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Preface

This report has been prepared for the Ministry of Health by Liz Smith and Michele Grigg from Litmus Ltd, Lisa Davies from Kaipuke Consulting, James Reilly from Statistical Insights Ltd, and Senorita Laukau. We acknowledge and thank all those who provided valuable insights into their experiences of the HPV Immunisation Programme’s implementation and uptake of the vaccine, including health professionals, parents, girls and young women around New Zealand. We also thank our Advisory Group members, Dr Beverley Lawton, Dr Deborah Read and Dr Debbie Ryan for their expert advice and input for the duration of the evaluation.

We especially commend the professionalism and commitment of the Canterbury DHB participants who contributed to this evaluation following the devastating effects of the February 2011 Christchurch earthquake.

We also thank Rayoni Keith, Dr Api Talemaitoga, David Wansbrough and Mishra Suryaprakash, Ministry of Health for enabling access to information and data.

Please contact Liz Smith liz@litmus.co.nz or Michele Grigg Michele@litmus.co.nz if you have any questions about this report.

This report is volume one of the final report. Volume two contains the appendices for this report (Litmus, 2011b).
1. Executive Summary

1.1 Background

In September 2008, the Ministry of Health (the Ministry) launched the Human Papillomavirus (HPV) Immunisation Programme (the Programme) across New Zealand. The Programme aims to reduce cervical cancer in New Zealand by protecting young women against HPV infection. Long-term, the Programme has the potential to prevent cervical cancer for two women every week, saving over 30 lives every year (Ministry of Health, 2008a: 2).

The Programme purpose is to reduce the incidence of HPV infection and the subsequent development of cervical cancer, and to reduce inequalities in cervical cancer. The Programme goal is to implement an equitable, ongoing HPV Immunisation Programme for girls in school year 8 (or age 12 if not delivered in a school-based programme) and an HPV catch-up immunisation programme for young women born on or after 1 January 1990 to help provide protection against HPV infection and the subsequent development of cervical cancer, particularly for those groups most at risk of developing cervical cancer. A number of strategies were used to implement the Programme with the aim of achieving equal opportunity for Māori and Pacific young women.

1.2 Evaluation methodology

The Ministry commissioned Litmus to evaluate the implementation of the Programme to assess how well it is achieving its short-term goals, objectives and implementation priorities. The evaluation focused on Māori, Pacific and other young women and their whānau across two key groups: 1) girls born in 1997 and 2) young women born between 1990 and 1991 who could access the vaccine for free up to 31 December 2011.

Litmus adopted a mixed-method approach and undertook the following activities: national and regional stakeholder interviews; a literature and documentation review; case site visits to nine District Health Board areas; interviews with Māori, Pacific and other girls born in 1997 and in 1990/91; focus groups with Māori, Pacific and other parents/whānau of girls born in 1997; an online survey of young women born in 1990/91; online surveys of General Practitioners (GPs) and Practice Nurses; and analysis of data from the National Immunisation Register (NIR).

Reflecting the short-term goals, objectives and implementation priorities of the HPV Immunisation Programme, the evaluation placed emphasis on assessing whether an equitable vaccination programme was implemented with the long-term view of reducing inequalities in cervical cancer.

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1 Other young women refer to those who do not identify as Māori or Pacific.
1.3 Key findings

Uptake results

Ongoing cohort – girls born in 1997
- Māori girls achieved the target set for the Programme of 65% HPV vaccine uptake at dose 1, and equity of uptake defined as equal or greater vaccine uptake than other girls. However, achievement of target uptake and equity of uptake varied across DHBs.
- Pacific girls exceeded the uptake target set for the Programme and achieved equity of uptake compared to other girls. More consistent target uptake and equity of uptake was achieved for Pacific young women across those DHBs with a high Pacific population.
- Other girls vaccine uptake was significantly under the target for dose 1.

Catch up cohort – young women born between 1990 and 1991
- Young Māori women were around 10% lower than the target for dose 1, 2, and 3, and equity of uptake was not achieved compared to other young women.
- Young Pacific women achieved the target for dose 1 and 2 but not 3, and equity of uptake was achieved for young Pacific women compared to other young women.
- Other young women were close to achieving the target for doses 1, 2, and 3.
- Drop off between doses 1 and 3 was substantial, and was twice as large for Māori and Pacific young women as for other young women.
- Overall uptake levels and equity of uptake were not consistent across DHBs.

Vaccine uptake by delivery mechanism
- Evidence remains inconclusive on whether school-based HPV vaccine delivery results in higher vaccine uptake than primary care.

Design to roll out

The review of the design phase of the Programme demonstrates that, while not easy, particular focus was placed on identifying and incorporating strategies and tactics to foster equal opportunity for Māori and Pacific young women. In summary, the design:
- Explicitly prioritised Māori and Pacific young women.
- Engaged with Māori and Pacific stakeholders nationally and regionally, and used Māori and Pacific Equity Advisory Groups to guide the design and roll out to DHBs.
- Used the existing evidence-base to identify service delivery processes most effective for Māori and Pacific young women and their whānau.
- Had funding to target Māori and Pacific young women and their whānau.
- Ensured monitoring of uptake by Māori and Pacific young women, and sought to resolve monitoring issues relating to the NIR’s ethnicity data.
Review of the design phase of the HPV programme identified key lessons, including:

- Managing relationships with external stakeholders and advisors, and recognising the role of conflict in seeking system change. The Ministry therefore needs to enhance the management of disagreement, and ensure consistent decision-making.

- Having effective communication strategies when communicating about a vaccine for a sexually transmitted infection (STI) to parents. Strategies need to be cognisant of low health literacy for Māori and Pacific girls and young women and their whānau. Communication strategies targeting a particular ethnic group are unlikely to resonate with other groups.

- Enhancing IT systems to facilitate identification, targeting, follow-up and monitoring at a regional and local level, and in particular improving the school-based vaccination system (SBVS), and the Practice Management System (PMS) and NIR interface for the HPV vaccine.

**Programme delivery**

Implementing the Programme at a DHB level required the co-ordination and integration of a complex system of interdependent components. Across the nine DHB case studies, equitable and above target vaccine uptake by Māori, Pacific and in some instances other girls appears to be more marked where there is evidence of integration and information sharing across these components (i.e. DHB Planning and Funding; HPV Team/Coordinator; school-based delivery; primary care delivery; and whānau engagement). Conversely, lower vaccine uptake is marked where there is limited integration.

From the DHB case analysis, the following variables were identified as appearing to contribute to high and equitable uptake of the HPV vaccine for young Māori and Pacific women:

- Effective DHB, school-based and primary care leadership driving a focus on equitable uptake as well as a shared understanding of health equity and approaches.

- Engagement with Māori and Pacific health and community leaders at governance, management, operational and community levels.

- Equitable funding to enable targeted strategies.

- Collaborative, dedicated teams across and within delivery components implementing multiple and targeted strategies to achieve equitable uptake.

- Trusted and knowledgeable whānau engagement to create a supportive environment as well as integration of whānau engagement with the vaccination process.

- A number of routes through which eligible girls access the vaccine – school-based, primary care and other alternative providers, to maximise opportunity.

- Integration and monitoring across all service delivery components to enable modification of approaches to achieve desired results – a planned but flexible approach.

Key areas to improve the implementation of the HPV Immunisation Programme are:

- Development of evidence-based strategies to address the misinformation about the HPV vaccine (and more generally other vaccines).
Increased integration of school-based and primary care delivery. Both delivery mechanisms are integral to ensuring high vaccine uptake, particularly as a significant proportion of other girls in the ongoing cohort are delaying uptake.

Identifying possible health equity mechanisms that could be used in primary care delivery, including the role of and levers available to PHOs. Vaccine uptake may be more effective if funding for vaccination in general practice covered delivery costs.

**Girls, young women and parental response**

Feedback received from parents, girls and young women in this evaluation reflects findings from international research on the reasons for having or not having the HPV vaccine.

**Parents and girls born in 1997**

- Awareness and understanding of the HPV vaccine was lower amongst Māori and Pacific parents than Pākehā parents. However, Pākehā parents did not perceive the HPV vaccine as relevant to their daughters due to their perceived lack of sexual maturity and the targeting of the communication strategy.

- Mothers were the key decision-maker, although for Māori and Pacific girls the wider whānau also influenced the vaccination decision. For Pacific and Pākehā parents, health professions support (or lack of support) also influenced their decision.

- Pākehā parents tended to be confident in their ability to make a decision either for or against having the vaccine. In contrast, Māori and particularly Pacific parents tended to follow advice received from a trusted source with little consideration of written information (i.e. the consent form).

- Across all ethnicities, the reasons to vaccinate were similar: protection from cervical cancer, whānau exposure to cervical and other cancers, the sense of ‘doing the right thing’ and the vaccine is free.

- Parents who decided not vaccinate their daughters fell into four broad groups:
  - those opposed to all immunisations
  - those not opposed to immunisations but who face access barriers, in particular Māori and Pacific parents noted their lack of knowledge about the vaccine
  - those parents, in particular Pākehā parents, who are delaying the decision until their daughters are more mature
  - those parents who oppose the HPV vaccine due to concerns about the link between the vaccine and sexual activity, efficacy and side-effects, vaccination fatigue, their daughters' fear of needles and inconsistency with religious beliefs.

The greatest opportunity to increase the HPV vaccine uptake for the ongoing cohort is to target parents who are delaying the decision to address low uptake by Pākehā girls.

**Young women born in 1990-1991**

- Amongst Pākehā young women born in 1990/91, there is recognition of the benefits of the vaccine. In contrast, Māori young women born in 1990/91 appear to be less aware that they are eligible to receive the vaccine.
In the main, young women across ethnicities decided for themselves whether or not they will have the vaccine. Mothers also have a strong influence particularly for Māori and Pacific young women.

Reasons to vaccinate are the same as for girls born in 1997: protects against cervical cancer, exposure to cancer in family and the vaccine is free.

Reasons for not vaccinating include: a lack of awareness about the vaccine, particularly for young Māori women; not getting round to having it especially for young Pākehā women; a false perception that only those who are sexually promiscuous need it; a fear of needles; and concerns about efficacy and side effects.

Perceptions on the ease of accessing general practice to receive the vaccine were mixed.

Most unvaccinated young women were not aware they would be no longer eligible to receive the vaccine for free after 31 December 2011. When aware that they would have to pay around $500 for the vaccine, less than half said they would get it.

The greatest opportunity to increase the HPV vaccine uptake is to target those born in 1992/96, in particular Māori young women who not aware of the vaccine, as well as facilitating Pākehā young women who are not against the vaccine to have it.

Other insights

Those vaccinated are aware of the need for cervical smears when older but will need to be reminded.

In maintaining equity of uptake for Māori and Pacific girls, consideration is needed on how to effectively address the information needs of those with low health literacy. The presentation and layering of information is particularly important.

1.4 Conclusions

An equitable Programme was implemented for Māori and Pacific girls born in 1997. The Programme has successfully targeted and tailored implementation to achieve target uptake and equity of uptake by those women who experience the greatest burden of cervical cancer and who had the perceived highest risk of missing out on the Programme, as well as those with the greatest potential to benefit from the vaccine (ie girls who are least likely to have had contact with the virus). Positively, equitable uptake appears to be holding for the 1998 birth cohort.

Of concern is that other girls born in 1997, who represent two thirds of the birth cohort, have not achieved target vaccine uptake. Evidence suggests that Pākehā parents of non-vaccinated girls born in 1997 are in the main not opposed to the HPV vaccine but have decided to delay uptake until their daughters are in their late teens. Other Pākehā parents perceive the HPV vaccine is not for their daughters, an unintended consequence of the Programme’s targeting of Māori and Pacific girls.

Equity results for 1990/91 cohort are mixed. Target uptake and equity of uptake was achieved for Pacific young women, but not for Māori young women. The reasons for this variation in result is unclear, and multi-faceted (e.g. reflecting differing population locations and density, low health literacy, lack of health equity strategies in general practice).
The key challenge for the Programme going forward is increasing uptake of the vaccine by other girls born in 1997 and in ongoing birth cohorts, while maintaining equity of uptake by Māori and Pacific girls. Consideration is also needed on the extent to which further resource is used to increase uptake in the catch up cohort for Māori and other girls, given the HPV vaccine is more effective before contact with the virus.

1.5 Communication strategy reflections

An integrated communication strategy has a key role in the effective implementation of an immunisation programme. For the HPV Immunisation Programme, an effective communication strategy is defined as one that enables the targeted groups and their family/whānau to make an informed decision about whether or not to receive the vaccine. Drawing from the evaluation findings, the following are reflections on communication strategies to inform future immunisation programmes:

- **An integrated communication strategy** is needed which acknowledges the range of stakeholders directly and indirectly involved, the environment in which the vaccine is being promoted, the disease the vaccine is seeking to prevent, and the level of urgency to act.

- **Health sector readiness** to ensure those delivering the vaccine and the wider health sector are aware of the disease (e.g. HPV and cervical cancer), the vaccine and its benefits as well as risks and contraindications. Awareness and understanding across the wider health sector is important as their support (or not) will influence the target groups’ decision.

- **The goal of achieving equity of uptake** needs to be explicitly and clearly communicated nationally, regionally and locally to facilitate appropriate resource allocation, systems development and monitoring of results.

- **Synchronisation of the mass media campaign with local community awareness raising activities.** The role of the mass media campaign is to create widespread awareness of the protection offered by the vaccine, while local community awareness raising activities seek to influence behavioural change. Use of a mass media campaign alone will not effectively reach Māori and Pacific girls and their family/whānau. Consideration of ongoing mass media activities beyond the initial launch of the programme is also needed.

- **Tailored and targeted strategies** are needed to reach and engage with target groups and achieve equity goals. The evaluation of the HPV Immunisation Programme reinforced that communications work best when they reflect the values of the target group. It cannot be assumed therefore that communications targeting Māori and Pacific people will resonate with Pākehā. This is an area requiring further research.

- **Informed consent is central to an effective immunisation programme.** Communications strategies need to be developed that are cognisant of the low levels of health literacy amongst Māori, Pacific and other populations. To enable informed consent, information needs to be layered: level 1 - the need and key vaccine benefits together with reassurances the vaccine is safe and works; level 2 - key information needed to inform a decision to act or not, e.g. vaccine efficacy, side effects, duration of protection; level 3 - detailed information with links to relevant and credible research.

- **A coordinated response to anti-immunisation lobby activities** by the Ministry and DHBs. Developing this response is also an area for further research.
2. Introduction

2.1 Background

In September 2008, the Ministry of Health (the Ministry) launched the Human Papillomavirus (HPV) Immunisation Programme (the Programme) across New Zealand. The Programme aims to reduce cervical cancer in New Zealand by protecting young women against HPV infection. Long-term, the Programme has the potential to prevent cervical cancer for two women every week, saving over 30 lives every year (Ministry of Health, 2008a: 2).

Māori have the highest rate of cervical cancer and the lowest immunisation rate of any ethnic group in New Zealand. While disparities in cervical cancer incidence and mortality appear to be reducing, Māori women still experience substantially higher levels of disease and mortality (Brewer, McKenzie et al 2007, in Ministry of Health, 2008a). In 2008, Pacific children had lower uptake of childhood immunisations compared to European children and there were substantially lower rates of cervical screening for Pacific women. A key risk for the Programme was that inequalities for Māori and Pacific could be widened if the HPV vaccine was rolled without clear focus on equity for Māori and Pacific women (Ministry of Health, 2008a).

In this context, the Programme purpose is to reduce the incidence of HPV infection and the subsequent development of cervical cancer, and to reduce inequalities in cervical cancer. The Programme goal is to implement an equitable, ongoing HPV Immunisation Programme for girls in school year 8 (or age 12 if not delivered in a school-based programme) and an HPV catch-up immunisation programme for young women born on or after 1 January 1990 to help provide protection against HPV infection and the subsequent development of cervical cancer, particularly for those groups most at risk of developing cervical cancer. A number of strategies were used to implement the Programme to achieve equal opportunity for Māori and Pacific young women.

Appendix 1 provides an overview of the intended implementation of the HPV Immunisation Programme2.

2 Appendices for this report can be found in Volume 2 of the report (Litmus, 2011b).

2.2 Evaluation overview

The Ministry commissioned Litmus to evaluate the implementation of the Programme to assess how well it is achieving its short-term goals, objectives and implementation priorities. This involved undertaking a process and outcomes evaluation of the implementation of the HPV Immunisation Programme. The evaluation applied a health equity lens to the Programme’s implementation in relation to process and outcomes for Māori and Pacific young women and their whānau3.

The evaluation focused on Māori, Pacific and other4 young women and their whānau across the two key groups:

3 Appendix 2 lists the ten questions used by the Health Equity Assessment Tool to prompt users to consider health inequities.

4 Other young women refer to those who do not identify as Māori or Pacific.
- girls born in 1997 (i.e. those girls in school year 8 in 2009 and 2010 where the school-based delivery of the vaccine is used, and those aged 12 if delivered via primary care)
- young women born between 1990 and 1991 who can access the vaccine for free up to 31 December 2011.

In the evaluation, little focus was placed on young women born between 1992 and 1996 as they can access the vaccine for free up to their 20th birthday (i.e. 31 December 2012 – 31 December 2016), and they may not have been offered the HPV vaccine during the evaluative period.

The evaluation examined the implementation of the HPV Immunisation Programme between 1 September 2008 and 31 December 2010.

The evaluation objectives were:
- to understand the impact (qualitative and quantitative) of the implementation on key stakeholders, including: young Māori women, their whānau and communities; young Pacific women, their families and communities; all young women, their families and communities; Māori service providers; Pacific service providers; all service providers; and the general public
- to identify the implementation’s strengths and weaknesses, particularly what is working well and not well for: Māori girls; Pacific girls; and all eligible girls
- to verify that the implementation is progressing towards the achievement of the Programme’s goals, specifically around equity
- to provide valid comparisons between the catch-up programme and the ongoing cohort to inform future immunisation programmes
- to provide valid comparisons between implementation models (school-based programme and primary health care) to inform future immunisation programmes
- to describe key findings and conclusions to inform future immunisation programmes.

The evaluation does not focus on the impact of the HPV Immunisation Programme on cervical abnormalities and cervical cancer.

The evaluation was structured into two phases.
- Phase One involved a review of existing information, research and data, and interviews with key national stakeholders to understand the design and roll out of the Programme from the Ministry to the District Health Boards (DHBs). For more details, refer to the Phase One Evaluation Plan (Litmus, 2010a) and HPV Immunisation Programme Implementation Evaluation Phase One Report (Litmus, 2011a).
- Phase Two focused on the collection of primary data from young Māori, Pacific and other eligible young women and their whānau/families and communities, Māori, Pacific and other service providers, key DHB staff, and other key stakeholders at a community and regional level to inform the evaluation objectives. For more details, refer to the Phase Two Evaluation Plan (Litmus, 2010b).

Ethical approval for the evaluation was granted by the Multi-Region Health and Disability Ethics Committee, reference MEC/10/085/EXP.

Appendix 3 contains the evaluation questions for Phases One and Two. Appendix 4 lists the evaluation team members.
2.3 Overview of evaluation approach

Litmus adopted a mixed-method approach and undertook the following activities:

- **thirty-three national and regional stakeholder interviews** to identify whether the Programme was implemented as intended and health equity approaches were used
- **a literature review** to identify implementation models and coverage trends in other countries, their successes and challenges to vaccine uptake
- **a documentation review** of research, Ministry documents and reports, DHB documents and reports, and financial information on the Programme implementation
- **case site visits to nine District Health Board areas** (following a telephone survey of 56 DHB managers across all DHBs) using a comparative case study methodology to understand the critical success factors in the uptake of the HPV vaccine particularly in achieving equity of uptake for Māori and Pacific girls
- **forty paired interviews with Māori, Pacific and other girls born in 1997 and Māori, Pacific and other young women born in 1990/91** to understand perceptions of the HPV vaccine, the decision-making process, vaccination experience, and preferred service delivery mechanism
- **sixteen focus groups with Māori, Pacific and other parents/whānau of girls born in 1997** to understand perceptions of the HPV vaccine, involvement and role in the decision-making process, and preferred service delivery mechanism(s)
- **an online survey of 226 young women born in 1990 and 1991** to measure their perceptions of, knowledge of and decision making process about the HPV vaccine, their preferred delivery mechanism(s), vaccination experience and post-vaccine knowledge
- **online surveys of 253 General Practitioners (GPs) and 355 Practice Nurses** to measure their awareness, knowledge, attitudes and administration of the vaccine and perceptions of the effectiveness of the different delivery models in reaching Māori and Pacific girls
- **analysis of data from the National Immunisation Register (NIR).**

Methodological details of each of the evaluation activities are contained in Appendix 5. All evaluation tools are in Appendix 6.

2.4 Analysis and report structure

Reflecting the short-term goals, objectives and implementation priorities of the HPV Immunisation Programme, emphasis has been placed on assessing whether an equitable vaccination programme was implemented with the long-term view of reducing inequalities in cervical cancer. In this evaluation, health inequities are defined as “differences which are unnecessary and avoidable, but in addition are considered unfair and unjust.” (Whitehead, 1992, cited in Reid and Robson, 2006). As noted by Loring (2007) a health equity approach requires sustained effort and specific strategies in all phases including policy and

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5 A survey of Public Health Nurses was not undertaken as no accessible online database existed that would enable the cost-effective surveying of this important provider group.
programme design, workforce training, implementation, data collection and evaluation. In this context, health equity analysis focused on the systems, processes and structures of the HPV Immunisation Programme.

Kaipuke (unpublished) has developed an evaluative framework to assess the effective delivery of Government services to Māori. The framework draws on a number of methodologies and guidelines developed in New Zealand over the past two decades, to assist state sector agencies to assess the effectiveness of their services for Māori (Ministry of Health 1995, Office of the Auditor General 1998, Te Puni Kōkiri 1998, State Services Commission 2003 a & b, Te Roopu Rangahau a Eru Pomare et al 2004). Kaipuke’s emerging evaluative framework has been adopted and adapted to triangulate this evaluation’s multiple data streams and to provide insightful findings. In summary, the evaluative framework focuses on:

- results achieved for Māori (and, for the purpose of this evaluation, Pacific people)
- design quality to achieve improved outcomes for Māori and Pacific people
- delivery effectiveness contributing to desired results for Māori and Pacific people
- response from Māori and Pacific people to the Programme's design and implementation.

The report presents the uptake results for the HPV vaccine and then demonstrates how the design and delivery of the Programme contributed to these results for Māori, Pacific and other young women. More specifically:

- Chapter 3 presents the NIR uptake results for the HPV vaccine up to 31 December 2010 to assess whether uptake amongst Māori and Pacific young women is equal to other girls and to present other key uptake analysis and comparisons
- Chapter 4 highlights the successes and lessons from the design to roll out phase of the Programme which contributed to the uptake results and highlights key strengths and lessons for future immunisation programmes
- Chapter 5 showcases health providers perceptions of the vaccine and the Programme, and assesses the implementation and delivery of the Programme from a systems and service component level
- Chapter 6 details Māori, Pacific and other parents and girls response to the Programme focusing on their awareness, knowledge and decision-making about the HPV vaccine and their post-vaccination knowledge, as well as strategies to increase uptake
- Chapter 7 presents the evaluation conclusions.

2.5 Evaluation limitations

The Evaluation Team is confident that the report accurately represents the views and perceptions of participants who contributed to the evaluation and is supported by the wider literature and data. The consistency of themes across participants and their support through the wider surveys, data and documentation strengthens and validates the findings presented.

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6 Appendix 7 contains an overview of the evaluation framework.
In considering the findings of this evaluation, a number of limitations are acknowledged:

- Stakeholders who contributed to the case studies were identified by the DHBs. It is possible therefore that some wider issues may not have been identified due to sample selection bias.

- The online survey of GPs, Practice Nurses and young women born in 1990 and 1991 are not representative of these populations in New Zealand. However, the profile of the achieved sample of GPs and Practice Nurses is reflective of the wider populations. Findings from these surveys are therefore indicative and not definitive. Positively, the findings of the online surveys are consistent with themes emerging from qualitative data streams.

- Analysis of data from the NIR was limited by inconsistent ethnicity coding, missing values for urbanisation and deprivation, movement of young women across DHBs, small populations of eligible Pacific young women in some DHBs, and the observational nature of the data.

- On completion of the evaluation report, it was found that Bay of Plenty DHB had issues messaging HPV uptake rates from the school-based vaccination system (SBVS) to the NIR. At 31 January 2012, uptake of dose 1 of the HPV vaccine by girls born in 1997 was: 59% Māori, 40% Pacific\(^7\), and 38% other girls. This is an increase from the results presented in this report for Bay of Plenty where 53% Māori, 30% Pacific, and 32% other girls are reported as having received dose 1 of the HPV vaccine. However, uptake achieved remains below the target of 65% uptake of dose 1 across all groups. The reconciliation does not therefore alter the key findings in this report.

- No cost and benefit analysis of the Programme was undertaken as this was not in the evaluation scope. Future analysis of costs and benefits may further strengthen the assessment of the cost effectiveness of the differing delivery models.

### 2.6 Glossary of terms

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

- Girls refer to females aged 12 years or in school year 8, and females born in 1997.


- Parents refer collectively to parents and caregivers of girls and young women as indicated.

- Ministry refers to the Ministry of Health.

- Programme refers to the HPV Immunisation Programme.

- Ongoing cohort refers to girls aged 12 or in school year 8. In the report, reference to the ongoing cohort mainly refers to girls born in 1997.

- Catch up cohort refers to young women born between 1990 and 1996.

- School-based vaccinator refers to public health nurses and other nurse vaccinators who come into the school to facilitate the vaccination process and give the HPV

\(^7\) Care is needed in the interpretation of these results as there are only 40 Pacific girls born in 1997 living in the Bay of Plenty region who are eligible to receive the HPV vaccine.
vaccine. School-based vaccinators are not the school nurses based at colleges and some low decile primary and intermediate schools.

- Cohort refers to particular birth year or years, usually girls born in 1997 or young women born in 1990/91.
- Uptake refers to those who have had dose one or more of the HPV vaccine.

Acronyms used include:

- CAR – Community Awareness Raising
- DHB – District Health Board
- HPV – Human Papillomavirus
- MEAG – Māori Equity Advisory Group
- MeNZB™ – Meningococcal B
- NIR – National Immunisation Register
- PEAG – Pacific Equity Advisory Group
- PHNs – Public Health Nurses
- PHOs – Primary Health Organisations
- SBVS – School-based vaccination system (an IT system to enable delivery of vaccines in schools)
- STI – Sexually transmitted infection.
3. Uptake of HPV Vaccine

3.1 Introduction

Ultimately, the effectiveness of the HPV Immunisation Programme will be judged by the impact it has on reducing cervical abnormalities and cancer among New Zealand women, and specifically for Māori and Pacific women. However, these outcomes will take time to eventuate, and other measures of success are needed in the short-term. Success for the Programme was defined as being demonstrated by differentiated strategies across all phases of the Programme’s implementation focused on equity in process and outcomes for young Māori and Pacific women and their whānau. Health inequities will be known to have been reduced through the implementation of the HPV Immunisation Programme when:

- Māori and Pacific young woman have equal opportunity to benefit from the Programme as other young women in New Zealand (discussed in sections 4 and 5)
- Coverage for young Māori women across the three doses is equal to other young women
- Coverage for young Pacific women across the three doses is equal to other young women.

This section presents analysis results based on NIR data for HPV immunisations between September 2008 and December 2010. Combined with Census-based population estimates, this provides a measure of the uptake of the HPV vaccine, both overall and broken down by demographic variables. The NIR also records the delivery system for each dose (school-based or primary care). No corresponding population information is available, so uptake cannot be analysed directly by delivery system, but indicative results are provided.

The analysis focuses on uptake results for three birth cohorts: girls born in 1997, and young women born in 1990 and 1991. The analysis for these birth cohorts is based on the assumption that by 31 December 2010, girls and young women in these birth years will have been offered the opportunity to have the HPV vaccine, and if having, likely to have received three doses. This section presents:

- Uptake by birth year and ethnicity
- Uptake by birth year and ethnicity across DHBs
- Comparison of vaccination delivery mechanisms
- Vaccination provider by ethnicity
- Summary of key uptake findings.

---

8 The HPV vaccination uptake rates calculated here assume that variables are measured in the same way between the Census and the NIR. There were both conceptual and practical difficulties in making these calculations. For instance, young women who moved between DHB areas during the study period were assigned a single DHB at the end, which may not match their residence for some of the vaccinations. Young women’s reported ethnicity may also vary depending on who fills in the relevant forms and the context in which they are completed.
3.2 Uptake by birth year and ethnicity

Table 1 below details the target HPV vaccination uptake rates for Māori, Pacific and other young women in three birth year cohorts, across the three doses, to December 2010.

As shown in Table 2 and Figure 1 below, uptake rates for Māori girls born in 1997 approached or slightly exceeded the targets. Uptake rates for Pacific girls born in 1997 were well above the target.

In contrast, uptake rates for other girls born in 1997 did not meet targets. Uptake rates were noticeably lower amongst other girls born in 1997 than those born in 1990/91. These findings reflect a reported inclination among Pākehā parents for their daughters to be vaccinated in their late teen years (refer section 6.2).

The target uptake rates for Pacific and other young women born in 1990/91 were approached and sometimes exceeded, while the uptake rates for young Māori women in that cohort fell short of the target. The Programme’s priority was to deliver the vaccine to the ongoing 1997 birth cohort, in particular achieving equity of uptake for Māori and Pacific girls. Both Māori and Pacific girls born in 1997 had uptake rates that were substantially higher than the rates achieved for Māori and Pacific young women born in 1990 and 1991.

Table 1: Target HPV vaccination uptake rates by birth year, ethnicity and dose

<table>
<thead>
<tr>
<th>Cohort</th>
<th>Ethnicity</th>
<th>Dose 1</th>
<th>Dose 2</th>
<th>Dose 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>Māori</td>
<td>65%</td>
<td>60%</td>
<td>55%</td>
</tr>
<tr>
<td>1997</td>
<td>Pacific</td>
<td>65%</td>
<td>60%</td>
<td>55%</td>
</tr>
<tr>
<td>1997</td>
<td>Other</td>
<td>65%</td>
<td>60%</td>
<td>55%</td>
</tr>
<tr>
<td>1990-1991</td>
<td>Māori</td>
<td>50%</td>
<td>45%</td>
<td>40%</td>
</tr>
<tr>
<td>1990-1991</td>
<td>Pacific</td>
<td>50%</td>
<td>45%</td>
<td>40%</td>
</tr>
<tr>
<td>1990-1991</td>
<td>Other</td>
<td>50%</td>
<td>45%</td>
<td>40%</td>
</tr>
</tbody>
</table>

These compare with the vaccination uptake percentages in Table 2 achieved as at 31 December 2010 for young women from each ethnicity and cohort, across the three doses.

Table 2: Achieved HPV vaccination uptake rates by birth year, ethnicity and dose

<table>
<thead>
<tr>
<th>Cohort</th>
<th>Ethnicity</th>
<th>Dose 1</th>
<th>Dose 2</th>
<th>Dose 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>Māori</td>
<td>64%</td>
<td>61%</td>
<td>56%</td>
</tr>
<tr>
<td>1997</td>
<td>Pacific</td>
<td>76%</td>
<td>75%</td>
<td>70%</td>
</tr>
<tr>
<td>1997</td>
<td>Other</td>
<td>43%</td>
<td>42%</td>
<td>40%</td>
</tr>
<tr>
<td>1997</td>
<td>Total</td>
<td>51%</td>
<td>50%</td>
<td>46%</td>
</tr>
<tr>
<td>1990-1991</td>
<td>Māori</td>
<td>40%</td>
<td>34%</td>
<td>28%</td>
</tr>
<tr>
<td>1990-1991</td>
<td>Pacific</td>
<td>51%</td>
<td>45%</td>
<td>36%</td>
</tr>
<tr>
<td>1990-1991</td>
<td>Other</td>
<td>49%</td>
<td>46%</td>
<td>42%</td>
</tr>
<tr>
<td>1990-1991</td>
<td>Total</td>
<td>48%</td>
<td>44%</td>
<td>39%</td>
</tr>
</tbody>
</table>
These same figures are displayed in the following graph.

**Figure 1: Achieved HPV vaccination uptake rates by birth year, ethnicity and dose**

![Graph showing HPV vaccination uptake rates by birth year, ethnicity, and dose.](image)

### 3.3 Uptake by birth year and ethnicity across DHBs

As shown in Figures 2, 3 and 4, there is significant variation across DHBs in the uptake of the HPV vaccine by birth year and ethnicity.

The HPV vaccination uptake rates by DHB and ethnicity as at 31 December 2010 for girls born in 1997, averaged over the three doses, are shown in Figure 2. The vertical lines indicate the national uptake rate for girls born in 1997 for each ethnic group. In two DHBs (Wairarapa and Otago), the number of vaccinations was slightly higher than the estimated number of young Pacific women in the 1997 birth cohort, perhaps due to rounding. The estimated uptake rate for these two cases is shown as 100%. Appendix 8 lists vaccine uptake by DHB, cohort and ethnicity.

Note: Care is needed in the interpretation of uptake rates for Pacific girls and young women born in 1997 and 1990/91 in DHBs with small Pacific populations. The following DHBs had an estimated Pacific population of 50 or less in at least one cohort: Bay of Plenty, Hawkes Bay, Lakes, MidCentral, Nelson Marlborough, Northland, Otago, South Canterbury, Southland, Tairawhiti, Taranaki, Wairarapa, West Coast, and Whanganui.
Figure 2: Vaccine uptake by ethnicity and DHB for girls born in 1997

The following chart displays the corresponding figures for young women born in 1990/91.

Figure 3: Vaccine uptake by ethnicity and DHB for young women born 1990/91

The following charts show the uptake figures for each DHB, by birth year, ethnicity, and dose.
Figure 4: Vaccine uptake for each DHB, by birth year, ethnicity and dose
3.4 Comparison of vaccination delivery mechanisms

HPV vaccinations are delivered either through school-based delivery or through primary care\(^9\). The Ministry’s preference was for school-aged girls to have the HPV vaccine in school, and young women who had left school to receive the vaccine through primary care. All DHBs, with the exception of Canterbury DHB and South Canterbury DHB in 2010, ran a school-based vaccination programme for HPV for girls and young women in schools. The Ministry also intended that girls and young women go to one source for all three vaccines. For Canterbury DHB and South Canterbury DHB in 2010 the HPV vaccine was delivered through primary care.

There is substantial interest in whether the vaccination uptake rate is affected by the delivery method. However, the HPV vaccination system does not make this an easy question to answer. The method (or methods) by which the vaccination was offered to each young woman was determined by a variety of practical constraints, including the approach taken by their DHB. This is a natural result of attempting to make the vaccination as accessible as possible. However, it does mean that delivery method is confounded with many other factors. The data are therefore not straightforward to interpret.

Another complication is that there is no population data on how many young women were offered the vaccinations through each delivery method (some will have been given both options at different times), so it is not possible to simply calculate uptake rates by delivery method. Instead the analysis examines relationships between these outcomes and other variables, and whether these might imply any relationship between delivery method and uptake.

As expected due to young women leaving school, the proportion of HPV vaccinations up to 31 December 2010 provided through schools to girls born in 1997 was much higher than for young women born in 1990/91 (refer to Table 3).

Note: Tables 3 – 8 are based on girls and young women born in 1997 and 1990/91.

Table 3: Delivery method by birth year

<table>
<thead>
<tr>
<th>Birth Year</th>
<th>Primary care</th>
<th>School-based</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>12%</td>
<td>88%</td>
</tr>
<tr>
<td>1990-1991</td>
<td>80%</td>
<td>20%</td>
</tr>
</tbody>
</table>

As shown in Table 4 below, while there is some variation between DHBs, a similar pattern to that in Table 3 applies in most DHBs.

