many common systems and activities.

5.4. Consultations following an elevated risk diagnosis increase patient understanding of how to mitigate that risk, but fewer take on board the changes they need to make

The overall number of risk assessments carried out has certainly increased during the time the target programme has been in place. Whether this has resulted in those who were assessed being better informed and better able to manage their risk depends upon factors such as:

- How well they have been told about their risk;
- Their level of motivation to make lifestyle changes;
- The degree of support that have been able to access during the change process; and
- Sometimes their adoption (or not) of medical advice regarding prescribed medications.

Respondents to the practitioner survey were asked how often they thought people would make sustained lifestyle change when they are found to have an elevated CVD risk. The responses indicate that they thought it was easiest for people to change their diet; a little more difficult to stop smoking or to take more exercise; and the hardest thing was sustained weight loss. Case study participants reported that patients who had already suffered a cardiovascular event were more likely to achieve lifestyle changes than those assessed as at risk. Some practitioners also said that they thought active follow-up at three months after people had been assessed and given advice was helpful to support change.

Case study participants reported that while they hoped that their efforts to communicate not only the risk but also ways to mitigate elevated risk were understood by their patients, it was not always easy to be sure. The best indicator of increased understanding was when the patient returned for follow-up check-ups and was found to have reduced their risk through the uptake of lifestyle changes or was using medications as prescribed – and there were anecdotal reports of this happening.

Evaluation Rubric
Criterion: Consumer understanding and management of CVD risk

Excellent

Adequate

Almost Adequate

Poor

“Patient health is improving, which is very rewarding.”

At some of the case study sites we heard from the PHO level that there seemed to have been an increase in the use of referral services for lifestyle modification such as Green Prescriptions, exercise classes, dietitian and smoking cessation services, but we were given no hard evidence of this and it was difficult to tell whether this was a change driven by the targets programme or not. We were told that practices vary in the extent to which they refer to lifestyle services – some, for example, will make lots of Green Prescription referrals, others hardly any.

Of the 59 people who responded to the relevant patient survey question, most claimed to have a good understanding of what they need to do in order to avoid having a heart attack or stroke, or of getting diabetes. Further, 40 percent (28) recalled receiving written information at the time of the consultation, and all but two of these respondents reported that they read it.

The consumer experience survey included questions about lifestyle changes concerning diet, exercise, weight, and smoking. These results are reported below, along with related comments from case study and key informant interviews, and data from the practitioner survey.

Dietary changes

Forty people made some dietary changes. However, 10 of these people (25 percent) reported reverting to their usual habits. Three people reported that although they were advised to make changes to their diet, they had not done so. Eighteen respondents (26 percent) were not advised to make dietary changes.

Weight loss

Of the 38 people who reported being advised to lose weight, seven people (18 percent) were clear that they had lost weight since the check; a further 10 people (26 percent) reported that they had lost weight but not because of the check; six people (16 percent) were unsure if they had lost weight; and 15 (39 percent) had not sustained any weight loss.

At one PHO it was reported that their dietetic services were “absolutely over-subscribed” and that there was insufficient funding to extend the service.

Increased physical activity

Twenty-one people (30 percent) were not advised to exercise more. Of the remaining 49 respondents, 14 (28.5 percent) reported doing more exercise than before the check; and 27 (55 percent) were advised to exercise but hadn't sustained any increase. Twenty-three percent of respondents (16) were given a Green Prescription, whereas 82 percent of clinicians reported often or occasionally providing these.

Some case study participants reported that patient requests for Green Prescriptions were so frequent that demand outstripped capacity. At one practice, Green Prescription service providers were asked to advise if patients don't arrive for appointments, and the practice then followed up: as the practice nurse told us, "We want to know if they have been referred, and if they actually attend." This illustrates the strength of links being developed between health providers and supplementary services.

Reduced smoking

Fifty respondents reported that they were non-smokers, and a further seven people omitted the question. Of the remaining 13 participants, three reported that they have quit smoking, five reported reduced smoking, and five commented that they had made no attempt to change their smoking patterns despite being advised to quit. Of the four participants who reported being referred to a smoking cessation service, two had cut back, one had quit, and the fourth had not made a quit attempt.

In contrast, 93.84 percent of respondents to the practitioner survey reported that they often or occasionally referred to smoking cessation services.

Other services

Key informants noted some changes in particular areas – the Heart Foundation, for example, noted a significant overall increase of work whereas Diabetes New Zealand has had a drop in membership over the last few years (possibly because there are now many other sources of diabetes information). Otherwise key informants had little to add in this area.

Long waits for cardiac rehabilitation services where these were needed was another capacity issue mentioned. Similarly, increased use of services for diabetics, such as eye screening and

podiatry, strained services in some areas. How much the *Checks* health target was directly responsible for these referral issues is unclear.

5.5. There is little evidence of changes in health outcomes

During the case studies we asked for evidence or assessments of changed health outcomes but little was forthcoming. Some clinicians were confident that more people had been identified at high risk and that lifestyle changes and medication would lead to fewer cardiovascular events. One PHO had data to show that 60 percent of those identified to be at elevated risk had subsequently, after receiving advice about lifestyle changes and or taken medication, been found to be at reduced risk levels.

We also heard examples of previously unknown diabetes being detected and of people who had not had their risk assessed having cardiovascular events – and these events serving to underline for providers the importance of the assessment process.

There were very few comments from the key informant interviews about health outcomes. No one pointed to any firm data of outcome improvement; some thought it was unlikely that impacts would be visible at this stage. Many participants talked about provider resistance and a fairly widespread sense, at least in the initial stages, that the focus was on carrying out checks rather than on actually achieving better health outcomes for those people with higher risks.

Prescribing data

As a secondary outcome measure we reviewed statin prescribing. High levels of low density lipoproteins have been shown to be associated with a higher risk of ischaemic heart disease and mortality. Treatment with statins to reduce the levels of these lipids has been shown to be effective in reducing risks from CVD.¹⁰⁵ Statins are a treatment that is commonly started in general practice and thus, when CVD risk is assessed in general practice, a proportion of people with elevated risk will be recommended to start statins. We reviewed the data about rates of statin prescribing over the period of the latest target regime since it is likely that increased detection of people with high CVD risk would result in more statin prescribing. Our analysis initially suggested an upward trend in prescribing, but this was an anomaly brought about by a period of monthly prescribing rather than the more usually three-monthly prescribing, due to a supply shortage. With this in mind, it is fair to say that we observed no clear sign of any upward trend in statin prescribing over the period of the *Checks* health target.

5.6. Summary

The *Checks* health target has clearly resulted in many more CVD risk assessments being made and, although at this time more robust quantitative evidence is not available, it seems that this has resulted in more people being aware of their risk and some making changes to reduce that risk. There are many challenges including health literacy problems, the best ways to communicate risk and how to help people make lifestyle changes, but the *Checks* programme has increased attention to these issues.

The programme has required a very significant effort at practice and PHO levels which has not always been easy or straightforward. To be successful, PHOs have needed strong leadership both

¹⁰⁵ Taylor et al., ‘Statins for the Primary Prevention of Cardiovascular Disease’.

from management and clinicians, and good systems and processes to monitor and support action at practice level. Where PHOs have struggled or been slower it has generally been because the value of the programme was not accepted. Over time most PHOs have accepted the value of the *Checks* health target and levels of coverage have increased.

Similarly, strong leadership and good systems are essential to success at the practice level. While some practices were already paying attention to assessments before the health target was introduced, in other places there was considerable initial scepticism and resistance. Generally, with the help of PHO support to identify candidates and assist with their assessment, the programme has come to be built in to practice with upskilling of personnel, particularly practice nurses, and the institution of new tools, processes and policies.