- School-based delivery predominated among girls born in 1997, while the majority of HPV vaccinations were provided through primary care for young women born in 1990/91.
- A proportion of girls born in 1997 living in DHBs with a school programme, opted to have the vaccine in primary care. This reflects findings from the qualitative research were parents of girls fearful of needles or anxious about the vaccine sought to have the vaccine at their General Practice (refer to section 6.2.7).
- Reflecting the historical delivery of the BOOSTRIX vaccine via primary care in the South Island, all South Island DHBs, with one exception, had higher primary care

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\(^9\) A small proportion of young women in the Canterbury and Otago DHBs were recorded as being vaccinated through a third type of provider, namely a university. These have been combined with primary care in the analyses presented here.
delivery rates among girls born in 1997 than every North Island DHB. (The exception was Taranaki at 9% beating Otago at 8%).

- In Canterbury DHB, as expected, most vaccinations were conducted through primary care in both cohorts. The girls and young women in Canterbury DHB who were recorded as receiving the vaccine through a school-based programme will have received it in another DHB before moving into the region.
- In South Canterbury DHB vaccination delivery reflects a school-based programme being run in 2009 and not in 2010.
- For young women born in 1990-1991, while the majority received their vaccines through primary care, a proportion were still at school and received the vaccine via school-based delivery.

Table 4: Vaccination delivery method by DHB and birth year up to 31 December 2010

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary care</td>
<td>School-based</td>
<td>Primary care</td>
<td>School-based</td>
</tr>
<tr>
<td>Auckland</td>
<td>77%</td>
<td>23%</td>
<td>5%</td>
<td>95%</td>
</tr>
<tr>
<td>Bay of Plenty</td>
<td>79%</td>
<td>21%</td>
<td>6%</td>
<td>94%</td>
</tr>
<tr>
<td>Canterbury</td>
<td>95%</td>
<td>5%</td>
<td>99%</td>
<td>1%</td>
</tr>
<tr>
<td>Capital and Coast</td>
<td>83%</td>
<td>17%</td>
<td>7%</td>
<td>93%</td>
</tr>
<tr>
<td>Counties Manukau</td>
<td>77%</td>
<td>23%</td>
<td>4%</td>
<td>96%</td>
</tr>
<tr>
<td>Hawkes Bay</td>
<td>62%</td>
<td>38%</td>
<td>5%</td>
<td>95%</td>
</tr>
<tr>
<td>Hutt Valley</td>
<td>83%</td>
<td>17%</td>
<td>7%</td>
<td>93%</td>
</tr>
<tr>
<td>Lakes</td>
<td>79%</td>
<td>21%</td>
<td>12%</td>
<td>88%</td>
</tr>
<tr>
<td>MidCentral</td>
<td>83%</td>
<td>17%</td>
<td>5%</td>
<td>95%</td>
</tr>
<tr>
<td>Nelson Marlborough</td>
<td>81%</td>
<td>19%</td>
<td>10%</td>
<td>90%</td>
</tr>
<tr>
<td>Northland</td>
<td>79%</td>
<td>21%</td>
<td>6%</td>
<td>94%</td>
</tr>
<tr>
<td>Otago</td>
<td>76%</td>
<td>24%</td>
<td>8%</td>
<td>92%</td>
</tr>
<tr>
<td>South Canterbury</td>
<td>91%</td>
<td>9%</td>
<td>42%</td>
<td>58%</td>
</tr>
<tr>
<td>Southland</td>
<td>73%</td>
<td>27%</td>
<td>12%</td>
<td>88%</td>
</tr>
<tr>
<td>Tairawhiti</td>
<td>68%</td>
<td>32%</td>
<td>4%</td>
<td>96%</td>
</tr>
<tr>
<td>Taranaki</td>
<td>82%</td>
<td>18%</td>
<td>9%</td>
<td>91%</td>
</tr>
<tr>
<td>Waikato</td>
<td>78%</td>
<td>22%</td>
<td>4%</td>
<td>96%</td>
</tr>
<tr>
<td>Wairarapa</td>
<td>90%</td>
<td>10%</td>
<td>3%</td>
<td>97%</td>
</tr>
<tr>
<td>Waitemata</td>
<td>80%</td>
<td>20%</td>
<td>6%</td>
<td>94%</td>
</tr>
<tr>
<td>West Coast</td>
<td>81%</td>
<td>19%</td>
<td>15%</td>
<td>85%</td>
</tr>
<tr>
<td>Whanganui</td>
<td>81%</td>
<td>19%</td>
<td>8%</td>
<td>92%</td>
</tr>
</tbody>
</table>
As shown in Table 5, Māori and Pacific young women in both cohorts were more likely to be vaccinated at school than other young women.

Table 5: Delivery method by ethnicity

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary care</td>
<td>School-based</td>
</tr>
<tr>
<td>Māori</td>
<td>78%</td>
<td>22%</td>
</tr>
<tr>
<td>Pacific</td>
<td>68%</td>
<td>32%</td>
</tr>
<tr>
<td>Other</td>
<td>83%</td>
<td>17%</td>
</tr>
</tbody>
</table>

In both cohorts, school-based vaccinations were more prevalent in areas of high deprivation (refer to Table 6).10 This may reflect, particularly for parents of girls born in 1997 in low deprivation areas, a preference to use primary care as an alternative delivery mechanism, if they are anxious about the vaccine or aware their girl dislikes needles (refer section 6.2.7). These parents, with the exception of time, have few if any barriers in accessing primary care.

Table 6: Delivery method by area deprivation

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary care</td>
<td>School-based</td>
</tr>
<tr>
<td>1 (low)</td>
<td>84%</td>
<td>16%</td>
</tr>
<tr>
<td>2</td>
<td>84%</td>
<td>16%</td>
</tr>
<tr>
<td>3</td>
<td>85%</td>
<td>15%</td>
</tr>
<tr>
<td>4</td>
<td>83%</td>
<td>17%</td>
</tr>
<tr>
<td>5</td>
<td>82%</td>
<td>18%</td>
</tr>
<tr>
<td>6</td>
<td>81%</td>
<td>19%</td>
</tr>
<tr>
<td>7</td>
<td>80%</td>
<td>20%</td>
</tr>
<tr>
<td>8</td>
<td>78%</td>
<td>22%</td>
</tr>
<tr>
<td>9</td>
<td>76%</td>
<td>24%</td>
</tr>
<tr>
<td>10 (high)</td>
<td>73%</td>
<td>27%</td>
</tr>
</tbody>
</table>

10 Deprivation levels could not be established for some young women, who accounted for 12% of vaccinations provided. These have been left out of the deprivation table presented here.
There was little variation in delivery method across different levels of urbanisation, and what variation there was showed no coherent pattern. As shown in Table 7, the proportion of school-based vaccinations increased slightly from dose 1 to dose 3 in both cohorts, and conversely the proportion of primary care based vaccinations decreased. This reflects the finding, illustrated later in Figure 6, that primary care suffered more drop-off across doses than the school-based delivery system.

Table 7: Delivery method by dose

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary care</td>
<td>School-based</td>
</tr>
<tr>
<td>HPV1</td>
<td>82%</td>
<td>18%</td>
</tr>
<tr>
<td>HPV2</td>
<td>80%</td>
<td>20%</td>
</tr>
<tr>
<td>HPV3</td>
<td>79%</td>
<td>21%</td>
</tr>
</tbody>
</table>

As noted above, Canterbury DHB differed from other DHBs in using primary care delivery for both girls born in 1997 and those born in 1990/91. Consideration was given to whether the uptake results for Canterbury DHB could be used to compare the relative effectiveness of primary care and school based delivery in achieving high vaccine uptake for ‘similar’ DHBs (ie large metro DHBs). However, even a simplistic comparison of Canterbury DHBs uptake rates for 1997 and 1990/91 birth cohorts with those for Auckland, Counties Manukau, Waitemata, Waikato and Capital and Coast DHBs show significant uptake variation that do not demonstrate a consistent result from which to draw definitive conclusions (refer Appendix 8).

Further analysis was undertaken to explore whether school-based delivery consistently achieves high vaccine uptake. Figure 5 plots each DHB’s uptake rate for the first dose of the vaccine for girls both in 1997 and those born in 1990/91 against the proportion of vaccines delivered through schools. It demonstrates:

- Even leaving Canterbury DHB aside (on the left), DHBs differed significantly in their delivery method profiles. The proportion of vaccinations conducted through the school-based programme ranged from 53% in Otago DHB to 81% in Tairawhiti DHB across all three cohorts.

- Uptake results using a school-based delivery mechanism also varied significantly across DHBs and ranged from 43% in Waikato DHB to 58% in Wairarapa DHB. Further, a regression analysis weighted by DHB size showed there was no statistically significant relationship between the proportion of vaccines delivered in schools and the uptake rate for each DHB.

- Analysis was also undertaken to explore whether there were statistically significant relationships between delivery method and uptake when the data was analysed by ethnicity and birth cohort. None was found.

In summary, the evidence indicates that school-based delivery of the HPV vaccine did not result in consistent increases or decreases in HPV vaccine uptake.

---

11 Urbanisation could not be established for some young women, who accounted for 11% of vaccinations provided.
A simple linear relationship was also explored in relation to HPV vaccine uptake and school-based delivery, specifically if school-based delivery resulted in higher vaccine uptake, it would be expected that as the number of vaccines given in schools increases, so to would the level of uptake of the vaccine. As shown in Table 8, this is not always the case – 27% of vaccines were delivered in schools for young women born in 1991 resulting in a vaccine uptake rate of 49%. In comparison, when 88% of vaccines are delivered in schools for girls born in 1997, the uptake does not significantly increase but remains at 49%.

Table 8: Delivery method and uptake rates for individual birth years

<table>
<thead>
<tr>
<th>Birth year</th>
<th>Percentage of school-based vaccine delivery</th>
<th>Average uptake of HPV doses 1-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>10%</td>
<td>38%</td>
</tr>
<tr>
<td>1991</td>
<td>27%</td>
<td>49%</td>
</tr>
<tr>
<td>1997</td>
<td>88%</td>
<td>49%</td>
</tr>
</tbody>
</table>

In short, Table 8 highlights that similar uptake can be achieved without a high level of school-based delivery.

While some aspects of the data hint at a relationship between delivery method and uptake levels, the results are not clear-cut. Higher levels of school-based vaccination among Pacific young women than for other young women are reflected in higher uptake rates. Māori young women, however, have similar levels of school-based vaccinations to Pacific young women coupled with similar uptake to other young women. The lack of a clear
relationship across DHBs also indicates that if such a linkage exists, it does not predominate and has been outweighed by other unknown differences between DHBs.

The timing of uptake does appear to be influenced by the delivery method. Figure 8 displays the uptake of each dose of the HPV vaccine over time, broken down by birth year and delivery method. The values plotted are expressed as a percentage of the number of vaccinations with HPV dose 1 as at 31 December 2010, or equivalently of each birth cohort's maximum number of vaccinations during the evaluation period. Each dose is shown as a separate line.

The upper right and lower left panels account for the bulk of vaccinations in these cohorts. The graphs demonstrate that within a school-based programme:

- It takes two years to reach all girls in a birth cohort vaccine when targeting girls in one school year (ie year 8). As a result, using Statistics New Zealand’s population projections as the denominator for calculating vaccine uptake rates for school-based delivery will only be meaningful in year two once all the birth year cohort have been offered the vaccine.
- Less time elapses between the first and last doses. Vaccinations through primary care appear to suffer greater drop off across doses.

**Figure 6: Vaccine uptake over time, by dose and delivery method within cohort**
3.5 Vaccination provider by ethnicity

Section 3.4 mentioned that Māori and Pacific young women were more likely to be vaccinated against HPV at school than other young women. The proportion of Pacific young women vaccinated at school was even higher than for Māori (refer to Table 9). Note: Tables 9 – 13 are based on girls and young women born in 1997 and 1990/91.

Table 9: Delivery method by ethnicity

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Primary care</th>
<th>School-based</th>
</tr>
</thead>
<tbody>
<tr>
<td>Māori</td>
<td>45%</td>
<td>55%</td>
</tr>
<tr>
<td>Pacific</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>Other</td>
<td>64%</td>
<td>36%</td>
</tr>
</tbody>
</table>

In the rest of this section, Tables 10 to 13 show only the percentage of school-based vaccinations. The complementary percentage of vaccinations delivered through primary care is omitted for brevity.

Provision by ethnicity generally follows a similar pattern in most DHBs to the nation as a whole, with Pacific young women slightly more likely to be vaccinated at school than Māori, and both being much more likely to be vaccinated at school than young women of other ethnicities (refer to Table 10). The main deviations from this pattern were in the Nelson Marlborough, Canterbury, South Canterbury, Wairarapa, and West Coast DHBs. Apart from Canterbury, these DHBs only have small numbers of Pacific young women, and the discrepancies may therefore be mostly due to random variation.

Table 10: Percentage of school-based vaccinations by DHB and ethnicity

<table>
<thead>
<tr>
<th>DHB</th>
<th>Māori</th>
<th>Pacific</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auckland</td>
<td>52%</td>
<td>56%</td>
<td>42%</td>
</tr>
<tr>
<td>Bay of Plenty</td>
<td>56%</td>
<td>61%</td>
<td>39%</td>
</tr>
<tr>
<td>Canterbury</td>
<td>4%</td>
<td>2%</td>
<td>5%</td>
</tr>
<tr>
<td>Capital and Coast</td>
<td>48%</td>
<td>63%</td>
<td>36%</td>
</tr>
<tr>
<td>Counties Manukau</td>
<td>60%</td>
<td>65%</td>
<td>47%</td>
</tr>
<tr>
<td>Hawkes Bay</td>
<td>70%</td>
<td>78%</td>
<td>49%</td>
</tr>
<tr>
<td>Hutt Valley</td>
<td>54%</td>
<td>64%</td>
<td>37%</td>
</tr>
<tr>
<td>Lakes</td>
<td>59%</td>
<td>69%</td>
<td>36%</td>
</tr>
<tr>
<td>MidCentral</td>
<td>62%</td>
<td>76%</td>
<td>37%</td>
</tr>
<tr>
<td>Nelson Marlborough</td>
<td>48%</td>
<td>44%</td>
<td>40%</td>
</tr>
<tr>
<td>Northland</td>
<td>62%</td>
<td>63%</td>
<td>44%</td>
</tr>
<tr>
<td>Otago</td>
<td>51%</td>
<td>53%</td>
<td>39%</td>
</tr>
<tr>
<td>South Canterbury</td>
<td>9%</td>
<td>35%</td>
<td>15%</td>
</tr>
<tr>
<td>Southland</td>
<td>52%</td>
<td>55%</td>
<td>45%</td>
</tr>
<tr>
<td>Tairawhiti</td>
<td>73%</td>
<td>78%</td>
<td>45%</td>
</tr>
<tr>
<td>Taranaki</td>
<td>58%</td>
<td>69%</td>
<td>42%</td>
</tr>
<tr>
<td>Waikato</td>
<td>61%</td>
<td>67%</td>
<td>46%</td>
</tr>
<tr>
<td>Wairarapa</td>
<td>55%</td>
<td>43%</td>
<td>36%</td>
</tr>
<tr>
<td>Waitemata</td>
<td>56%</td>
<td>60%</td>
<td>42%</td>
</tr>
<tr>
<td>West Coast</td>
<td>34%</td>
<td>0%</td>
<td>45%</td>
</tr>
<tr>
<td>Whanganui</td>
<td>54%</td>
<td>71%</td>
<td>39%</td>
</tr>
</tbody>
</table>
While the proportion of HPV vaccinations provided through schools in the 1997 birth cohort was much higher than in the 1990/91 cohort for all three ethnic groups, this increase was strongest for Māori young women (refer to Table 11).

Table 11: Percentage of school-based vaccinations by cohort and ethnicity

<table>
<thead>
<tr>
<th>Birth year</th>
<th>Māori</th>
<th>Pacific</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>92%</td>
<td>94%</td>
<td>84%</td>
</tr>
<tr>
<td>1990-1991</td>
<td>22%</td>
<td>32%</td>
<td>17%</td>
</tr>
</tbody>
</table>

The earlier finding that school-based vaccinations were more prevalent in more deprived areas also holds true within each of these three ethnic groups, although the relationship is much stronger among Māori and Pacific young women than among other young women (refer to Table 12).

Table 12: Percentage of school-based vaccinations by area deprivation and ethnicity

<table>
<thead>
<tr>
<th>Area Deprivation</th>
<th>Māori</th>
<th>Pacific</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>45%</td>
<td>49%</td>
<td>34%</td>
</tr>
<tr>
<td>2</td>
<td>48%</td>
<td>52%</td>
<td>33%</td>
</tr>
<tr>
<td>3</td>
<td>45%</td>
<td>49%</td>
<td>36%</td>
</tr>
<tr>
<td>4</td>
<td>54%</td>
<td>52%</td>
<td>35%</td>
</tr>
<tr>
<td>5</td>
<td>52%</td>
<td>49%</td>
<td>37%</td>
</tr>
<tr>
<td>6</td>
<td>51%</td>
<td>51%</td>
<td>35%</td>
</tr>
<tr>
<td>7</td>
<td>55%</td>
<td>57%</td>
<td>38%</td>
</tr>
<tr>
<td>8</td>
<td>57%</td>
<td>57%</td>
<td>36%</td>
</tr>
<tr>
<td>9</td>
<td>56%</td>
<td>62%</td>
<td>39%</td>
</tr>
<tr>
<td>10</td>
<td>62%</td>
<td>65%</td>
<td>39%</td>
</tr>
</tbody>
</table>

There was generally not much variation within each ethnic group in the prevalence of school-based delivery across different levels of urbanisation. Pacific young women showed more variation, but this was probably due to their small numbers outside urban areas.12

The proportion of school-based vaccinations increased steadily from dose 1 to dose 3 in each ethnic group (refer to Table 13).

Table 13: Percentage of school-based vaccinations by dose and ethnicity

<table>
<thead>
<tr>
<th>Dose</th>
<th>Māori</th>
<th>Pacific</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPV1</td>
<td>52%</td>
<td>56%</td>
<td>34%</td>
</tr>
<tr>
<td>HPV2</td>
<td>55%</td>
<td>61%</td>
<td>36%</td>
</tr>
<tr>
<td>HPV3</td>
<td>59%</td>
<td>64%</td>
<td>39%</td>
</tr>
</tbody>
</table>

In summary, these analyses have generally found similar patterns within each ethnic group to those observed for the entire study population. Some tables showed stronger relationships for Māori and Pacific young women than other young women, and small Pacific populations left other analyses inconclusive. However, the results do not alter the earlier conclusion that there was no clear-cut evidence of a relationship between delivery method and vaccine uptake.

12 The total number of doses provided to Pacific young women in each rural urbanisation category ranged from only 6 to 21, and only 32 doses were provided to Pacific young women in satellite urban communities.
3.6 Summary of key uptake findings

3.6.1 Comparison between ongoing and catch-up cohorts

At the outset of the Programme, it was expected that vaccine delivery to young women born in 1990/91 would be more challenging than to girls born in 1997.

Comparing vaccine uptake rates by girls born in 1997 and young women born in 1990/91 shows fairly similar uptake at a total cohort level (49% versus 43%), but this global uniformity hides substantial ethnic differences. Vaccine uptake is higher for Māori and Pacific girls born in 1997 than those born in 1990/91.

In contrast, uptake rates for other girls born in 1997 were noticeably lower than those born in 1990/91.

Total cohort results therefore need to be interpreted with some caution, since results broken down by demographics are often less consistent. Uptake across DHBs is another example. For instance, uptake was significantly higher in Canterbury DHB for Māori young women born in 1990/91 than those born in 1997.

3.6.2 Vaccine uptake for young girls born in 1997 across all DHBs

To recap, the targets set for the HPV vaccine uptake for Māori, Pacific and other girls born in 1997 by 31 December 2010 were 65% for dose 1, 60% dose 2, and 55% dose 3 respectively. By 31 December 2010, the following HPV vaccine uptake results were achieved for girls born in 1997:

- Uptake of the vaccine by Māori girls reached the target for doses 1, 2 and 3.
- Uptake of the vaccine by Pacific girls exceeded the target for doses 1, 2, and 3 (by around 15%).
- Uptake of the vaccine by other girls was significantly under the target for dose 1 (43%), although the drop off from dose 1-3 was small – 40% at dose 3.
- Equity of uptake was achieved for Māori and Pacific girls compared to other young women.
- Equity of uptake for Pacific girls was achieved across most DHBs with a large Pacific population.
- Equity of uptake for young Māori women was not consistent across DHBs.
- With the exclusion of Canterbury DHB, 94% of girls born in 1997 received the vaccine through school-based delivery.
3.6.3 Vaccine uptake for young women born in 1990/91 across all DHBs

The targets set for the HPV vaccine uptake for Māori, Pacific and other young women born in 1990/91 by 31 December 2010 were 50% for dose 1, 45% dose 2, and 40% dose 3 respectively. By 31 December 2010, the following HPV vaccine uptake results were achieved for young women born in 1990/91:

- Young Māori women were around 10% lower than the target for doses 1, 2, and 3.
- Young Pacific women achieved the target for dose 1 and 2 but not 3.
- Other young women were close to achieving the target for doses 1, 2, and 3.
- Drop off between doses 1-3 was substantial, and was twice as large for Māori and Pacific young women.
- Equity of uptake was not achieved for young Māori women compared to other young women.
- Equity of uptake was achieved for young Pacific women compared to other young women.
- Overall uptake levels and equity of uptake were not consistent across DHBs.
- Young women born in 1990/91 predominantly received the HPV vaccine through primary care – over 80%.

3.6.4 Vaccine uptake by delivery mechanism

Uptake of the HPV vaccine varies significantly across DHBs for girls born in 1997 and young women born in 1990/91. Significant uptake variation is also noted across the two delivery mechanisms - primary care and school-based.

Evidence remains inconclusive on whether school-based HPV vaccine delivery results in higher vaccine uptake than primary care.

The focus on whether one delivery mechanism is better than the other assumes the need for only one type of vaccination delivery mechanism. Section 5 explores this assumption further together with the interfaces across school-based and primary care delivery.
4. Design to Roll Out

4.1 Introduction

This section presents a high level overview of the Ministry’s design and roll out of the HPV Immunisation Programme. It offers an overview of the successes of this phase as well as key lessons for future immunisation programmes. Particular focus is placed on whether the Programme design fostered strategies and tactics to ensure equal opportunity for Māori and Pacific young women to benefit from the Programme.

More detailed analysis of the design of the HPV Immunisation Programme to its roll out to DHBs can be found in HPV Immunisation Programme Implementation Evaluation Phase One Report (Litmus, 2011a).

4.2 Background to launch

In September 2007, the Ministry of Health became aware of the decision that the HPV vaccine was to be included in the 2008 Schedule. The Ministry therefore had 12 months to launch the HPV Immunisation Programme. As a result of the short lead up, DHBs were not aware of the need to factor the HPV Immunisation Programme into their District Annual Plans for 2009 until after most DHB planning was confirmed.

Within the Ministry, the implementation team for the HPV Immunisation Programme sat outside the Immunisation Team. The HPV Project Team consisted of a project manager, clinical advisors, communications advisors, analysts, relationship managers and administrative support. The Immunisation Team and the Immunisation Technical Working Group advised the HPV Project Team. The Ministry recognised the importance of having a range of broader stakeholders engaged with the Programme and commenced setting up key groups. These included the HPV Sector Steering Group, and the Communications Advisory Group, the Māori Equity Advisory Group (MEAG), and the Pacific Equity Advisory Group (PEAG), the Ministry of Education and wider stakeholders and interested parties, including women’s health advocacy groups.

Table 14 summarises key milestones achieved from 2007 to 2010 (Ministry of Health, 2010b).13

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13 Most of the 2007/08 activities happened from March 2008.
## Table 14: Milestones completed between 2007 and 2010

<table>
<thead>
<tr>
<th>Year</th>
<th>Milestones</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007/08</td>
<td>- Business case for the provision of the Programme&lt;br&gt; - Closed vaccine tender&lt;br&gt; - HPV Team recruitment activities&lt;br&gt; - Cabinet paper entailing a report on the final costings&lt;br&gt; - National Implementation Strategic Overview (NISO) and associated consultation&lt;br&gt; - Development of new contracts and service specification so DHBs could employ project managers&lt;br&gt; - A request for proposal seeking a provider to undertake public education and information activities on behalf of the Ministry&lt;br&gt; - Advisory groups formed&lt;br&gt; - Vaccine procurement agreement&lt;br&gt; - DHB primary care workshop</td>
</tr>
<tr>
<td>2008/09</td>
<td>- Delivery of vaccine&lt;br&gt; - Crown Funding Agreement, corresponding Service Specifications and associated consultation for DHBs&lt;br&gt; - Production of posters, pamphlets, consent form and corresponding translations&lt;br&gt; - Production of school-based programme DVD&lt;br&gt; - HPV Vaccine Communications Benchmark survey&lt;br&gt; - Accredited vaccinators training programme&lt;br&gt; - School-based programme Professional Standards for Service Delivery&lt;br&gt; - Completion and sign-off of 21 DHB project implementation plans&lt;br&gt; - Activation of HPV Programme on SBVS and messaging to the National Immunisation Register (NIR) and changes to vendor Practice Management System (PMS) programmes&lt;br&gt; - SBVS IT training programme&lt;br&gt; - Datamart reports developed&lt;br&gt; - NIR coverage reporting&lt;br&gt; - Programme in primary care and schools starts&lt;br&gt; - Centre for Adverse Reactions Monitoring (CARM) monthly reports start&lt;br&gt; - DHB quarterly reports to the Ministry</td>
</tr>
<tr>
<td>2009/10</td>
<td>- Agreeing joint communications and shared key messages with the National Screening Unit around a coordinated strategy for cervical cancer prevention&lt;br&gt; - Revising the Programme targets&lt;br&gt; - Revising the school consent form for 2010&lt;br&gt; - Revising the school-based programme DVD&lt;br&gt; - HPV Vaccine first-year tracking survey&lt;br&gt; - Redeveloping the cervical cancer vaccine website&lt;br&gt; - Implementing a proactive public relations plan to encourage editorial coverage&lt;br&gt; - Publication of a fact sheet about information and privacy in the HPV Immunisation Programme&lt;br&gt; - Engaging with consumer advocacy groups to review resources&lt;br&gt; - Developing a new HPV DVD for a broader audience</td>
</tr>
</tbody>
</table>
4.3 Successes from design to roll out

Discussions with key stakeholders both within and external to the Ministry highlight a number of successes deriving from the implementation of the Programme. These successes tend to relate to outputs, outcomes and systems, which highlighted the ability of the Ministry and wider stakeholders to negotiate barriers to achieve common goals. In summary, key successes were:

- **The Programme was launched on time in September 2008.** This was a significant achievement, given the time pressures, lack of developed policy and need for the Ministry and key stakeholders to work effectively to successfully negotiate a number of obstacles.

- **A strategic and operational focus on health equity for Māori and Pacific young women** was achieved by the Ministry’s HPV Project Team and Māori Health Directorate and Pacific Innovations, Sector Capability & Innovation Team (Pacific Innovations Team), working with the Māori Equity Advisory Group (MEAG) and the Pacific Equity Advisory Group (PEAG). This is discussed further in section 4.5.

- **Enhanced relationships at national and DHB level** through frank and open discussions about the design and implementation of the Programme.

- **Enhanced integration of a cervical cancer prevention strategy.** The World Health Organization (2009) endorses HPV Immunisation Programmes as part of an integrated cervical cancer prevention strategy that includes cervical cancer screening and sexuality health education14. The HPV Immunisation Programme is integrated with the Cervical Screening Programme. Both Programmes actively promote the benefits of the other (e.g. vaccine benefits and the future need for young women who receive the HPV vaccine to have three-yearly cervical smears from the age of 20).15.

- **Development of protocols and revived systems** likely to benefit future immunisation programmes, specifically:
  - a fact sheet on how the Ministry uses personal health information
  - enhancement of parental consent forms
  - enhancement of the NIR through an identity data reconciliation exercise by the Identity Data Management team in the Ministry.

- **Enhancement of school-based immunisation delivery** through greater understanding of the Ministry of Education’s processes and policies, and the ability of all DHBs (excluding Canterbury DHB) to deliver vaccinations in schools.

- **Workforce capability building** through Auckland University developing training tools and running effective workforce development sessions across New Zealand.

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14 Sexuality education provides students with the knowledge, understanding and skills to develop positive attitudes towards sexuality, to take care of their sexual health and to enhance their interpersonal relationships, now and in the future. In the curriculum, the term ‘sexuality education’ includes relevant aspects of the concept of hauora, the process of health promotion and the socio-ecological perspective www.tki.org.nz/r/health/curriculum/statement/page38_e.php accessed 3 February 2011.

4.4 Challenges from design to roll out

Discussions with key stakeholders both within and external to the Ministry highlight a number of challenges in the design phase of the Programme, specifically:

- **Launching the Programme quickly.** Stakeholders perceived no significant clinical reasons to launch the Programme in a condensed time period. The HPV vaccine is a preventive vaccine for sexually transmitted infection (STIs) that are precursors to cervical cancer. The vaccine is not responding to an immediate life-threatening disease.\(^{16}\)

- **Delivering on the underlying principle of ‘a partnership approach across all sectors and with communities’** (Ministry of Health, 2008a: 14). Stakeholders on the Steering Group and advisory and working groups were regularly consulted on Programme policy and implementation planning. However, they believed there was little opportunity to inform policy decisions as the process kept moving forward at speed to achieve the launch date. Consequently, some stakeholders were uncertain about their role and responsibilities and withdrew from the development process.

- **Negotiating differing philosophical positions on the HPV vaccine and Programme implementation** on a case-by-case basis increased workload. Key areas of debate for the Programme were around health equity strategies and tactics, gender equity given the exclusion of boys. Communication strategies focused on full informed consent versus direct call to action, and school-based versus primary care delivery mechanisms.

- **Strengthening leadership, governance and management structure for the Programme** to effectively negotiate design and implementation challenges, in particular:
  - More visible leadership at a senior management level within the Ministry to negotiate the conflicting opinions on the Programme and to push back against unproven policy changes being sought. A more clearly defined process for ‘sticky’ decision-making was also needed to avoid the re-litigation of decisions.
  - A consistent clinical champion to proactively respond to scientifically unsound comments on the vaccine and the Programme’s implementation.
  - Greater clarity between the roles and responsibilities of the Programme and Project Managers: the former being more strategic and the latter more operational. Critical to these roles was a depth of understanding of the Ministry’s processes and protocols and the implementation of programmes within DHBs as well as the ability to manage relationships and develop and sustain effective stakeholder partnerships.

- **Refining the eligibility criteria.** The Ministry proposed a multi-year approach to target each birth year in this older age group to avoid over-burdening DHBs. Internal and external stakeholders and primary health care providers opinion were mixed on whether the complexity of the eligibility criteria for the HPV vaccine made implementation challenging (refer to Table 15).

Some questioned the targeting of ‘older’ teens, as to be more effective, the vaccine needs to be given before girls come into contact with the virus. Alternatively, some noted a preference for a catch-up cohort with a more condensed eligibility period in

\(^{16}\) It is acknowledged that in New Zealand HPV affects an estimated 80% of sexually active women, with the peak incidence of infection occurring in women between 16 and 20 years old (Ministry of Health, 2008a).
which to be vaccinated (e.g. one year). For the Ministry, it is likely the use of catch-up initiatives will continue to be made on a case-by-case basis depending on the cost-effectiveness of the vaccine relative to cost per life and quality-adjusted life year (QALY) gained, as well as health equalities for at-risk populations.

Table 15: Perceptions of eligibility criteria for the HPV vaccine by key stakeholders

<table>
<thead>
<tr>
<th>The eligibility criteria for the HPV vaccine was too complex making implementation challenging</th>
<th>Strongly agree/agree %</th>
<th>Neither agree nor disagree %</th>
<th>Strongly disagree/disagree %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Base: those who answered</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Practitioners (n=248)</td>
<td>33</td>
<td>33</td>
<td>33</td>
</tr>
<tr>
<td>Practice nurses (n=325)</td>
<td>26</td>
<td>22</td>
<td>52</td>
</tr>
</tbody>
</table>

Data source: Online survey of GPs and Practice Nurses, 2011.

- **Target setting.** In 2008, high coverage targets were set for the HPV Immunisation Programme of 90% for dose 1 for young women in year 8 (12 years) by 31 December 2010, 85% for those born in 1992/96 and 75% for those born in 1990/1991. The same high targets were set for Māori and Pacific young women across the age cohorts recognising the drive for equity of cover and the prioritisation of these audiences (Ministry of Health, 2008a). The primary driver for having the target was the Ministry’s desire to ensure every girl had an opportunity to avoid cervical cancer. However, the initial high uptake target created concern for stakeholders at all levels. Two key issues underpinned these tensions:

  - The need for an ambitiously high target during the early years of implementation when the vaccine is not seeking to circuit break an immediate life-threatening epidemic like the meningococcal B (MeNZB) vaccine.

  - The complexity of accurately assessing the population uptake of the vaccine during the first year of the Programme for school-based delivery. This reflects that in a school year there are up to three birth year cohorts. Consequently, using Statistics New Zealand’s population projections as the denominator for calculating vaccine uptake rates for school-based delivery will only be meaningful once all the birth year cohort have been offered the vaccine. With school-based delivery, this will take a number of years.

In 2010, the Ministry revised the targets downwards to 65% for dose 1 for Māori, Pacific and other young women in year 8 (12 years) (Ministry of Health, 2010a). From the implementation of the HPV Immunisation Programme, a number of questions for consideration have been raised for future immunisation programmes, specifically:

  - How are uptake targets determined for preventive vaccines like HPV?

  - How does the Ministry effectively measure uptake at a population level?

  - What are the success indicators in the early stages of the Programme’s implementation?

  - What are the long-term success indicators?

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17 In 2009, the school-based delivery of the HPV vaccine was offered to year 8 students which included young women born in 1996, 1997 and 1998. In 2009, it was estimated that around a third of young women born in 1997 were in year 8. Consequently, using Statistics New Zealand’s population projections from the 2006 census as the denominator, it appeared that vaccine uptake in 2009 for those born in 1997, via school-based delivery, was low. It was only in 2010 that the school-based programme reached all girls born in 1997, and a population-based calculation of uptake could be meaningfully calculated based on Statistics New Zealand’s population projections.
Ensuring IT systems support implementation and monitoring. On implementation, it was found that the business rules relating to the SBVS and the NIR were fairly rigid and required review to enable monitoring and reporting. For future immunisation programmes, a key consideration is the IT requirement and the amendments needed to existing IT systems to help plan, implement and monitor the Programme.

Strengthening sexuality health education in the cervical cancer prevention strategy. While the HPV Immunisation Programme is integrated with the Cervical Screening Programme, there is no evidence that the Programme is linked to sexuality education taught in schools as part of Health and Physical Education in the New Zealand Curriculum and is compulsory up to year 10.

An integrated, multi-faceted approach to reducing cervical cancer through education, immunisation and screening is a long-term goal. More work is needed in the area of sexuality education for young people. The Ministry needs to identify its role in sexuality education for young people, or identify levers in seeking quality improvements to influence sexuality education to support positive health outcomes.

4.5 Designing a health equity approach

4.5.1 Processes to develop an equitable Programme

The ability of the HPV Immunisation Programme to achieve equitable uptake of the vaccine by young Māori and Pacific girls born in 1997 reflects the focus of equity within the Programme design.

For young Māori women

The Ministry acknowledged the significant challenges in seeking to achieve equitable coverage for Māori. Discussions in early 2008 between the Māori Health Directorate and the HPV Implementation Team identified the need to establish the MEAG. The Māori Health Directorate identified key experts in equity issues, media, public health, clinical research, sexuality, health promotion, education and Māori health to constitute the MEAG. While a Terms of Reference for the MEAG was not signed off, the MEAG was formed to provide advice to the Ministry on HPV Programme planning and implementation to:

- ensure cervical cancer disparities did not widen for Māori
- use best possible evidence to intentionally reduce inequalities between Māori and non-Māori (Ministry of Health, 2008a).

For young Pacific women

The HPV Implementation Team approached the Pacific Innovations Team to help set up and facilitate a PEAG. Members of the PEAG included representatives from the Ministry’s Pacific Innovations Team, DHB Pacific Health General Managers, communication experts and the Screening Unit. The purpose of the PEAG, as defined in the agreed Terms of Reference, was to support the HPV Implementation Team and provide advice on (Ministry of Health, 2008c):

- strategic development that would promote the Programme’s objectives
planning, implementation, monitoring and evaluation of the HPV Immunisation Programme

- Pacific cultural challenges
- ways to improve Pacific HPV immunisation coverage.

In May 2008, the PEAG developed a Pacific Overview Strategy for the HPV Immunisation Programme (Ministry of Health, 2008e) which guided the implementation of the Programme across the seven DHBs with a large Pacific population.

**4.5.2 Applying a health equity approach**

The HPV Immunisation Programme National Implementation Strategic Overview makes explicit that high coverage for young Māori and Pacific women are key priorities. The Ministry working with the MEAG and the PEAG identified eight key mechanisms to ensure the Programme was effective for young Māori and Pacific women (Ministry of Health, 2008a: 16). These mechanisms are detailed below, together with an assessment of their use at a design level for the Ministry of Health.

1. **Equitable funding** to ensure the Programme is effective for young Māori and Pacific women.
   - The Ministry allocated additional funding to specifically target young Māori and Pacific women and their whānau/families. Allocation of HPV funding to DHBs was determined by the Population Based Funding Formula, weighted for ethnicity, deprivation level and unmet need, with additional funding aimed at increasing community awareness and vaccination uptake by Māori, Pacific and Asian girls.

2. **Differential timing** to reach national coverage targets, specifically prioritising to reach targets earlier for Māori and Pacific girls and young women.
   - The review of DHBs’ Programme Implementation Plans (PIPs) highlights that DHBs did, as appropriate to their populations, propose targeting schools with a higher population of young Māori and Pacific women first.
   - Primary health care was responsible for the precall and recall of Māori and Pacific young women born in 1990 and 1991. Review of the PIPs highlighted that most DHBs had identified strategies to target young Māori and Pacific women by focusing on Primary Health Organisations (PHOs) with high Māori populations, and through outreach and whānau engagement.

3. **Service specifications requiring DHBs to work with Māori and Pacific communities** when planning and implementing their Programme and identifying the specific strategies.
   - The review of DHBs’ PIPs highlights that DHBs had consulted, as relevant for their communities, with their Māori and Pacific communities when designing the Plan. Further, DHBs had Māori and Pacific representatives at both strategic and operational levels for the implementation of the Programme in their region.

4. **Use of a school-based delivery model** where possible.
A school-based delivery model was used in all DHBs with the exception of Canterbury DHB. In 2010 South Canterbury DHB stopped their school-based delivery. Following a request from the Ministry, South Canterbury DHB reinstated school-based delivery in 2011 following a decline in uptake amongst those aged 12 years.

5. Guidance and support to DHBs to ensure their PIPs contain specific strategies to ensure high immunisation coverage for Māori and Pacific young women.

- The Ministry and the MEAG developed a ‘super’ PIP to help DHBs identify targeted strategies. The MEAG, in conjunction with the Ministry, reviewed and commented on all PIPs, recognising this was a key opportunity to influence how DHBs chose to implement the Programme. The MEAG advised on Māori participation in steering committees, culturally appropriate outreach, catch-up clinics, alternative vaccination settings, the need for a detailed plan for reaching older Māori girls, sufficient workforce and monitoring of coverage.

6. National and local communications and resources.

- Significant effort was taken to seek to ensure the communications and resources were appropriate and relevant for young Māori and Pacific women and their whānau and families.

- As shown in section 4.6 Māori and Pacific parents had lower awareness and knowledge about the HPV vaccine than all parents.

7. Sharing knowledge and experiences.

- The Ministry initiated regular DHB teleconferences to keep staff informed about the Programme and its implementation. It is unknown the extent to which initiatives effective for Māori and Pacific communities were shared through this mechanism.

- At the initiation of the MEAG, a two-day hui was held to inform Māori General Managers at DHBs about the Programme and to seek their support and engagement. This consultation was perceived as coming late in the development of the Programme thereby limiting Māori General Managers’ input into the development of effective strategies to gain uptake by Māori women at the DHB level.

- The PEAG initiated an equity workshop which informed the development of the Pacific Plan.


- Ethnicity data are collected on the consent form and the data collected aligns with the Ministry’s protocols.

- A potential risk for the Programme was under-counting of Māori ethnicity in PHO records. Pacific ethnicity was also noted as appearing to be slightly under-counted (CBG Research, 2006: 23). An identity data reconciliation exercise was carried out to improve accuracy and specificity of ethnicity data within the NIR.

- The Ministry’s monthly reporting to the DHBs clearly differentiated uptake results by young Māori, Pacific and other women and an aggregated total uptake.
As indicated above, during the development stage sustained effort and consideration was made to ensure the Programme design did not increase health inequalities for Māori and Pacific women. The MEAG and the PEAG had key roles in this process through offering critical guidance and direction, challenging assumptions about the Programme design and connecting to Māori and Pacific leaders both nationally and regionally to inform and implement appropriate targeted strategies for Māori and Pacific.

4.5.3 Challenges ensuring a health equity design

The establishment of the MEAG was the first time the Ministry used a dedicated equity advisory group in programme design and implementation. For members of the MEAG and the Ministry, the process of working together was particularly challenging and offers lessons for future programmes.

- **Early involvement**: Both the MEAG and the PEAG were critical that their invitation to provide advice on health equity issues for the Programme occurred after many of the significant design and implementation decisions had been made.

- **Shared definition of health equity**: A key underlying tension fuelling the frustrations of both the MEAG and the Ministry appears to be differing interpretations of health equity. The MEAG interpreted a health equity approach as focusing on changing the structures, systems and processes which perpetuate inequities and seeking levers for systemic change. In contrast, the Ministry appeared to be seeking advice on documents, communications and connections to communities. This confusion was compounded by the absence of a policy articulating what was meant by health equity in the context of the HPV Immunisation Programme, although the Health Equity Assessment Tool was used in the ‘super’ PIP.

- **Wider stakeholder engagement**: The MEAG (2009: 20) comments, ‘successful engagement with Māori depends on the quality and quantity of relationships with Māori stakeholders, the extent of the Ministry’s participation in Māori networks and communities, and the effectiveness of the Ministry’s communication methods. There is no single Māori institution to satisfy a comprehensive engagement strategy.’ The MEAG could not therefore speak for all Māori, and there was a significant risk that the MEAG would be seen as responsible for the outcome of the HPV vaccination for Māori. In this context, the MEAG perceived that the Ministry had a responsibility to engage with Māori stakeholders across DHBs. In contrast, the Ministry believed this engagement was a DHB responsibility.

Time constraints, differing interpretations of health equity and roles created significant tension. Care is needed in assessing this relationship as, while there were tensions, it was not ineffective. Advice and recommendations from the MEAG were incorporated into the Programme design and implemented by the Ministry, and desired uptake results are emerging. Seeking to implement a Programme using a health equity approach is likely to create tension because, to be effective, the approach needs to vigorously challenge the existing assumptions and status quo and to modify at a system level.

As noted by Heifetz and Laurie (1997), to get collective and effective change, an organisation needs to directly feel external pressures within a range it can stand to create change. However, the organisation needs to avoid the tension boiling over so the work can continue. A process Heifitz and Laurie (1997) call “cooking the conflict”. In this context, a key lesson for future immunisation Programmes is the Ministry’s appreciation of the role of conflict in creating change via the use of MEAG and PEAG or other external agencies/stakeholders as well as the Ministry’s role to effectively facilitate the change process.
4.6 National communication strategy

4.6.1 Overview of the national communication strategy

The Ministry developed and implemented a national communication strategy for the Programme based on research with Māori, Pacific and other young women and their parents/whānau to identify how best to promote and position the vaccine to encourage uptake. A pro-choice campaign based on informed decision-making was developed.

In February 2009, the nationwide mass media campaign was launched, supported by other communications collateral, including: www.cervicalcancervaccine.govt.nz, posters, postcards, brochures, translated resources, consent forms, an educational DVD, flip charts for health professionals and Boards of Trustees, post-vaccination pads and a toolkit for school-based vaccinators. The primary audience of the mass media campaign was parents/whānau of girls in year 8.

Young women who had left school were targeted to a lesser extent via postcards, teen magazines, the GARDASIL® website, communications and text reminders from CSL (the pharmaceutical company that developed the vaccine)18. CSL also provided educational support for practice nurses, and education and promotional resources to GPs.

The national communications material was made available to DHBs to ensure consistent branding across regional communication campaigns. A roadshow was conducted in December 2008 to show the communications to HPV coordinators across DHBs and in particular Māori and Pacific leaders and managers.

4.6.2 Feedback on the communication campaign

While the communication campaign was perceived by the Ministry as one of the early successes of the Programme, it was not without its critics.

- **Enhancing the health equity approach:** While Pacific stakeholders were very positive about the campaign, there was criticism from some stakeholders that the communications strategy lacked a prioritised focus on young Māori women and their whānau. Conversely, others perceived that the focus on young Pacific and Māori women resulted in the campaign not reaching middle Pākehā New Zealand; although tracking shows they have the highest level of awareness (Phoenix, 2009, refer Table 17).

- **Maximising campaign timing and media weighting:** Due to the short timeline to launch, some DHBs were not ready to roll out their local delivery of the Programme. As a result, the timing of the media placement for the national communication campaign did not coincide with local delivery in schools and primary health care. DHBs were also critical about the duration of the campaign to support the ongoing delivery of the HPV vaccine to young women entering year 8 or turning 12.

- **Targeted persuasive message versus full technical vaccine information:** Opinion was divided on the communication strategy being used. Some perceived the communication campaign as using ‘marketing’ tactics to achieve a high vaccine uptake to the detriment of providing very detailed and technical information about the vaccine to parents and young women. In contrast, the Ministry perceived that the

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communication campaign took a pro-choice approach and was providing very detailed information from a number of sources\textsuperscript{19}. For others, the approach was too soft and did not go far enough to call young women and parents to act and have the vaccine.

- **Lack of visible national leadership and champions.** The Programme did not have a vocal champion within Government. This contrasted with the HPV Immunisation Programme launch in Australia where the then Prime Minister was a vocal advocate. A few national champions for the Programme did emerge through their own commitment to reducing the burden of cervical cancer in New Zealand. These champions advocated for the Programme and sought to counterbalance misleading information about the vaccine. However, no one person was perceived as the figurehead to create a rallying call around the Programme.

- **Use of CSL resources:** The use of CSL communications material and text reminders was criticised by some as undue influence and marketing of the vaccine by those who had a profit incentive to encourage uptake. These criticisms raise the importance of being vigilant for perceptions of undue influence and conflict of interest, given an environment of mistrust towards vaccines in general (Litmus, 2011c).

### 4.6.3 Effectiveness and reach of campaign

To determine whether the communication campaign was a success, consideration needs to be given to its effectiveness in reaching the priority audiences of young Māori and Pacific women and the campaign’s effect on awareness, understanding, trust and propensity to have the vaccine. Table 16 summarises key results from the November 2009 HPV communication tracking survey of parents (Phoenix, 2009). Key points of note are:

- Knowledge that HPV causes cervical cancer continues to be low, especially for Pacific (31%) and Māori parents (44%).

- Since the launch, awareness that the vaccine protects against developing cervical cancer has increased and is higher amongst Māori parents than Pacific parents. However, Māori and Pacific parents are less aware that the vaccine is available in New Zealand, is free and comprises three doses.

- Support and consent for the vaccine is higher amongst Pacific parents than Māori.

- Recall of advertising is lower amongst Pacific parents.

\textsuperscript{19} The Ministry sought via a number of differing mechanisms to ensure in-depth and unbiased information was available: brochures, website, IMAC, consent forms, information for Boards of Trustees and so on.
Table 16: Effectiveness and reach of communication campaign

<table>
<thead>
<tr>
<th>Key measures</th>
<th>Random sample of parents/ caregivers of females aged 11–20 years interviewed August–September 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Māori</td>
</tr>
<tr>
<td></td>
<td>n=360</td>
</tr>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>KNOWLEDGE</td>
<td></td>
</tr>
<tr>
<td>Aware HPV causes cervical cancer – unprompted</td>
<td>4↓</td>
</tr>
<tr>
<td>Aware of HPV – prompted</td>
<td>44↓</td>
</tr>
<tr>
<td>VACCINE</td>
<td></td>
</tr>
<tr>
<td>Aware of vaccine – unprompted</td>
<td>22↓</td>
</tr>
<tr>
<td>Aware of vaccine – prompted</td>
<td>77↓</td>
</tr>
<tr>
<td>Aware vaccine available in New Zealand</td>
<td>58↓</td>
</tr>
<tr>
<td>Know vaccine is free</td>
<td>53↓</td>
</tr>
<tr>
<td>Aware three vaccinations</td>
<td>43↓</td>
</tr>
<tr>
<td>CONSENT/UPTAKE</td>
<td></td>
</tr>
<tr>
<td>Support females receiving vaccine</td>
<td>51</td>
</tr>
<tr>
<td>Consent for vaccination</td>
<td>53</td>
</tr>
<tr>
<td>ADVERTISING RECALL</td>
<td></td>
</tr>
<tr>
<td>Recall seeing/hearing advertising</td>
<td>63↓</td>
</tr>
</tbody>
</table>

Data source: Phoenix (2009)
↓ Statistically lower level than total sample (which includes Māori and Pacific parents/caregivers)
↑ Statistically higher level than total sample (which includes Māori and Pacific parents/caregivers)

Based on the results of the communication tracking monitor (Phoenix, 2009), the national level communication strategies do not appear to have had equal reach for Māori and Pacific parents and caregivers. This is reflected in Māori and Pacific parents’ lower levels of recall of the campaign, knowledge about HPV, and awareness and knowledge about the vaccine. It is notable that, while Pacific parents have lower levels of awareness and knowledge, they are more predisposed to supporting and consenting to the vaccine. If the national communication strategy did not reach Māori and Pacific parents to the same extent as non-Māori and non-Pacific parents, then other strategies must have contributed to ensuring equity of uptake. These strategies are discussed in section 5.

An underlying assumption of communication strategy appears to be that if Māori and Pacific girls are successfully targeted, Pākehā parents and girls will also be reached. Feedback from the qualitative interviews with Pākehā parents, girls and young women highlighted the perception amongst some that the Programme is not targeting them. The communications use of strong imagery on Māori and Pacific young women therefore had the unintended consequence of implying to some Pākehā that the Programme was not intended for them. As noted in Phoenix (2004) communications work best when they reflect the values of the target group (i.e. if I cannot see myself then the message is for others). These findings indicate an area for further research in exploring how to maximise the effectiveness of communication strategies to reach the total eligible population, while successfully targeting specific populations to ensure equal opportunities and avoid further increasing known health inequalities.

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20 Base = those involved in vaccination decision.
### 4.7 Key lessons from design to DHB roll out

The review of the design phase demonstrates that, while not easy, particular focus was placed on identifying and incorporating strategies and tactics to foster equal opportunity for Māori and Pacific young women through the implementation of the HPV Immunisation Programme. In summary, the design:

- Explicitly prioritised Māori and Pacific young women reflecting they suffer a significantly greater burden of cervical cancer.
- Engaged with Māori and Pacific stakeholders nationally and regionally, and used Māori and Pacific Equity Advisory Groups to inform and guide the design and roll out to DHBs.
- Used the existing evidence-base to identify service delivery processes most effective for Māori and Pacific young women and their whānau.
- Ensured monitoring of uptake by Māori and Pacific young women, and sought to resolve monitoring issues relating to NIR’s ethnicity data.

As noted, the design phase was not without its challenges. Key lessons to inform future immunisation programmes are summarised in Table 17 below.

<table>
<thead>
<tr>
<th>Implementation area</th>
<th>Proposed strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management of partnership approaches and relationships with external stakeholders</td>
<td>▪ Have fewer but more strategic technical advisory groups.</td>
</tr>
<tr>
<td></td>
<td>▪ Develop a differentiated stakeholder relationship strategy with clear expectations and roles in the immunisation programme design (i.e. differentiating between technical advice and information to engender support and involvement in implementation).</td>
</tr>
<tr>
<td></td>
<td>▪ Recognise the role of conflict in change and facilitate the process to avoid tensions boiling over.</td>
</tr>
<tr>
<td></td>
<td>▪ Develop processes to manage disagreement and ensure consistent decision-making.</td>
</tr>
<tr>
<td>Leadership and management</td>
<td>▪ Ensure visible senior management and clinical leadership, and programme champion.</td>
</tr>
<tr>
<td></td>
<td>▪ Focus on building the public’s long-term trust of immunisation.</td>
</tr>
<tr>
<td></td>
<td>▪ Proactively respond to misinformation.</td>
</tr>
<tr>
<td></td>
<td>▪ Ensure programme and project manager roles and responsibilities are clear.</td>
</tr>
<tr>
<td>Design</td>
<td>▪ Consider cost and effectiveness of complex eligibility criteria and benefits of catch-up cohorts.</td>
</tr>
<tr>
<td></td>
<td>▪ Determine and disseminate targets and early success criteria for the Programme, and how these will be measured.</td>
</tr>
<tr>
<td></td>
<td>▪ Consider IT amendments needed to existing systems and databases to facilitate ongoing implementation and monitoring.</td>
</tr>
<tr>
<td>Wider Programme integration</td>
<td>▪ Consider how the immunisation programme fits in the wider integrated health strategy approach to reduce disease burden.</td>
</tr>
<tr>
<td></td>
<td>▪ All parties develop an agreed coordinated response that demonstrates collaboration and support across all components that address the disease burden.</td>
</tr>
<tr>
<td>Implementation area</td>
<td>Proposed strategies</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Health equity approach</td>
<td>• Involve the Ministry’s Māori Health Directorate and Pacific Innovations Team from the outset.</td>
</tr>
<tr>
<td></td>
<td>• Agree on an understanding of health equity in the context of the Programme’s goals and aims and how success will be measured.</td>
</tr>
<tr>
<td></td>
<td>• Use a MEAG and PEAG with clear Terms of Reference to advise and guide the implementation team.</td>
</tr>
<tr>
<td></td>
<td>• Engage early with Māori and Pacific stakeholders to inform the design and identify targeted strategies for Māori and Pacific both regionally and locally.</td>
</tr>
<tr>
<td></td>
<td>• Identify levers at Ministry and DHB levels that will ensure that health inequalities are reduced (and not increased) from the introduction of the immunisation programme.</td>
</tr>
<tr>
<td>Communications strategy</td>
<td>• Further research is needed on whether communications strategies targeting Māori and Pacific young women are also effective with non-Māori and non-Pacific young women.</td>
</tr>
<tr>
<td></td>
<td>• Consider the need for layered information to meet differing information needs and health literacy levels (refer to section 6 for further discussion).</td>
</tr>
<tr>
<td></td>
<td>• Consider campaign timing and weight to align with DHB launch and ongoing Programme implementation.</td>
</tr>
</tbody>
</table>
5. Programme Delivery

5.1 Introduction

This section details the implementation of the delivery of the HPV Immunisation Programme across the DHBs. Emphasis has been placed on identifying the strategies and tactics used to achieve uptake by Māori and Pacific girls and young women born in 1997 and 1990/91. Particular care has been taken in the analysis recognising that DHBs face differing demographic and regional challenges, and that the uptake of the HPV vaccine is ongoing\textsuperscript{21}. The section draws from the findings of the nine DHB cases, the phone interviews with Planning and Funding Managers, Māori and Pacific General Managers and HPV Coordinators across all DHBs, and surveys with GPs and Practice Nurses.

The nine DHB cases were selected to offer a mix of DHBs with a range of vaccine uptake for Māori and Pacific girls born in 1997, urban and more rural DHBs, North and South Islands and different vaccine delivery methods. Tables 18 and 19 summarise vaccine uptake by Māori, Pacific and other girls and women born in 1997 and 1990/91 respectively. Care is needed in reviewing the data for Pacific girls and young women due to the very small size of the eligible population.

Table 18: Uptake of HPV vaccine by girls born in 1997 at dose 1 by 31 December 2010 across nine DHB cases

<table>
<thead>
<tr>
<th>DHB</th>
<th>Girls born 1997 Estimated eligible population</th>
<th>Girls born 1997 Imunisation coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Māori</td>
<td>Pacific</td>
</tr>
<tr>
<td>Lakes</td>
<td>370</td>
<td>20</td>
</tr>
<tr>
<td>Counties Manukau</td>
<td>850</td>
<td>1,090</td>
</tr>
<tr>
<td>Otago</td>
<td>120</td>
<td>20</td>
</tr>
<tr>
<td>MidCentral</td>
<td>320</td>
<td>50</td>
</tr>
<tr>
<td>Whanganui</td>
<td>190</td>
<td>20</td>
</tr>
<tr>
<td>Hutt Valley</td>
<td>260</td>
<td>100</td>
</tr>
<tr>
<td>Waikato</td>
<td>780</td>
<td>80</td>
</tr>
<tr>
<td>Bay of Plenty</td>
<td>560</td>
<td>40</td>
</tr>
<tr>
<td>Canterbury</td>
<td>420</td>
<td>100</td>
</tr>
</tbody>
</table>

\textsuperscript{21} Since selection of the cases uptake has continued to increase across a number of DHBs.
Table 19: Uptake of HPV vaccine by young women born in 1990/91 at dose 1 by 31 December 2010 across nine DHB cases

<table>
<thead>
<tr>
<th>DHB</th>
<th>Young women born 1990/91 Estimated eligible population</th>
<th>Young women born 1990/91 Immunisation coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Māori</td>
<td>Pacific</td>
</tr>
<tr>
<td>Lakes</td>
<td>730</td>
<td>60</td>
</tr>
<tr>
<td>Counties Manukau</td>
<td>1,620</td>
<td>2,090</td>
</tr>
<tr>
<td>Otago</td>
<td>310</td>
<td>70</td>
</tr>
<tr>
<td>MidCentral</td>
<td>690</td>
<td>80</td>
</tr>
<tr>
<td>Whanganui</td>
<td>340</td>
<td>30</td>
</tr>
<tr>
<td>Hutt Valley</td>
<td>500</td>
<td>210</td>
</tr>
<tr>
<td>Waikato</td>
<td>1,650</td>
<td>160</td>
</tr>
<tr>
<td>Bay of Plenty</td>
<td>1,030</td>
<td>50</td>
</tr>
<tr>
<td>Canterbury</td>
<td>800</td>
<td>220</td>
</tr>
</tbody>
</table>

5.2 Overarching system’s perspective

It is assumed that to achieve the target uptake of the HPV vaccine by eligible Māori, Pacific and other young women, co-ordination and integration of a complex system of interdependent components is required. Young women and their parents/whānau respond to the stimuli from the system (and wider information sources)22 in deciding whether or not to have the vaccine. The diagram below offers a simple overview of the DHB level components of the HPV Immunisation Programme interacting with young women, their parents and whānau nested within their respective communities.

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22 Refer section 6 for a discussion of influencers on vaccine uptake.
Under the New Zealand Public Health and Disability Act 2000, DHBs are obligated to deliver services to meet the health and disability support needs of their population. While the Ministry defined a preferred way of implementing the HPV Immunisation Programme, DHBs had the opportunity to respond to their population’s needs. Consequently, there are variations in the delivery processes used across the 21 DHBs. The summary below presents the overarching delivery components of the HPV Immunisation Programme together with key management variations across the nine selected case site DHBs.

- **DHB Planning and Funding** was responsible for the management of the contract with the Ministry and accountable for regional delivery. DHB Planning and Funding managed the allocation of Programme funding, the development of, consultation on and implementation of the agreed Programme, workforce development, vaccine allocation to providers, and monitoring vaccine uptake.

- **Steering Group** offered governance on the Programme. For some DHBs, this was their existing Immunisation Steering Group. The Steering Group tended to consist of a diverse range of health professionals including DHB managers, Māori and Pacific General Managers, PHOs, General Practice representatives, Well Child experts, immunisation coordinators, public health representatives, and at times Māori and Pacific community representatives (e.g. Māori Women’s Welfare League).

- **HPV Advisory Group/sub-committees** were used by some DHBs to develop their PIP, to have forums for sharing information across the range of providers involved in the delivery of the vaccine, and to place focus on specific delivery components.

- **HPV Team or Coordinator** project managed and implemented the Plan. The location and composition of this team varied across the nine DHB cases. Three management models are evident across the nine DHB cases:
  - **Integrated DHB management of school-based and primary care delivery.** Lakes DHB used centralised management and delivery functions to create a very cohesive and close knit team. The HPV Team, located at the DHB, comprised of a project manager, school-based vaccinators, administrative support, data entry and NIR support, IMAC training support, peer and whānau support workers and Te Pou Whakamarama. The HPV Team also liaised and worked closely with primary care delivery. MidCentral DHB also used a centralised model seeking to create cohesion and connection across school-based providers and community stakeholders. Although they did not have a dedicated HPV coordinator, integrated approaches are also noted for Counties Manukau and Hutt DHBs. For these DHBs, the HPV Advisory Group was critical in seeking to share information and create cohesion across the delivery arms and interlinkages with community stakeholders.
  - **Integrated PHO management of school-based and primary care delivery.** Otago and Whanganui DHBs contracted the management of the Programme to a PHO to manage both the school-based (via contracting back to Public Health) and the primary care delivery.
  - **Separate management of school-based and primary care delivery.** Waikato and Bay of Plenty DHBs’ HPV coordinators were focused on the management and delivery of the vaccine via schools. Whānau engagement
was contracted out to Māori and Pacific providers with little centralised coordination or integration of approach. Primary care delivery linked into the Steering Group with little overarching direction on the Programme.

- **School-based delivery** using public health nurses and other nurse vaccinators\(^\text{24}\). Two of the DHB cases set up a new school-delivery programme for the HPV vaccine.
  - Otago DHB contracted Well Dunedin PHO to lead the implementation who sub-contracted Public Health South to manage the school delivery with a dedicated Public Health Nurse manager and team of five full-time equivalents (FTE) school-based vaccinators.
  - Lakes DHB employed a Clinical Nurse Manager in October 2008 to set up and implement the Programme. A key component of the role was recruiting the required workforce (vaccinators, administration, and promotional staff) and establishing the required information technology components. A particular focus of this service was rebuilding positive relationships with schools following the MeNZB immunisation programme.

Section 5.5 details the processes used in school-based delivery and their successes and lessons.

- **Primary care delivery** through PHOs focused on informing independent General Practices about the purpose and objectives of the Programme, concentrating on eligible school leavers, and assisting with query builds and monitoring of uptake through Immunisation Coordinators. Some PHOs and General Practice also drew on their outreach services. With the exception of Canterbury DHB, primary care delivery focused on eligible young women who had left school.

  Canterbury DHB undertook a primary care demonstration model targeting all eligible young women including those in school. The governance and management structure employed was similar to other DHBs: a multi-disciplinary and multi-sectoral steering group, development group and an operational HPV Team. The HPV Team was responsible for managing community awareness raising, and liaising with the three PHOs, immunisation coordinators and whānau engagement provider.

Section 5.6 details processes used in primary-care delivery and their successes and lessons.

- **Whānau engagement** was funded to provide additional support to Māori and Pacific girls and young women, and girls and young women of other ethnic groups. The objective of whānau engagement was to ensure the activities of existing health professionals were co-ordinated and focused and the eligible population was assisted by face-to-face engagement to better utilise these services (Ministry of Health, 2008c).

- **Community awareness raising (CAR)** strategies for Māori, Pacific and other communities were developed in consultation with local key stakeholders to complement national communication strategies. The purpose of CAR was to build broad-based community support for the Programme through effective local strategies to address local situations (Ministry of Health, 2008d).

Refer to section 5.4 for the differing approaches to whānau engagement and CAR across the nine DHB case studies.

\(^{24}\) For clarity in the report, these nurses are referred to as *school-based vaccinators* except if referring to a specific DHB or if used in a quote. These are not the school nurses based at colleges and some low decile primary and intermediate schools. They are the nurses who come into the school to facilitate the vaccination process and give the vaccine.
Workforce education was built into the system via the Ministry contracting University of Auckland’s Immunisation Advisory Centre (IMAC) to develop a training package for vaccinators and information sharers and to provide face-to-face train-the-trainer sessions to allow each DHB to have an HPV trainer in their district.

“We were able to employ a [vaccination] team within the DHB specifically for this project...The DHB decided it wanted to put a lot of value into the Programme. We were able to do it with the funding and flexibility that Ministry had given. We did not want a repeat of MeNZB. ... We wanted emphasis on Māori. The DHB philosophy suited that. We had a local team and had to go back into mend relationships at schools after MeNZB.” (HPV coordinator)

5.3 DHB perceptions, support and equitable design

5.3.1 DHB knowledge and perceptions of the Programme

Fundamental to effective service delivery is Programme ‘buy-in’ by service providers as without it delivery is likely to be ad hoc and challenging to sustain. Positively, across the DHB managers interviewed, there is in the main, broad understanding and support for the HPV Immunisation Programme and the vaccine (refer to Table 20 below).

- DHB managers interviewed in 2010 are aware that the Programme is seeking to protect young women from the HPV virus and in the long-term seeking to reduce the incidence and impact of cervical cancer.

- In 2009, the implementation of the HPV Immunisation Programme was acknowledged as an important priority for all DHBs due to the directive from the Ministry and that the Programme was in its establishment phase (DHB survey 2010). However, it was one of many DHB priorities, and a few DHBs queried the level of investment in the HPV Immunisation Programme given other more pressing health priorities in their regions.

- Towards the end of 2010, the HPV Immunisation Programme is perceived to have entered a business-as-usual phase. However, there is some sentiment that the Programme may be losing momentum reflecting the decline in publicity about the HPV vaccine and the emergence of other DHB priorities and newer initiatives25.

- DHB managers agree that:
  - HPV Immunisation Programme is an important public health intervention for young women
  - HPV vaccine is an effective vaccine for preventing cervical cancer
  - HPV vaccine is safe and well tested.

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25 Positively, this lower priority does not appear to be reflected in 1998 HPV vaccine uptake.
Table 20: Health managers and professionals attitudes to HPV vaccine and Programme

<table>
<thead>
<tr>
<th>Level of agreement (strongly agree and agree combined)</th>
<th>DHB Planning and Funding Managers ‡ n=15 Number</th>
<th>HPV Coordinators ‡ n=20 Number</th>
<th>Māori GM/Providers ‡ * n=20 Number</th>
<th>Pacific GM/Providers ‡ * n=12 Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>The administration of the HPV vaccine is now business as usual within my organisation</td>
<td>12</td>
<td>16</td>
<td>13</td>
<td>7</td>
</tr>
<tr>
<td>HPV Immunisation Programme is an important public health intervention for young women</td>
<td>13</td>
<td>20</td>
<td>20</td>
<td>11</td>
</tr>
<tr>
<td>HPV vaccine is an effective vaccine for preventing cervical cancer</td>
<td>13</td>
<td>20</td>
<td>17</td>
<td>9</td>
</tr>
<tr>
<td>HPV vaccine is safe and well tested</td>
<td>13</td>
<td>20</td>
<td>15</td>
<td>9</td>
</tr>
</tbody>
</table>

Data sources: ‡ DHB telephone survey; *Case visits self-completion form

“To prevent cervical cancer and reduce health inequalities. We are selling the programme to Māori families and accessing Māori families to reduce the incidence of cervical cancer, and HPV. It is a good place to start.” (Māori DHB General Manager)

“Because it was an external priority. Not that DHB thought that it wasn’t important but it hasn’t driven priorities in the DHB. It also came out at same time as other programmes like the hearing screening. New funding was made available so we could have HPV ticking over. HPV had a dedicated coordinator because there was funding.” (DHB Planning and Funding Manager)

5.3.2 Equitable design and implementation at DHB level – enablers

As noted in section 4.5.2, the Ministry working with the MEAG and the PEAG identified eight mechanisms to ensure the Programme was effective for young Māori and Pacific women (Ministry of Health, 2008a: 16). Feedback from DHB managers interviewed in 2010 indicated that several of these mechanisms as well as others were important in ensuring the design and implementation of a Programme focused on health equity. From the DHB, perspective, enablers to designing and implementing an equitable HPV Immunisation Programme are:

- recognition and support for the need for an equity approach
- leadership
- equitable and dedicated funding
- planning and flexible
- engagement with and involvement of Māori and Pacific health and community leaders and providers

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26 Māori General Managers/Providers: n=15 General Managers, n=5 Providers. Data collated from two sources with slightly different questions. Pacific General Managers/Providers: n=5 General Managers, n=7 Providers. Data collated from two sources with slightly different questions. Small base number reflects small overall population. Interpret with caution.

27 Data sources: ‡ DHB telephone survey; *Case visits self-completion form.
collaboration, sharing knowledge and experiences
multiple strategies and tactics
monitoring results and flexible response.

Recognition and support for an equity approach

The importance of achieving equal uptake of the vaccine by Māori and Pacific women to avoid increasing the existing inequities of cervical cancer was in the main acknowledged by DHB managers (refer to Table 21).

DHB cases which achieved an equal uptake of vaccine amongst Māori and Pacific girls born in 1997 compared to other girls demonstrated a more in-depth understanding of the processes to achieve equal opportunity (i.e. the need for greater inputs to achieve equal results for Māori and Pacific people). Those DHBs with a greater appreciation of health equity tended to have larger Māori and/or Pacific population and had investment in increasing workforce knowledge and capacity to address health inequalities.

In contrast, DHBs who did not achieve equal results for Māori and Pacific girls born in 1997 had a more limited understanding of the need for differentiated targeting. For some this reflects their DHB’s relatively small Māori and Pacific populations. Managers from these DHBs focused on vaccine uptake by all eligible young women and implemented a limited range of strategies prioritising uptake by Māori and Pacific young women.

<table>
<thead>
<tr>
<th>Table 21: Health managers and professionals attitudes to health equity</th>
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<tbody>
<tr>
<td><strong>Level of agreement (strongly agree and agree combined)</strong></td>
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<tr>
<td><strong>Base: Those who answered</strong></td>
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<tr>
<td><strong>DHB Planning and Funding Managers</strong></td>
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<td>‡ n=15 Number</td>
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<td><strong>HPV Coordinators</strong></td>
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<td><strong>Māori GM/Providers</strong></td>
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<td><strong>Pacific GM/Providers</strong></td>
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<tr>
<td>‡ * n=12 Number</td>
</tr>
<tr>
<td>My organisation is focused on achieving equal or greater uptake of the HPV vaccine by young Māori and Pacific women</td>
</tr>
</tbody>
</table>

Data sources: ‡ DHB telephone survey; *Case visits self-completion form

“Although we did put targeting Māori and Pacific engagement in the budget, it wasn’t used because it wasn’t needed. The Programme was successful anyway. Cervical screening paid for [name] to come and engage with mothers on the marae so this didn’t come out of our budget. We approached everyone with the message; through meetings in schools, through local public meetings with staff including the Medical Officer of Health, through media releases. Also a lot of girls don’t identify themselves as Māori on the school roll but they are Māori. Don’t know why they don’t identify. The culture of the [DHB] is that we really don’t see any difference in cultural groups; we’re all just [regional name]. We don’t have many Pacific girls in that age group in 2010.” (DHB HPV coordinator)

“You know and I know you have to put in inequitable inputs to get equitable outcomes..., so that (funding) allowed us to do that targeting.” (DHB Planning and Funding Manager)
Leadership

Feedback across the DHB cases highlighted the critical role of leadership within the DHB to ensure emphasis on the Programme, linkage across delivery components (i.e. Planning and Funding, Māori and Pacific health teams, school-based and primary care delivery, whānau engagement/ CAR) and consistent focus on health equity.