6. ECONOMIC EVALUATION FINDINGS

The findings from the economic evaluation are presented below. These findings have been reached through an analysis of the data that relate to KEQ 3: ‘What have been the economic implications of the *Checks* health target and is it likely the programme provides good value for money?’

The analysis was informed by an assessment against the evaluation rubric for KEQ 3 (see Appendix A: Evaluation Rubrics) which included two criteria:

- Efficiency; and
- Impact of financial incentive.

The economic implications of the *Checks* health target were explored through considering participants’ views of their costs and benefits, the impact of financial incentives, and how efficiently resources were used. No formal, quantitative data collection on costs and benefits was possible, given the timing of this evaluation (which started well after the implementation of the *Checks* health target), the spreading of costs across the Ministry, DHBs, PHOs and practices, and the time-frame for the evaluation (less than a year). Those interviewed found it difficult to respond to questions on both the costs and the benefits of the programme, and overall we find a mix of views as to the value of the *Checks* health target.

6.1. There were mixed views about whether or not resources have been efficiently used within the *Checks* programme

There were mixed views about the efficiency of the incentive payments. One view was that they helped the health target to be taken more seriously, as evidenced by the four DHBs that received the one-off bonus payment as a result of meeting the coverage goal. On the other hand, another view was that the funding model, with small siloes of money, was not very attractive, and having one big pool of incentive payments would be a bigger motivator. A third view was that incentive payments had not always been spent as efficiently as they could be (especially where there was a lack of collaboration), but this reflected the level of immaturity of the programme.

A further issue raised by many participants was that although it brings greater attention to the needs of at-risk populations, the funding model does not take into account measures to engage with hard-to-reach groups.

A number of participants were positive that the risk assessments were effectively and efficiently implemented. One highlighted a shift to a more efficient allocation of resources such as nurse-led clinics, with practices being able to choose the most efficient way for them to run the service (for example, opportunistically or by holding clinics; using practice staff or a PHO nurse) in relation to their employment model, population demographics and context. For some participants, there were no examples of inefficiencies. On the contrary, one described efficiency gains from standardising classifications across the DHB and good communication between secondary and primary care.

<i>Evaluation Rubric Criterion: Efficiency</i>
Excellent
Adequate
Almost Adequate
Poor

Many case study participants did describe inefficiencies around funding and payment issues, data, systems and reporting issues. Some of the funding and payment issues have already been mentioned above, such as the level of remuneration of the incentive and a preference for greater focus on prevention or on outcomes. Another suggestion was that incentives might have been better tied to high-needs patients, rather than a blanket approach whereby the 'low-lying fruit' earned the funds. One participant suggested some of the money might be better spent elsewhere such as for providing triple antithrombotic therapy for cardiovascular disease. While some of the case study participants mentioned IT systems enabled efficiencies and there were intangible benefits to systems through cleansed data and patient templates, various aspects of data collection were viewed as inefficient by some – the cost of developing and maintaining tools for CVD risk assessment (including different practice and PHO systems), time and difficulty of reporting and transferring data between different systems, and reporting costs generally. The costs of quarterly teleconferences between the Ministry, a DHB and a PHO added up, and some participants questioned the value from these teleconferences when the PHO had clearly turned a corner in terms of increasing its coverage.

Others pointed to inefficiencies in relation to processes around working with patients. There were concerns that within practices, recall processes are inefficient generally, including incorrect patient details being a hindrance to contacting them (highlighting the need to include frontline staff in the process), and some patients being checked more than once while others were not checked at all. Participants noted some inefficiencies in interactions with patients, including the time taken to track patients and the 'wasted time' related to patients who do not buy-in to the programme, miss appointments or do not complete a blood test. However, while one participant agreed putting a lot of resource into chasing a person could seem inefficient, it should be viewed as a long-term investment in whānau. Another noted cultural differences affect the coverage possibilities and different approaches are needed for different cultures.

Another set of issues related to the disjuncture between primary and secondary services impacting on the CVDRA delivery and reporting. One person noted that occupational health nurses do risk assessments but that these are not counted under primary health care, and another reported that not being able to count activity undertaken in secondary care that is relevant for the risk assessment is frustrating for general practice, although we are aware of a case where such assessments were counted.

Costs borne by organisations involved in delivering the *Checks* health target

Costs of the *Checks* health target were identified at Ministry, DHB, PHO and practice levels within the health system as well as for NGOs.

At the Ministry level, key informants said costs included core jobs within the CVD team, policy/advisory groups and consultation with the sector. There were also administration costs related to monitoring the target. Costs were also associated with the national Target Champions and the public awareness campaign.

For case study participants from DHBs, there was additional staff time and cost associated with monitoring PHOs and NGOs and the monthly reporting. This was described by one person as very resource intensive, although another participant in the same DHB believed the additional costs were small, and overall, close to cost-neutral. PHOs also had staffing costs related to data management. DHB staff time was taken up in attending, supporting and facilitating working and operational groups related to the *Checks* health target. Some DHBs and PHOs had created new

roles (such as community clinical nurses, a diabetes nurse practitioner and a dietitian) to support practices with the *Checks* health target, particularly for complex cases or specific populations.

At the practice level, key informants and case study participants noted costs related to infrastructure (including information systems), staffing and risk assessment costs. Appropriate infrastructure included information systems to collect, analyse, act on and report data, all of which have costs for practices. Reporting was said to be time-consuming and resource-intensive. Infrastructure also involved systems to implement the risk assessments with patients and practicalities such as a room and computer for seeing patients. Staffing costs related particularly to nurses and people in support positions identifying patients and making bookings, then carrying out the CVDRA as well as follow-up management. Opportunistic assessments carried fewer costs than methods such as sending out letters of invitation. Clinical champions at the practice level were identified by one key informant as a success factor, but also had a cost to the practice. One practice mentioned costs related to other programmes that supported those whose risk was assessed as elevated, such as a self-management programme for people with diabetes and a course on healthy eating on a budget.

Case study participants from one practice praised the patient leaflets that came from the Ministry of Health and used them widely while they were initially free. However, when a cost was imposed, this became a disincentive to using the leaflets because of a limited budget.

Some key informants viewed the role of the Target Champions as being critical. Their costs related to time meeting with DHBs, PHOs and practices to support implementation of the *Checks* programme, as well as the development of resources (videos). One key informant noted that where there had been success in making progress toward the coverage goal, there had been considerable support from PHOs (whether to support practices to be independent or through direct activities).

Another cost borne by the Ministry was for the Heart Foundation, which was also involved in creating resources, sharing best practice and working to contribute to the sustainability of the target.

Several case study participants raised concerns about the adequacy of funding: that it was insufficient to cover additional staff time and that amounts were inadequate to cover the time needed for preventative consultations with patients. One person believed the programme is restrained by financial limitations, rather than space or capability. Another considered that some initiatives (such as contacting patients after hours and holding special clinics) required a lot of time commitment and were financially unsustainable. One person also expressed concern about cash-flow problems for the PHO resulting from slowness of DHBs passing on the money received from the Ministry.

Hidden costs of implementation

The practitioner survey included questions that aimed to reveal hidden costs of implementing the *Checks* health target, such as through additional unpaid effort. The relevant data is presented and discussed above, in section 5.2. The additional work necessary to achieve coverage gains, discussed in the earlier section, is sometimes conducted without pay: eight respondents made a point of noting, in the free-form comments section within the survey, for example: “Some nurses did some volunteer work in the community on Festival days”; “unpaid overtime”; “majority (of work to contact people to arrange post-assessment follow-up discussion) is unpaid”; “after-hours work is not paid for.” The additional effort, paid and unpaid, did not always result in the achievement of the coverage goal, and so anticipated rewards for extra effort were not always

forthcoming. Several case study participants noted the irony that any incentive gained had already been spent in the attempt to achieve it.