“You need a very committed CEO and good leader and executive team that support the kaupapa. A team committed at all levels to be able to make this work. Commitment, and our team from the onset understood the importance of HPV and we went the extra mile … to make the Programme work.” (Māori DHB General Manager)

Equitable and dedicated funding

DHB managers interviewed perceived funding for the Programme was generous, and indicated funding was used as prescribed by the Ministry. Having dedicated and adequate funding was acknowledged as ensuring the effective targeting of young Māori and Pacific women which is perceived to contribute to the achievement of equitable uptake.

HPV coordinators and Māori and Pacific General Managers noted that funding was allocated to services to reach and encourage uptake by Māori and Pacific women, and other relevant ethnic groups (e.g. Asian). DHBs managers interviewed noted that funding was particularly beneficial in identifying innovative ways to increase the uptake of the vaccine by Māori, Pacific and other women. Examples given included:

- **Outreach services and whānau support** to ensure effective targeting of non-responding Māori and Pacific young women. This was used both in the school-based delivery and primary care, although there was significant variation in approach and intensity of use across DHBs. Refer to section 5.4 for more details.

- **Use of incentives** to focus young women’s attention on the HPV vaccine so they are aware of its existence (i.e. to achieve cut-through in the busy lives of young women), and if vaccinating, to encourage completion of the three doses. Incentives used include lip gloss, bracelets, pens, bookmarks, prize draws for an IPod. The use of incentives was contentious. The Ministry and some within DHBs did not condone the use of incentives as it was considered their use undermined the principles of informed consent. Others saw them as an effective attention grabber for all young women and an aide memoire. It is unknown whether the use of incentives increased vaccine uptake. However, where used as a component of a multi-pronged strategy, they appear to have a place (e.g. Lakes DHB used incentives as one tactic and exceeded targeted uptake, compared to Bay of Plenty which did not and did not achieve targets).

- **Local contestable innovation fund** to support General Practice in Canterbury DHB to undertake innovations to increase uptake of the vaccine. Twenty-four initiatives received funding and included ideas such as promotions at movie nights, GPs working with schools, and HPV syringe pens.

- **Investing in text-based follow-up and reminders** for General Practice based on the Practice Management System (PMS). Canterbury DHB paid and introduced the text reminders system for doses 2 and 3 that runs off PMS to assist this process. Text

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29 The syringe pens had a mixed reception and were picked up by national media. Some health professionals were concerned that they may be perceived by young people as unintentionally encouraging intravenous drug use. Conversely, others perceived them as an original way to promote the vaccine to young women.
reminders are now being used for other purposes, and is an example of system strengthening that occurred due to the HPV Immunisation Programme.

- **CAR activities** via DVDs targeting Māori young women and their whānau using Māori models of health care, websites and high profile community events.

  “There is the HPV Coordinator - a dedicated resource. I was involved via the Steering Group. I had control of some money – it is hard to undertake innovative action without dedicated money. And also having the money for the whānau engagement. I had some flexibility; argued best way to promote was not through marketing e.g. TV and print that was happening already, I redirected it to fund the Māori whānau engagement workers.... I believe the whānau engagement workers are more powerful than ‘advertising’ HPV to whānau.” (Māori DHB General Manager)

  “The MOH set that [funding] in the contract so it was not left to the DHB. Funding was identified for Pacific Community Awareness Training. We costed out what each educational session would cost and then worked out how many we could run, and that number was divided according to population figures (e.g. half of the sessions to the Samoan population as they represent half).” (Pacific DHB General Manager)

Engagement with and involvement of Māori and Pacific health and community leaders and providers

All DHBs interviewed had undertaken consultation, to some extent, with Māori and Pacific stakeholders in the development of their PIP. Māori and Pacific stakeholders included Māori and Pacific General Managers within DHBs, and Māori and Pacific clinicians and community providers and leaders in their communities.

Three inter-related approaches were used to foster the involvement of Māori and Pacific stakeholders in the design and implementation of the HPV Immunisation Programme:

- **Using existing governance structures** where Māori and Pacific General Managers and other Māori and Pacific stakeholders offer direction and advice on strategies to achieve health equity, monitoring and review of vaccine uptake and offer advice to increase uptake. This was common across most DHBs.

- **Operational and tactical assistance** by employing or identifying Māori and Pacific clinicians and health providers to connect with and mobilise their communities. This was a common tactic across DHBs and discussed further under whānau engagement and CAR strategies (section 5.4).

- **Integration into the HPV Implementation team** was more uncommon, although very successful. Examples include Lakes DHB who embedded whānau engagement within the HPV team and Counties Manukau where Māori and Pacific health teams were strategically and operationally involved in the design, implementation and monitoring.

The intensity of engagement and involvement of Māori leaders and providers at governance, management and operational levels varied across DHBs and appears to reflect their pre-existing relationships. A core challenge for this engagement was seeking to ensure consideration was given to the diversity of Māori young women and their whānau and the range of strategies required to effectively reach, inform and support them to have the vaccine (e.g. urban versus rural approach, traditional versus mainstream approaches).
Building on the engagement of the PEAG with the Pacific General Managers of the seven DHBs with the largest Pacific populations, Pacific clinicians, community leaders and other Pacific stakeholders were engaged and in the main mobilised to support the delivery of the Programme. In part this reflected the PEAG’s focus on carefully positioning the vaccine as protecting young women from cervical cancer (i.e. focusing on the end-disease state and not its sexual transmission).

Where Māori and Pacific managers and stakeholders are engaged in governance (and implementation) of the Programme, it appears that greater emphasis is placed on using multiple regional/ local strategies to achieve equity of uptake. Further, the DHB was better placed to respond proactively to address concerns about falling or static uptake rates.

“High fit; priority is on influencing and building internal capacity to respond to Māori health needs. We developed an internal Memo of Action with Planning and Funding to get funding for a full time Māori community worker position based in Māori health team. We take a whole of whānau and whole of community approach. They take referrals from primary care and schools for hard-to-reach girls. (Māori DHB General Manager)

“We specifically appointed 0.8 FTE community health worker for 18 months to do outreach. They sometimes work with the DHB’s Pacific nurse to deliver vaccine in homes so not just a focus on HPV for them. The community worker also links closely with school-based team. She receives referrals from them for follow-up. She sometimes takes girls to outreach clinics.” (Pacific DHB General Manager)

Collaboration, sharing knowledge and experiences

The ability to work effectively as a team was seen as a key enabler in designing and implementing the Programme and ensuring a focus on achieving equal opportunity for Māori and Pacific young women. Many of the team relationships derived from the MeNZB programme. Consequently, teams had established trust, rapport and understanding of their roles, and the recognition and processes to share information to enable other providers to follow-up and support non-responders to make an informed decision about whether or not they wanted the vaccine.

Across the nine DHB cases, those with equal (or higher) uptake of the vaccine by young Māori and Pacific girls born in 1997 tended to hold regular meetings with representatives from the DHB, PHOs, school-based delivery, Māori and Pacific stakeholders and providers to discuss progress, ensure cross-team linkages and share knowledge and information to enable effective and appropriate targeting.

“We have a really committed team, just flows really. For us it’s really good having a dedicated team - means Public Health Nurses can get on with what they’re doing. Must say that relationship managers at the Ministry of Health have been absolutely brilliant, and if there have been any issues at all the Ministry has been fantastic. The whole team has been brilliant responding quickly to emails and keep up to date. They’ve been excellent.” (HPV coordinator)

“Behind scenes – are long lasting collaboration across the groups. The [name] Project Management meetings are quite in awe of the work of Māori and Pacific providers. The personalities get on well - I coordinate and bring them together every two weeks - working together with the Māori provider for CAR and linked to Public Health Nurses to do delivery straight afterwards. They’re great - sign consents then do tonight and do immediately. Champions within DHB to promote vaccine.” (HPV coordinator)
Multiple strategies and tactics

As noted in section 4.5.2, the Ministry and the MEAG developed a ‘super’ PIP to help DHBs identify targeted strategies. Review across the nine DHB cases and wider feedback indicate that some DHBs did not undertake all strategies and tactics detailed in their PIPs. For some this reflected that after further consultation or early implementation, their proposed strategies were determined to be less effective and other strategies were implemented. In contrast, a few noted the development of the PIP was undertaken to meet Ministry’s precise health equity requirements which were perceived to be less relevant within their DHB.

Across the DHB cases with equity of vaccine uptake for those born in 1997, there is evidence of a diverse range of strategies and tactics targeting girls of different ethnicities and ages. These DHBs tended to have a consistent and applied focus on the overarching goal of equal opportunity, and flexibility to try differing strategies to engage with non-responders – they had a measured and long-term view of achieving equal uptake. In contrast, DHBs that did not achieve the target used more ad hoc and short-term tactics to try to remedy (unsuccessfully) low uptake by Māori and Pacific girls.

Monitoring results and flexible response

Monitoring of vaccine uptake is critical in seeking to ensure equitable opportunity to have the vaccine. Capability to use monitoring data varied. Across the nine DHBs, the monitoring data was used at a district level, by the school-based programme and by some PHOs. However, qualitative interviews at a General Practice level indicated a lack of monitoring of uptake and Practice Nurses interviewed did not know their practice’s uptake rates and whether they needed to use differing strategies to target Māori and Pacific.

Ability to ensure vaccinators had data on those eligible to receive the vaccine and their vaccine status was critical to effectively target and to identify strategic responses to address low uptake by priority populations. Data monitoring was challenging and is an area for enhancement discussed further in sections 5.5.4 and 5.6.6.

<table>
<thead>
<tr>
<th>Level of agreement (strongly agree and agree combined)</th>
<th>DHB Planning and Funding Managers</th>
<th>HPV Coordinators</th>
<th>Māori GM/Providers</th>
<th>Pacific GM/Providers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base: Those who answered</td>
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<td>‡ n=20</td>
<td>‡ * n=20</td>
<td>‡ * n=5</td>
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<tr>
<td>Data collection and reporting was effective to monitor the uptake of the HPV vaccine</td>
<td>8</td>
<td>8</td>
<td>7</td>
<td>5</td>
</tr>
</tbody>
</table>

Data sources: ‡ DHB telephone survey; *Case visits self-completion form
5.3.3 *Equitable design and implementation at DHB level – inhibitors*

Inhibitors to the design and implementation of an equitable Programme are the opposite of those noted in section 5.3.2. DHB managers also highlighted a number of wider environmental factors which inhibited the implementation of the Programme in general: vaccine for a STI, three doses and anti-vaccine environment.

**Vaccine for a sexually transmitted infection**

The HPV vaccine is unique in that it is a vaccine to prevent a sexually transmitted infection, and is more effective before girls come into contact with the virus. Promoting the need for the vaccine to parents and girls aged 12 years requires sensitive and careful positioning. Pacific communities in particular were very sensitive to the idea of their daughters being protected from a sexually transmitted infection as it implied unacceptable sexual behaviour.

Due to the limited time to launch the Programme, no communications were undertaken to create awareness of the prevalence of the disease and the link to cervical cancer. As a result, health professionals, particularly in primary care had to spend time educating parents and young women before they consented to have the vaccine.

**Completing three doses**

Requiring young women to have three doses was logistically challenging, particularly for more transient communities.

**Anti-vaccine/ immunisation environment**

DHBs in some areas were promoting and implementing the Programme against a background of anti-HPV vaccine and anti-immunisation lobbying. Resistance to the vaccine came from some surprising sources, for example highly visible health professionals and managers, key community leaders such as Board of Trustees informing their schools not to support the Programme. DHBs had to try to repair damage created. However, it was difficult to overcome the underlying uncertainty created due to the credibility of the opponent within the community. For Pacific communities, rejection by a senior member of the community is especially damaging and nearly impossible to overcome as demonstrated low uptake among young Pacific girls born in 1997 in one of the case DHBs.

In many areas, DHBs had to respond to misinformation and confusion about the vaccine due to the activities of the anti-immunisation lobby and at times the media (both local and national). Claims that were put forward related to the vaccine being unsafe and causing infertility, cancer, genital warts, severe adverse reaction and death. The Programme, particularly in the lower North Island, was significantly set back by the death of an 18-year-old girl whose family attributed her death to the HPV vaccine. More than a year after the young woman’s death, the coroner has not reported on the cause of death; thus concerns about the vaccine have not been mitigated. The Ministry was criticised by health professionals for not being more proactive and vocal in addressing misinformation.

“I think the biggest challenge for us has been the negative media. It has been massive. Lessons are, not everyone really understands HPV, the ads were great on TV, but we could have used more really positive media. The lessons learned are that you have to have really key people, e.g. the head of hospital [name] came out and said HPV is your best shot at protection, it was just amazing and people changed their mind. So think that more of that really positive media stuff would have been great.” (DHB HPV coordinator)
5.4 Whānau engagement and CAR

The Ministry’s design of the HPV Immunisation Programme noted the importance of CAR and whānau engagement to ensure the equitable implementation of the Programme. All DHBs used whānau engagement and CAR to some extent. However, the types of strategies and tactics used and the intensity of application varied across DHBs. Variations in strategy use reflected the demographic profile of the DHB as well as the interpretation and importance placed on health equity. While whānau engagement and CAR are defined within DHBs’ PIPs, the terms are used interchangeably. In part this reflects that Māori and Pacific providers were contracted to undertake both CAR and whānau engagement.

5.4.1 Community awareness raising approaches (CAR)

Due to the rapid implementation of the Programme, no pre-launch CAR activities were undertaken to create awareness of the need for the vaccine. Furthermore, CAR and whānau engagement providers were in some DHBs contracted after the commencement of the Programme. Consequently, these providers were in catch-up mode trying to create awareness and in some case re-educate their communities about the benefits of the HPV vaccine following negative media coverage. In addition, late contracting meant they were seeking to establish links with vaccinators (i.e. school-based delivery or primary care).

DHBs undertook a range of regional and local activities to increase awareness, and knowledge about the HPV vaccine amongst young women and their parents/whānau and create a foundation of support for the Programme. Emphasis was placed on delivering information in culturally safe environments and ways to target young Māori and Pacific women and their parents/whānau. Activities undertaken include:

- Presence at local and regional events such as Pasifika, Polyfest, local sports tournaments and other events targeting young women and their whānau.
- Identifying local champions including young women, fathers, or local sporting celebrities.
- Sponsorship of local sports team (e.g. sponsorship of Tactix netballers in Canterbury DHB, Māori rugby team and local netball).
- Developing and distributing posters and newsletters in schools, cinemas, university campus and pubs.
- Culturally-specific events for Māori such as waka ama, kapahaka and Koroneihana (Coronation), as well as resources and DVDs.
- Culturally-specific events for Pacific young women and their fānau through Pacific churches, youth fono, and community gatherings and workshops targeting the different Pacific nations, and radio programmes in different Pacific languages.
- Local advertising on radio and cinemas to supplement the national campaign. In Canterbury DHB, television advertising to address any potential confusion relating to promotion of the school-based delivery.

With the exception of Canterbury DHB who monitored their publicity campaign (Opinions Market Research, 2009), the level to which these local CAR activities created a supportive and facilitating environment to foster uptake of the vaccine is unknown.
“The approach that was taken, the majority of CAR done by actual providers who are already based in the community who already knew the population that they worked with.” (Māori DHB General Manager)

“Community awareness raising, health promotions. We held sessions at churches, all sorts of other gatherings. We established links with primary care, including youth clinics as only one Pacific provider in the area who doesn't deliver immunisations. We established links with school teams for referrals.” (Pacific DHB General Manager)

“Community workers doing community awareness raising. Very important people for mass immunisations programmes, especially as vaccine was considered controversial by the community. It was vital to have Māori and Pacific CAR workers. It should ideally start their work in the community before campaign is even launched. The contracts end in [name] in December 2010 unfortunately.” (DHB HPV coordinator)

5.4.2 Whānau engagement approaches

A range of whānau engagement approaches was used across the nine DHB cases to target Māori and Pacific young women and their families. Discussions with Māori and Pacific whānau engagement providers highlighted that Māori and Pacific young women were prioritised, and emphasis was placed on ensuring no one was excluded regardless of ethnicity.

“Whole of community approach - not just Māori focus; importance of the community worker role; school programme fantastic.” (Māori General Manager)

Māori whānau engagement

Analysis across the nine DHB cases identified five broad approaches of whānau engagement with young Māori women and their whānau, specifically:

1. centralised, integrated and coordinated approach
2. community-centred approach
3. decentralised approach
4. limited, ad hoc and reactive approach
5. non-contracted business-as-usual approach.

1. Centralised, integrated and coordinated approach

In two DHBs, whānau engagement/support workers were employed to work collaboratively alongside those delivering the vaccine offering culturally appropriate education about the vaccine, supporting parents and young women to make an informed decision, following up non-response and overcoming potential access barriers. Working collaboratively enabled the whānau engagement workers to focus their activities on those young women the vaccinators were targeting.

- Lakes DHB employed a Pou Whakamarama on the recommendation of the two iwi governance groups. Working collaboratively with the DHB’s Pou Herenga (liaison advisor from the Māori Health Unit), the Pou Whakamarama undertook initial CAR activities in the area. Five Māori providers were contracted to undertake CAR activities within the Lakes area. These contracts were not renewed by the DHB after the first year due to a lack of perceived effectiveness. From this point, all community awareness raising, whānau engagement, and outreach services were provided by the
HPV Team at the DHB. This ensured a coordinated approach and consistent, well-informed messaging for health professionals.

- Counties Manukau school-based delivery employed Māori and Pacific whānau support workers to follow-up non.returned consent forms, undertake as needed education about the vaccine, and support Māori and Pacific young women through the vaccination process. The whānau support workers also offered administrative support to enable public health nurses to focus on their role as vaccinators. Given the effectiveness of the whānau support workers in the HPV Immunisation Programme, their roles have been incorporated into the wider school-based health and wellbeing programmes.

In another two DHBs, there was a collaborative and coordinated relationship between the contracted Māori health providers who undertook whānau engagement and those vaccinating in schools. These providers were not contracted to be a member of the HPV school vaccinator team. However, they developed processes to work closely and in sync with the school vaccinators.

- In MidCentral DHB whānau engagement was initially undertaken by iwi providers. However, the role was taken over by a Māori Public Health Nurse due to their perceived limited success. The Māori Public Health Nurse worked closely with schools to ensure a 100% return rate of consents for Māori girls. The Māori Public Health Nurse also attended public events raising community awareness, informing parents, and dispelling myths.

- In Otago DHB, Public Health South’s Public Health Nurses worked closely with Arai Te Uru Whare Hauora in high deprivation schools to educate and support young Māori women to make an informed decision about whether they have the vaccine. Arai Te Uru Whare Hauora’s philosophy was focused on informing and educating to achieve “genuine informed consent” and not to engage in “invasive” outreach activities.

2. Community-centred approach

A community-centred approach focused on contracting Māori health or community providers to undertake whānau engagement within their community. In this approach, the integration of whānau engagement activities to the delivery of vaccinations in school and primary care was challenging.

- Counties Manukau DHB contracted five Māori providers to work collaboratively to target the diversity of young Māori women and their whānau living in the DHB region. The underlying strategy was to leverage the strengths of the five organisations to create awareness and action using a range of strategies specifically through youth focused services, community marae-based service, an integrated kaupapa Māori health service and a Māori PHO. Using a collaborative approach enabled a multi-pronged strategy and an in-built flexibility to adapt and respond to the community needs in relation to the HPV vaccine.

The five providers met with resistance when seeking to work alongside the school-based delivery and primary care. As a result, the five providers were unable to synchronise their whānau engagement and CAR activities with the delivery of school-based vaccines. Some vaccinators were concerned that the presence of whānau engagement providers would contravene the principles of informed consent. Primary care organisations were also reluctant to release the names of non-responders due to privacy concerns.
Whanganui DHB applied a community-centred approach working with the Māori Women’s Welfare League, a young Māori peer educator, and four iwi providers who worked closely with their respective communities.

Hutt Valley DHB employed a Māori and Pacific whānau engagement worker to educate and promote uptake of the vaccine and to overcome the access barriers to primary health care. The whānau engagement workers were successful in informing and mobilising their communities within their existing networks. However, resistance by primary care to hand over lists of non-responding Māori and Pacific women meant that their reach and ability to effect change outside of their networks was limited.

3. Decentralised approach

Two DHBs used a more decentralised approach leveraging off a centralised role. The approach reflected that each DHB had a large geographical area to cover and a diverse Māori community and iwi.

Bay of Plenty DHB funded a full time Whānau Engagement Coordinator on a one year contract, based at the DHB. Their role was to liaise with Māori providers across the region – a large task given the number and spread of providers. The responsibilities of the Whānau Engagement Coordinator included: leading consultation and planning for Māori, advising the project team on appropriate and culturally sensitive service provision, facilitating whānau engagement, undertaking awareness raising in the Māori community, and advising on the delivery of immunisation to hard-to-reach groups, particularly those born in 1990/91.

In Waikato DHB, the whānau engagement and CAR were contracted out to Māori and Pacific providers. There was little coordination of whānau engagement and CAR activities and school-based delivery.

4. Limited, ad hoc and reactive approach

One DHB undertook very limited whānau engagement in response to an unexpected low uptake by Māori and the need to achieve an agreed Ministry target to continue with their preferred delivery approach.

Canterbury DHB perceived little need for whānau engagement to achieve target vaccine uptake by Māori (and Pacific) young women. This assumption was based on the high enrolment of Māori, Pacific and other girls in PHOs and equity of BOOSTRIX uptake by 11 year olds for Māori and non-Māori using a primary-care led delivery without any specific targeting of Māori. Consequently, targeted Māori whānau engagement activities occurred for only a short duration (six weeks) when seeking to achieve the year one uptake target agreed with the Ministry to continue the primary care demonstration model.

A respected and well-connected Māori health professional was contracted to undertake a range of activities to increase parents and young women’s awareness and understanding about the HPV vaccine, and address any concerns or negative publicity about the vaccine (e.g. visits to intermediate and secondary schools with a high population of Māori students to have separate information sharing sessions with parents and young women). Once the agreed target was achieved, the whānau engagement was no longer funded by the DHB, although a PHO continued the contract for a short period of time.
5. Non-contracted business-as-usual approach

Reflecting the professionalism of many iwi health providers and the wider health shift to whānau ora, some non-contracted providers sought to undertake CAR and whānau engagement activities within their wider health promotion roles. Māori health providers in Otago DHB and Canterbury DHB noted that they sought opportunities to promote the HPV vaccine as appropriate through their other contracts (e.g. cervical screening).

“The worker is hugely important; you had to have the right worker. Māori clinician that has the ability to gain respect and credibility quite quickly. Can't emphasise enough.”  
(Māori General Manager)

“We had a lot of really good relationships with the Māori Women’s Welfare League, the President really promoted the programme; we worked with other iwi providers to give them resources (the stuff we got from the MOH, leaflets etc.) and get them to help with the clinics in the schools… We engaged with the Pacific Health Trust for awareness and engagement and the community health workers and outreach services helped with families. No Pacific health providers in our area.”  
(HPV coordinator)

Pacific fānau engagement

For Pacific communities, fānau engagement approaches appear to reflect the size of the eligible Pacific population in the DHB. Four fānau engagement approaches were identified across the nine DHB cases:

1. centralised, integrated and coordinated approach
2. community centred approach
3. business-as-usual approach
4. responsibility of Māori whānau engagement/ CAR providers.

1. Centralised, integrated and coordinated approach

As noted, in Counties Manukau DHB Pacific fānau engagement/ support workers were embedded into the HPV and school-based delivery team respectively. These fānau engagement/ support workers were employed to work collaboratively with the school-based vaccinators.

2. Community centred approach

Those DHBs with larger Pacific populations tended to use a community centred approach. Counties Manukau DHB selected two differing Pacific providers: one with an established track record in successful delivery a range of health initiatives and the other a Pacific provider of social services. The health-based Pacific provider ensured that all staff were knowledgeable about the HPV vaccine, including administrative and reception staff, to facilitate all eligible Pacific girls and their fānau being made aware of the opportunity. The other Pacific provider tended to focus on Pacific young women more disengaged from their fānau and community. As similar to the Māori providers in Counties Manukau, the use of two distinct Pacific providers increased the reach and range of strategies being used to inform the community and created a supportive environment for young women to have the vaccine. However, the Pacific providers were not strongly integrated with vaccinators.
As discussed, Hutt DHB also used a community-centred approach through engaging a Pacific whānau engagement worker whose success was limited to the reach of their networks within Pacific communities and across the Pacific nations they affiliated to.

3. Business-as-usual approach

DHBs with few eligible Pacific young women tended to inform their local Pacific Trusts and Pacific health providers about the Programme. For example, Bay of Plenty DHB envisaged that CAR activities undertaken by the Pacific Island Trust would dovetail onto their cervical screening activities. Similarly, in Otago DHB, the contracted Pacific Trust delivered whānau engagement and CAR about HPV to Pacific peoples through existing health promotion and activities and established communications systems (e.g. newsletter).

In Waikato DHB, the Pacific provider undertook numerous activities: community meetings, youth fono, church presentations, radio programmes in different languages, door knocking and workshops with Tongan, Samoan and ni-Vanuatu women. Another important strategy was to ‘piggyback’ HPV onto other scheduled events and existing networks to work with Pacific school children (primary, intermediate and secondary) and national broadcasting services.

In Canterbury DHB, Pacific health providers appeared to be more involved in the delivery of the HPV immunisation programme. Potentially, this reflects that the Pacific health provider is a General Practice and has direct involvement in and payment for vaccines given. The Pacific health provider did not receive any funding for CAR, outreach services or translation activities.

4. Responsibility of Māori whānau engagement/ CAR providers

MidCentral DHB with a small eligible Pacific population used Māori whānau engagement providers to also target young Pacific women and their fānau through their activities.

“Good success in that we hired community workers that learned a lot through the programme - it became a career path; some of our Pacific community workers are training to become Public Health Nurses and social workers. This happened in the MeNZB programme also so we were looking for this to happen.” (Planning and Funding Manager)

“The extra work we did in community awareness, subcontracted to the Pacific providers. We have two Pacific providers in the DHB; they have trained community health workers who are experienced in delivering other health programmes. They live in those local communities; they are well connected and have credibility. They are effective in delivering the community awareness for HPV. They delivered education sessions in Pacific languages plus English. We target those populations who have biggest access barriers, and low uptake. The HPV programme benefitted from the long-term systems and relationships of other Pacific community health programmes.” (Pacific General Manager)

5.4.3 Effectiveness of whānau engagement and CAR

Assessing the effectiveness of whānau engagement and CAR activities in achieving equitable uptake of the HPV vaccine is challenging. In part, this is due the unclear delineation of the role between whānau engagement and CAR, definition of the target audience and the interfacing with vaccinating providers. For the HPV Immunisation Programme, it is clear that young Māori and Pacific women are the priority audiences. However, for whānau engagement and CAR providers it appeared at times unclear who is being targeted, (e.g. those in year 8/12 years, other eligible school aged girls or eligible young women who have left school, or the community as a whole). Even when the role and
focus of whānau engagement are clearly defined, attributing the actual contribution of whānau engagement in enabling an informed decision and preferably vaccine uptake is difficult - a challenge that is recognised by some DHBs.

**Effective whānau engagement with Māori**

From the nine comparative DHB cases, there is evidence to suggest that whānau engagement does play an important role in achieving equal vaccine uptake by young Māori women vaccinated through schools. Drawing from the four DHBs cases that achieved equity of uptake and a vaccine uptake of over 70% for young Māori girls born in 1997 (dose 1 by 31 December), the evidence suggests that whānau engagement is more effective in contributing to equitable vaccine uptake when the whānau engagement providers are:

- **Known and trusted in the community, and ideally building holistically on other health prevention or social wellbeing activities.** Consequently, the providers are connected with, and can negotiate and interact with the diversity of Māori in the DHB region. In this context, a diversity of Māori providers may be needed to reach and engage with the diversity of Māori and iwi.

- **Knowledgeable about HPV virus, cervical cancer and the HPV Immunisation Programme.** Whānau engagement providers must be able to present complex health information in a way that is understandable and culturally acceptable. Information provided needs to be sensitive to cultural norms and taboos, especially in the case of the HPV vaccine which offers protection against a sexually transmitted infection. Having a health background is important in enabling whānau engagement providers to answer the ‘hard’ questions. Feedback from whānau engagement providers indicates the need to create time to talk and reflect, and to focus on choice. Promotional material needs to be tailored to the community and target audience and include resources in Te Reo Māori and ideally use local role models.

- **Flexible in their response to the community needs, and use of a range of strategies and tactics to engage with parents and young women.** Effective whānau engagement providers were community-centric in their delivery and sought to use appropriate community levers to achieve reach into and engagement with a wide audience. They were also reflective about what worked and didn’t work, and revised their strategies and tactics accordingly.

- **Actively seeking to remove barriers to receive the vaccine via persistently seeking out non-responding young Māori women, educating and assisting them to access via in-home vaccinations or transporting to primary care.** For whānau engagement workers to effectively find non-responders they need to receive a list of non-responders. Consequently, primary care and school-based deliverers must have trust and confidence in the provider to hand over this information.

- **Closely interlinked, synchronised and planned in their approach with the vaccinators** (e.g. employment of whānau support workers by the school-based delivery, a Māori Public Health nurse who takes on a wider whānau engagement role, or iwi providers having a strong alignment with the delivery). From the cases, it is evident that there are differing ways to achieve interlinked whānau engagement and vaccine delivery which deliver positive results. While the components of the effective delivery are common across those four DHB cases which achieved over a 70% uptake for young Māori girls born on 1997, the delivery varied reflecting regional needs and provider strengths.
Across the four DHB cases with more than 70% of young Māori girls born in 1997 vaccinated, the role of CAR is less clear. In two cases, contracts with iwi providers delivering CAR were not continued as they were perceived as not effective. However, it is unknown whether their activities created a 'readied' environment for the whānau engagement activities that came later. In Counties Manukau DHB, while whānau engagement was contracted in the school-based delivery, the contribution of the CAR providers in creating a vaccine ready environment is unknown.

DHBs that used whānau engagement and CAR that were not linked to the actual vaccination event did achieve equity of uptake and while they were close to the uptake target of 65% at dose 1 for young Māori women born in 1997, they did not achieve an uptake rate over 70%. Whānau engagement strongly interlinked to vaccinators therefore appears to offer better return getting young Māori women vaccinated. In contrast, the two case DHBs that did not achieve the uptake target for Māori born in 1997, had either very limited whānau engagement or challenges with effectively engaging across very diverse Māori populations.

Fānau engagement with Pacific

In DHBs with a larger Pacific population, there is evidence that more interconnected approaches between school-based delivery and fānau engagement resulted in higher uptake (e.g. Counties Manukau with over 80% uptake of the vaccine by Pacific girls born in 1997).

The general principles underpinning effective fānau engagement for Pacific are similar to Māori. However, a key difference is the cultural approach and the differing community levers to gain engagement (in particular gaining approval of church, community and male leaders). As indicated earlier the rejection of the Programme by one Pacific leader can result in the community rejecting the vaccine. However, this is only one level of engagement, as one Pacific provider noted securing of consent happens on a fānau basis within a community supportive of the vaccine.

For Pacific fānau, a key focus of whānau engagement is ensuring information is presented in a way, format and language that is understood and can inform decision-making. In this context, the use of Pacific languages is an important tool for Pacific parents and grandparents. However, translating information on HPV into Pacific languages is challenging, in particular retaining the essence of the key health messages.

“A conversation between mum and dad has to be held, rather than a wider group. [It’s] a family by family conversation” (Pacific provider).

5.4.4 Lessons going forward

In considering the effectiveness of whānau engagement, care is needed as effectiveness can be impeded by the lack of willingness of other providers to work collaboratively. While the factors underpinning effectiveness of whānau engagement and CAR have been identified, other lessons from the HPV Immunisation Programme have also been identified:

- Better lead in times to plan, engage and facilitate communities to ensure information is widely disseminated before Programme launch.
- A planned and measured approach.
- Placing the individualised focus of vaccine delivery into the context of the ongoing health of the community (e.g. CAR for HPV Immunisation Programme is one activity
in a wider more holistic suite of health promotion/ initiatives for the provider). In this context, placing promotion of immunisation into a whānau ora framework.

- For Pacific using existing community infrastructures to disseminate information about HPV (e.g. churches, youth groups, exercise groups, Pasifika festival).
- Clarity of role of definition and delineation with other providers to ensure joined-up delivery focused on positive outcomes for young women (i.e. supported and empowered to make an informed decision). The interface between whānau engagement/ CAR and primary care, in particular, appears disjointed with primary care, if engaging, using outreach services.

Areas requiring further discussion and clarity are:

- defining and measuring success for whānau/ fānau engagement and CAR
- agreeing the role and use of incentives
- determining the benefits and cost effectiveness of providing vaccines in a non-clinical setting, and determining processes that mitigate potential conflicts of interest or perceived coercion.
  - Pacific fānau engagement providers wanted vaccines to be given in non-clinical settings (e.g. churches). The debate arose as CAR/ fānau engagement creates momentum and support for eligible Pacific women to have the vaccine. However, the need to make appointments to see their GP at a later date or wait for school delivery creates access barriers. As a result, the expected ‘near’ universal uptake does not occur. The concept of vaccinating for example in churches is contentious due to the perceived risk of coercion.

5.4.5 Sustainability of whānau engagement

Most contracts for CAR and whānau engagement ended in December 2010, although a few DHBs retained funds to continue these services through to June 2011. The implication of this discontinuation for the ongoing cohort and those in the catch-up cohort as they near the end of their eligibility to receive the free vaccine is unknown. While there is more awareness of the HPV Immunisation Programme since its inception, it is not known whether the current equity levels of uptake for young Māori and Pacific women in year 8/ 12 years will be sustained without this intensive level of support and engagement. Ongoing tracking over the coming years after the discontinuance of whānau engagement will offer further insight into whether equity of opportunity can be maintained without this additional resource.

Positively, the NIR data indicates that young Māori and Pacific girls born in 1998 continue to have higher uptake of the vaccine without the intensive use of whānau engagement and CAR in 2011 (refer to Table 23). This maintenance of equity of vaccine uptake may reflect a readied environment due to the intensive whānau engagement in the previous year, as well as other factors such as the influence of older siblings, effective school-based delivery, ability of the vaccinator workforce to answer ‘difficult’ questions about the vaccine, and/ or growing acceptance of the vaccine by these communities.
Table 23: HPV Vaccine Uptake for Girls born in 1998 at 30 October 2011

<table>
<thead>
<tr>
<th>HPV Dose</th>
<th>Māori</th>
<th>Pacific</th>
<th>Other</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dose 1</td>
<td>62%</td>
<td>74%</td>
<td>43%</td>
<td>50%</td>
</tr>
<tr>
<td>Dose 2</td>
<td>59%</td>
<td>71%</td>
<td>42%</td>
<td>48%</td>
</tr>
<tr>
<td>Dose 3$^{30}$</td>
<td>42%</td>
<td>47%</td>
<td>30%</td>
<td>34%</td>
</tr>
</tbody>
</table>

Source: NiR data at 30 October 2011

5.5 School-based delivery of HPV vaccine

5.5.1 Uptake for 1997 cohort

To recap, the targets set for the HPV vaccine uptake for Māori, Pacific and other girls born in 1997 by 31 December 2010 were 65% for dose 1, 60% dose 2, and 55% dose 3 respectively. By 31 December 2010, the following HPV vaccine uptake results were achieved for girls born in 1997:

- Uptake of the vaccine by Māori girls reached the target for doses 1, 2 and 3.
- Uptake of the vaccine by Pacific girls exceeded the target for doses 1, 2, and 3 (by around 15%).
- Uptake of the vaccine by other girls was significantly under the target for dose 1 (43%), although the drop off from dose 1-3 was small – 40% at dose 3.
- Equity of uptake was achieved overall for Māori and Pacific girls compared to other girls
  - equity of uptake for Pacific girls was achieved across most Pacific DHBs
  - equity of uptake for young Māori women was not consistent across DHBs.
- With the exclusion of Canterbury DHB, 94% of girls born in 1997 who had the vaccine received it through school-based delivery.