6.2. The financial incentives adequately impacted coverage gains

The one-off bonus was an incentive for some, but not for all

Those who considered the one-off bonus to have incentivised performance noted that this was a way to get people engaged and motivated to do something different, especially given that change could be difficult to achieve in general practice. The financial gain was important for some, both to provide services for patients and to give staff a sense of reward for their work effort. One participant agreed the bonus was a significant ‘carrot’ and the improvements across the country could be seen as evidence this had worked; on the other hand, the same respondent noted that for a PHO that tried hard but did not succeed in meeting the 90 percent coverage goal, it was deflating to put in a lot of extra effort for no reward.

Those case study participants who did not consider the bonus had incentivised performance gave a variety of reasons for this. One PHO respondent said they already had very high coverage before the health target came on stream, because this was important for their patients’ health. At the opposite end of the spectrum, a participant from another PHO said they were so far from reaching the coverage goal that it was not motivating.

Some participants suggested that coverage improvements at their PHO were not related to the time period when the bonus was available. Others were uncertain about whether financial incentives work in general, or suggested they can drive the wrong kinds of behaviour (focusing on the financial gain rather than the provision of care and health outcomes). One person said the incentives were too low to be considered motivating.

Incentives were distributed differently at various PHOs

Most of the case study participants who answered this question talked about the money being distributed to practices by PHOs, generally in relation to performance (more being paid for good performance, but other practices still receiving a share). One said all the funding went to practices, with none held back by the PHO, while two mentioned the PHO retained some funding (in one case, to fund specific positions such as local champions).

Participants described specific uses of the funding: training nurses to take blood; contributing towards nursing services for all long-term conditions generally; maintaining service within a Very Low Cost Access practice;¹⁰⁶ and establishing new roles related to performance management and the Integrated Performance & Incentive Framework (according to one, the cost of this was not fully covered by the income generated). One person from a PHO said the money had already been

Evaluation Rubric Criterion: Impact of financial incentives
Excellent
Adequate
Almost Adequate
Poor

¹⁰⁶ The ‘Very Low Cost Access’ scheme provides additional financial supports to general practices whose enrolled population includes a majority of high needs patients.

spent on risk assessments before it came in; in other words, it was seen as simply compensating for the cost of assessments already performed.

Non-financial motivations

A number of participants also highlighted non-financial incentives that had motivated action on the *Checks* health target. One commented that investment in early intervention now would pay off later. A notable driver for clinicians was (as above) concern for better patient outcomes. For another health worker, the incentive to act had not been the positive ‘carrot’ of a bonus, but rather, the negative ‘stick’ of pressure from the PHO and Ministry of Health to improve “the numbers”, although again, they commented on patient needs being the primary motivation.

League tables were another incentive to act, including to work to meet the needs of hard-to-reach populations.

Others highlighted the effect of the additional money from the *Checks* programme in strengthening nursing roles to carry out this work, and the importance of this for professional esteem.

This then raised the question about how different things might be in terms of the coverage goal if there had been no one-off bonus or incentive payments. On this issue, there was a variety of views.

Some key informants went back to the broader issue of whether or not bonuses motivate action. Some said that money signals priorities, focuses attention and had enabled investment in resources and tools.

Those key informants who did not view money as having been a strong motivator said many people would not have realised performance was linked to payment. They also considered the amounts paid for achieving the coverage goal were small, and conversely, the penalty for not achieving was not a disincentive. One person expressed doubt about the underlying evidence that financial incentives make a difference, suggesting clinical buy-in is the key factor. However, the same person said in some areas, practices had previously been paid per risk assessment, but when the current *Checks* health target was implemented, the payment per assessment stopped and some GPs then stopped doing them.

Case study participants were more definite than the key informants that financial incentives had made a difference in motivating participation at both PHO and practice level and that coverage would otherwise be worse. Funding was viewed as important for supporting the capacity of practices to undertake additional work. It also encouraged practices to invest time and energy beyond the everyday demands of reactive care. One person commented on the impact of the funding on allowing further changes in nursing roles. Another highlighted the difference funding made to patients, noting their patient population would not have come if they had to pay (as evidenced by their difficulty in getting patients to attend for cervical smears, which are charged for).

Costs in light of the results

Case study and key informant interviewees frequently preferred not to address our question about the costs of the programme compared with its perceived health gains. Amongst those who did address the question, there were mixed views on the issue of whether or not the costs seemed reasonable in light of the results. On the negative side, one pointed to the burdensome nature of the reporting, seeing this as potentially outweighing the value of the programme; in particular, while narrative reporting was seen to be especially useful early on, this was less so later on as the

programme settled in. Others focused on the results: some felt that the assessments were beneficial (both in terms of reduced health care costs and the health benefits to individual patients), but many said which they had not been beneficial or were uncertain, with one viewing the results as underwhelming.

For those who were unclear or negative about the relationship between costs and benefits, the main concerns were that costs were excessive relative to the benefits; costs were not adequately recompensed; and/or that the benefits in terms of improved outcomes for patients were uncertain. One person suggested the assessments should be outcomes-focussed but are currently input-driven, and that the 90 percent coverage target may encourage a ‘tick-box’ approach rather than being the best target to measure and incentivise change.

Those who were positive referred to the benefits to patients and for population health. Some participants also mentioned infrastructure or systems benefits. But even those pointing to benefits sometimes added caveats. One noted that gains will continue if the programme is embedded as ‘business as usual’ at clinic level, but was uncertainty as to whether this would happen without ongoing PHO support (and funding for that support). A second, while positive about the benefits of the programme, thought the administrative costs for staff (nurses) were not reasonable and was uncertain if benefits outweighed costs overall.

Other, broader comments related to this question were the need for training and support for staff implementing the risk assessments programme and the need for more time and resourcing to manage patients who are most at-risk and to focus not only on diagnosis and management, but on prevention and reducing disease incidence. One person also suggested CVDRA in primary care is saving secondary care costs such as hospital beds and surgery, but these savings do not benefit primary care.

There were 23 responses¹⁰⁷ in the practitioner survey to the question, “Thinking about the costs to the practice that arise from providing the health checks, compared with health gains for your patients, what is your impression of the balance?” Answers are summarised in Table 3 below.

Table 3: Perceptions of doctors with a financial interest in their practice about the balance between costs to the practice and patient health gains

Response choices	Number of responses (n=23)	% of responses
The costs outweigh the health gains, because the cost of the programme is high	3	13.04
The costs outweigh the health gains, because the gains of the programme are low	6	26.09
The costs and health gains are relatively equal	6	26.09
The health gains outweigh the costs, because the cost of the programme is low	4	17.39

¹⁰⁷ The question was only presented to clinicians who had previously reported that they had a financial interest in the clinic in which they usually worked.

Response choices	Number of responses (n=23)	% of responses
The health gains outweigh the costs, because the gains of the programme are high	4	17.39

Overall, 39.13 percent (nine) respondents believed that costs outweighed gains, 26.09 percent (six) that they were relatively equal and 34.78 percent (eight) that gains outweighed costs. That is, views are split as to whether or not the gains from the programme are worth the costs.

Twelve survey respondents chose to add a written comment. Most were uncertain about any evidence of health gains through the *Checks* health target, particularly for low income or hard-to-reach patients. Two people commented that the funding was inadequate, one saying:

Never did it for the money. If it was for financial gain we would not have done it as the rewards were paltry even though we always exceeded our targets.