This section explores the delivery of the HPV vaccine through schools to identify the processes and levers contributing to achieving the uptake target and equity of uptake by Māori and Pacific girls.

5.5.2 School-based vaccinators’ knowledge and perceptions of the Programme

Across the nine DHB cases, school-based vaccinators delivering the HPV vaccine in school were in the main, very positive about the Programme$^{31}$. As shown in Table 24 below, school-based vaccinators interviewed agreed that:

- the HPV Programme is an important intervention
- the vaccine is safe and effective
- school-based delivery is more effective at targeting Māori and Pacific girls and those aged around 12 years

$^{30}$ School-based delivery of dose 3 will not be completed until December 2011.

$^{31}$ Care sample size is small and qualitative in nature. Findings are only indicative of the school-based vaccinators interviewed.
- delivery is prioritising Māori and Pacific young women
- delivery is now business as usual.

Table 24: School-based vaccinators’ knowledge and perception of the Programme

<table>
<thead>
<tr>
<th>Level of agreement (strongly agree and agree combined)</th>
<th>School-based vaccinators n=20 Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPV Immunisation Programme is an important public health intervention for young women</td>
<td>20</td>
</tr>
<tr>
<td>HPV vaccine is an effective vaccine for preventing cervical cancer</td>
<td>20</td>
</tr>
<tr>
<td>HPV vaccine is safe and well tested</td>
<td>19</td>
</tr>
<tr>
<td>The administration of the HPV vaccine is now business as usual within my organisation</td>
<td>19</td>
</tr>
<tr>
<td>School-based delivery is the most effective mechanism for vaccinating girls aged 12 years</td>
<td>19</td>
</tr>
<tr>
<td>School-based delivery is the most effective mechanism to achieve high uptake of the HPV vaccine amongst young Māori and Pacific women aged 12</td>
<td>19</td>
</tr>
<tr>
<td>My organisation is focused on achieving equal or greater uptake of the HPV vaccine by young Māori and Pacific women</td>
<td>16</td>
</tr>
</tbody>
</table>

Data source: Case visits self-completion form

5.5.3 School-based delivery approaches

Sixteen DHBs had existing school-based delivery for the year 7 BOOSTRIX vaccination. Lakes, Otago and South Canterbury DHBs set up school-based delivery for the HPV Immunisation Programme. Canterbury DHB undertook a primary care demonstration model and therefore had no school-based delivery of the vaccine.

School-based delivery approaches across the eight DHB cases in the main followed fairly similar processes and faced similar challenges as summarised below.

Workforce recruitment and training

DHBS were in most cases able to draw on experienced Public Health Nurses and school-based vaccinators who had been involved in the MeNZB Immunisation Programme. For some DHBs, the fast rate of implementation was problematic as not all roles were filled from the outset, creating planning and logistical challenges.

The school-based delivery workforce tended to include:
- Manager/ clinical nurse leader responsible for managing staff rosters, timetables and equipment and liaison within the wider HPV Immunisation Programme’s DHB management and governance structures.
- Clinical nurse educator who coordinated IMAC training for vaccinators and in some cases HPV education for whānau engagement workers.

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32 South Canterbury DHB discontinued the school-based delivery in 2010 due to cost and logistics of targeting one or two girls in small rural schools. However, in 2012 South Canterbury DHB reinstated their school-based delivery for HPV vaccine due to low uptake rates amongst young women aged 12 years (i.e. the ongoing cohort).
School-based vaccinators (usually drawing from the existing pool of Public Health Nurses) who sought access to schools and undertook the vaccination and follow-up. All staff received vaccinator training or refresher training.

Data entry and administration staff responsible for the SBVS and loading data onto the NIR. Some were also involved in ensuring a smooth administrative process when vaccinating in schools, allowing school vaccinators to remain focused on the nursing care of delivering the vaccine and the post-vaccine observation.

Community support or whānau engagement workers were used in four of the eight DHB cases which used school-based delivery. Their role was to support the school vaccinators and engage, educate and support Māori and Pacific parents to make an informed decision about whether their daughters would have the HPV vaccine.

“You have got to put good planning into it, get good buy-in (this applies to every programme, not just HPV). Education of your staff is vital so they can talk confidently to girls and parents. The Programme is really only as good as the staff and the processes. We never had any problems with the privacy stuff, because we'd done the groundwork with schools, I went around to all the schools and talked with principals. Our smooth implementation reflected our careful planning and processes.” (HPV coordinator)

“We could have benefited from a more coordinated approach. We had a six month period with no programme manager across the whole programme (sick leave); we just had a school-based programme manager.” (Planning and Funding Manager)

**Work planning and access to schools**

The manager/clinical nurse leader was responsible for planning the staggered roll out of the school-based delivery. In 2009, 1,399 out of the 1,472 eligible schools (95%) agreed to participate in the HPV Programme. Of the 73 schools that declined to participate in the Programme (5%), half were decile 6–10, primary schools, or religious or alternative schools. Qualitative feedback from school-based vaccinators across the eight DHB cases suggests that some schools that initially declined to participate are now coming on board, and one or two religious schools have now opted out.

Schools’ Boards of Trustees are responsible for the governance and management of their school. Consequently, DHBs have to seek approval for access from each school to administer the HPV vaccine to eligible young women enrolled in the school. Most DHBs had existing relationships with primary and intermediate schools on which to base the roll out of the HPV Immunisation Programme and to seek this agreement. However, connections and relationships were less well established with colleges for targeting young women in the catch up cohort. For some DHBs, substantial work was undertaken to re-engage colleges and other schools due to residual distrust from the MeNZB Immunisation Programme.

In seeking to build or maintain relationships with the schools, DHBs tended to assign school-based vaccinators to specified schools. In Otago DHB, which achieved equitable and one of the highest vaccine uptakes for young Māori and Pacific women born in 1997, schools identified their preferred contact person within the HPV school-based vaccination team.

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33 This data excludes eligible schools in Canterbury DHB as they delivered the HPV vaccine only in primary health care from the outset. The data includes South Canterbury DHB as they delivered the HPV vaccine in schools in the 2009 school year, and then opted for only primary care-based delivery from 2010.

34 Appendix 9 presents a profile of the schools that declined to participate by decile, proportion of Māori and Pacific students enrolled, school roll size and DHB.
Across the eight DHB case studies, all school-based delivery services sought to prioritise larger schools with a high proportion of Māori and Pacific students. However, some DHBs were unable to follow through on this intent due to the geographic spread making this an inefficient approach.

Whanganui and Bay of Plenty DHBs, with a rurally dispersed eligible population, sought process efficiencies by bussing eligible consented girls from rural/ small schools to central locations to receive their vaccines. In contrast, Lakes DHB decided not to bus eligible girls from rural locations, therefore all girls were vaccinated at their school. Otago DHB used the rural Public Health Nurses (i.e. nurses not formally within the school-based vaccination team) to deliver the HPV vaccine in rural areas. The extent to which vaccinating at the girls’ school contributed towards the higher uptake of Māori and Pacific girls born in 1997 in Lakes and Otago DHBs is unknown.

Two DHB cases sought to condense the roll out of the HPV Immunisation Programme to one year and not the Ministry’s recommended two year period. Bay of Plenty DHB focused on rolling out the Programme to all schools in 2009 with focus in 2010 on catch-up vaccinations. The rationale given was to minimise disruption to schools by reducing the number of visits required by the vaccination team, preserve the existing Public Health Nurse service as far as possible, provide economies of scale, and optimise the impact of the national social awareness campaign commencing in January 2009. Waikato DHB also focused on a one year roll out. However, due to low uptake in 2009, the Ministry requested the DHB to continue to deliver the Programme in 2010. Comparatively, the lower uptake for girls born in 1997 in both these DHBs lends some support to a more paced roll out for the HPV vaccine.

Seeking access to schools requires sensitive discussions and negotiations with the Board of Trustees (who make the ultimate decision on access), and the principal (who oversees the day-to-day management of the schools). Feedback from school vaccinators and parents highlight that it only took one very vocal and anti-vaccine Board of Trustee member to result in a school declining to participate. Getting commitment from the school nurse (if there is one), teachers and administrative support (i.e. the school secretary) is also critical to creating an environment supportive to educate young women and their parents about the vaccine and to facilitate a smooth vaccination process. Feedback from school vaccinators highlighted that while schools may agree to participate, schools can be divided into those that actively facilitate the vaccination process and vaccine uptake and those that simply offer access but no assistance. From a vaccinator perspective, the vaccination process is made easier by facilitating schools. However, whether these schools have higher vaccine uptake is currently unknown.

Schools that facilitate the vaccination process tend to:

- hand-over the school roll so the school-based vaccinator is aware of the number of eligible girls in the school and their names and relevant contact details
- be active in distributing and collecting in the consent forms, and reminding non-responders to return their forms
- offer education about the HPV virus, the vaccine, relevant sexuality education and the long-term protection offered by the vaccine against cervical cancer
- facilitate communications with parents via newsletters and education sessions with the school-based vaccinator
facilitate the logistics of young women being vaccinated (i.e. the space, organising the smooth flow of young women to and from their classrooms)

- be accommodating of follow-up and catch-up clinics.

Interviews with school participants\(^{35}\) indicate that, in the main, they support vaccine delivery in their schools. Most school participants consider health and wellbeing, and immunisation to be an important part of education. One principal felt that the HPV Immunisation Programme embodied the school motto of empowering young women.

Feedback on the vaccination process was mainly positive with most school participants noting minimal disruption once initial processes were clarified. One felt that school-based delivery ‘saved downtime’ as it was all done onsite (i.e. young women were not having to request time off from school to go and see their GP). The biggest challenges from a school’s perspective was getting consent forms back, and organisational problems around timetable clashes, and coordinating the young women. However, none of the school participants interviewed found these difficulties outweighed the benefits of school-based delivery.

“The biggest challenge was the MeNZB programme had not being terribly well received in some schools. It had been seen as almost a herd exercise where masses had been pushed through in a short time. It seemed schools had bad experiences. We quickly had to show we were coming in from a different approach, promoting a calm environment. It probably took all of 2009 to wipe out effects of MeNZB campaign. Same for younger girls at school as well, as they could recall having a bad experience at school and what they remembered as a horrible, nasty vaccine. Public doubt, not huge in 2009, people were interested, wanted to hear, were prepared to hear what we had to say, less so in 2010 once the horror stories started to come out and people were starting to blame the vaccine without any real substance to it.” (HPV Coordinator)

“One of our school mottos is empowering young women to make decisions. Having immunisation onsite means students can make their own choice.” (School)

“Going to doctors can be difficult - more efficient through schools… In a lot of whānau both parents work, so it is not convenient going to GP even though most of them live in town. Difficult economic times also. Health centres close at 5pm.” (School)

Educating parents and young women

Led by school-based vaccinators, education sessions were held with young women in the school. Parent education sessions in schools were a key tactic mentioned across the eight DHB cases using school-based delivery. However, feedback from school-based vaccinators indicates low levels of parental attendance, and therefore questionable effectiveness. As discussed in section 6.2.2, parents want the opportunity of an information session to find out the facts about the vaccine – the need for it, the benefits and potential drawbacks. The vaccine is not addressing an immediately life-threatening disease and given the low levels of awareness of the prevalence of HPV and the link to cervical cancer, there is no real urgency or perceived need for parents to prioritise an information evening on the vaccine.

“We ran education sessions in the evenings for parents in each town in well-known venues, but they were not attended at all. It was difficult to know why. Info already out there enough? The method not what parents wanted? Not interested? Schools couldn’t/didn’t want to organise parents’ sessions at school.” (HPV coordinator)

\(^{35}\) Nine interviews were conducted with principals or key stakeholders at schools for this evaluation. Findings are therefore indicative and need to be treated with caution. Potentially this is an area for further exploration.
Consent distribution and return

To effectively deliver the vaccine, DHBs needed to know who in each school is eligible to receive the vaccine (denominator) and who decides to have it (numerator). To effectively manage the vaccination process, school-based vaccinators need the school roll detailing the eligible young women attending the school so they can distribute and work to facilitate a high return rate of consent forms. In December 2009, school-based vaccinators achieved a consent form return rate across New Zealand of 87% for young women born in 1992 - 1997. Across DHBs for this age cohort and period, the consent form return rate ranged from a high of 99% in Northland DHB to 72% in West Coast DHB.

School-based vaccinators strongly support parents/caregivers and their daughters making an informed decision about uptake of the vaccine. Their focus on the consent forms is to know who has accepted or declined the vaccine to ensure an efficient and effective plan to deliver the vaccine, and the intensity of follow-up required. Without the school roll data to check consents back against, school-based vaccinators cannot ascertain whether or not any eligible young women have missed out on the opportunity of the free vaccine (i.e. has a young women declined or simply lost their consent form?) Some schools are reluctant to hand over the school roll citing privacy concerns. Further, the format and therefore the ease of use of the school roll varies from hard copy to electronic transfer. Ideally, school-based vaccinators are seeking the school roll early in the school year to enable planning. However, this is simply not feasible for many schools.

“If you have a good relationship with schools…90% of schools no problem. Probably the biggest challenge on the school’s side, do they really understand what we are after? Don’t have the skills to give us the information we require... They haven’t been trained to use their databases, spreadsheets – they put it to one side – too hard basket. I send all the schools in our programme a letter out explaining what we need, and date information required. Usually pretty good.” (SBVS coordinator)

“Some schools cited privacy as a big issue and wouldn’t give us the rolls. We had no idea of the population and we had to work with only those who consented. Some schools had religious values as a factor in their doubts. Others had a belief that the vaccine would promote promiscuity. I had to speak to the Board [of Trustees] in four schools on this issue. Some were religious, others private schools.” (School-based delivery team leader)

Vaccination

Reflecting the depth of experience of the school-based vaccinators, the process of vaccinating tends to be fairly regimented and puts minimal burden on the schools. For the school-based vaccinators vaccinating in colleges tends to be more challenging than primary or intermediate schools. The challenge is a logistical one as young women are not as easily located, given their regular movement around classrooms.

“I’m Assistant Principal and HPV falls under operations, the coordination of it in terms of information into the college and out of the college, making sure facilities are available and students are aware of it in terms of being called up. The Public Health Nurse contacts me and we talk about dates, information sessions etc. She worked around our schedule. It works well. We give them a printout of the current year, an up-to-date list; we don’t give them our database because of legal issues. We give them the year groups. The information evening is held, she hands out the forms and the forms are collected by the teachers and then collected by the Public Health Nurse on the vaccination day. I take them to the designated room, they set up, and we liaise about groups. We don’t screen for permission slips and consent forms – they do the final check. We have no barriers here and I’ve had no issues with girls getting worked up.” (Assistant Principal School)
Follow-up school visits

10% of New Zealand European and 15% of Māori are absent from college or 9% overall are absent from primary school on any given day (Ng, 2007). Consequently, the role of follow-up and catch-up sessions is important to ensure initial receipt of dose 1 and to ensure the completion of doses 2 and 3. Follow-up occurs both proactively and reactively. For example, when vaccinating for dose 2 and 3, those known to want the vaccine but who missed out will be targeted. Further, some school-based vaccinators will liaise with schools if they are in the area to see if young women who have consented to the vaccine are at school. If present, they drop in to proactively vaccinate the young women.

Catch-up clinics are also held in school holidays at community centres to maximise uptake, especially for those who have left school. Feedback from school-based vaccinators suggests that non-school-based catch-up clinics are not that successful in terms of the number of vaccinations given.

Both school-based vaccinators and school participants noted that over the course of a year, a school may be visited up to 20 times to maximise the uptake of the vaccine. Feedback from schools suggests that the multiple visits are not a burden or significant disruption to the school day. However, consideration needs to be given to the value of this intensity of follow-up and the associated costs to achieve what may be a marginal return on vaccine uptake.

“Some schools were getting annoyed at us for returning to the schools to do catch-up. We may have gone up to 20 times. Perpetually catching up.” (School-based vaccinator)

“Regional catch-up clinics in malls. Advertised in regional media. First time we gained 40 girls and second time 45 girls. Definitely not as successful as doing them in schools.” (School-based delivery team leader)

5.5.4 Challenges in school-based delivery

Implementation challenges have been noted in section 5.5.3 describing the delivery features. However, four challenges were noted consistently across the eight DHB cases (and are reflective of wider feedback across the HPV coordinators of the other 12 DHBs using a school-based delivery mechanism), specifically: the age of consent, consent forms, and SBVS and NIR data management and analysis.

Age of consent – is 12 years too young?

Feedback from school-based vaccinators highlighted parental perception than 12 years is too young for the HPV vaccine. As discussed further in sections 6.2.5 and 6.2.9, parents (and mainly European/ other parents) appear to be delaying having the vaccine until their daughters are older.

Consent forms

Feedback from school-based vaccinators highlighted differing opinions about the consent form. Some perceived the form as badly designed, contained misinformation, too much or too little information and were perceived as difficult for parents to complete. Feedback on the information in the consent reflects the wider sector debates on whether to place focus on the HPV virus or cervical cancer, and the differing levels of information required across the audiences being targeted.
The design of the consent form raised a number of uncertainties for the school-based vaccinators, specifically:

- The wording of the decline section of the consent form specifies that in signing parents are declining for their daughters to have the HPV vaccine in school. In the 2009 consent form parents were asked to indicate whether they intend to have their GP deliver the vaccine or they did not want their daughter to have the HPV vaccine (a true decline). This information allowed school-based vaccinators to understand parental intent and some DHBs (e.g. Otago DHB) sought to manage this transfer of responsibility to primary care.

As indicated, it appears that some parents are delaying and not declining the vaccine. Consequently, it is important for the NIR system to clearly record this decision so the young women can be offered the vaccine when older.

- The need to complete and return the consent, if declining, was not clear for all parents.

- The opt off the NIR option was also confusing and created extra work in verifying whether or not the young women had received all three doses.

Other challenges relating to the consent form reflected:

- A need for greater clarity on who can legally sign the form. School-based vaccinators noted consents being completed by aunts, older sisters, and even friends.

- Uncertainties about how long consent lasts. School-based vaccinators noted that the policy states a consent cannot be used if it is older than six months. However, doses can spread out longer than six months, due to for example young women being absent for dose 1, 2 or 3. Questions were raised therefore about whether parents needed to re-consent.

"Confusion about what is a guardian and what is a caregiver. Particularly an issue in 2009 before the consent form was changed… Have to take legal guardian as read. We can’t prove otherwise. We had one that was signed by a sister who ticked parent and another by a brother’s girlfriend. It is as legal as you make it.” (School-based vaccinator)

SBVS and NIR data

Across all DHBs, there were frequent complaints about the challenges of using the SBVS and NIR to inform Programme delivery, specifically that the process to use is complex, time consuming and labour intensive. The following is the data management process used by the school-based delivery in Counties Manukau DHB which highlights the complexity and challenges of the SBVS and NIR:

1. Request school roll via letter to school
   - 16 column spreadsheet
   - 98% received electronically and around 50% accuracy.
2. Clean the roll.
3. Delimited format Excel – CSV format.
4. Validate and import
   - remove duplication
   - check glitches i.e. right name, wrong address.
5. Clean up data (double ups).
6. Print class list and school spreadsheet – send file to school-based vaccinator
   – used to track consent forms.
7. Vaccination
   – tidy consent.
8. Consent back to nurses or deactivate file and centre to file.
9. NIR match daily as needed for messaging
   – daily import and tidy up which is done in batches
   – big issues was the exception error.
10. Monitoring
    – check discrepancies between SBVS and NIR.

Other common complaints about the SBVS and NIR were:

- Difference in uptake rates calculated using the NIR and SBVS. The NIR is perceived as underestimating vaccine uptake as the denominators were based on Statistics New Zealand’s 2006 census data, while SBVS is based on actual class size. Further, in Waikato DHB, approximately 300-400 young women on the SBVS system (via school rolls) could not be matched to NHI numbers.
- NIR is dependent on the SBVS messaging. Many DHBs commented on the SBVS not messaging to the NIR, or messaging is not timely.
- Consent form details needs to match to NHI details and this is a particular issue for Asian people who have multiple names.
- Inability to make data changes required on SBVS to import school rolls and export to the NIR.
- SBVS does not pick up duplicates in school rolls.

Due to the difficulties and time consuming nature of the SBVS, two DHBs decided to not use the SBVS. Otago DHB used MedTech to access the NIR directly as did Whanganui DHB. While still challenging, as time progresses SBVS administrators appeared to have become skilled at avoiding or addressing common issues. The quarterly teleconference with the Ministry and SIMPL (IT company) has facilitated this process.

"Everyone knew the process – really good communication – nobody felt that they couldn’t talk – any issue got together and sorted it out. Entered data straight into SBVS – then uploaded every day onto NIR. Error messages went to [name] – worked really hard ensuring data entered in a way it would be accepted to prevent errors showing. More work for the NIR ladies so tried really hard to ensure it worked well – reduced errors for them as well. Biggest problem with that is that if a child doesn’t have an NHI number on SBVS then it doesn’t message to the NIR and no way of knowing… NIR number has to come back from HealthLink. Could become a long drawn out process.” (SBVS coordinator)

“Now running more smoothly, due to quarterly DHB teleconferences between SIMPL, Ministry and system administrators. Created more understanding about what the issues really are. Lot of DHBs didn’t realise they weren’t the only ones with problems. Very
helpful having those discussions and getting feedback from SIMPL about how to get around the issues." (SBVS coordinator)

Another challenge noted with the school-based delivery programme was delivering vaccines in kura kaupapa schools when vaccinators cannot speak Te Reo Māori; noted in two of the DHB cases. To overcome this, one DHB set up a vaccination process in an English speaking room.

5.5.5 Effective school-based delivery

Lakes, Counties Manukau, Otago and MidCentral DHBs all achieved equity of uptake for Māori and Pacific girls born in 1997 and well exceeded the target of 65%. Analysis across these cases and in comparison to those that just achieved or did not achieve the target uptake for Māori and Pacific girls born in 1997 highlights the following enabling factors to achieving equitable and high vaccine uptake for the HPV vaccine through school-based delivery:

- **Strong leaders** who are consistent and focused in their approach, trusted by nursing, school and wider stakeholders, and interconnected into the wider HPV Immunisation Programme.
- **Integrated or synchronised whānau engagement workers** to educate about the vaccine, support the informed decision-making process, and to reduce cultural barriers (Refer to section 5.4).
- **Established relationships with schools** through MENZB and year 7 BOOSTRIX or if a new school-based delivery mechanism, time was invested in establishing these relationships. Success at an individual school level was facilitated by an in-house champion usually the school secretary, school nurse in colleges and/ or teachers/ principals.
- **Responsiveness to schools’ needs** in terms of scheduling and seeking to minimise disruption.
- **Focused on 100% consent forms** returned so vaccinators know the decision of the eligible girls and can follow-up appropriately if not at school the day vaccination occurs.
- **Dedicated and well-resourced team of school-based vaccinators** who were solely focused on HPV immunisation. In effective school-based vaccination teams there was immense pride in achieving 100% consent returns, and issues arising were shared, discussed and solutions implemented. The teams had clearly delineated roles and administrative support was present to enable the vaccinators focus on the girls.
- **A high degree of flexibility in the vaccination process** with young women being vaccinated whenever possible (i.e. not using a restrictive schedule). A flexible approach to gathering tardy consents, and allowing ‘out of allotted schedule vaccinations’.
- **Extensive and persistent follow-up** using a range of differing strategies and tactics (e.g. opportunistic drop into schools if the school-based vaccinator was in the area) as well as the use of the incentives to remind and encourage the completion of the three vaccine doses.
- **Administrative and NIR data support to enable monitoring** of uptake and identification and implementation of strategies when uptake is not being achieved.
“We had a dedicated team not like MeNZB which was fragmented. It was driven by the Public Health Nurses working out of office. A good system coordinated from the office with one goal to achieve [HPV vaccine uptake]... Well resourced – building, cars, team, form and tight control... We had pride in getting 100% of the consent forms back – lots of pride in the team. It was an exceptional team – no subgroups – committed.” (School-based vaccinator)

“[Strong team] We all believed in it. We trusted each other. Most of us were older nurses. We were really fine-tuned by the end. IT evolved from our experiences out there. [Name] was a really good team leader. A good skill mix, personalities, we were really organised.” (School-based vaccinator)

5.5.6 Lessons for school-based delivery going forward

School-based delivery is in many ways a closed system focused on promoting and seeking high uptake of the HPV vaccine for the HPV Immunisation Programme. In looking forward, key areas for focus to enhance the process are:

- enhancements to the consent form
- review of the interface between the SBVS and NIR to ensure effective data processing and analysis to inform the Programme’s ongoing delivery.
- incorporating whānau engagement in the school-based programme to ensure effective targeting of young Māori and Pacific women.

5.5.7 Sustainability of school-based programme

Between launch and 31 December 2010, the school-based delivery team were focused predominantly on the HPV Immunisation Programme. With the HPV Immunisation Programme moving to business-as-usual, the HPV vaccination is being immersed into wider Public Health Nurse roles in schools (e.g. delivering the BOOSTRIX vaccine, hearing checks). Feedback from school-based vaccinators suggests the move to business-as-usual may lead to decline in uptake and completion rates.

Preliminary analysis of the HPV vaccine uptake by girls born in 1998 in comparison to the 1997 birth cohort suggests mixed results across the DHB cases (refer to Table 25):[36]

- Whanganui DHB’s uptake results have improved.
- Counties Manukau, Hutt Valley, Waitako, Bay of Plenty and Canterbury DHBs uptake results are similar to that achieved with girls born in 1997.
- Lakes, Otago and MidCentral DHBs uptake results, although on or close to vaccine target, are lower than those achieved when using dedicated HPV teams, particularly for Māori girls. This finding reinforces the effectiveness of dedicated, collaborative and multi-disciplinary teams in achieving high, above target, vaccine uptake, although the costs and benefits of this more intensive approach require further exploration.

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[36] Caution is needed in the interpretation of uptake by Pacific girls due to the very small eligible population size.
Table 25: A comparison of HPV vaccine uptake at dose 1 for girls born in 1997 (at 30 December 2010) and girls born in 1998 (at 31 December 2011)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Māori uptake</td>
<td>Pacific uptake</td>
</tr>
<tr>
<td>Lakes</td>
<td>78%</td>
<td>75%</td>
</tr>
<tr>
<td>Counties Manukau</td>
<td>77%</td>
<td>86%</td>
</tr>
<tr>
<td>Otago</td>
<td>75%</td>
<td>100%</td>
</tr>
<tr>
<td>MidCentral</td>
<td>78%</td>
<td>68%</td>
</tr>
<tr>
<td>Whanganui</td>
<td>67%</td>
<td>45%</td>
</tr>
<tr>
<td>Hutt Valley</td>
<td>62%</td>
<td>75%</td>
</tr>
<tr>
<td>Waikato</td>
<td>67%</td>
<td>60%</td>
</tr>
<tr>
<td>Bay of Plenty</td>
<td>54%</td>
<td>32%</td>
</tr>
<tr>
<td>Canterbury</td>
<td>38%</td>
<td>65%</td>
</tr>
</tbody>
</table>

Data source: NIR

“Going forward the lack of dedicated resource will have a significant impact on the uptake rate. No resources, no results… There is pressure to fit this in with our other work.”
(School-based vaccinator)

5.6 Primary care delivery of HPV vaccine

5.6.1 Context of primary care delivery

Primary health providers and other community-based services have a key role in the delivery of the Programme, particularly for older eligible young women, those not attending school and those who prefer immunisation in primary care and other settings (Ministry of Health, 2008a). Delivery of the HPV vaccine through primary care across all DHBs was to commence in September 2008.

Review of the delivery of the HPV vaccine in primary care needs to be placed in the relevant context. Unlike the school-based delivery system with the tightly defined goal of HPV vaccine delivery, primary care has a much wider remit. Primary health care provides an entry point to the health system, delivers core medical and preventative care and helps patients co-ordinate and integrate their care37. As such, General Practice has a holistic focus on patients’ and their families’ whānau life-long health and wellbeing of which immunisation is one of a number of important preventive health measures. Primary care organisations have therefore a number of priorities that compete for the limited primary care resource, and they must also respond to emerging health initiatives and emergencies.

For primary care, the roll out of the HPV Immunisation Programme came at a time of significant change with the amalgamation of more than 80 PHOs down to the current 32. The HPV vaccine was not one of the 2009/10 health targets38 therefore it may not have received as much attention as the focus on increasing childhood immunisation. General

38 In 2009/10 the six health targets were: shorter stays in emergency departments; improved access to elective surgery; shorter waits for cancer treatment; increased (childhood) immunisation; better help for smokers to quit; and better diabetes and cardiovascular services. http://www.moh.govt.nz/moh.nsf/indexmh/health-targets-200910 accessed 25 September 2011.
practice had also to respond to a flu pandemic. In rural areas, the ongoing shortage of GPs may have affected ability to effectively focus on the HPV Immunisation Programme.

“We were working with the PHO. Unfortunately as the Programme commenced our local PHO went through some challenging times, plus we had the flu so GP practices basically parked HPV because they had other more pressing priorities.” (DHB Planning and Funding)

5.6.2 Primary care demonstration model for Canterbury DHB

Unlike other DHBs, Canterbury DHB proposed a primary care-led HPV vaccination programme for all eligible young women. Following extensive consultation with PHOs, the rationale put forward to undertake this delivery method was (Ministry of Health, 2008b):

- Alignment to the Primary Care Vision (Ministry of Health, 2001) and Canterbury DHB’s vision of developing primary health care and community services to support people/whānau in community-based settings and to provide a point of on-going continuity in the health system (Ministry of Health, 2008b).

- Not having an existing school-based immunisation programme or the infrastructure to support one. The Director of Nursing noted that implementing the MeNZB school-based vaccination programme depleted the nursing workforce in Canterbury DHB. Consequently, a school-based approach was not clinically supported.

- Evidence demonstrating Canterbury DHB’s ability to achieve equitable vaccine uptake through business-as-usual General Practice activities. Specifically noted was the high enrolment of Māori, Pacific and other girls in PHOs and equity of BOOSTRIX uptake by 11 year olds for Māori and non-Māori achieved using a primary-care led delivery without any specific targeting of Māori.

- Primary care is better situated to have sensitive conversations about sexual health and safety with young women in a confidential setting and to develop an ongoing relationship. Further, use of primary care addresses the concern that with school-based programmes approximately 15% of high school and 10% of primary school Māori youth are absent on the day that immunisation clinics may take place (Ng, 2007).

- The primary-care led approach aligned with the US Taskforce on Community Preventive recommendations to increase uptake of vaccines (Briss et al, 2000).

Canterbury DHB staff interviewed noted other key benefits of using the primary care approach included:

- parents have greater flexibility in being able to delay uptake, and be reminded later to have the vaccine when they feel their daughter is ready to have it

- easier to work with the broad eligibility criteria as not having to negotiate with primary, intermediate and secondary schools.

The Ministry of Health agreed to a primary care demonstration model for Canterbury DHB for the duration of 18 months followed by immediate evaluation (Hudson, 2010). Refer to Appendix 10 for a review of the findings of the 2010 evaluation of Canterbury DHB’s demonstration model.

This section explores the delivery of the HPV vaccine through primary care to identify the processes and levers contributing to the uptake and equity results for young Māori and Pacific women born in 1990/91, and in the Canterbury DHB for girls born in 1997. The
findings presented draw from the GPs and Practice Nurses online survey conducted in late 2010 to early 2011\textsuperscript{39}, and interviews conducted with PHO representatives and Practice Nurses undertaken across the nine DHB case studies including Canterbury DHB.

5.6.3 Uptake results

For young women born in 1990/91 across all DHBs

To recap, the targets set for the HPV vaccine uptake for Māori, Pacific and other young women born in 1990/91 by 31 December 2010 were 50% for dose 1, 45% dose 2, and 40% dose 3 respectively. By 31 December 2010, the following HPV vaccine uptake results were achieved for young women born in 1990/91:

- Young Māori women were around 10% lower than the target for dose 1, 2, and 3 (40%, 34%, and 28% respectively).
- Young Pacific women achieved the target for dose 1 and 2 but not 3 (51%, 45%, and 36% respectively).
- Other young women were close to achieving the target for doses 1, 2, and 3 (49%, 46%, and 42% respectively).
- Equity of uptake was not achieved for young Māori women compared to other young women.
- Equity of uptake was achieved for young Pacific women compared to other young women.
- Overall uptake levels and equity of uptake were not consistent across DHBs.
- Young women born in 1990/91 who had the HPV vaccine predominantly received it through primary care (80%).

For girls born in 1997 in Canterbury DHB

To recap, the targets set for the HPV vaccine uptake for Māori, Pacific and other girls born in 1997 by 31 December 2010 were 65% for dose 1, 60% dose 2, and 55% dose 3 respectively. By 31 December 2010, Canterbury DHB had achieved the following HPV vaccine uptake results for girls born in 1997:

- Uptake of the vaccine by young Māori women was significantly under the target for doses 1, 2 and 3 (38%, 31%, 25% respectively).
- Uptake of the vaccine by young Pacific women reached the target for doses 1 and 2, but not 3 (65%, 58%, 40% respectively).
- Uptake of the vaccine by other girls was significantly under the target for doses 1, 2 and 3 (34%, 30%, 25% respectively).
- Equity of uptake was achieved for Māori girls compared to other girls (however uptake is under target for both groups).
- Equity of uptake was achieved for Pacific girls compared to other girls.
- Girls born in 1997 in the Canterbury region predominantly received the HPV vaccine through primary care – 99%.

\textsuperscript{39} Refer to Appendix 5.4 for details of the online surveys of GPs and Practice Nurses.
Note: The Christchurch earthquakes on 4 September 2010 and 22 February 2011 will have impacted on vaccine uptake due to infrastructure issues, population shifts and other more pressing priorities in primary care. Based on a next birthday pre-call approach used, all girls born in 1997 living in the Canterbury DHB region should reasonably be expected to have been offered at least one dose of the HPV vaccine before the 4 September 2010 earthquake.

5.6.4 Primary care’s knowledge and perceptions of the Programme

In the main, GPs and Practice Nurses who completed the online survey agree with the benefits of the HPV vaccine, and are supportive of the Programme. However, there is evidence that support for the vaccine and Programme is not universal across these important stakeholders.

In 2010, GPs and Practice Nurses who completed the online survey agreed that:

- The HPV Programme is an important public health intervention for young women.
- The vaccine is effective for preventing cervical cancer.
- The vaccine is safe and well tested; although only four in ten strongly agreed suggesting some uncertainties about safety.
- Their practice strongly supports the Programme. However, only around three in ten strongly agreed with this statement supporting qualitative feedback that not all practices were proactively supporting the Programme.
- Health professionals are knowledgeable about the link between HPV and cervical cancer. Interviews with PHOs and Practice Nurses did, however, indicate confusion about the vaccine (e.g. giving the vaccine with BOOSTRIX, young women who are sexually active not being eligible for the vaccine).