6.3. Summary

The overall value for money of the *Checks* programme rests on it demonstrating greater benefits than costs. At one level, setting a *Checks* coverage goal clearly led to an improvement in the percentages of those the programme aimed at assessing for CVD and diabetes risk. It is estimated that 1.1 million people have had the cardiovascular health assessed in the last five years.¹⁰⁸ This represents a significant resource; to put it into context, 12.6m GP visits occur each year in New Zealand.¹⁰⁹ From the evaluation, we have identified four areas which need attention if the economic value of the programme is to be improved.

First, the costs of data collection and reporting may be reduced in future if good systems and processes are now embedded. In addition, a review of the usefulness of all the data being collected may indicate that some data (such as narrative reporting) is no longer necessary or can be reported less frequently, thus reducing collection costs.

Second, all practices need to be convinced that the incentives and bonuses are covering their costs or it is possible they would choose not to continue to participate in the *Checks* programme. This is a particular issue with respect to working with those who are hard-to-reach, where it is essential that programmes such as the *Checks* health target adequately compensate and/or reward those working with disadvantaged populations.

Third, that there are reported inefficiencies relating to identifying those eligible is of concern, not just for the *Checks* health target; perhaps a clearer set of diagnoses coding is required to assist with future target initiatives.

Fourth, issues relating to inefficiencies in working with hard-to-reach groups not only affect the *Checks* health target but also other programmes, and work needs to be done to ensure that PHOs and practices working with such enrolled populations are well supported financially and

¹⁰⁸ 'Health and Independence Report 2015: Ministry of Health', ix.

¹⁰⁹ Ibid., xi.

organisationally to improve and protect health, particularly as such groups may in fact be those most at risk of developing the conditions the *Checks* health target was aimed at.

At a wider, programme level, not all agreed the *Checks* health target was a good use of public funding – but without more information on outcomes in terms of the benefits to health, relative to their costs, it is difficult to be sure if the *Checks* health target provided good value for money. The outcomes aspect of the evaluation looked at how successfully the target has focused the sector's attention on the risks associated with CVD and diabetes and what difference this has made for people in the target cohort. Information came mainly from interviews, case studies and patient and practitioner surveys along with some data about prescribing and referral rates, but a longer term analysis is required to identify the full range of health benefits that might accrue from the *Checks* target.

As we noted in the literature review, many analyses of pay for performance programmes and systematic reviews of pay for performance suggest that there is the potential for such schemes to be cost-effective, but that the overall evidence base is weak.

Of particular concern in New Zealand may be three factors that may undermine the overall value for money offered by the entire *Checks* programme. First, the *Checks* health target may not be as aligned with key risk factors (such as those identified by the New Zealand Medical Association i.e. smoking, dyslipidaemia, hypertension, family history of diabetes or CVD) as it might have been. Similarly, it may not have been well aligned with high-risk populations, given the inequities seen in the implementation of the *Checks* health target and the difficulties reaching some populations. Second, not all patients assessed were necessarily aware of the programme, nor the outcomes from their assessment. Yet the engagement of those at risk is essential for behaviour change and the programme could have taken better advantage of the checks to promote healthier lifestyles. Third, the nature of the health target emphasised undertaking the risk assessment as opposed to better *management* of higher-risk patients; again, this can be viewed as a lost opportunity.

Two rubrics were used to judge the economic implications of the *Checks* health target and whether it is likely the programme provides good value for money. The first, efficiency, was judged as almost adequate because there was minimal evidence of wastage of funding but compliance/administration costs associated with the *Checks* programme were not insignificant. A higher rating for efficiency would be achieved if the compliance costs were reduced.

The second criterion, impact of financial incentive, was judged as adequate, reflecting the impact bonuses and incentives had on implementation and that the same result probably would not have been achieved for less. However, this also suggests there is a risk implementation of the programme could falter if the incentives are removed.

7. SUSTAINABILITY

The finding reported below have been reached through an analysis of data that relate to KEQ 4: “To what extent are any gains made through the *Checks* health target likely to continue?” The analysis was informed by an assessment against the evaluation rubric for KEQ 4 (see Appendix A: Evaluation Rubrics) which included one criteria: sustainability.

The findings below arose through three research methods: case studies, key informant interviews, and surveys of primary care practitioners.

7.1. The assessments appear to be quite well embedded into most practices, but clinicians nevertheless consider it likely that coverage will decline over time

Our findings for this question best align with the evaluation rubric’s criteria for being “almost adequate”: *CVD risk assessment is embedded in most primary care practices but the positive benefits of the Checks target are likely to reverse in some areas.*

The majority of case study and key informant interview participants who felt qualified to address this question anticipated that coverage rates would gradually reduce with the removal of incentives; declining to a certain point before plateauing. Estimates for the percentage of the population cohort that coverage might drop to range from 60 percent to 80 percent (considerably higher than coverage before the introduction of the *Checks* target).

Some participants suggested that incentive payments were a key component for some practices and PHOs, and predicted that coverage will drop should these payments be taken away. One participant from a PHO with a team dedicated to performing and promoting checks, suggested that these roles may not be possible without the incentive funding and that coverage would inevitably drop should these be discontinued.

Of the 109 people who responded to the relevant practitioner survey question, a slim majority of 56 percent agreed that “*Even without the national coverage target, the health check would continue to be routine for our patients in the age brackets covered by the present health target.*” The remaining 44 percent answered that “*Fewer checks would be carried out at the practice if the national coverage target was removed.*”

Interestingly, respondents to the practitioner survey, while offering a range of responses, were on average much less optimistic than the case study and key informant interview participants about coverage following the removal of the *Checks* target. Just 47/114 respondents addressed the question *What percentage of the patients at your practice who have had their check would continue to have regular checks (at least every five years) if these were no longer part of the national health target programme?* Their answers also seem somewhat surprising given their positive responses to the question described above. Approximately 40 percent of the 47 respondents estimated that less than 50 percent of patients would continue with regular assessment, with a few respondents

Evaluation Criterion: Sustainability
Excellent
Adequate
Almost Adequate
Poor

going so far as to predict that as few as 10 percent of their patients would continue to have regular checks.

The discrepancy in optimism about the retention or otherwise of coverage that is apparent above might be explained by contrasting experiences of implementing the CVDRA. As we have noted above, the case study PHOs tended to nominate exemplary practices: they had achieved the coverage goal early, or they had experienced substantial coverage gains as a result of structural change. In comparison, less than 60 percent of clinicians who completed the on-line survey reported that their practice had reached the coverage goal. The following factors, drawn from the survey responses, suggest that participants for whom the coverage goal remains elusive or has only recently been attained may have reasonable grounds for their apparent pessimism. Survey respondents considered that:

- The effort attempting to attain the coverage goal (whether or not this was successful) was considerable;
- The effort to retain coverage is expected to be roughly the same; and
- The back-fill relief usually provided either by PHOs or through the temporary employment of an additional staff member, seems unlikely to continue – a point reiterated by case study participants.

We suggest these factors will make it problematic for practice nurses to continue providing services such as telephoning people who have recently entered the population cohort for CVDRA to arrange an appointment for their assessment, locating the results of earlier blood tests, or following up people to remind them to go for their blood test. As a result, CVDRA seems likely to be almost exclusively initiated opportunistically, with completion being highly reliant upon patient action: getting the blood test. Those in the enrolled population whose CVDRA has to date been purposefully arranged – which will often include a portion of people who infrequently attend the clinic – will either not be assessed at all, or they will be assessed considerably later, for example on their next visit to the clinic, assuming that visit is not at an especially busy time either for the clinic or for the patient. While it appears from the case studies and the clinician survey that the procedure for performing the risk assessment is quite well embedded in practices, it also appears that the process of getting the patient to the practice in order to perform the assessment is less well embedded, remaining comparatively dependent upon additional capacity support.

A constructive dimension for the *Checks* health target would be to embed them within practice or PHO quality improvement frameworks. Practices would need support in doing this effectively. The degree to which the CVD risk assessment was linked to quality improvement frameworks varied across the case study sites. Having relevant systems and tools to capture data, and practice and PHO capability in terms of the level of ‘analytical’ skill and support would promote embedding targets into quality improvement frameworks.

High-risk patients are most likely to miss out on risk assessment should coverage decline

The practitioner survey asked participants who would not be checked (i.e. who is most likely to miss out) after the removal of the *Checks* target. Responses to this question include:

- Those who do not present at the clinic regularly. Some respondents suggested that CVDRA would primarily be performed opportunistically, and that those who did not present would not be contacted through current processes (e.g. ‘missing patient lists’);

- Those who are difficult to contact. It was suggested that it would no longer be feasible for many practices and PHOs to dedicate resource to following up with people who were difficult to engage with;
- Māori and Pasifika populations (especially men) who have been the focus of outreach initiatives including providing the CVDRA free of charge;
- Those who decline CVDRA and/or do not see the value in it; and
- People who are likely to have low risk (it was not made clear whether this would be through self-selection or physician discretion).

One benefit of the incentive payments is that they have helped focus attention on coverage gains. Some case study and key informant interview participants explained that without the incentives, attention will slowly be drawn to other priority areas that are being given more emphasis by the Ministry or that offer financial rewards, and that this will result in coverage declining over time, but not as low as the level experienced prior to the *Checks* health target. Others suggested that focus would shift to CVD management, and that this might be prioritised over performing checks on “healthy people” every five years. However, it was noted by one key informant that in order to manage risk successfully, it is important to understand the population-level risk.

Evaluation participants expressed concern that the removal of the *Checks* programme from the Health Targets would result in the loss of key roles within DHBs and PHOs, established with the aid of incentive funding, making it difficult for practices to perform sufficient assessment to maintain the present coverage rate. As a result, many people will not be aware of their CVD and diabetes risk, and the coverage gap that exists between Māori and non-Māori will not close.

Some case study participants suggested that it would no longer be possible to provide risk assessment appointments free of charge, resulting in many people opting not to take up opportunities for assessment. One practice nurse was especially concerned that this will have a negative impact on the Māori population enrolled with the practice. Another participant directly cautioned that the hard-to-reach would be most affected by a decline of coverage with the removal of *Checks* from the Health Targets programme, as initiatives and resources would be taken away and CVDRA would almost exclusively be performed opportunistically.

Well embedded in places, but not wholly ‘business as usual’

The majority of case study participants agreed that CVD risk assessments have become embedded in everyday practice and should remain a part of everyday practice. Others commented that it varies between practices whether CVD risk assessments have become embedded; that risk assessments are becoming integrated but are still not “business as usual”; and that in some PHOs with dedicated resource for risk assessments, the assessments have not yet become embedded into the everyday practice of frontline clinicians.

Case study participants reiterated the need to ‘keep our eye on the ball’, and expressed concern that if CVD risk assessments were no longer part of the Health Targets programme, focus on these would slide.

Where CVD risk assessments have become embedded in everyday primary care practice, resources and processes have contributed to, and are a manifestation of this. Resources identified by case study participants that have helped embed CVDRA in primary care include:

- MEDTECH;
- Templates;
- Dedicated and passionate staff; and
- The BPAC (Best Practice Advocacy Centre) tool.

Processes that have embedded CVDRA in practice include:

- The integration of checks with a PHO's broader long-term condition work programme;
- Local and regional initiatives, the sharing of best practice between PHOs (in some cases);
- Integration with Whānau Ora assessment plans; and
- Opportunistically performed checks.

Resources and processes vary significantly between practices, PHOs, and DHBs, and this may influence or reflect the embeddedness of CVDRA.

Safeguarding CVD and diabetes risk assessment in everyday practice

Safeguarding the health gains made requires retaining both the focus and momentum that has been created. Overwhelmingly, the sector's view is that CVD and diabetes risk assessment, with risk management added, needs to 'stay on the agenda' to safeguard the health gains achieved – that is, remain in focus through transitioning to the System Level Measures Framework rather than being put aside or overshadowed by new health targets.

There was some suggestion amongst participants that the *Checks* health target may have gone beyond motivating clinicians to increase coverage, changing the way that they think about risk assessment and the value this has for the enrolled population of their practice. A key informant explained that the *Checks* health target has fostered a new way of thinking in terms of ethnicity, access, and responsibility for absent patients, and that this population health approach will persist after the removal of the *Checks* target. This attitude towards risk assessments might contribute to the sustainability of coverage with the removal of incentives. The Ministry has noted that quarterly reports since mid-2015 suggest that the *Checks* target has helped solidify the links between assessment and long term conditions objectives, such as the early identification of CVD and diabetes, and long term conditions management programmes.

It was also apparent that resources and processes developed to enhance coverage gains would need to be disestablished, ignored, or allowed to fall by the wayside in order for coverage to decline. For example, having CVDRA as an item on practitioners' dashboards will continue to contribute to coverage remaining high compared to before the introduction of the *Checks* target, maintaining the momentum developed during the lifecycle of the *Checks* health target, unless it is removed or ignored in favour of 'new' priorities – or newly-incentivised priorities.

One participant, a PHO manager, proposed that risk assessments will remain a part of everyday practice for those motivated by service quality, but will not for others. They explained that the government attaching incentives to targets signals importance and helps to make something a priority. A practice facilitator suggested that it is crucial that risk assessments are considered business as usual, and not seen as an optional "extra".

Some PHOs reported that CVDRA was already included in a local quality framework, so its importance on a national basis was only relevant if the national scheme went beyond local expectations.

Amongst practice nurses, the main deliverers of the initiative, there was not such optimism. Many expressed their hope that coverage would be maintained, but appeared doubtful that this would be the case.

Increasing public awareness

Safeguarding the cardiovascular health gains associated with the *Checks* health target requires public buy-in. One key informant suggested it would be helpful if the level of public attention generally focused upon cancer could be spread a little further, to increase public awareness of other important health issues such as CVD, stroke and diabetes. Therefore, increasing public awareness is needed about the role of general practices, which are 'tasked' with looking after the health and wellbeing of their enrolled population. The public also need a better understanding of prevention within the context of long term conditions.

7.2. Summary

The majority of participants considered that CVDRA has become embedded in everyday practice through resources, processes, and through a shift in thinking around population health. While resources and processes remain it is likely that coverage will remain high for many practices, but that this may vary between practices and is likely to slowly decline over time.

Most participants anticipated that positive benefits of the *Checks* programme would continue beyond the period of assistance. This may occur in two ways: through coverage remaining relatively high compared with that prior to the introduction of the health target, with clinicians continuing to perform regular CVDRA on those in the cohort; or through retaining an emphasis on CVD and diabetes, but refocusing to the management of these long term conditions in their populations.

While many participants anticipated, or hoped, that the gains of the *Checks* target would be sustainable, a number of case study and key informant interview participants suggested that coverage would not be sustainable for all practices. Factors that may influence sustainability include continuing to collect and share data at national and regional levels, retaining a CVDRA measure through the System Level Measures Framework, commitment to maintaining coverage at a DHB and PHO level, and retaining tools and processes that support CVDRA in everyday practice.