Table 26: GP and Practice Nurses knowledge and perceptions

<table>
<thead>
<tr>
<th>Please rate how strongly you agree or disagree with each of these statements:</th>
<th>GP</th>
<th>Practice nurse</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly agree</td>
<td>Agree</td>
</tr>
<tr>
<td>Base: Total sample</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HPV Immunisation Programme is an important public health intervention for young women (GP n=253; Practice nurse n=355)</td>
<td>68</td>
<td>24</td>
</tr>
<tr>
<td>HPV vaccine is an effective vaccine for preventing cervical cancer (GP n=253; Practice nurse n=355)</td>
<td>52</td>
<td>35</td>
</tr>
<tr>
<td>HPV vaccine is safe and well tested (GP n=253; Practice nurse n=355)</td>
<td>44</td>
<td>40</td>
</tr>
<tr>
<td>There is a lack of knowledge amongst health professionals about HPV and its link to cervical cancer (GP n=238; Practice nurse n=230)</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>There is strong support for the HPV immunisation programme within the practice (GP n=238; Practice nurse n=230)</td>
<td>34</td>
<td>48</td>
</tr>
</tbody>
</table>

Data source: Online survey of GPs and Practice Nurses, 2011

“We ran late compared to other DHBs. There was disinterest from primary care from the beginning, and getting them to refer to outreach was difficult. They hung onto them. It was an ongoing issue. It [the Programme] was perceived by PHOs as a schools-based”

The findings from the online survey of GPs and Practice Nurses need to be treated as indicative.
programme only and nothing to do with them. They also couldn't understand end date criteria for eligibility." (HPV coordinator)

“Strongly disagree that HPV vaccination will benefit girls and young women. The adverse reactions far outweigh any claimed ‘protection’ from cervical cancer. Advise cessation of programme immediately.” (GP)

5.6.5 Primary care delivery approaches

In General Practice there is variation in the range of approaches used in the delivery of the HPV vaccine as well as the intensity of which the vaccine was promoted. The range of delivery approaches in primary care includes:

- delivery of HPV vaccine incorporated into business-as-usual
- promotion of the HPV vaccine using standardised pre-call, recall and follow-up as well as opportunistic vaccination
- educating young women and parents about the vaccine
- use of outreach and whānau engagement.

Delivery business-as-usual

GPs and Practice Nurses agree that administration of HPV vaccine is now business-as-usual (82% and 66% respectively); although this perception is more strongly held by GPs (refer to Table 27).

Implementation of the Programme did not adversely affect the delivery of other health services; 7% of GPs and Practice Nurses respectively agreed the Programme adversely impacted on their other services. This feedback reflects that few practices significantly changed their service delivery to implement the Programme. The most frequently mentioned action noted by GPs and Practice Nurses in implementing the HPV Programme was providing training and education opportunities (64% and 63% respectively), which is expected with any new programme. One in ten noted their practice extended Practice Nurse hours (11% and 7%). Few extended opening hours (3% and 4%), GP hours (3% and 1%), or employed additional staff (4% and 10%).

The use of bonus payments to Practice Nurses based on the number of HPV vaccinations given was mentioned by 4% of GPs. The effectiveness of these bonus payments is unknown. A PHO in one of the DHB cases used incentives to increase uptake. Practices received a one-off payment of $1,750 if they reached the target of 50% of girls vaccinated41. The target was achieved by 61% of practices in the PHO.

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41 It is unknown how this target level was determined.
Table 27: Perceptions of implementation progress and practice impact

<table>
<thead>
<tr>
<th>Please rate how strongly you agree or disagree with each of these statements:</th>
<th>GP</th>
<th>Practice nurse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base: Total sample</td>
<td>Strongly agree</td>
<td>Agree</td>
</tr>
<tr>
<td>Administration of the HPV vaccine is now business-as-usual at my practice (GP n=253; Practice nurse n=355)</td>
<td>42</td>
<td>40</td>
</tr>
<tr>
<td>The HPV Immunisation Programme adversely affected the practice’s delivery of other health services (GP n=238; Practice nurse n=230)</td>
<td>1</td>
<td>6</td>
</tr>
</tbody>
</table>

Table 28: Addition of new services

<table>
<thead>
<tr>
<th>To implement the HPV Immunisation Programme, did your practice:</th>
<th>GP (n=245)</th>
<th>Practice Nurse (n=253)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base: Total sample</td>
<td>Yes %</td>
<td>Yes %</td>
</tr>
<tr>
<td>Provide training/education opportunities on the HPV vaccine</td>
<td>64</td>
<td>63</td>
</tr>
<tr>
<td>Extend Practice Nurse hours</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>Employ extra Practice Nurses/staff</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Provide bonus payments/incentives to Practice Nurses based on the number of HPV vaccinations given</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Extend opening hours</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Extend GP hours</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

Data source: Online survey of GPs and Practice Nurses, 2011

Promoting the HPV vaccine

GPs and Practice Nurses rate their practice highly on proactively promoting the HPV vaccine to young women and their parents/whānau enrolled in their practice (81% and 72%). Programme implementation tends to be through business-as-usual General Practice processes of using:

- A standard pre-call of sending girls turning 12 (or older birthday) a letter with a HPV information pamphlet from their General Practitioner inviting them to book an appointment for their HPV vaccine.
- Recall and follow-up tended to be a mix of letters, phone and text reminders, and are usually part of batch recalls for the practice including cervical smears, diabetes checks and so on. The intensity of follow-up varied depending on General Practice standard recall processes.

Some practices across the eight DHB cases indicated that they only undertook opportunistic vaccinations for the HPV vaccine (i.e. offering the vaccine to young women who have come to the General Practice for another reason). Opportunistically offering the vaccine to young women may involve scanning who is booked in for a doctor or nurse appointment, or having alerts on PMS. Use of only opportunistic vaccination may reflect that all the eligible young women in the catch-up cohort have received letters and follow-up reminders. Consequently, General Practices have now moved to a more direct face-to-face intervention when the young women present at the practice.
Across the nine DHBs, only Hutt DHB case demonstrated a specific DHB-wide strategy to support practices to re-contact young women born in 1990/91 to inform them their eligibility to receive the HPV vaccine for free expired on 31 December 2011. In Hutt DHB, the immunisation coordinator was working with the practices to run query builds to identify and send letters to non-vaccinated young women born in 1990/91. It is possible that similar strategies were occurring across other DHBs either regionally or locally.

These delivery processes are strongly reflected in the survey with Practice Nurses, and indicate that practices are using a mix of planned and opportunistic approaches. The most frequently used approaches by Practice Nurses to inform young women about the vaccine are:

- opportunistic invites when young women/parents/whānau come into practice for other appointments (no alerts on PMS) (71%)
- letters to young women informing and inviting them to come for the vaccine (70%).

Fewer used:

- alerts on eligible young women’s files on the PMS to target opportunistically (46%)
- letters to parents/whānau informing and inviting their daughter(s) to come for the vaccine (43%).

Sixteen percent of Practice Nurses mentioned using other approaches. These included: opportunistically mentioning the vaccine when coming across young women in the community, leaflets/posters in the clinic, speaking to mothers/grandmothers when they come in for their cervical smears, and advising parents when they bring their daughter in for their 11 year old immunisation.

Table 29: Rating of practices’ promotion of vaccine

<table>
<thead>
<tr>
<th>Please rate your practice’s ability to:</th>
<th>GP (n=245)</th>
<th>Practice Nurses (n=238)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very good %</td>
<td>Good %</td>
</tr>
<tr>
<td>Proactively promote the HPV vaccine to young women and their parents enrolled in your practice</td>
<td>24</td>
<td>57</td>
</tr>
</tbody>
</table>

Data source: Online survey of GPs and Practice Nurses, 2011

Table 30: Methods used to inform young women about the HPV vaccine

<table>
<thead>
<tr>
<th>How does your practice inform young women they can receive the HPV vaccine?</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunistic invites when young women/parents come into practice for other appointments (no alerts on PMS)</td>
<td>71</td>
</tr>
<tr>
<td>Letter to young women informing and inviting them to come for the vaccine</td>
<td>70</td>
</tr>
<tr>
<td>Alerts on all eligible young women’s files on the PMS to target opportunistically</td>
<td>46</td>
</tr>
<tr>
<td>Letter to parents/whānau informing and inviting their daughter(s) to come for the vaccine</td>
<td>43</td>
</tr>
<tr>
<td>Phone young women and/or parents inviting them personally</td>
<td>29</td>
</tr>
<tr>
<td>Text messages to young women/parents</td>
<td>23</td>
</tr>
<tr>
<td>Special HPV vaccine clinics</td>
<td>8</td>
</tr>
<tr>
<td>Other</td>
<td>16</td>
</tr>
<tr>
<td>Don’t know</td>
<td>5</td>
</tr>
</tbody>
</table>

Data source: Online survey of Practice Nurses, 2011
“We send out a series of three letters (at month apart intervals). The first letter included a brochure, the second was the same but without the brochure, and the third letter told them they could come in any time before they were 20. We did a big display in the waiting room, we had a quiz offering a prize, we texted, we did everything. We got a very poor turnout. Phone calls worked well – often got the mum which triggered a conversation and a decision.” (Practice Nurse)

“We rely on the school-based programme, and then take care of those that choose to attend the surgery.” (Practice Nurse)

“We did none of the above as the risk to young girls getting this vaccine was far too dangerous and of no use towards good health at all, in fact it is quite the opposite!” (Practice Nurse)

Educating about the vaccine

Discussions with Practice Nurses highlighted the need to spend more time than for other vaccines educating young women and their parents/whānau about the need for the HPV vaccine (i.e. HPV virus, genital warts and cervical cancer), as well as the benefits and limitations. As noted by Practice Nurses in Canterbury DHB, the education had to be tailored to reflect the age of the young woman - focusing on long-term health benefits for younger women, and genital warts for women in their late teens.

Feedback from the survey shows that two thirds of Practice Nurses (61%) consider they have adequate time for quality discussions, while 20% did not.

**Table 31: Time available for quality discussions**

<table>
<thead>
<tr>
<th>Please indicate how strongly you agree or disagree with the following statements:</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neither</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is sufficient time for quality discussions with young women/parents/whānau about the vaccine</td>
<td>11%</td>
<td>50%</td>
<td>16%</td>
<td>16%</td>
<td>4%</td>
<td>3%</td>
</tr>
</tbody>
</table>

Data source: Online survey of Practice Nurses, 2011

“There are 50/50 fence sitters. If you spend time and give them the information you can usually convince them it is the right decision.” (Practice nurse)

Recall processes for doses 2 and 3

Ensuring young women complete the three doses of the HPV vaccine was a consistent challenge noted by Practice Nurses. The NIR data highlights that the drop off between dose 1 and 3 is especially marked for Māori and Pacific women born in 1990/91 of 13% and 15% respectively at 31 December 2010. In comparison, the drop off for other girls is 7% from dose 1 to 3.

While acknowledging the challenges of a three dose vaccine, GPs and Practice Nurses rate their practice highly for proactively following-up young women to ensure they receive the three doses of the HPV vaccine (82% respectively; refer to Table 32). Consistently, Practice Nurses perceive their processes and systems as enabling this result; although no additional systems were noted to ensure uptake of dose 2 and 3. Practice Nurses agree or strongly agree that their practice has an effective process to follow-up young women who do not respond to invites to have the HPV vaccine (66%; refer to Table 33).
Table 32: Rating practice’s ability to follow-up for 3 doses

<table>
<thead>
<tr>
<th>Please rate your practice's ability to:</th>
<th>GP (n=245)</th>
<th>Practice Nurses (n=238)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very good %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proactively follow-up young women to ensure they receive the three doses of the HPV vaccine</td>
<td>29</td>
<td>38</td>
</tr>
</tbody>
</table>

Data source: Online survey of GPs and Practice Nurses, 2011

Table 33: Processes and systems to follow-up and monitor uptake

<table>
<thead>
<tr>
<th>Please indicate how strongly you agree or disagree with the following statements:</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neither</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base: Practice Nurses n=230</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>The practice has an effective process to follow-up young women who do not respond to invites to have the HPV vaccine</td>
<td>12</td>
<td>54</td>
<td>21</td>
<td>7</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

Data source: Online survey of Practice Nurses, 2011

Practice Nurses noting that their practice recalls young women to receive their second and third HPV doses were asked to indicate which method they use. The large majority use letters (90%), followed by phone calls (70%). Opportunistic invites were used by 55%; alerts on the PMS were used by 50%.

Text messaging using the Practice’s texting system was used by less than a third (29%), and 27% used CSL’s Remind Me texting service. Information from case site visits indicates that those Practice Nurses who had used text messaging services found these both convenient and effective.

Feedback from Practice Nurses in the DHB cases indicated uncertainty about when they were supposed to stop following up non-responders. Each practice appeared to have differing formal or informal policies. Some continued to seek a response on a regular basis (e.g. monthly, three monthly), while others tried three letters and one phone call and then coded as rescheduled or non-response. In Canterbury DHB, one Practice Nurse was rescheduling girls born in 1997 whose parents had refused the vaccine to be re-contacted after their 16th birthday so they could then decide whether or not they wanted the vaccine. Some Practice Nurses were frustrated with the amount of follow-up and prompting required.

Table 34: Methods used to recall young women for second and third HPV vaccine doses

<table>
<thead>
<tr>
<th>What, if any, of the following methods does your practice use to recall young women to receive their second and third HPV doses?</th>
<th>Practice Nurses n=229 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Letters</td>
<td>90</td>
</tr>
<tr>
<td>Phone</td>
<td>70</td>
</tr>
<tr>
<td>Opportunistic invites when come into practice for other appointments (no alerts on PMS)</td>
<td>55</td>
</tr>
<tr>
<td>Alerts on all eligible young women’s files on the PMS to target opportunistically</td>
<td>50</td>
</tr>
<tr>
<td>Text message (using own texting service)</td>
<td>29</td>
</tr>
<tr>
<td>Text message (using CSL’s ‘Remind Me’ texting service)</td>
<td>27</td>
</tr>
<tr>
<td>Reminders from whānau outreach, community engagement services, other agencies</td>
<td>16</td>
</tr>
<tr>
<td>Local advertising</td>
<td>7</td>
</tr>
<tr>
<td>Home visits</td>
<td>6</td>
</tr>
</tbody>
</table>
“Texts worked well. Reminder texts are good because they only go to them, not to the whole family.” (Practice Nurses)

“We did try the text messaging. I think the phone call when you could book them in was better.” (Practice Nurses)

“I have a little resentment about the amount of work the practice has to put in to get people to take personal responsibility. In my personal opinion, they should take responsibility for their own health. Professionally I know we have to get results. It is just the amount of effort needed to get people to comply.” (Practice Nurse)

Use of outreach or whānau engagement services by practices

Four in ten Practice Nurses agree or strongly agree that there is not enough time to contact hard-to-reach young women (43%). However, only 38% of Practice Nurses say they refer to outreach or whānau engagement services to encourage uptake of the vaccine. An additional 13% didn’t know. This reflects the finding from the DHB cases where only a few practices with their own or strongly linked outreach services were referring non-responders. Similarly interviews with outreach and whānau engagement providers highlighted a perceived reluctance by some practices to hand over non-responder lists (or any patient lists) citing patient privacy, and preference not to refer on to outside agencies.

Among those that refer to outreach and engagement services, the majority of Practice Nurses report their practice makes three or more attempts to contact young women and their parents/whānau before referral (82%).

Practice Nurses who had referred patients to outreach services for the HPV vaccine were asked to rate the services. A reasonable proportion of Practice Nurses were unable to provide ratings for the outreach services (up to 27% indicated ‘don’t know’ for some of the statements). Those Practice Nurses who used outreach services and were able to rate services acknowledged the effectiveness of the service, agreeing or strongly agreeing that they are effective at:

- contacting young women (82%)
- encouraging young women to have the vaccine (75%)
- giving the HPV vaccine to young women (71%)
- liaison between the practice and outreach/whānau engagement services (66%).

Table 35: Time to contact hard-to-reach young women

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neither</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is not enough time to contact hard to reach young women</td>
<td>13</td>
<td>30</td>
<td>24</td>
<td>24</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

Data source: Online survey of Practice Nurses, 2011
Table 36: Number of contact attempts made before referring to outreach

<table>
<thead>
<tr>
<th>How many contact attempts are generally made with young women/parents/whānau before referring to outreach services?</th>
<th>Practice Nurses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Base: Those referring to outreach</td>
</tr>
<tr>
<td>Practice does not have a referral protocol</td>
<td>4</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>3</td>
<td>69</td>
</tr>
<tr>
<td>4 or more</td>
<td>13</td>
</tr>
<tr>
<td>Don’t know</td>
<td>5</td>
</tr>
</tbody>
</table>

Data source: Online survey of Practice Nurses, 2011

Table 37: Views on the role of outreach services for the HPV vaccine

<table>
<thead>
<tr>
<th>Please rate the following:</th>
<th>Very good</th>
<th>Good</th>
<th>Neither</th>
<th>Poor</th>
<th>Very poor</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>The outreach services are effective at contacting young women referred to them</td>
<td>28</td>
<td>35</td>
<td>13</td>
<td>1</td>
<td>0</td>
<td>23</td>
</tr>
<tr>
<td>The outreach services are effective at encouraging young women to have the vaccine</td>
<td>28</td>
<td>27</td>
<td>16</td>
<td>2</td>
<td>0</td>
<td>27</td>
</tr>
<tr>
<td>The outreach services are effective at giving the HPV vaccine to young women</td>
<td>24</td>
<td>28</td>
<td>19</td>
<td>1</td>
<td>1</td>
<td>27</td>
</tr>
<tr>
<td>Liaison between the practice and the outreach/whānau engagement services works effectively for increasing uptake of the HPV vaccine</td>
<td>26</td>
<td>29</td>
<td>18</td>
<td>5</td>
<td>5</td>
<td>17</td>
</tr>
</tbody>
</table>

Data source: Online survey of Practice Nurses, 2011

“We would contact the outreach worker. This was successful – they found most of the girls that we needed to recall. They always got back to us with results and they arranged to get the girl vaccinated.” (Practice Nurse)

5.6.6 Health equity approaches in primary care

Half of GPs and Practice Nurses agreed or strongly agreed that their practice is focused on achieving equal uptake of the HPV vaccine by young Māori and Pacific women (50% respectively). GPs and Practice Nurses rated their practice’s ability to achieve high uptake of the HPV vaccine by young European women higher than that for young Māori and Pacific women (refer to Table 39 below).

Interviews with Practice Nurses across the nine DHB cases suggest, that unlike school-based delivery, the emphasis on achieving equal uptake by young Māori and Pacific women was not strongly recognised or a guiding principle for implementing the Programme in practices. Health equity within practices tends to be described as all people being treated the same and therefore having an equal opportunity to services offered. There was little evidence of strategies or tactics to target or prioritise the targeting of young Māori and Pacific women due to existing inequalities relating to cervical cancer. As members enrolled in PHOs, it is perceived that Māori and Pacific peoples will response to standardised approaches of letter, and follow-up. The concept of prioritising young Māori and Pacific women was perceived as inequitable, potentially disadvantaging other young women. Further, Practice Nurses were unsure how a prioritised approach could be achieved within
their existing vaccination processes or systems, given the relatively small number of eligible Māori and Pacific women enrolled in their practice.

It is acknowledged that many PHOs and General Practices have a depth of expertise in targeting high deprivation populations through low cost initiatives, services to improve access, outreach services and a range of other strategies. However, in relation to the delivery of the HPV vaccine few strategies were noted specifically targeting Māori and Pacific young women, outside of delivery by Māori and Pacific primary health care providers.

As evident from the NIR data at 31 December 2010 for young women living in the Canterbury DHB:

- The uptake target and equity of uptake was achieved for young Māori and Pacific women born in 1990/91, thus confirming that equity can be achieved for young women through General Practice in Canterbury DHB. This may also reflect that in Canterbury DHB, since 1994, all PHO practices offer free sexual health consultations to youth under 21 years.\(^\text{42}\)

- The uptake target was not achieved for Māori and other young women born in 1997. Uptake was similar across the two populations indicating that while Māori girls born in 1997 had a low uptake, it was equal to other young women in the same age group. Consequently, other factors besides ethnicity may be impeding the uptake rates in the Canterbury region for this age group, and these are discussed further in the challenges noted in section 5.6.7.

- The uptake target and equity of uptake was achieved for young Pacific women born in 1997. Potentially, this reflects the intensive targeting by Pacific General Practices in the Canterbury DHB region creating an environment where it was socially desirable to have the vaccine (i.e. it reinforced a sense of good parenting by protecting future generations).

Table 38: Agreement practice is focused on health equity

<table>
<thead>
<tr>
<th>Please rate how strongly you agree or disagree with each of these statements:</th>
<th>GP (n=253)</th>
<th>Practice nurse (n=355)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly agree</td>
<td>Agree</td>
</tr>
<tr>
<td>Base: total sample</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The practice is focused on achieving equal or greater uptake of the HPV vaccine by young Māori and Pacific women</td>
<td>19</td>
<td>31</td>
</tr>
</tbody>
</table>

Data source: Online survey of GPs and Practice Nurses, 2011

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42 Approximately 20,000 young people attend primary care practices for free sexual health consultations each year.
Table 39: Ability to achieve high uptake across key population groups

<table>
<thead>
<tr>
<th>Please rate your practice’s ability to:</th>
<th>GP (n=245)</th>
<th>Practice Nurses (n=238)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very good</td>
<td>Good %</td>
</tr>
<tr>
<td>Achieve high uptake of the HPV vaccine by young Māori women</td>
<td>10</td>
<td>33</td>
</tr>
<tr>
<td>Achieve high uptake of the HPV vaccine by young Pacific women</td>
<td>9</td>
<td>30</td>
</tr>
<tr>
<td>Achieve high uptake of the HPV vaccine by young European women</td>
<td>15</td>
<td>47</td>
</tr>
</tbody>
</table>

Data source: Online survey of Practice Nurses, 2011

“We target everyone and follow-up everyone. I don’t know what else to do apart from one more letter to a Māori girl than a Pākehā girl. That would not sit comfortably with me.” (Practice Nurse)

“Established and successful Marae-based outreach vaccinators for other immunisation programmes should have been funded to vaccinate young women in the community as happened in MeNZB - cultural events, community settings, workplaces, homes, and follow-up in schools for those born in 1990.” (Practice Nurse)

“More outreach services for follow-up, particularly for those young women who have left educational services and are now unemployed or seeking work in the workforce. Difficulty for some rural situations. Good communication between services is important. Practice Nurses often too busy to spend time with these young women. Some funding apart from just per injection needed to support youth health services supporting this programme.” (Practice Nurse)

5.6.7 Challenges in primary delivery

The Canterbury DHB case and interviews with Practice Nurses, managers and PHO immunisation coordinators across the other eight DHB cases highlights key challenges of delivering the HPV vaccine through General Practice, specifically:

- achieving consistency of delivery across general practices
- a longer uptake period in General Practice
- reaching younger and older young women through General Practice
- the interface between the PMS and the NIR
- promoting the vaccine
- inadequate funding to deliver the vaccine.

Achieving consistency of delivery across General Practices

As independent businesses, General Practice can implement the vaccination programme as they prefer. As a result, while there is commonality in general approach, each practice can determine the intensity of the recall and follow-up process. Interviews with Practice Nurses indicated most were aware of and understood the purpose of the HPV vaccine. However, the intensity with which Practice Nurses sought to promote and encourage uptake of the vaccine varied across and within the DHB cases:
The majority sought to include the pre-call and recall and opportunistic approaches as part of business-as-usual.

Others passionately believed in the long-term health benefits and proactively implemented a range of strategies to increase awareness and uptake (including education session at schools, opportunistic review of appointments to promote the vaccine to parents/whānau of young women).

A few Practice Nurses interviewed did not know the processes used to pre-call or recall young women who are eligible for the vaccines in their practice (i.e. it was unclear whether or not practices continue to send out letters to young women when they turn 12 [in Canterbury DHB], or what, if any, activity was being undertaken to remind young women born in 1990/91 that they would no longer be eligible after December 2011).

“Scout ahead by looking at the appointment template to look for people who need to be aware of the vaccine – like family members. It is a small practice and family orientated so easy to do.” (Practice Nurses)

A longer uptake period in General Practice

In contrast to school-based delivery, there is a longer uptake period in General Practice when seeking to vaccinate an age specific cohort. General Practice used a staggered invitation process to be able to logistically process the number of young women who decide to have the vaccine without compromising other services.

In Canterbury DHB, for the HPV vaccine the uptake period may be further increased by parents delaying the vaccination of their 12 year old girls until they are older (refer to section 6.2). While General Practice offers this flexibility to parents, there is a potential risk some young women may miss out if they are not reminded to have the vaccine at a later date. Interviews with Practice Nurses suggested inconsistencies in outcome recording of delay decisions by parents. Most Practice Nurses interviewed noted that they entered these girls as ‘rescheduled’ on the NIR, while some entered as declines. Consequently, those entered as a decline may not be reminded at a later stage.

In Canterbury DHB, there is a strong perception that over time more girls will be vaccinated and that rates for girls born in 1997 will reach similar levels as those vaccinated in schools in other areas. However, the latter will only occur if the appropriate recall systems or opportunistic vaccination processes are in place and are consistently used.

Reaching younger and older young women through General Practice

Interviews with Practice Nurses across the DHB cases (excluding Canterbury DHB) noted the difficulties of targeting young women aged 19 to 20 years to have the HPV vaccine. These young women are at a transient stage of their life, leaving school, moving into work/unemployment or going on to further study. Practice Nurses believe that the influence of parents and whānau is waning and therefore there is a need to directly connect. These young women are perceived to be busy with their lives and with few concerns about the potential of developing cancer later in their life. Further, young women tend to be well and do not come to General Practice. Consequently, if a young woman is vaccinated opportunistically, it can be a real challenge to get them to complete doses 2 and 3. Practice

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43 Section 6.3.3 highlights that parents/whānau however are a key influencer and conduit for ‘older’ eligible young women to decide to have and to get the vaccine.
nurses also noted that some young women aged 19-20 are not vaccinated or have incomplete doses due to pregnancy.

In contrast, within Canterbury DHB, health professionals perceive that it is easier to encourage older girls to have the vaccine. 15 years was most frequently noted as the ideal age for giving the HPV vaccine. No evidence was put forward to support this preference beyond qualitative comment that it is easier to talk to 15 year olds about sexual health matters. It was also noted that 12 year old girls tend to be healthy and have no need to visit their General Practice. The clinical reasons for giving the vaccine at 12 years in relation to the immune response were noted and understood.

These findings are reflected in the wider GP and Practice Nurse surveys where the rating of General Practice ability to target young women aged 19/20 years (57% and 48% good or very good) was higher than 12 year girls (39% and 33% respectively).

Table 40: General Practice ability to vaccine 12 years and 19/20 years

<table>
<thead>
<tr>
<th>Please rate your practice’s ability to:</th>
<th>GP (n=245)</th>
<th>Practice Nurses (n=238)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achieve high uptake of young women in year 8 at school/aged around 12 years</td>
<td>Very good %</td>
<td>Good %</td>
</tr>
<tr>
<td>Achieve high uptake of young women aged 19 and 20 years/born in 1990/91</td>
<td>11</td>
<td>28</td>
</tr>
<tr>
<td>Achieve high uptake of young women aged 19 and 20 years/born in 1990/91</td>
<td>15</td>
<td>42</td>
</tr>
</tbody>
</table>

Data source: Online survey of Practice Nurses, 2011

“The biggest objection is the age of 12. Most parents are not prepared to discuss sexually transmitted diseases at that age and fear that the injection may make their children grow up too fast and experiment. Information on the immune process and the need for early delivery is not available or understood by the general public.” (Practice Nurses)

“We have experienced considerable resistance to starting vaccine at age 12 years with a lot of parents rescheduling until 13 years.” (Practice Nurses)

The interface between the PMS and the NIR and school-based delivery

More than half of GPs and Practice Nurses rate their practice’s ability to use the NIR to target young women as good or very good (58% and 55%). However, common across the nine DHB cases was Practice Nurses’ frustration with the interface between the PMS and the NIR. Their frustration reflects that the HPV vaccine is not on the schedule so the PMS does not automatically set up recalls. Practices have to do query builds and then send out the letters. The process is dependent on having staff with the capability to do query builds, or if this is not the case, relying on assistance from PHOs. If confident with PMS and NIR, it is estimated that query builds for the HPV vaccine takes around 10-12 minutes. Other scheduled vaccines are automated on PMS; push a button and letters are prepared.

The NIR was also perceived as inflexible (e.g. not being able to change date for doses 2 and 3). This inflexibility is particularly challenging for practices dealing with mobile eligible populations, (e.g. university health centres and rural practices where young women go to boarding schools).
Practice Nurses are reliant on the NIR to inform them whether or not young women have received any of the doses at school. However, there are data entry time delays, and inconsistent data entry of declines on the school-based systems. As a result, Practice Nurses are unable to determine the vaccination status of some young women who might have been vaccinated through opportunistic screening.

Practice nurses felt that data collection and reporting was effective for monitoring the uptake of the HPV vaccine (59%). In contrast, the qualitative interviews highlighted that few Practice Nurses were aware of vaccine uptake levels for their practice. Further, little consideration was given to how to use the data to identify appropriate targeting strategies for non-responders beyond the standardised processes.

Table 41: Practice’s ability to use NIR data

<table>
<thead>
<tr>
<th>Please rate your practice’s ability to:</th>
<th>GP (n=245)</th>
<th>Practice Nurses (n=238)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very good %</td>
<td>Good %</td>
</tr>
<tr>
<td>Use the NIR data to target young women appropriately</td>
<td>14</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>Very good %</td>
<td>Good %</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>38</td>
</tr>
</tbody>
</table>

Data source: Online surveys of GPs and Practice Nurses, 2011

Table 42: Processes and systems to follow-up and monitor uptake

<table>
<thead>
<tr>
<th>Please indicate how strongly you agree or disagree with the following statements:</th>
<th>Strongly agree %</th>
<th>Agree %</th>
<th>Neither %</th>
<th>Disagree %</th>
<th>Strongly disagree %</th>
<th>Don’t know %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data collection and reporting was effective to monitor the uptake of the HPV vaccine</td>
<td>15</td>
<td>44</td>
<td>23</td>
<td>6</td>
<td>3</td>
<td>9</td>
</tr>
</tbody>
</table>

Data source: Online survey of Practice Nurses, 2011

“Every practice is doing the Programme and giving the vaccine. PMS is not set up as for other vaccinations so HPV is more time consuming for practice nurses. MOH never went through the links between giving the vaccine and recording of the vaccine on PMS. It made for a lot of confusion and using the PMS for HPV is much more complicated than if you give other scheduled vaccinations such as MMR...Data input is tricky ... it can take up to ten minutes to enter HPV into the PMS. For other vaccines it is a simple process.” (DHB)

“No data sharing between school-based programs and GPs. We have no idea who has received their vaccines at school and who has not. Nothing shows on NIR, data not fed back to us in any manner. Very tricky to ascertain who we are supposed to be recalling. If you want a program to work successfully then you have to work together. The different ages of eligibility over a few years make it very tricky especially when recalling children. It should just be one age, as per schedule from the start then it would have been easier. The HPV is not attached to the immunisation schedule in our PMS (MedTech) so does not automatically apply a recall once the 11 year old imms have been given. To rely on someone ticking extra schedules leaves room for error.” (Practice Nurse)
Promoting the vaccine

The national communications campaign was criticised and at times the criticism was contradictory. Criticisms from practice nurses reflect comments from the school-based vaccinators, specifically:

- sexualising the vaccine
- focusing on choice but not clearly positioning the long-term health benefits
- focusing on cervical cancer and not providing adequate information on the HPV virus or genital warts
- mention of the school-based delivery potentially confusing parents
- lack of rebuttal from the Ministry about misinformation.

“Very disappointed it was positioned as the cervical cancer vaccine. The issue is HPV and not cancer - an STI. It is an ethical issue parents need to know and understand this. The information campaign bypassed this.” (Practice Nurse)

“Advertising the protection against other types of cancers. Stressing it’s a cancer vaccine. (wouldn’t everyone like to prevent cancer?) Printed material stating it lasts longer than five years by stating eight and a half or ten years. People retain five years and don’t retain the longer than five years.” (Practice Nurses)

“More media coverage similar to the cervical smear advertisements. Overcoming parents concerns that their daughters may be sexually active at a young age with better education.” (Practice Nurses)

Inadequate funding to deliver vaccine

Just over a quarter of GPs who completed the online survey agree or strongly agree that funding for the HPV vaccination covered costs (28%). This relatively low level of agreement reflects the frequent criticism from interviews with PHOs, GPs and Practice Nurses across the cases that the cost of delivering the HPV vaccine in General Practice is not recovered. General Practices receive $17 per vaccine. However, it is estimated that vaccines cost around $26 for each under five year vaccine to deliver (Turner et al, 2009). Feedback from Practice Nurses highlight that a significant education component is required for parents and girls to make an informed decision about whether or not to have the vaccine.

Table 43: Agreement vaccine costs covered

<table>
<thead>
<tr>
<th>Please indicate how strongly you agree or disagree with:</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neither</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base: total sample, GPs (n=238)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funding for the HPV vaccination has covered costs</td>
<td>4</td>
<td>24</td>
<td>30</td>
<td>23</td>
<td>7</td>
<td>12</td>
</tr>
</tbody>
</table>

Data source: Online surveys of GPs, 2011

“Funding must increase to cover promotion of the vaccines to the target ages and their families.” (GP)

“There was a lot of money floating around the PHO…..but the actual delivery of the vaccine by our practice was under funded i.e. $19 and we lose money on every vaccine we give – so why do we do it …..?” (GP)

“How about incentive payments for the hard-to-reach group?” (GP)
5.6.8 Effective primary care delivery

As noted, there is variation in the intensity of the delivery of the HPV Immunisation Programme within General Practice both for the eligible young women and in Canterbury DHB for 12 year old girls. While this evaluation is unable to be definitive on the variables that contribute to effective primary care delivery for the HPV vaccine, there are some useful insights.

- Recognition and support by GPs within the practice for the vaccine to create an environment conducive to effective implementation, and wider PHO support.
- A Practice Nurse champion who is knowledgeable about the vaccine, has capacity and capability to promote the vaccine, is committed and consistent in their focus and has access to accurate uptake information.
- Systematised approach to target the eligible population, particularly an ability to use PMS and the NIR.
- Use of planned and opportunistic methods (e.g. letters, alerts, scanning daily appointments).
- A clear policy to manage decliners and delayers.
- Effective, systematised follow-up processes to ensure three doses are received. Ideally the HPV vaccine follow-up aligns with other follow-ups (e.g. cervical smear) so it is part of business-as-usual. A range of strategies are used to maximise uptake together with incentives to recognise completion.
- Support from a PHO Immunisation Coordinator to support General Practice overcome any specific issues.
- Ability to share and discuss challenges faced with colleagues.
- Monitoring data to inform on progress and to tailor approaches.
- Access to and a policy on referrals to outreach/whānau engagement.

Note: The role of PHOs in enabling effective delivery of vaccine requires further investigation, particularly in relation to approaches to create equal opportunity for Māori and Pacific young women.

5.6.9 Lessons for primary care delivery going forward

As noted, the HPV Immunisation Programme is one of a number of important health prevention initiatives delivered through primary care to enhance the health and wellbeing of New Zealanders. Recognising the multi-faceted demands on primary care, key lessons going forward are:

- Enhancing awareness of the HPV vaccine and its role in reducing the impact and incidence of cervical cancer and genital warts in New Zealand amongst health professionals.
- Adapting the PMS to allow for automated pre-call and recalls.
- Enhancing the interface between PMS and NIR or ensuring Immunisation Coordinators continue to support Practice Nurses with more limited IT capability to identify non-vaccinated eligible young women for recall or opportunistic.
- Ensuring more consistent use of opportunistic vaccine tactics (e.g. Alerts on PMS).
Identifying ways to ensure greater access for eligible young Māori women (e.g. use of outreach services, targeting through family planning or youth health services).

Considering full cost recovery of the vaccination and/or financial incentives to achieve target.

Enhanced integration with school-based delivery to ensure those preferring to vaccinate in General Practice are encouraged/support to come in.

Strengthening the interface between whānau engagement and primary care.

“Greater communication between PHNs [Public Health Nurses] /schools (those who are implementing the majority of the vaccine, and General Practices - even to know what vaccination programmes are to be implemented in which schools for which students and when?” (Practice Nurses)

“Would like to have worked closer with the school-based team. If we’ve got common problems can attack them together – strong if we’re sharing problems.” (Practice Nurse)

5.6.10 Sustainability of primary care delivery

Primary care delivery of HPV vaccine is moving to business-as-usual.