8. CONCLUSION AND RECOMMENDATIONS

Generally, PHOs and general practices have made solid ground in undertaking CVDRA and have set up effective systems along the way. The CVD risk assessments are working well and in many cases are becoming embedded into everyday practice. The assessments come at a cost, however, both in the resources and impact on practices in reaching the coverage goal, and on maintaining adequate coverage into the future. These costs need to be balanced against the value of the CVDRA. The real value now comes in being able to ensure that people whose assessment suggests an elevated risk are adequately supported to manage that risk, and that this leads to improved CVD outcomes.

This section summarises the evaluation team's answers to four of the evaluation questions:

1. How well was the Checks health target implemented? (Process component)
2. What difference did the Checks health target make for health practices/service providers and for those whose risk was assessed? (Outcome component)
3. What have been the economic implications of the Checks health target and is it likely that the programme provides good value for money? (Economic component)
4. To what extent are any gains made through the Checks health target likely to continue? (Sustainability)

The final evaluation question 'What should the Ministry do to support CVD risk assessment?' is addressed in section 8.5 *Recommendations* on page 80.

8.1. The Checks target was implemented well when information systems were strengthened and nurse-led approaches included opportunistic and planned assessments

Some of the implementation processes associated with the Checks health target worked very well, while others performed poorly. Encouragingly, a number of impediments to implementation were overcome by many PHOs and practices, and there were generally improvements to the way the Checks programme was implemented over time.

Nationally, the coverage rate was met, but later than initially set. As at December 2015, 15 (out of 20) DHBs and 29 (out of 36) PHOs had reached the coverage goal of 90 percent. Critically, the gap in the CVDRA coverage rate between Māori and non-Māori grew over the implementation period. This is a poor result and needs to be an area for future focus.

The way the CVDRA services were delivered was largely positive, with impediments related to data and information systems, scaling up the volume of risk assessments, and successfully engaging with hard-to-reach populations. Leadership buy-in to the Checks health target and nurse-led approaches to planning and delivering the risk assessments were critical success factors.

The league table dimension of the programme, where practices, PHOs and DHBs could compare their performance, had a positive effect on implementation; although for some, this made no difference or was, at worst, demoralising. Training opportunities and resources, where taken up, had a positive impact on implementation. The same could be said of the Target Champion concept, but overall engagement with the national champions was poor.

8.2. The *Checks* target has increased attention on CVD risk and strengthened primary care systems, but there is no evidence that it has made a difference to population health outcomes

Understanding of what the *Checks* health target was trying to achieve and health sector buy-in to the programme improved over time. Initially, buy-in was affected as the programme's aims were not well 'sold' and there was a feeling amongst some clinicians that the evidence for population screening for CVD risk was not well-established. As discussed in the previous section, leadership buy-in was essential to successful uptake, as was clinical buy-in. At the practice and clinical level, the potential for improved patient outcomes (decreased heart disease and diabetes) drove buy-in and the financial incentives were not especially influential. That said, funding to offset the added costs imposed by the programme was extremely important.

For PHOs and practices, it took considerable effort to achieve the *Checks* coverage goal and there were challenges in terms of both a shortage of capacity and capability. Most organisations responded well to this, using funding specific to the *Checks* health target to bring in extra capacity to deal with the surge, and to provide training to upskill clinicians. This has had a positive benefit of empowering practice nurses, particularly in preventative health. Nevertheless, striving to achieve the coverage goal did disrupt some other services.

The *Checks* programme has helped to improve systems and processes within most PHOs and practices, such as for identifying populations, running data queries on the enrolled population, creating patient lists, and for communicating with patients. These systems should be beneficial for other population health initiatives.

The greater attention on CVD risk and communication of that risk to individuals has helped to make people more aware of and understand their CVD risk and how to manage it. However, the evaluation found that communicating CVD risk well is difficult and time consuming, and it is not always well-understood by consumers.

There is no hard evidence of an increased use of referral services, for example for lifestyle modifications, as a result of the *Checks* programme. There is also no evidence, at this point of time, of changes in health outcomes as a result of the significant increase in CVD risk assessments.

8.3. Costs associated with implementing the *Checks* programme were not insignificant while the financial incentive did have an impact on the result

In terms of efficiency, there was minimal evidence of resources being used inefficiently beyond common problems such as missed appointments and people not completing blood tests. However, the compliance/administrative costs associated with the *Checks* programme were not insignificant and these affected overall programme efficiency. Costs of collecting and reporting data need to reduce in order to improve efficiency.

Other implementation costs, particularly for staffing to undertake the risk assessments (especially through outreach, which was costlier than opportunistic checks), were also not insignificant. The funding was not always sufficient to cover these costs and there was evidence of these being met through unpaid work. The financial incentives were not sensitive to measures needed to engage with hard-to-reach populations, which is a concern.

There were mixed views on whether the financial incentives had an impact on the coverage rate. Clearly many practitioners were motivated by concerns for better patient outcomes and some were not aware that the programme included a performance pay component. However, for others, the financial incentive helped to signal CVD risk assessment as a priority and this focused their attention. This view was most clearly evident in the case study interviews with PHOs and practices and we would conclude that the bonus and incentives did make a difference to the programme's results and that the same result probably would not have been achieved for less.

It is very difficult to determine whether, overall, the *Checks* programme provided good value for money. Views on this were evenly split, with a similar number of respondents viewing the costs as high/low, and a similar number viewing the gains as high/low. In order to achieve good value for money, more certainty is needed about the value of the *Checks* programme.

8.4. Systematic risk assessment is becoming embedded into primary care practice and its benefits can likely be sustained

The overall evaluative judgement on sustainability is that risk assessments are sufficiently well embedded in many practices that, in the absence of the *Checks* health target and incentive payments, coverage rates would decline but remain significantly higher than pre-intervention and many of the benefits of the programme would continue. Of concern, however, is that the likely reduction in coverage rate may be at the expense of those most at risk, being most likely to miss out on regular risk assessments (e.g. those that do not present to primary care clinics regularly are most likely to miss out on opportunistic assessment).

There is also some concern that when the risk assessments are no longer a Health Target, the sector will shift its focus and attention to the latest 'new' priority, potentially overshadowing the risk assessments. Transitioning the risk assessments to the System Level Measures Framework would help to ensure it remains a priority, as would embedding risk assessment into local PHO/practice quality improvement frameworks. Strengthening the focus on CVD risk management, or at least making the link between risk assessment and management more explicit, would help achieve greater sector buy-in to CVDRA and therefore would also likely enhance its sustainability.

As part of risk assessments becoming part of routine practice for the majority of practitioners, the evaluation found the establishment of processes and systems, such as templates and the integration of the assessments into broader long term conditions work programmes, to be key determinants of its sustainability. Some systems, such as including assessment activities on patient dashboards, would either have to be removed/ceased or consciously ignored if coverage rates were to decline. In addition, risk assessments have helped to strengthen a focus on population health within primary care, and this approach will support the continuation of such initiatives.

8.5. Recommendations

This final section of the evaluation report answers the evaluation question 'What should the Ministry of Health do to support CVD risk assessment?' It considers recommendations related to future approaches to risk assessment, and recommendation related to health targets and incentive performance systems more generally.

Recommendations for CVD and diabetes risk assessment:

1. **Continue to report risk assessment coverage under the System Level Measures Framework.** In doing so:
 - Consider how best to share coverage data across providers to drive performance.
 - Consider reporting coverage by high-risk and hard to reach population groups.

2. **Complement the focus on risk assessment with greater attention on the management of elevated risk of CVD, stroke and diabetes.** The Ministry of Health could do this by:
 - Continuing to support primary care clinicians in providing clear advice to patients on lifestyle changes required to manage risk through supporting the provision of guidelines, tools, training and sharing of good practice.
 - Ensuring funding and access to associated services (e.g. Care Plus and Green Prescriptions).
 - Ensuring high uptake of health promotional resources, such as pamphlets.
 - Strengthening messaging around risk management so that it is delivered hand-in-hand with messaging around risk assessment.

Recommendations for health targets:

3. **The Ministry of Health should provide clear messaging to the sector around future health targets and goals.** This includes:
 - Ensuring consistent understanding of expectations relating to any coverage or other goals.
 - Ensuring the sector understands the relationship between goals and any funding associated with the target.

4. **The Ministry of Health should engage with the sector early in the planning of future health targets.** Early engagement would:
 - Ensure the Ministry has a comprehensive understanding of the entire system required to implement a target, including the existing capacity and capability in that system and where this will need to be strengthened and how any gaps will be addressed.
 - Help to build provider clinical and managerial buy-in to the health target(s) which is vital to early uptake.

5. **The Ministry of Health should consider establishing separate coverage goals for high-risk populations.** Providers should be required to report against these coverage goals.

6. **The Ministry of Health should consider including an equity sensitive calibration in funding allocations to support a greater focus on high-risk populations.** This might include, for example, a higher funding level for providers with a higher number of patients in high-risk populations; or any performance-based funding tied to the achievement of the coverage goal for these populations. This would require the Ministry developing a clear understanding of the categories of population likely to be high-risk for any given target.
7. **The Ministry of Health should better utilise national target champions for building clinical support for health targets.** This might include greater support for national target champions to establish nation-wide networks of champions and/or networks at a district and local level.
8. **The Ministry of Health should invest in gaining an understanding of the full costs of delivering health targets, including the costs to health providers.** This should then be reflected in accurate costings for future targets. This will signal to the sector that the Ministry is serious about achieving key goals, and that it is aware of potential costs to the sector.
9. **Before implementing further pay-for-performance funding models, the Ministry of Health should review the growing evidence on these funding models.** In considering whether these are the most appropriate funding models for health targets, the review should pay particular attention to issues of effectiveness and equity.
10. **The Ministry of Health should seek to leverage off investments made in building systems and processes for health targets by utilising these for other targets and interventions.** This would involve working with providers to ensure systems are sufficiently flexible that they can be adapted for wider use and to promote system interoperability.
11. **The Ministry of Health should ensure health targets are well-integrated and take a long-term view.** This includes:
 - a. Ensuring health targets are well-aligned with related interventions, such as appropriate referral services.
 - b. Where relevant, ensuring targets focus on the family/whānau and not only the individual.
12. **When withdrawing or transitioning a health target, the Ministry of Health should send early signals to the sector about future plans for the target.** This will help to sustain the goodwill that has been built and to safeguard the gains made.

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APPENDIX A: EVALUATION RUBRICS

Implementation / Process evaluation

KEQ 1: How well was the <i>Checks</i> health target implemented?				
Criteria	Poor	Almost adequate	Adequate	Excellent
Achievement of coverage target	≤82%	83 – 84%	85 - 89%	≥90%
Achievement of coverage target (equity)	Coverage for at-risk populations (by ethnicity and deprivation) is less than for populations with lower risk, and this ‘gap’ has not meaningfully reduced since 2012.	A reduction in the relative coverage gap between ethnicity groups that are at higher risk than those with relatively lower risk; or a reduction in the relative gap in coverage between Quintile 5 and Quintile 1.	A reduction in the relative coverage gap between ethnicity groups that are at higher risk than those with relatively lower risk; and a reduction in the relative gap in coverage between Quintile 5 and Quintile 1.	Coverage for ethnicities at relatively higher risk is the same or better than for other ethnicities; and coverage for those living in Quintile 5 areas is the same or better than for those living in Quintile 1 areas.
Quality of service delivery	Checks were only delivered opportunistically. Purpose of check may not have been communicated to patient. Follow-up (where indicated) was not a routine aspect of the risk assessment process (possibly stalling until the patient initiated a further consultation).	Checks were mostly delivered opportunistically. Purpose of check may not have been communicated to patient. Follow-up (where indicated) was initiated by the health provider when assessment suggested the patient to be ‘at risk’, with those people encouraged to initiate a consultation.	Checks were delivered both opportunistically and pre-arranged. Purpose of check and result were communicated to patient. Follow-up (where indicated) was initiated by the health provider, with those who were assessed as ‘at risk’ encouraged to initiate consultation, and this was	Checks were delivered both opportunistically and pre-arranged. Purpose of check and result were communicated to patient. Everyone whose risk was assessed was followed up, whether or not their risk was elevated. Those who were assessed as ‘at risk’ were encouraged to initiate a

KEQ 1: How well was the *Checks* health target implemented?

Criteria	Poor	Almost adequate	Adequate	Excellent
			followed up if no appointment was requested.	consultation, and this was followed up if no appointment was requested.
Influence of national initiatives (Target Champion)	Sector was unaware of the role of the Target Champion.	Many in the sector aware of the Target Champion role but did not recognise its value.	Majority of the sector aware of the Target Champion role and reflected positively on their experiences with the Target Champion.	Majority of the sector aware of the Target Champion role and reflected positively on their experiences with the Target Champion. Regions or providers with poorer performance perceived the Target Champion to have provided useful support.
Influence of national initiatives (performance information)	Providers were unaware of their performance.	Providers were aware of their performance (but not how they compared to similar others).	Providers were aware of their performance (including compared to similar others).	Providers were aware of their performance (including compared to similar others). This knowledge was used to drive performance.
Influence of national initiatives (promotion and awareness)	Target population was not aware of social marketing campaign. HPA promotional material was not displayed and information leaflets were not available.	Target population was aware of social marketing campaign but not motivated by it. HPA promotional material was displayed or information leaflets were available but were not actively promoted.	Target population was aware of and motivated by social marketing campaign. HPA promotional material was displayed and information leaflets were available but were not actively promoted.	Target population was aware of social marketing campaign and hard-to-reach and high-risk populations were motivated to seek risk assessment. HPA promotional material was displayed and information

KEQ 1: How well was the *Checks* health target implemented?

Criteria	Poor	Almost adequate	Adequate	Excellent
				leaflets were available and were actively promoted.
Influence of national initiatives (collaboration and learning)	Sector was not aware of collaboration and learning opportunities.	Sector was aware of collaboration and learning opportunities but did not participate in these.	Sector was aware of collaboration and learning opportunities and participated in some of these.	Sector was aware of various collaboration and learning opportunities and participate in several of these.

Impact

KEQ 2: What difference did the <i>Checks</i> health target make for service providers and the people whose risk was assessed?				
Criteria	Poor	Almost adequate	Adequate	Excellent
Sector buy-in	There was weak sector buy-in to the Checks health target and it was not seen as a credible or worthwhile initiative.	There was some sector buy in to the Checks health target but it was mixed: some viewed it as a credible initiative while others did not.	Generally, the sector had buy-in to the Checks health target and considered it a credible initiative.	The sector had strong buy-in to the Checks health target and consider it a very credible and worthwhile initiative.
Consumer understanding and management of CVD risk	People did not generally understand the meaning of the assessments and their CVD risk, or how to manage risks where elevated.	People understood the meaning of the assessments and their CVD risk (i.e. result) but were not confident in how to manage risks where elevated.	People understood the meaning of the assessments and their CVD risk (i.e. result), and were confident in how to manage risks where elevated.	People understood the meaning of the assessments and their CVD risk (i.e. result), and were confident in how to manage risks where elevated, and had taken active steps to do so.
Improved processes and systems	There has been no impact on providers' processes and systems for CVD risk assessment, nor for the ongoing treatment and management of patients with an elevated risk.	Providers have improved their processes and systems for CVD risk assessment, and for the ongoing treatment and management of patients with an elevated risk, but further improvements are needed.	Providers have improved their processes and systems for CVD risk assessment, and for the ongoing treatment and management of patients with an elevated risk.	Providers have significantly improved their processes and systems for CVD risk assessment, and for the ongoing treatment and management of patients with an elevated risk.