For Canterbury DHB, the focus is on ensuring that parents and whānau of 12 year olds are offered the vaccine as they become eligible. As discussed, in section 6.2, Pākehā parents appear to be delaying their girls receiving the HPV vaccine, therefore focus needs to be placed on preparing parents to starting thinking about the vaccine when the girls come in for their year 7 or 11 year old BOOSTRIX.

Primary care strategies are also required so that girls whose parents decide to delay the HPV vaccination do not miss out when they are older. Consequently, in all DHBs including Canterbury DHB, the focus needs to be on ensuring that eligible non-vaccinated young women are re-offered the opportunity to have the vaccine before their eligibility expires. A transfer system of lists of non-vaccinated girls and young women from the school-based delivery to primary care would help to ensure no one misses out on the opportunity of having the vaccine. Currently, there is no explicit transfer process beyond general practice undertaking query builds to identify non-vaccinated young women.

5.6.11 School-based versus primary care delivery

The use of school-based delivery to vaccinate school-aged children over primary health delivery raises much debate, and the evidence that one is more effective than the other is inconclusive. Opinion was sought from GPs and Practice Nurses to gain their input on this issue. Reflecting the wider debate opinion is, not surprisingly, divided:

Nearly six in ten GPs (58%) agree that school-based delivery is the most effective mechanism to achieve high uptake of the HPV vaccine by young women aged 12 years. Agreement rises to nearly two-thirds of GPs (63%) agreeing that is the most effective mechanism to achieve high uptake by young Māori and Pacific women aged 12 years.

– Canterbury GPs are less likely to agree or strongly agree that school-based delivery is the most effective mechanism to achieve high uptake of the HPV vaccine by young women aged 12 years (45%). In contrast, 63% agree that school-based delivery is the most effective mechanism to achieve high uptake of the HPV vaccine by young Māori and Pacific women aged 12 years (63%).
Practice Nurses, compared to GPs, are more likely to agree with these statements with 74% respectively. As with GPs, Canterbury Practice Nurses are considerably less likely than Practice Nurses based in other parts of the country to agree or strongly agree that:

- School-based delivery is the most effective mechanism to achieve high uptake of the HPV vaccine by young women aged 12 years (41% in Canterbury, 81% elsewhere).
- School-based delivery is the most effective mechanism to achieve high uptake of the HPV vaccine by young Māori and Pacific women aged 12 years (59% in Canterbury, 80% elsewhere).

GPs’ divided opinion on school-based delivery is likely to reflect the tension between the ideal of delivery in primary care as part of a wider holistic lifelong health and wellbeing approach for young women, and the reality of effective vaccine delivery given the numerous competing priorities. It may also reflect their acknowledgement that effectively targeting Māori and Pacific young women through General Practice is challenging.

Table 44: Perception of school-based delivery

<table>
<thead>
<tr>
<th>Please rate how strongly you agree or disagree with each of these statements:</th>
<th>GP (n=253)</th>
<th>Practice nurse (n=355)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base: Total sample</td>
<td>Strongly agree</td>
<td>Agree</td>
</tr>
<tr>
<td>School-based delivery is the most effective mechanism to achieve high uptake of the HPV vaccine by young women aged 12 years</td>
<td>26</td>
<td>32</td>
</tr>
<tr>
<td>School-based delivery is the most effective mechanism to achieve high uptake of the HPV vaccine amongst young Māori and Pacific women aged 12 years</td>
<td>29</td>
<td>34</td>
</tr>
</tbody>
</table>

Data source: Online surveys of GPs and Practice Nurses, 2011

“Promote the vaccine within practice where strong relationships have been developed. Use history of trust by families.” (GP)

“General Practice is too busy each year with their current workload of under five year olds and flu season each winter whereas a “captive” audience in school promotes uptake and completion of full course (don’t need to make special trip to their own clinic three times).” (Practice Nurse)

“There are people who will die in a ditch for delivering through primary care. Elsewhere people die in a ditch for school-based delivery. I don’t really care as long as people get what they are entitled to get. It’s silly to say that one is better than the other, if they both work for different people then fine… People respond differently to the same input. We have to do the best we can with what we’ve got in as many ways as possible. We know that many Māori are not engaged in the education system and some not engaged in primary care so we need elements of both.” (Anonymous)
5.7 Other primary care provider delivery of HPV vaccine

As noted in the Ministry’s implementation strategy, it was intended that DHBs identify the range of primary care providers, youth-specific services, Māori and Pacific providers, family planning clinics, and sexual health clinics that may actively promote and/or deliver HPV immunisation. All service providers administering the vaccine must be trained, meet cold chain and clinical safety standards, and be able to interface with the NIR. Processes for follow-up were also required using recall systems and individual contact (Ministry of Health, 2008a).

Across the nine DHBs cases, there is evidence of the use of other primary care providers to deliver the HPV vaccine to a few eligible young women attending these services. These providers tended to be Youth Health Services and Family Planning Services who offered the HPV vaccine opportunistically to eligible young women. Feedback indicates that while these services were able to effectively promote the benefits of the vaccine, there were challenges in administrating the vaccine, specifically:

- Not having staff trained to give vaccinations therefore the young women had to see the doctor which could create an access barrier if there is not an immediate appointment available.
- Accessing the NIR to identify whether the young women had had the vaccine and recording when given. Some providers had no access which significantly increased the level of paperwork.
- Meeting cold chain requirements which resulted in some providers not delivering the vaccine but referring to other providers.

In discussions, these primary care providers indicated they delivered a few vaccines to young women. This perception is supported in Canterbury DHB where only 20 vaccines were given by alternative primary care providers from September 2008 – December 2009 – a 15 month period (Hudson, 2010).

5.8 The role of system integration

It is assumed that equitable and high vaccine uptake will require an integrated and coordinated vaccination programme. As demonstrated, there are three core components of the HPV Immunisation Programme in New Zealand: school-based delivery, primary care delivery and whānau engagement/ CAR to effectively encourage vaccine uptake by the ongoing and catch up cohort. Underpinning the assumption of the need for integrated delivery is:

- Interlinked school-based and primary-care delivery is necessary to:
  - Maximise uptake amongst the catch up cohort of young women who have left or leave school non-vaccinated or have not completed the three vaccine doses. Primary care is responsible for picking up these young women before their eligibility for the free vaccine expires on their 20th birthday.
  - Offer young women and their parents/ caregivers delivery choice especially for parents who decide their daughter will have the vaccine when she is older. GP delivery is also preferred by parents of school girls who fear needles.
Avoid unnecessary vaccination. Cases of young women having more than three doses did occur infrequently. School-based vaccinators and Practice Nurses noted that young women, in the main, were uncertain about whether they had the HPV vaccine or how many doses they’d had. Consequently, accurate, timely record-keeping onto the NIR and ability to access the NIR to check vaccination status is critical to avoid young women have additional doses.

Uptake by Māori and Pacific young women will be increased through strong interlinking of whānau engagement/ CAR with school-based and primary care delivery.

Across the nine DHB case studies, equitable and high vaccine uptake by Māori, Pacific and in some instances other girls appears to be more marked where there is evidence of integration and information sharing across the three components. Conversely, lower uptake is marked where there is limited integration.

**Fully integrated and coordinated HPV Immunisation Programme**

- Lakes DHB’s centralised management and delivery functions created a cohesive team across the three delivery components and achieved equity and above target uptake by Māori and Pacific girls born in 1997 and above target uptake for other young women born in 1990/91 at dose 1. However, it did not result in equal uptake by Māori and Pacific young women born in 1990/91. As noted, Lakes DHB’s shift away from this integrated model has resulted in a decline in vaccine uptake by Māori, Pacific and other girls born in 1998.

**Integration across some components**

- In Counties Manukau, Otago, MidCentral and Whanganui DHBs’ school-based delivery was strongly integrated with whānau engagement and equitable and above target uptake by Māori and Pacific girls born in 1997 at dose 1 was achieved. Other DHBs cases, without this level of direct interface, achieved equity of uptake but not as high an uptake by young Māori and Pacific women born in 1997. All these DHBs exceeded the target uptake rates for Māori and Pacific young girls born in 1997 (with the exception of Whanganui DHB). Otago and MidCentral DHBs also achieved target for Māori and other young women born in 1990/91. Equal uptake for young Māori women born in 1990/91 was achieved in Otago DHB.

**Limited integration**

- Bay of Plenty had limited integration between school-based delivery and whānau engagement/ CAR and primary care as well as minimal information sharing between PHOs and primary care. In part, this reflects the challenges of the size of the geographical region and the diversity of Māori populations. Vaccine uptake by girls born in 1997 did not achieve the target, and uptake was lower than other DHBs for Māori and Pacific girls.

- Hutt Valley DHB used Māori and Pacific whānau engagement workers who were effective in mobilising their community within their direct sphere of influence to access primary care for the vaccine. However, they struggled to effectively engage widely with primary care practices, where they were not

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44 While mentioned in qualitative interviews, this occurrence appeared to be infrequent. The exact numbers of young women who received more than three doses is unknown.
already connected with, or to obtain lists of non-responding Māori and Pacific young women. The target for vaccine uptake was achieved for Pacific and other young women born in 1990/91 but not for Māori in this age cohort.

“The interface between Primary Care and the school-based programme could have been better. We had some GPs who were not promoting HPV for various reasons (cultural, religious or values about sex). We had a lot of phone calls from parents who had GP input on kids not needing it yet, mixed messages about the safety and the timing of it. Some health professionals were not aligned.” (School-based delivery team leader)

“We need to have Practice Nurses known to the parents and the students giving these vaccines - we need to have a co-ordinated approach with the Public Health nurses to work on getting the girls and parents who are not keen to have their children vaccinated at school present at the doctors surgery for vaccination on the same day, and if possible, at the same time that other students are having their vaccinations. Working together we will achieve higher vaccination rates. The flow of information from Public Health is very slow and we often don’t get timely information to help give support to our co-professionals in the work place. Keep practices in the loop of information sharing and we will find a way to work this better I am sure.” (Practice Nurse)

5.9 Implementing an equitable HPV Immunisation Programme

At the outset, the Programme goal was set as implementing an equitable, ongoing HPV Immunisation Programme. Analysis at a DHB level identified seven overarching mechanisms that facilitated the HPV Immunisation Programme to be effective for young Māori and Pacific women. The mechanisms are consistent with those identified by the Ministry working with the MEAG and the PEAG (Ministry of Health, 2008a: 16). Table 45 below lists the mechanisms and highlights their presence across the Programme components. The equity mechanisms noted were:

- recognition and support for the need for an equitable approach across all Programme components as well as a shared understanding of health equity and approaches
- leadership to ensure emphasis on the Programme and focus on enabling equal opportunities
- equitable and dedicated funding to enable effective targeting
- engagement and involvement of Māori and Pacific health and community leaders at governance, management, operational and community engagement levels
- collaboration, sharing knowledge and experiences
- multiple strategies and tactics – a planned but flexible approach
- monitoring results and flexible response.
### Table 45: Use and characteristics of effective mechanisms to increase Programme effectiveness for Māori and Pacific young women across Programme components (a √ indicates occurring)

<table>
<thead>
<tr>
<th>Enablers an equitable HPV Immunisation Programme</th>
<th>MOH</th>
<th>DHB</th>
<th>School-based delivery</th>
<th>PHOs</th>
<th>General Practice</th>
<th>Whānau engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recognition and support for the need for an equitable approach, and shared understanding of health equity and approaches</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>Variable</td>
<td>Variable</td>
<td>√</td>
</tr>
<tr>
<td>Leadership</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>Variable</td>
<td>Variable</td>
<td>√</td>
</tr>
<tr>
<td>Equitable and dedicated funding</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>No</td>
<td>No</td>
<td>√</td>
</tr>
<tr>
<td>Engagement with and involvement of Māori and Pacific health and community leaders and providers</td>
<td>√</td>
<td>√</td>
<td>Variable</td>
<td>No</td>
<td>Use of outreach providers. Reluctance to hand over patient lists to whānau engagement workers</td>
<td>Closely interfinked, synchronised and planned in their approach with the vaccinators</td>
</tr>
<tr>
<td>Collaboration, sharing knowledge and experiences</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>One of many areas of focus.</td>
<td>Unknown</td>
<td></td>
</tr>
<tr>
<td>Multiple strategies and tactics – planned but flexible approach</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>Unclear levers</td>
<td>Standardised approach for all</td>
<td>Known and trusted in the community</td>
</tr>
<tr>
<td>Monitoring results and flexible response. IT systems that facilitate the vaccine process</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>Variable</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

- **MOH**: Ministry of Health
- **DHB**: District Health Board
- **PHOs**: Primary Health Organisations
- **Whānau engagement**: Family engagement
6. Parents and Young Women’s Response

6.1 Introduction

This section details Māori, Pacific and other parents and young women’s response to the HPV Immunisation Programme focusing on their awareness, knowledge and decision-making about the HPV vaccine and their post-vaccination knowledge. Recognising the differing delivery strategies targeting differing age cohorts, the section focuses firstly on girls born in 1997, and young women born in 1990/91. It draws from the focus groups and paired interviews with Māori, Pacific and other parents, girls and young women born in 1997 and born in 1990/91. Quantitative survey data of parents’ awareness, knowledge and attitudes of the vaccine (Phoenix, 2009)\(^45\), and the findings from the online survey of young women born in 1990/91 are also presented. Where relevant, a comparative overview of national and international literature is provided in accompanying text boxes.

With the exception of Canterbury DHB, 94% of girls born in 1997 received the HPV vaccine through schools. Table 46 summarises the vaccine uptake for this birth cohort. Across New Zealand, target and equity of uptake was achieved for Māori and Pacific girls born in 1997; although results achieved varied by DHB.

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Dose 1 %</th>
<th>Dose 2 %</th>
<th>Dose 3 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Māori</td>
<td>64</td>
<td>61</td>
<td>56</td>
</tr>
<tr>
<td>Pacific</td>
<td>76</td>
<td>75</td>
<td>70</td>
</tr>
<tr>
<td>Other</td>
<td>43 ↓</td>
<td>42 ↓</td>
<td>40 ↓</td>
</tr>
<tr>
<td>Target</td>
<td>65</td>
<td>60</td>
<td>55</td>
</tr>
</tbody>
</table>

Data source: NIR up to 31 December 2010

More than 80% of young women born in 1990/91 received the HPV vaccine through primary care. The uptake target and equity was not achieved for young Māori women born in 1990/91 (refer to Table 47). The uptake target and equity was achieved for young Pacific women (except dose 3). Other young women achieved the uptake target.

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Dose 1 %</th>
<th>Dose 2 %</th>
<th>Dose 3 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Māori</td>
<td>40 ↓</td>
<td>34 ↓</td>
<td>28 ↓</td>
</tr>
<tr>
<td>Pacific</td>
<td>51</td>
<td>45</td>
<td>36 ↓</td>
</tr>
<tr>
<td>Other</td>
<td>49</td>
<td>46</td>
<td>42</td>
</tr>
<tr>
<td>Target</td>
<td>50</td>
<td>45</td>
<td>40</td>
</tr>
</tbody>
</table>

Data source: NIR up to 31 December 2010

\(^45\) Over the last three years, it is likely parents’ awareness, knowledge and attitudes of the vaccine will have changed

\(^46\) ↓ indicates below target.
6.2 Response of girls born in 1997 and their parents

6.2.1 Awareness and knowledge of parents and girls born in 1997

Awareness and knowledge about the link between the HPV virus and cervical cancer and the existence of a vaccine to protect against the virus is low amongst parents of young women aged 11–20. Further, awareness and knowledge is lower amongst Māori and Pacific parents. As shown in Table 48 below:

- 10% of parents of young women aged 11–20 when asked what causes cervical cancer mention the HPV virus. Mention was lower amongst Māori (4%) and there was no mention of the HPV virus by Pacific parents (0%).
- At an unprompted level, over a third of parents mention getting vaccinated as something that can be done to avoid cervical cancer (37%). Mention of vaccination by Māori and Pacific parents was lower (22% and 17% respectively).
- When prompted, 85% of parents had heard of a vaccine to protect women against developing cervical cancer. While lower, 77% of Māori parents were aware that the vaccine existed (77%). However, only half of Pacific parents were aware of the vaccine (55%).

Table 48: Effectiveness and reach of communication campaign (Phoenix, 2009)

<table>
<thead>
<tr>
<th>Key measures</th>
<th>Random sample of parents/ caregivers of females aged 11–20 years interviewed August–September 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Māori n=360 %</td>
</tr>
<tr>
<td>KNOWLEDGE</td>
<td></td>
</tr>
<tr>
<td>Aware HPV causes cervical cancer – unprompted</td>
<td>4↓</td>
</tr>
<tr>
<td>Aware of HPV – prompted</td>
<td>44↓</td>
</tr>
<tr>
<td>VACCINE</td>
<td></td>
</tr>
<tr>
<td>Aware of vaccine – unprompted</td>
<td>22↓</td>
</tr>
<tr>
<td>Aware of vaccine – prompted</td>
<td>77↓</td>
</tr>
<tr>
<td>Aware vaccine available in New Zealand</td>
<td>58↓</td>
</tr>
<tr>
<td>Know vaccine free</td>
<td>53↓</td>
</tr>
<tr>
<td>Aware three vaccinations</td>
<td>43↓</td>
</tr>
</tbody>
</table>

Data source: Phoenix (2009) HPV communications first tracking monitor

In the focus groups with parents of girls born in 1997, awareness and knowledge about the HPV vaccine varied, particularly by ethnic group and vaccination status.

- **Parents of Māori girls** who were vaccinated had a range of knowledge about the vaccine. Some had very basic knowledge, while others were well informed. In contrast, parents of unvaccinated Māori girls generally had low (or no) awareness of and knowledge about the vaccine. Many were confused about the difference between cervical cancer and breast cancer. Consequently, these parents did not feel sufficiently informed or confident to make a decision about vaccinating their girls.

- **Parents of Pacific girls** who were vaccinated had limited knowledge of cervical cancer and the vaccine. Some knew that the vaccine was for girls to \textit{protect them}$
down there”. Others knew that Pacific women were targeted because they have high incidence of cervical cancer and that it was important that girls get vaccinated in preparation for sexual activity.

Parents of Pacific girls who were not vaccinated and their extended family had no (or extremely limited) awareness and understanding of the HPV vaccine.

- **Parents of vaccinated and non-vaccinated Pākehā girls** had reasonable awareness about the vaccine and cervical cancer. They were aware of the relationship between HPV and cervical cancer, the vaccine was given in three doses, and their daughters would still need to have regular cervical smears.

In the paired interviews with girls born in 1997, all girls who were vaccinated appeared to have low levels of knowledge about HPV virus, cervical cancer and how the vaccine worked. Consistent with the responses of parents, the knowledge and awareness of Māori and Pacific girls was especially low. Not surprisingly, awareness and knowledge was low amongst girls who were not vaccinated.

- **Most Māori girls** who were vaccinated had limited knowledge of cervical cancer and the HPV vaccine. Some struggled to recall whether they had been given information before vaccination and if they did, they did not recall the details of the information. These girls were often confused between cervical and breast cancer.

- **Most Pacific girls** who were vaccinated had good recall of the vaccination process, (that it was free and delivered in three doses). However, like Māori girls, they were very vague and sometimes confused about the vaccine. Beyond knowing that it affected the ‘child bearing part of the body’, most had limited knowledge of cervical cancer and how the vaccine worked.

Most unvaccinated Pacific girls had low awareness of the vaccine and did not know what was being immunised against. They thought it had something to do with ‘sex/sex organs’ but were not clear what it was about or why the vaccine had to be given at an early age.

- **Most Pākehā girls** who were vaccinated had some knowledge about the vaccine including prevention of cervical cancer, and the vaccine was free and involved getting three doses. Only one of the girls interviewed was not sure what type of cancer was being protected against. However, few girls actually knew where their cervix was or any details about cervical cancer.

Pākehā girls who were not vaccinated had a more limited awareness and understanding of the HPV vaccine. They had varying ideas about what the vaccine protected against, who should get it and the likelihood of getting cervical cancer.

During the interviews and focus groups, parents and girls were asked to recall information about a vaccine they were offered and received in 2009. Consequently, it is not surprising that parents and girls struggled to recall specific details about the vaccine. However, the lack of knowledge about the vaccine preventing cervical cancer is of concern as well as the girls’ limited understanding of how their bodies work. Awareness that the vaccine also protected against genital warts was mentioned very infrequently.

“I don’t know how you get it. Whether it’s a sexually transmitted thing or what. I don’t know. I just thought - if they get it – then what?” (Māori father; non-vaccinated)

“I think we bought home a little pamphlet thing from school. I don’t know the costs or how many injections.” (Māori girl, not vaccinated)

“I don’t really know anything about it. What it does and stuff. I haven’t got it ‘cause I think it’s putting chemicals into your body. I think it’s dumb.” (Māori girl; not vaccinated)
6.2.2 Access to information

Parents of girls aged 11-20 years found out about the HPV vaccine from a range of different sources. The news media (49%), school newsletters (43%), advertising (38%) and doctors (24%) were the most commonly mentioned information sources. Māori and Pacific parents most frequently mentioned advertising and the school newsletter (refer to Table 49).

Table 49: Where parents of 11-20 years heard about HPV vaccine

<table>
<thead>
<tr>
<th>Where heard about HPV vaccine</th>
<th>Total Sample</th>
<th>Māori</th>
<th>Pacific</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1&lt;sup&gt;st&lt;/sup&gt; Monitor</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; Monitor</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; Monitor</td>
</tr>
<tr>
<td>From news items/unpaid media grouped</td>
<td>% (n=1051)</td>
<td>% (n=360)</td>
<td>% (n=346)</td>
</tr>
<tr>
<td>School newsletter</td>
<td>49</td>
<td>33↓</td>
<td>20↓</td>
</tr>
<tr>
<td>In advertising</td>
<td>43</td>
<td>39</td>
<td>23↓</td>
</tr>
<tr>
<td>From doctor/people at doctors</td>
<td>24</td>
<td>16↓</td>
<td>14↓</td>
</tr>
<tr>
<td>Pamphlet</td>
<td>11</td>
<td>9</td>
<td>6↓</td>
</tr>
<tr>
<td>From other family/friends</td>
<td>8</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Through work</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Wife/husband/partner</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Posters</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Don't know</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Data source: Phoenix (2009) HPV communications first tracking monitor

Parents participating in the qualitative research in 2010 also accessed information about the vaccine from a range of sources.

- **Māori parents** relied mostly on TV advertising and the information sent home from school as their key information source. Most whānau did not mention undertaking ‘research’ or seek further information online. Few Māori whānau reported seeking further information from their GP about the vaccine.

- **Pacific parents**, beyond pamphlets from school, TV advertising and targeted media campaigns (through Pacific language radio), identified health professionals as a key information source. Many recalled having received information from health professionals, particularly Pacific providers, and then seeking advice from their doctors or nurses about whether or not to vaccinate. Pacific parents generally had high levels of trust in the information provided by health professionals. Pacific parents feedback suggests that Pacific fānau engagement was (when reaching Pacific parents) supporting them to agree to their daughters having the vaccine. Few Pacific parents reported written material as a key information source or seeking out information online; thus reinforcing the importance of fānau engagement. Some Pacific parents who had had their daughters vaccinated did not feel there was sufficient information to meet their needs.

- **Pākehā parents** (both those who had vaccinated and not vaccinated) sought out information about the vaccine from a wider range of sources. Pākehā parents tended
to do their ‘research’ in deciding whether or not their daughters would have the vaccine. The research involved magazines and newspaper, discussions with family/friends and/or work colleagues and health professionals and online searches.

Parents of unvaccinated girls did receive information about the HPV Immunisation Programme including: information sent home through schools, media advertisements and websites.

Parents acknowledged the challenge of receiving information from school as they tend to get ‘lost’ in transit (i.e. they stay in the school bag until the parent goes looking). Even if handed over, pamphlets and brochures may get lost in the bulk of information received on a daily and weekly basis.

Feedback on the information received (i.e. HPV pamphlets and consent form) was mixed. Parents’ review of the HPV consent forms (both 2009 and 2010) reinforced that it contained useful information in determining whether or not their daughters have the vaccine. However, Māori and Pacific parents found the level of information overwhelming, potentially, reflecting lower levels of literacy and health literacy of Māori and Pacific parents.

A key area of confusion arising from the information was how long the vaccine lasted. The HPV consent form and pamphlet states “so far, ongoing studies show three doses of the vaccine protects against HPV infection for five years after immunisation, and suggest protection will be long lasting.” Consequently, some Pākehā parents queried the logic of giving the vaccine at age 12 when it may not work at age 17 – an age when their daughters may be in greater need of protection as becoming sexually active.

A common theme was parents wanting to receive more facts (e.g. the number of women who get the HPV virus or have cervical cancer) and importantly to hear that the vaccine is working (e.g. the decline in genital warts in Australia).

“Lack of good information is probably the main issue. If people understand and are given lots of information about the reasons for immunisation then it will really help.” (Pacific parent; vaccinated)

“Husband looked up all the information and agreed it was a good idea.” (Pākehā parent; vaccinated)

**Girls**

Girls recalled receiving information about the vaccine at school through the presentation from the school-based vaccinator, and in Canterbury DHB from their Practice Nurse. Detailed recall of these presentations was limited, reflecting that they had occurred at least 12 months earlier. However, feedback from Māori and Pacific girls suggest that the information received at the time of vaccination had not been targeted in a way or at a level where they were able to fully understand, or to ensure key information ‘sticks’. This may reflect the lower levels of literacy and health literacy of Māori and Pacific girls.

“Explained what it was for but I’ve forgotten – didn’t stay in my head. We were thinking of other stuff – sports and school – and it just slipped away.” (Pākehā girl; vaccinated)

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48 30% Pasifika and 25% of Māori students aged 15 years do not show proficiency in reading above Level 1. A lower proportion of Māori and Pasifika students achieved at the highest levels of reading proficiency, and they are over-represented at the lower levels when compared with Pākehā-European and Asian students (Telford and Caygill, 2007). Māori aged 19-24 years of age have the poorest health literacy compared to the rest of the population (Ministry of Health, 2010).
“Yeah we were like asking each other what it was for and we didn’t really understand what it was for. One of my mates asked what type of cancer it was and the lady didn’t really say anything. One of the teachers was just like ‘oh ask your Mum’.” (Māori girl; vaccinated)

While girls were a key conduit to pass on the consent form and pamphlet to their whānau, it appears that across the ethnic groups the girls tended not engage with the information taken home.

“ Took home consent form – didn’t read it. Teenagers don’t like reading heaps. Mum read it.” (Māori girl; vaccinated)

The international literature emphasises the importance of adequate information to inform consent in administering the HPV vaccine to young people (Brabin, et al., 2007; Lippman, et al., 2007). In general, possession of information about the vaccine among parents was more likely, but not guaranteed, to increase uptake (Ogilvie, et al., 2010; Zimet, 2005). This increased uptake is, however, tempered by the ability of parents to interpret cautionary information they are given or have accessed via the internet (Ogilvie, et al., 2010).

The literature also reinforces the importance of using culturally sensitive information and approaches to increase participation among minority groups (Cassidy & Schlenk, in press; Loring, unpublished). In the New Zealand context, consideration needs to be given to the information or discussions required to ensure informed decision making without overloading, as well as the key information needed to be retained long-term by those having the vaccine to facilitative positive health choices.

6.2.3 Key influencers

Mother decides

Across all ethnic groups, mothers had the strongest influence over whether or not their daughters would be vaccinated. In the qualitative research, the 12 year old girls tended not to be an active participant in the decision-making process. The mother made the decision and then informed their daughter of the outcome.

“Mum just said it prevented cancer so I had to get it done.” (Māori girl, vaccinated)

“Well my Mum said she didn’t want me to get it and I don’t like injections so yeah, I didn’t have it.” (Māori girl; non-vaccinated)

Between Māori and Pacific girls and their parents, there appeared to be minimal discussion about the vaccine. If conversations arose, they tended to talk in generalities rather than the details of the cancer or how the vaccine worked. For Pacific girls and their parents, the reluctance to engage in discussion about cancer and a vaccine for an STI reflected what they described as ‘cultural taboo’.

“We didn’t like to discuss it. We just gave the sheets to our Mum and she signed it. Then we handed it in.” (Māori girl; vaccinated)

“I would have liked the vaccination to be part of normal conversation at home so I could be more informed of the importance.” (Pacific girl; vaccinated)

Pākehā mothers’ engagement with their daughters was mixed and tended to reflect their perception of their daughter’s maturity. Some made the decision with very little consultation with their daughters. In contrast, others used the HPV vaccine information as an opportunity to start or continue conversations on sexuality education.

“My Mum said no and she gave me a lecture: I am not going to have sex before marriage.” (Pākehā girl; non-vaccinated)
“I used it [HPV] vaccine as an opportunity to have a conversation about sex.” (Pākehā mother; vaccinated)

For Pākehā - a personal decision

When asked about who had influenced them to make a decision, many Pākehā parents, unlike Māori and Pacific parents, indicated that they had “made up their own mind”. Pākehā parents tended to feel more confident about locating relevant information and then coming to their own informed decision (either for or against). Those who chose to vaccinate indicated a high level of trust in the official programme information. In contrast, some Pākehā parents were unable to decide whether or not to vaccinate their daughters due to the range of differing opinions about the HPV vaccine. Consequently, these parents did nothing as it was perceived as the easier and safer option.

“I tend to find if you go too far and wide, they’ve all got different opinions. I just discussed it with my husband. I was pretty set on it from the beginning.” (Pākehā mother; vaccinated)

“We trust that the doctors are informing the politicians that are putting the programme in place”. (Pākehā parent; vaccinated)

Parents who were confident in coming to their own decision were also quite assertive in ensuring that their daughters were vaccinated. In contrast some parents of unvaccinated girls declined the vaccine as they did not want to fight with their daughters to get it done due to their daughters’ fear of needles or reluctance to have the vaccine.

“It’s up to us parents to educate our children. Easy to pass the buck to someone else to do it. Abdicate responsibility.” (Pākehā mother; vaccinated)

Wider guidance sought

In making the decision to vaccinate, the Phoenix (2009) survey highlights that advice was sought from others, in particular husband/ partner (54%), the girl (27%), and doctor/ GP (13%) (refer to Table 50).

Table 50: Others involved in decision to get vaccinated

<table>
<thead>
<tr>
<th>Others involved in decision to get vaccinated</th>
<th>Total sample (n=1052)</th>
<th>Māori (n=360)</th>
<th>Pacific (n=347)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Husband/wife/partner of respondent</td>
<td>54</td>
<td>47</td>
<td>59</td>
</tr>
<tr>
<td>The girl/young woman</td>
<td>27</td>
<td>25</td>
<td>17</td>
</tr>
<tr>
<td>Doctor/GP</td>
<td>13</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Daughter’s friends/peers</td>
<td>9</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Friends</td>
<td>5</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Grandparents</td>
<td>5</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Other health professional</td>
<td>5</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Other family members</td>
<td>3</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Her mother</td>
<td>3</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>The girl’s sister(s)</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Schools/teachers</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Her father</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Aunty/aunties</td>
<td>1</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>No-one else</td>
<td>13</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>Don’t know</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Data source: Phoenix (2009) HPV Communications First Tracking Monitor
The role of fathers and whānau

From the 2010 qualitative research, a small number of fathers were actively involved in the vaccination decision by reading the information provided, seeking more information and/or discussions with their partners. However, in the main, fathers did not play a big role in the decision. Māori and Pacific fathers included in the whānau group discussions, had limited or no understanding of the vaccine. Those aware their daughters were vaccinated were supportive of the decision to protect them. Some fathers were unaware that their daughters had been vaccinated. However, once they found out (through the interview) were supportive of the decision.

“Mum. Actually, Mum and Dad. Dad was like ‘you’re getting it’. I listen to Dad.” (Māori girl)

“It was a whānau decision. I really didn’t like shots. Mum thought it was a bad idea. She just told us. We’re happy with Mum’s decisions. Part of Mum and Dad and a bit of us.” (Māori girl; non-vaccinated)

In addition to mothers, Māori and Pacific girls sometimes reported a wider range of family influencers that they talked to about the vaccine, in particular sisters and aunties, grandmothers.

“I showed the consent to my sister first. She must have spoken with my father as he signed the consent form. Later on, he asked me if I did get the vaccination.” (Pacific girl; vaccinated)

“At the end of the day – they got the message we thought it was best for them.” (Māori grandmother; vaccinated)

The role of health professionals

For Pacific and Pākehā parents, health professionals were a key source of information about whether or not to vaccinate their daughter. Pacific parents tended to seek advice from Pacific health providers and indicated they had high levels of trust in their advice and it positively influenced their decision to vaccinate.

Pākehā parents sought advice from their GP and/or friends who worked as a nurse or doctor. Receiving clear-cut positive feedback about the vaccine from a health professional resulted in uncertain parents being reassured to agree to their daughter having the vaccine. Conversely, a negative response from a health professional about the vaccine, regardless of their role/area of expertise appears to tip parents to decline the vaccine.

“Very happy that the Samoan nurse talked to me because that influenced my decision to vaccinate. My daughter was there at the time and heard the information from the nurse too.” (Pacific mother; vaccinated)

“The family doctor. She said it was a good idea so got it done. I trust her – she birthed my girls.” (Pacific mother; vaccinated)

“A few years ago, when this came up, this nurse I talked to me said she wouldn’t give it to her daughter and so yeah, why would I immunise my daughter?” (Māori mother; non-vaccinated)

“Happened to discuss this with a doctor friend. She was wary of the research – something about stopping a trial in the UK. She is from the UK – a paediatrician. She distrusts it.” (Pākehā parent; non-vaccinated)
Review of the international literature highlights the importance of recommendation and validation for parents in deciding whether their daughters will have the HPV vaccine; specifically:

- Ensuring that health care professionals are informed about the benefits of vaccination and are able to provide ‘safety’ reassurances to allay parental concerns contributed to a likelihood to vaccinate (Stretch, et al., 2008; Cassidy & Schlenk, 2010; Zimet, et al., 2006).
- Recommendations in favour of vaccination from family, friends and community leaders also contributed to a likelihood to vaccinate (Ogilvie, et al., 2007; Ogilvie, et al., 2010).

6.2.4 Reasons to vaccinate

Most young girls that had been vaccinated had done so as a result of the influence of their mothers. Mothers opting to vaccinate were pro-immunisation and their children had received their childhood vaccines. Reasons given by parents in the 2010 focus groups for vaccinating are multi-dimensional and reflect the international literature and Phoenix 2009 survey, specifically:

- **Protection for the future.** Protection from cervical cancer was the key reason for parents from all ethnic groups to agree to vaccinate their daughters. In the Phoenix (2009) survey of parents of 11-20 year olds 53% of all parents and 42% of Māori and 41% Pacific parents mentioned protection from cervical cancer as the reason for consenting (see Table 51).

  “When the girls got the panui, we read the information and thought why wouldn’t we? I asked what were the long-term benefits, what were the side effects, etc. You don’t want to assume they will be forever not sexually active and so we need to take measures.” (Māori mother; vaccinated)

  “The word ‘cancer’ when it was mentioned to me, that it is a dangerous thing to have and therefore we need to help our girls to be protected from it.” (Pacific mother; vaccinated)

  “I felt like it was a hard decision, but the idea of protecting them against cancer weighed out.” (Pākehā parent; vaccinated)

- **Exposure to cervical and other cancers.** Māori and Pacific parents and girls often identified exposure to cancer within their whānau as a strong motivator for getting the vaccine. Pākehā parents also mentioned their personal experiences with abnormal cervical smears had influenced their decision to vaccinate their daughters.