Economic

KEQ 3: What have been the economic implications of the <i>Checks</i> health target and is it likely the programme provides good value for money?				
Criteria	Poor	Almost adequate	Adequate	Excellent
Efficiency	Some evidence of wastage of funding. Compliance/ administration costs associated with the Checks target were high.	Minimal evidence of wastage of funding. Compliance/ administration costs associated with the Checks target were not insignificant.	No evidence of wastage of funding. Compliance/ administration costs associated with the Checks target were minimal.	Proactively sought efficiencies in implementation. Compliance/ administration costs associated with the Checks target were minimal.
Impact of financial incentive	Bonuses and incentives had minimal impact on implementation, and probably would have achieved the same result for lower cost.	Bonuses and incentives had some impact on implementation, but may have achieved same result for lower cost.	Bonuses and incentives had an impact on implementation, and would not have achieved the same result for less.	Bonuses and incentives had a significant impact on implementation, and would not have achieved the same result for less.

Sustainability

KEQ 4: To what extent are any gains made through the <i>Checks</i> health target likely to continue?				
Criteria	Poor	Almost adequate	Adequate	Excellent
Sustainability	CVD risk assessment is only embedded in some primary care practices and the positive benefits of the Checks target are likely to reverse in many areas.	CVD risk assessment is embedded in most primary care practices but the positive benefits of the Checks target are likely to reverse in some areas.	CVD risk assessment is widely embedded in primary care practice and the positive benefits of the Checks target are likely to continue.	CVD risk assessment is widely embedded in primary care practice and the positive benefits of the Checks target are likely to continue to improve, including for hard-to-reach groups.

APPENDIX B: INFORMATION SOURCES AND METHODS

Method	Information Sources	Analysis
Document review	<p>PHO Service Agreement DHB Shared Service Data Extract from the contract template between Ministry of Health and DHBs: D: Standard Information Specification; Part 3: Service Schedules; E: Provider Specific Terms and Conditions; F: Service Specification Ministry of Health publications relating to the Health Targets (toolkits, reviews and evaluations) New Zealand research articles on CVD risk, assessment and management and chronic disease management PHO Performance Programme Review CVD Evidence-based Best Practice Guideline New Zealand Primary Care Handbook 2012 (Updated 2013)</p>	<p>The suite of documents was roughly divided in two, with each set being reviewed by one team member, who recorded notes about the relevance and key points from each document. The sets were then swapped and the notes reviewed and supplemented by the other team member.</p> <p>The project team was provided with access to the full suite of documents along with the reviewers' notes. A summary document, with material sorted by emerging themes, was also distributed to the project team.</p> <p>These documents were drawn upon for the background section above in particular.</p>
Literature review	<p>35 full text articles were sourced through a literature search. These are included in the reference list in this report.</p>	<p>The articles were thematically sorted and distributed to two team members for review according to an agreed critical appraisal checklist. The team members then exchanged sets and peer reviewed each other's appraisals.</p> <p>The resulting literature review was distributed to team members for review, and is included in this final evaluation report.</p>

Method	Information Sources	Analysis
Key informant interviews	<p>Ministry of Health (7), including 3 current or previous national Target Champions.</p> <p>Heart Foundation (1)</p> <p>Diabetes New Zealand (1)</p> <p>New Zealand Nurses Organisation (1) (College of Diabetes Nurses)</p> <p>New Zealand Medical Association (1)</p> <p>General Practice New Zealand (1)</p> <p>PHO Alliance (1)</p> <p>National Hauora Coalition (1)</p>	<p>Analysis proceeded as for the case studies, below. Care was taken to keep the two sets of interview notes separate so that differences in perception between the two groups would be apparent.</p>
Case studies	<p>Seven PHO-based case studies were conducted:</p> <ul style="list-style-type: none"> • Central PHO • Kimi Hauora Wairau PHO • Manaia PHO • Ngā Mataapuna Oranga PHO • Pegasus PHO • ProCare Networks PHO • Total Healthcare PHO <p>Each case study included in-depth interviews with people within the PHO, the associated DHB(s), and at one or two practices (nominated by the PHO).</p> <p>In total, 50 people were interviewed, 25 of whom were directly involved in the delivery of the CVDRA to the enrolled population, either presently or earlier in the <i>Checks</i> programme lifecycle.</p> <p>Each interview took approximately one hour.</p>	<p>An interview guide was constructed such that each question related directly to one or more of the KEQs.</p> <p>Five team members carried out the interviews, usually working in pairs. Interview teams included an evaluation specialist and a health professional.</p> <p>Interview notes were paired to the associated question from the interview guide.</p> <p>Once case-study interviewing was complete, team members were assigned a KEQ and provided with the relevant subset of interview data for thematic analysis. This thematic analysis was then further analysed during a group analysis workshop attended by the full evaluation team.</p>

Method	Information Sources	Analysis
On-line survey: Clinician perspectives	<p>An on-line survey consisting of 28 questions plus four demographic indicators was in the field for eight weeks. It was publicised through medical fora including the New Zealand Medical Association e-newsletter, and key personnel at PHOs (such as Clinical Directors) were also asked to distribute a web-link to their local practices.</p> <p>The survey received 114 responses from 21 PHOs. 56 percent of responses came from 5 PHOs, one of which (ProCare) was also a case-study site. Given the size of ProCare, this is not surprising.</p> <p>101 respondents answered the question about their role. 45 were nurses (about half being the Practice Champion); and 41 were doctors (27 of whom were partners at their practice).</p> <p>Of the 103 respondents who reported how long they have worked in primary care, 74 had done so for 12 years or more.</p>	<p>Survey questions were constructed to address specific KEQs. Accumulated responses for each survey question were grouped according to the associated KEQ and incorporated into the reported findings that follow. As above, for the key informant interviews, care was taken to keep the data discrete to enable comparison with the case study and the key informant findings.</p>
Postal survey: Consumer perspectives	<p>A postal survey of 19 questions plus demographic indicators gathered the perceptions of people who had had their CVD risk assessed during 2015 at two practices that were included in the case studies. The practices were purposively selected, based upon researcher perceptions of local capacity to assist in administering the survey.</p> <p>300 survey packs were assembled and sent to the PHO or Lead Practice Nurse for addressing and mailing. This assured participant confidentiality, because there was nothing on the questionnaire that could identify respondents, and patient names and addresses were not provided to the evaluation team.</p> <p>Of the 300 surveys distributed, at least 80 people were categorised in the PHO data as including Māori within their ethnic identity.</p>	<p>As above, survey questions were constructed to address specific KEQs. Accumulated responses for each survey question were grouped according to the associated KEQ and incorporated into the reported findings that follow. Also as above, for the key informant interviews, care was taken to keep the data discrete to enable comparison with the case study and the key informant findings.</p>

Method	Information Sources	Analysis
	<p>70 responses were received, representing a 23 percent response rate. At least 35 respondents were male and at least 27 were female (8 did not indicate their sex). 24 percent of respondents self-identified as Māori. Discounting the 13 respondents who declined to provide their age, the average age of respondents was 62 years, with a range from 40 to 74 years of age.</p>	