  “Sad because my Nan died from breast cancer. Mum asked me cause of what happened to Nan. It’s important. My Nan died last year and that’s why I missed out on the second vaccination. And Mum was like ‘Oh well, now you’re getting the second one.’ I didn’t want it and she was like ‘too bad you’re getting it done.’” (Māori girl; vaccinated)

  “… He had that and passed it on to me, at a very young age I had to have smears… as soon as this came out I knew straight away… I may not have had to worry about that.” (Pākehā mother; vaccinated)

- **Doing the ‘right thing’.** The responses of some Māori and Pacific parents suggested that they had consented to the vaccine for their daughters because they thought it was the ‘right thing to do’. Thus their agreement to have their daughters vaccinated was not an informed decision but more a response of being seen as a ‘good mother’ doing the right thing within their communities. As a result, a few Māori parents of vaccinated girls, on learning about concerns of non-vaccinating parents, felt they had should have sought more information to determine whether or not the vaccine was ‘risky’. In this context, some Māori whānau raised concerns that Māori are sometimes
overly compliant and stressed the need to ensure that whānau give informed consent to these types of initiatives.

Pacific parents did not tend to question their decision. Their decision making process of minimal engagement with written information and complying with trusted health professional advice raises questions about whether or not the decision was one of informed consent or simply consent based on trust. Consideration needs to be given to the wider implications of decision-making based on trust and social desirability factors - an area that requires further research.

“Do more research on it first. I learnt about it from the 30 second ads that were out, flyers from school and one paper. I jumped at the opportunity but should have done more research first. I've just got told that two girls had died from the injection but my daughter had already had it... I should have done more research... Internet, get different doctor's opinions and talk to other Mums whose daughters have had it”. (Māori mother; vaccinated)

“I signed the form but I didn’t know what it was.” (Pacific mother; vaccinated)

Free vaccine. For Māori and Pacific parents, the vaccination being free was an important factor that contributed to their decision.

“Think that it is good for people to have the choice. Not just say no because they don’t have the money to receive the vaccine.” (Pacific girl; vaccinated)

The international literature highlights similar facilitators for parents deciding to vaccinate their daughters:

Protecting the family
- Parents favouring the vaccine as a way of protecting their child (Cassidy & Schlenk, 2010; Brabin, et al., 2007; Brewer, 2007; Fisher, et al., 2008; Zimet, et al., 2006; Dempsey, et al., 2009; Pallecaros & Vonau, 2007).
- Parents with a heightened perception of the risk of their daughter contracting HPV (Brewer, 2007; Dempsey, et al., 2009).

Previous experience
- Parents who are pro-immunisation and have a childhood history of vaccination were more likely to participate (Ogilvie, et al., 2007; Pallecaros & Vonau, 2007), as were those who may previously have been immunised for other diseases (Rondy, et al., 2010).
- Parental experience (self or others) with HPV infection or HPV-related diseases and/or cervical cancer increased likelihood to vaccinate (Dempsey, et al., 2009).

### Table 51: Reasons to have daughter vaccinated

<table>
<thead>
<tr>
<th>Reasons would/did consent</th>
<th>Total (n=556) %</th>
<th>Māori (n=179) %</th>
<th>Pacific (n=219) %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protects girls against cervical cancer</td>
<td>53</td>
<td>42</td>
<td>41</td>
</tr>
<tr>
<td>So daughter can live a healthy life</td>
<td>16</td>
<td>18</td>
<td>31</td>
</tr>
<tr>
<td>Better to have protection</td>
<td>11</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>It protects girls from the VIRUS that can cause cervical cancer</td>
<td>10</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>Prevention better than cure</td>
<td>10</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Have a family history of cervical cancer</td>
<td>6</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>Concern about cervical cancer</td>
<td>6</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>It’s important to have the vaccination (unspecified)</td>
<td>5</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>To lower risk</td>
<td>5</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Could save daughter’s life</td>
<td>4</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

Data source: Phoenix (2009) HPV communications first tracking monitor
6.2.5 Reasons not to vaccinate

Parents whose daughters were not vaccinated fall into four broad groupings:

- parents who oppose all immunisation
- parents not opposed to the HPV vaccine but face access barriers
- parents who are undecided or delaying the decision
- parents who oppose the HPV vaccine for a range of reasons.

The reasons given by parents and girls for not having the vaccine reflect those identified in the international literature, as demonstrated below in the boxes. The reasons given by parents in the groups also reflect the reasons for not vaccinating given in the Phoenix report (2009): vaccine is not tested (36%), need for more information (29%), concerns about side effects (18%), girls are too young (15%) and opposed to vaccines (9%) (refer to Table 53 following).

Parents opposed to all immunisations

These parents tend to be Pākehā, and their daughters did not receive their childhood immunisations. Based on their strongly held anti-immunisation beliefs, these parents did not actively engage or consider the HPV vaccine. They simply rejected it outright for their 12 year old daughters. One parent noted that while she rejected the vaccine for her 12 year old daughter, her 17 year daughter had received the vaccine at school through self-consenting.

Parents not opposed to the vaccine – access barriers

Māori and Pacific whānau tended to be more likely to identify lack of information and knowledge about the vaccine as the reason for not vaccinating.

“We know nothing about it.” (Māori mother, not vaccinated)

For Pacific parents, language barriers often created confusion or resulted in misinformation about the vaccine. For example, some parents were confused between the HPV and meningococcal vaccines and between HPV and HIV. In addition, some rejected the vaccine as they thought it acted as a contraceptive and, if given, would encourage their daughter to become sexually active.

Amongst parents whose daughters had not been vaccinated, receiving more information may prompt them to reconsider their vaccination decision. The Phoenix (2009) survey of parents of 11-20 year olds highlighted that 63% of Māori undecided about the vaccine wanted more information to enable them to make an informed decision.

“I am a bit sceptical, but yeah, after this today I think I will get my daughters done.” (Māori parent; not vaccinated)

“I want more information before I sign my daughter to get one – there is not enough information.” (Māori mother; not vaccinated)

Issues of access were not widely raised by parents of unvaccinated girls located in DHBs using school-based delivery. A few parents noted that they had not vaccinated due to the Board of Trustees of their daughter’s school declining access. As result, these parents either forgot to go to their GP or took the Board of Trustee’s rejection as a reason not to vaccinate their daughters (usually for religious reasons).
In Canterbury DHB, the challenges of accessing GPs were raised in relation to the logistics of having to fit in three GP appointments either during or after school, and for a few concerns about having to face debt owed to the GP when seeking to access a free vaccine.

“Haven’t had the injection because Mum and Dad forgot the appointment. They forgot to take me to the appointment. Now I’m not too sure whether I want it.” (Pacific girl, Canterbury)

Parents who are undecided or delaying the decision

One of the most common issues to emerge from parents who have not vaccinated their daughters relates to the vaccination age. Some parents of unvaccinated girls in particular Pākehā and Pacific felt that their girls were too young to fully understand the reasons for the vaccine. They perceived agreeing to their girls having the vaccine would open up areas for discussion they believed their girls are simply not ready or mature enough to deal with.

“My girls are 12 years old. They can’t make that kind of decision. They are quite naïve in that kind of thing.” (Māori father; not vaccinated)

“Didn’t talk to daughter about it – would open the whole web about becoming sexually active. They’re just babies. Ignorant that way.” (Pākehā parent; not vaccinated)

Some strongly associated information about the vaccine with ‘sex education’. These parents often considered that society was too ‘permissive’ about sexual activity and felt that having their daughter’s vaccinated would reinforce this.

“They’re teaching that them all that stuff earlier than ever. They don’t teach all options, like abstinence, just about safe sex. At 13 it shouldn’t be an option.” (Pākehā parent; not vaccinated)

“They are too young to do that business - for that vaccine. Looking at our culture - 13 years. Oh my goodness they are still too young.” (Pacific parent; not vaccinated)

Consequently, a number of parents, in particular Pākehā parents, appeared to be adopting a strategy of delaying the decision about vaccination until the girls were ‘more mature’. Some parents abdicated out of the decision and will let their daughters decide when they are old enough to ‘make their own decision’. This delay decision reflects for these parents a strong belief that their daughters will not engage in sexual activity until they are much older. The delay decision is ‘logically’ supported by official information stating the vaccine is known to protect against HPV infection for five years. Thus, delaying the vaccine is perceived as offering their daughters better immunity when they are more likely to need it (i.e. later teens/early twenties).

The Phoenix (2009) survey of parents of 11-20 year old young women found around 20% of parents were undecided, and another 30% said they will consent to vaccination – however whether parents carry through on this intent is unknown (refer to Table 52).

“May have considered the vaccine if my girl was more physically mature.” (Pākehā parent; not vaccinated)

“The girls can decide themselves over the next five years.” (Pākehā; not vaccinated)

“It’s more use getting it then than now. There is more of a reason then. We are concentrating on school stuff now.” (Pākehā girl; not vaccinated)
Age-related concerns: Parental concern about the age at which vaccination is recommended appears to be common, with daughters thought to be too young to be sexually active (Cooper-Robbins, et al., 2010; Davis-Wolfe, et al., 2009; Dempsey, et al., 2009; Rondy, et al., 2010), and as such not at risk of contracting the HPV infection (Brabin, et al., 2007; Dempsey, et al., 2009; Farrell & Rome, 2007; Herzog, et al., 2008; Humiston, et al., 2009; Lippiatt, unpublished). This concern appears to stand in contrast to evidence of decreasing average age of sexual debut among teens (Garland, et al., 2008).

Parents who oppose the HPV vaccine for a range of reasons

Parents who oppose the HPV vaccine give a range of reasons to support their decision. However, the key concerns are the perceived links between the HPV vaccine and early sexual activity as well as uncertainty about the efficacy and side effects of the vaccine.

Link between the vaccine and sexual activity

A number of parents were concerned that having their daughters vaccinated would lead to early sexual activity. They considered that their approval to vaccinate would amount to tacit approval for their daughters to become sexually active. This range of concerns was more often mentioned by Pākehā than Māori and Pacific parents.

“The vaccine is tacit approval to have sex young.” (Pākehā parent; not vaccinated)

Some believed that the way to address cervical cancer is to address the wider issue of sexually transmitted infection through abstinence.

“I would rather encourage chastity in relationships and even if this is unrealistic, I would rather encourage my children in this than advise them to have the vaccine which they may see as tacit approval to engage in sex at a young age.” (Pākehā parent; not vaccinated)

A number of parents had chosen not to vaccinate their children because they thought that the vaccine was only relevant to girls who were sexually active.

“Guess it’s aimed at the ones who are likely to be sexually active. Who knows where they are really aiming it at?” (Pākehā parent; not vaccinated)

“My understanding is that it’s being marketed towards girls who show signs or behave as if they are already sexually active.” (Pacific parent; not vaccinated)

Sexualisation of the vaccine - a frequent concern of parents is that their consent to have the vaccine may be regarded by their daughters as implied approval of sexual activity (Cassidy & Schlenke, in press; Zimet, et al., 2006; Fisher, et al., 2008). Parents are also concerned about:

- vaccination promoting earlier sexual debut (Lippman, et al., 2007; Zimet, 2005; Brewer & Fazekas, 2007)
- the potential for the vaccine to promote casual attitudes towards sex, and particularly promiscuity (Cooper-Robbins, et al., 2010; Davis-Wolfe, et al., 2009; Marshall, 2007; Watson, et al., 2009) – this opinion persists despite there being little evidence supporting such a change in behaviour following vaccination (Farrell & Rome, 2007; Fisher, et al., 2008)
- the potential for the vaccine to promote what could be construed as ‘risky’ sexual behaviour among teens (Markowitz, 2010; Ogilvie, et al., 2010; Rondy, et al., 2010; Zimet, 2005; Vallely, et al., 2008), e.g. imagining that immunisation negates the need for prophylactic protection from STIs (Brabin, et al., 2006: 3092).
Concern about the efficacy and side-effects of the vaccine

A number of parents had concerns about the safety and efficacy of the vaccine; with some not trusting of the “official” information they had been provided. Several were put off by the vaccine being relatively new and considered that there was a lack of evidence as to whether it worked or not. Some were also influenced by negative media coverage of immunisation in general, and/or specifically about the HPV vaccine. A few mentioned the deaths of young women being attributed to the vaccine.

“I know that America has done it… before they introduced it to NZ… severe enough that they did documentaries on 60 Minutes… they don’t document them a whole lot.” (Pākehā parent; not vaccinated)

“How long has it been running? We just didn’t know what the side effects are. We’ve given them that many vaccines. We just don’t know aye? The side effects might come out in a few years time.” (Māori mother; not vaccinated)

Concerns about safety is sufficient to prevent parents from granting consent to vaccinate, while other parents with a comparable level of concern will consent based on the advice of medical experts. Parents of young women are reported to express specific safety concerns, including:

- the safety of HPV vaccines usually due to their recent development (Brabin, et al., 2007; Brabin, et al., 2008; Cassidy & Schlenke, in press; Dempsey, 2006; Humiston, et al., 2009; Marshall, 2007; Ogilvie, et al., 2010; Stretch, et al., 2008; Stretch, et al., 2009; Zimet, et al., 2010)
- unknown long-term side effects (Brabin, et al., 2008; Cassidy & Schlenke, in press; Dempsey, et al., 2009; Ogilvie, et al., 2010; Stretch, et al., 2009)
- doubts about the longevity of immunity and the level of protection offered (Dempsey, et al., 2009; Markowitz, 2010; Stretch, et al., 2009)
- general ‘lay’ concerns about the effects of immunisation, e.g. immunisation causing autism or allergies (Dempsey, et al., 2006).

Negative media coverage has a negative influence on perceptions of vaccine safety and disease severity amongst parents and young women generally (Herzog, et al., 2008; Humiston, et al., 2009), which may in turn affect overall uptake (Brabin, et al., 2008).

Vaccination ‘fatigue’

A small number of parents felt that the vaccine was being forced on people or indicated that they had been overloaded with vaccination choices. These reasons tended to be mentioned in association with other reasons rather than as a key factor not to vaccinate.

“There was not a lot of information, the girls just had the meningitis vaccine and then this and we just thought ‘nah’.” (Māori mother; not vaccinated)

“I said to my husband, ‘Oh goodie, another vaccine to be shoved down our throats’.” (Pākehā parent; not vaccinated)

Vaccine fatigue: The roll out of the HPV vaccine followed and coincided with recent public health epidemics, which the Meningococcal B and H1N1 vaccines were used to control. As Humiston, et al. (2009) note, there is some evidence that this may have resulted in ‘vaccine fatigue’, where parents saturated with public health information lost their sense of urgency about the HPV vaccine.

Fear of needles

Some parents identified an aversion to needles (either themselves or their daughters) as a reason not to vaccinate.

“It’s just that I don’t like injections.” (Māori girl; not vaccinated)
“Personally doesn’t think she needs to have it as she is kind of scared and doesn’t think she needs it.” (Pacific; not vaccinated)

Inconsistency with religious/cultural beliefs

A small number of Māori and Pacific whānau considered that their daughters did not need to be vaccinated either because of their religious beliefs or because their lineage would provide natural immunity against cervical cancer.

“Believe that having a strong faith in God means he will be able to protect my girls.” (Pacific mother; not vaccinated)

“I never get injections – I’ve never had any. I am like healthier than people who have had the injections.” (Pākehā girl; not vaccinated)

Table 52: Consent for vaccination

<table>
<thead>
<tr>
<th>Consent for vaccination</th>
<th>Total (n=975)</th>
<th>Māori (n=333)</th>
<th>Pacific (n=325)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have consented to vaccination</td>
<td>32%</td>
<td>27%</td>
<td>20%</td>
</tr>
<tr>
<td>Will consent to vaccination</td>
<td>30%</td>
<td>26%</td>
<td>47%</td>
</tr>
<tr>
<td>Would not/have not consented to vaccination</td>
<td>12%</td>
<td>10%</td>
<td>4%</td>
</tr>
<tr>
<td>Don’t think should vaccinate</td>
<td>9%</td>
<td>10%</td>
<td>5%</td>
</tr>
<tr>
<td>Daughter’s choice</td>
<td>7%</td>
<td>9%</td>
<td>4%</td>
</tr>
<tr>
<td>Did consent to some and not others</td>
<td>1%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Undecided/depends/don’t know</td>
<td>20%</td>
<td>18%</td>
<td>18%</td>
</tr>
</tbody>
</table>

Data source: Phoenix (2009) HPV communications first tracking monitor

Table 53: Reasons would not get vaccine

<table>
<thead>
<tr>
<th>Reasons would not/did not consent to vaccine</th>
<th>Total Sample (n=175)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not tested enough</td>
<td>36%</td>
</tr>
<tr>
<td>Need more information</td>
<td>29%</td>
</tr>
<tr>
<td>Concern at possible side effects</td>
<td>18%</td>
</tr>
<tr>
<td>Daughter too young</td>
<td>15%</td>
</tr>
<tr>
<td>Opposed to vaccinations</td>
<td>9%</td>
</tr>
<tr>
<td>Promotes sex for young girls</td>
<td>9%</td>
</tr>
<tr>
<td>Only offer to sexually active girls</td>
<td>9%</td>
</tr>
<tr>
<td>Rather education on abstinence or safe sex</td>
<td>8%</td>
</tr>
<tr>
<td>Vaccine only lasts five years</td>
<td>8%</td>
</tr>
<tr>
<td>Possibility not full immunity</td>
<td>7%</td>
</tr>
<tr>
<td>Implies girls now sexually active</td>
<td>6%</td>
</tr>
<tr>
<td>Year 8 (age 12-13) is too young</td>
<td>6%</td>
</tr>
<tr>
<td>Conservative about any vaccines</td>
<td>5%</td>
</tr>
<tr>
<td>Vaccine will not last very long</td>
<td>5%</td>
</tr>
</tbody>
</table>

NB. There were insufficient numbers answering this question to allow for accurate comparisons within ethnic groups

Data source: Phoenix (2009) HPV communications first tracking monitor
### Table 54: Reasons undecided

<table>
<thead>
<tr>
<th>Reasons undecided</th>
<th>Total (n=188)</th>
<th>Māori (n=64)</th>
<th>Pacific (n=64)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Need more information</td>
<td>46</td>
<td>63↑</td>
<td>47</td>
</tr>
<tr>
<td>Not tested enough</td>
<td>17</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Concern at possible side-effects</td>
<td>17</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Need for family discussion</td>
<td>5</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Would need to consult GP</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Depend on age group targeted</td>
<td>4</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Possibility not complete immunity</td>
<td>3</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Question if it does what they say it will do</td>
<td>2</td>
<td>10↑</td>
<td>2</td>
</tr>
</tbody>
</table>

Data source: Phoenix (2009) HPV communications first tracking monitor

### 6.2.6 Vaccination experience

Overall, girls who had been vaccinated were positive about the experience both through the school-based delivery and GP. Girls talked positively about going through the process at school with their peers. Some girls who were vaccinated through GPs noted that they would have preferred the option of being vaccinated at school.

“I would have liked to do through school and have friends to support.” (Pacific girl; vaccinated)

Many girls noted some fear of the needles and discomfort around the injection site post-vaccination, but generally were not too traumatised by it. Girls did raise some issues around school delivery in particular being teased by boys and in some cases having the injection site ‘punched’ by boys.

“We were teased by the boys in our class that we were getting the infections because otherwise we will get cancer. The boys made it sound like getting cancer was a funny thing or to get it is something that happens to stupid girls.” (Pacific girl; vaccinated)

### 6.2.7 Delivery preference

Amongst parents, opinion was divided on their preferred delivery mechanism. School-based delivery is acknowledged as being much more convenient than visiting their GP, and girls receive support from their peers before, during and after the vaccination. However, parents like to have the choice of both school-based and primary care and to be able to move between the two mechanisms (e.g. dose 1 at GP, and dose 2 and 3 at school). Parents who were aware that their daughters did not like needles preferred the option of going to the GP so the vaccination process was more private.

In Canterbury DHB, parents acknowledged that a school-base delivery would be easier for them. However, they also liked visiting their GP, given their existing relationship.

“Taking time off work etc and it’s a pain in the bum.” (Pākehā mother; vaccinated)

“I think that it was good having it at school. There was a group going before them. They were both comfortable.” (Māori mother; vaccinated)
6.2.8 Ongoing need for cervical smears

The majority of parents of young women aged 11-20 years (Phoenix, 2009) are aware that young women will still need a cervical smear test if vaccinated (92%). Positively, Māori and Pacific parents have high awareness of the need for smears after receiving the HPV vaccine (92% and 94% respectively).

In the interviews, girls were asked what other things they could do to protect against cervical cancer. Most were aware of the importance of having cervical smears when older; although there was some uncertainty of when they needed to do this. The humour used in the cervical smear advertisement - the Pacific women laughing in the van - had strong resonance across all ethnic groups.

6.2.9 Vaccination typologies parents and girls born in 1997

The Childhood Immunisation Research (Litmus, 2011c) identified five typologies of parents/ caregivers who do not fully immunise their children aged 0-6 years: ‘Nurturers’, ‘Fearfuls’, ‘Vulnerables’, ‘Unwell’ and ‘Rejecters’. Analysis of the feedback about HPV from parents and girls born in 1997 confirm some similarity in the typologies as well as key differences reflecting the uniqueness of the HPV vaccine. All participants fall into one main typology. The matrix below provides a summary of the differences between the typologies, along two key dimensions:

1. parent/caregiver’s openness to immunisation
2. the nature of the parent/caregiver’s environment – i.e. whether they have an enabling environment or a disabling environment.

Four typologies are apparent for parents/caregivers who did not consent for their 12 year old daughters to have the HPV vaccine: ‘Delayers’, ‘Fearfuls’, ‘Vulnerables’, and ‘Rejecters’. Each of these typologies has different characteristics and there are different mechanisms for change to facilitate immunisation decisions.

- ‘Delayers’ – mainly Pākehā who are not opposed to the HPV vaccine, but believe their daughters are too young and immature to receive it. Parents may consider the HPV vaccine when their daughter is older (e.g. 15 years). Pākehā ‘delayers’ are also strongly evident in the Canterbury DHB. Delayers are pro-immunisation having ensured their daughters had received the scheduled childhood immunisations.

An underlying risk to Pākehā acting on this intent of vaccinating later is their perception that their daughters are not likely to be at risk from an STI as they will not be sexually promiscuous. An unintended consequence of the communication campaign, focusing visually on Māori and Pacific girls, is it has reinforced racial prejudices about the populations most at risk from STIs through promiscuity.

“… She [nurse] said she didn’t feel that my daughter would be in a particularly high risk group unless she was Pacific Island or Māori….” (Pākehā; non-vaccinated)

- ‘Vulnerables’ – mainly Māori who are not opposed to immunisation, but face barriers to accessing meaningful information about the HPV vaccine on which to make an informed decision. While this is based on qualitative research, the ‘vulnerable’ group for Māori girls born in 1997 receiving the vaccine through the school-based system appears to be smaller than that for primary care. The school-based delivery is ensuring Māori are aware of the HPV vaccine and facilitating a positive response.
However, the response is not one based on an understanding of the HPV vaccine due to health literacy issues.

“It sounds a bit scary. I don’t want my child to have cancer. I don’t want that and if this can help them… I don’t know what’s in it. If it’s from Pākehā, it must be going to help me. What I would like to ask today is if you have some info about it?”

(Māori mother; not vaccinated)

- ‘Fearfuls’ – concerned about the efficacy and long-term side effects of the HPV vaccine, and some find the immunisation experience emotionally distressing for both themselves and their children (i.e. a fear of needles).

“She is needle phobic. We react badly to vaccines – it’s inherited.” (Pākehā parent; not vaccinated)

- ‘Rejecters’ – opposed to most or all immunisations tend to be Pākehā.

“I knew I was never going to do it so I didn’t need to research it.” (Pākehā parent; not vaccinated)

The ‘unwell’ typology was not included as only one girl was identified as not having the HPV vaccine due to childhood cancer. The ‘nurturing’ typology is included within the ‘delay’ typology and are the parents most likely to not see a strong need for their daughter to have the HPV vaccine.
6.2.10 Health literacy of immunised girls

In general, girls born in 1997 who have received the vaccine, and Māori and Pacific parents, have very little understanding of the HPV vaccine. While they are aware of the need for cervical smears when older, consideration is needed of the implications of this lack of health literacy about sexual reproduction, cervical cancers and other cervical abnormalities.

6.2.11 Opportunities to increase uptake for the ongoing cohort

The greatest opportunity to increase the uptake of the vaccine for the ongoing cohort is to target ‘delayers’ and address low uptake by Pākehā girls. A two-pronged strategy is required to target those who have made a delay decision already and potential delayers in the ongoing school year 8 cohort:

- **For non-vaccinated girls born in 1997** being either opportunistically offered the vaccine when at the GP for other medical reason, or conducting a more systematic recall via primary care when the young women turns 16 years old. Targeting at 16 years would enable the young women to have more involvement in the decision to vaccine; although this is less than ideal from an immune response perspective.

- **For the ongoing year 8 cohort (via school-based delivery)** implement strategies to potentially decrease the size of the delayer group through reinforcing the message that early uptake results in a stronger immunity response, longevity of the vaccine and creating awareness of the prevalence of the HPV virus.

In maintaining equity of uptake for Māori and Pacific girls, consideration is needed on how to effectively address the information needs of those in the vulnerable group. The presentation and layering of information is particularly important given that whānau engagement may not be funded on an ongoing basis. As evident, Māori and Pacific parents and girls have limited understanding of the HPV vaccine due to poor health literacy.

While brochures are useful, Māori and Pacific parents are not engaging and reading the information. Consideration needs to be given to how Māori and Pacific parents can discuss the vaccine via a hui/face-to-face discussion on the risks and benefits. While the school-based presentation to parents offers this opportunity, they are poorly attended. More innovative approaches may include information being presented or discussion opportunities linked to school-based cultural events (e.g. kapa haka evening).

Table 55 details opportunities for engagement, potential messages and systems to increase uptake across the non-immunised groups identified. Rejectors have been excluded due to the significant challenges in shifting their philosophical beliefs about vaccination in general.
<table>
<thead>
<tr>
<th>Table 55: Summary of potential opportunities and strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Delayers girls born in 1997</strong></td>
</tr>
<tr>
<td><strong>Opportunities for engagement:</strong></td>
</tr>
<tr>
<td>- Visits to GP</td>
</tr>
<tr>
<td>- Visits to Family Planning and other sexual and reproductive health providers</td>
</tr>
<tr>
<td><strong>Potential messages:</strong></td>
</tr>
<tr>
<td>- Young Pākehā women not vaccinated are at risk</td>
</tr>
<tr>
<td>- High prevalence of HPV amongst Pākehā women</td>
</tr>
<tr>
<td>- Vaccine is safe and works</td>
</tr>
<tr>
<td>- Release of vaccine results and research demonstrating effectiveness</td>
</tr>
<tr>
<td>- Longevity of the vaccine</td>
</tr>
<tr>
<td><strong>Systems:</strong></td>
</tr>
<tr>
<td>- Opportunistic vaccination at GPs</td>
</tr>
<tr>
<td>- Systematic follow-up of non-vaccinated 16 year olds via General Practice</td>
</tr>
<tr>
<td><strong>Delayers girls ongoing cohort</strong></td>
</tr>
<tr>
<td><strong>Opportunities for engagement:</strong></td>
</tr>
<tr>
<td>- School-based delivery</td>
</tr>
<tr>
<td>- GP reinforcing benefits of vaccine if in for other health matter</td>
</tr>
<tr>
<td><strong>Potential messages:</strong></td>
</tr>
<tr>
<td>- Young Pākehā women not vaccinated are at risk</td>
</tr>
<tr>
<td>- High prevalence of HPV amongst Pākehā women</td>
</tr>
<tr>
<td>- Length of efficacy/longevity of the vaccine</td>
</tr>
<tr>
<td>- Vaccine is safe and works</td>
</tr>
<tr>
<td>- Better immune response if have young</td>
</tr>
<tr>
<td><strong>Systems:</strong></td>
</tr>
<tr>
<td>- School-based delivery</td>
</tr>
<tr>
<td>- Opportunistic vaccination at GPs</td>
</tr>
<tr>
<td><strong>Vulnerables – Māori and Pacific parents</strong></td>
</tr>
<tr>
<td><strong>Opportunities for engagement:</strong></td>
</tr>
<tr>
<td>- Outreach services, e.g. Whānau Ora</td>
</tr>
<tr>
<td>- Unrelated health visits (e.g. GP, Family Planning) visits</td>
</tr>
<tr>
<td><strong>Potential messages:</strong></td>
</tr>
<tr>
<td>- Vaccine is safe/has few side-effects</td>
</tr>
<tr>
<td>- Vaccines do work</td>
</tr>
<tr>
<td>- Longevity of the vaccine</td>
</tr>
<tr>
<td><strong>Systems:</strong></td>
</tr>
<tr>
<td>- Outreach services, e.g. Whānau Ora</td>
</tr>
<tr>
<td>- School-based hui (innovation needed)</td>
</tr>
<tr>
<td>- Responsive health services (Māori/Pacific)</td>
</tr>
<tr>
<td><strong>Fearful</strong></td>
</tr>
<tr>
<td><strong>Opportunities for engagement:</strong></td>
</tr>
<tr>
<td>- School-based delivery</td>
</tr>
<tr>
<td>- GP reinforcing benefits of vaccine if in for other health matter</td>
</tr>
<tr>
<td><strong>Potential messages:</strong></td>
</tr>
<tr>
<td>- Immunisation has more benefits than risks</td>
</tr>
<tr>
<td>- Immunisation takes minutes and provides protection for years</td>
</tr>
<tr>
<td><strong>Systems:</strong></td>
</tr>
<tr>
<td>- School-based delivery - support person welcome</td>
</tr>
<tr>
<td>- Provider deals with mother and daughter</td>
</tr>
<tr>
<td>- Opportunistic vaccination at GPs</td>
</tr>
</tbody>
</table>
6.3 Response of young women born in 1990/91

6.3.1 Awareness, knowledge and perceptions of the HPV vaccine

Seven in ten young women born in 1990/91 (70%) who answered the online survey in 2011 had heard of the HPV vaccine before the survey. Of those aware, 93% knew that the HPV vaccine is available for free (refer to Table 56). Young women less likely to have heard of the vaccine are Pacific (48% have heard of it), unemployed (50%), and those with no qualifications (14% have heard of it).

Most young women who are aware of the vaccine correctly stated that the HPV programme requires three doses (93%) – refer to Table 57. Most of the remainder (6%) didn’t know how many doses are required.

In the 2011 online survey, young women born in 1990/91 were asked to provide their opinions about the HPV vaccine (refer to Table 58). Half of the young women agree or strongly agree that the HPV vaccine, (although around four in ten don’t know or neither agree/ disagree):

- is safe (55%)
- protects against most forms of cervical cancer (52%)
- prevents genital warts (43%).

The myths about the vaccine have not gained widespread traction with young women disagreeing or strongly disagreeing that:

- having safe sex means they do not need the HPV vaccine (79%)
- only women who are sexually active with multiple partners need to get the HPV vaccine (72%)
- the HPV vaccine can cause cancer (49%); although 43% don’t know or neither agree/ disagree
- vaccines can cause other health problems (24%); although 50% don’t know or neither agree/ disagree.

Of note, a number of young women are either neutral or unsure of their views for all of the above statements, but especially for ‘protection for the HPV vaccine may be lifelong’ (55% either don’t know or neither agree nor disagree). This reflects the general confusion about the effectiveness and duration of the vaccine.

Whilst there was awareness of the vaccine in the in-depth interviews with young women born in 1990/91, the level of knowledge about the vaccine varied across ethnic groups. Amongst Māori and Pacific women who have received the vaccine, levels of knowledge about the vaccine varied. Some were aware that the vaccine involved three doses and that it protected against cervical cancer.

Generally young Pākehā women who had been vaccinated were well-informed about the vaccine and cervical cancer more generally. Most were aware that the vaccine prevented cervical cancer, the HPV virus was linked to sexual activity, it involved three doses and regular cervical smears would still be required.
“Knew that there was some advantage in getting it, while we were young and thought that it would better prepare us to combat any attempt by the cancer germs to attack us in later life.” (Pacific woman; vaccinated)

Some young women however, were less informed. For example, one young Pacific woman had no idea what the vaccination was for; what the cervix is or where it is. This lack of detailed understanding was common amongst other young women. They had the vaccine but were not sure what they had received beyond a loose understanding of preventing cancer.

“I really don't know much about the actual vaccine. I just know it's supposed to prevent cervical cancer.” (Māori woman; vaccinated)

“Don't really know much more. It would be good to know more about what goes into your body through this vaccination.” (Pacific woman; vaccinated)

“When we are young, you just do what the adults tell you to do without understanding. So we have no idea what it is we have been told to undertake, only to agree and trust that the adults’ intuition best.” (Pacific woman; vaccinated)

Non-vaccinated young women born in 1990/91 generally had lower levels of awareness of the vaccine and knowledge about cervical cancer.

- Young Māori women in particular were poorly informed, and knew very little about the vaccine. They weren’t sure what cancer the vaccine protected against and either had no knowledge, or limited knowledge of cervical cancer. They were often confused between the vaccine and cervical smears and about how the vaccine might protect them from HPV.

- Unvaccinated Pacific women had mixed levels of awareness of the vaccine. The range of knowledge reported by these young women included: that the vaccine involved three injections over some months for cervical cancer; that it was free for people between 13 and 18 years; that it protected against cervical cancer for about eight and a half years. Others reported that they did not know what HPV was or that they did not seek out information on the vaccine.

- Amongst unvaccinated Pākehā women there was generally some awareness (more so than for Māori and Pacific) of the vaccine. The range of knowledge reported by these young women included: that they were aware that the vaccine prevented cervical cancer; that cervical cancer was somehow associated with sexual activity and that the vaccine was free.

“I don’t know. I wouldn’t have a clue. What is it and how important is it? There’s not enough awareness ‘cause I’m pretty in the know and I wouldn’t have a clue about it.” (Māori woman; non-vaccinated)

“It wasn’t really advertised around me, I didn’t really hear about it much, I didn’t really go the doctor, and like does it cost? Not educated enough about it.” (Māori woman; non-vaccinated)

“I don’t really know the benefits of the vaccine.” (Pacific; non-vaccinated)
Table 56: Awareness of HPV vaccine

<table>
<thead>
<tr>
<th>Awareness of HPV vaccine</th>
<th>Yes %</th>
<th>No %</th>
<th>Don’t know %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before this survey had you heard of the Human Papillomavirus (HPV) vaccine which has the brand name GARDASIL - protects against two types of viruses that cause cervical cancer and two types of viruses that cause genital warts. Base: total sample (n=226)</td>
<td>70</td>
<td>26</td>
<td>4</td>
</tr>
<tr>
<td>Before this survey were you aware that the HPV (cervical cancer) vaccine was available for free? Base: aware of vaccine (n=159)</td>
<td>93</td>
<td>7</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Data source: Online survey of young women born 1990/91, 2011; N/A – not asked

Table 57: Number of doses required

<table>
<thead>
<tr>
<th>How many doses are required to complete the HPV vaccine programme?</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>93</td>
</tr>
<tr>
<td>Don’t know</td>
<td>6</td>
</tr>
</tbody>
</table>

Data source: Online survey of young women born 1990/91, 2011

Table 58: Views about vaccines generally and the HPV vaccine

<table>
<thead>
<tr>
<th>Please tell us how strongly you agree or disagree with</th>
<th>Strongly agree %</th>
<th>Agree %</th>
<th>Neither %</th>
<th>Disagree %</th>
<th>Strongly disagree %</th>
<th>Don’t know %</th>
</tr>
</thead>
<tbody>
<tr>
<td>The HPV (cervical cancer) vaccine is safe</td>
<td>33</td>
<td>22</td>
<td>21</td>
<td>5</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>The HPV (cervical cancer) vaccine prevents genital warts</td>
<td>20</td>
<td>23</td>
<td>21</td>
<td>4</td>
<td>7</td>
<td>26</td>
</tr>
<tr>
<td>The HPV (cervical cancer) vaccine protects against most forms of cervical cancer</td>
<td>27</td>
<td>25</td>
<td>20</td>
<td>8</td>
<td>3</td>
<td>19</td>
</tr>
<tr>
<td>Protection from the HPV (cervical cancer) vaccine may be lifelong</td>
<td>9</td>
<td>22</td>
<td>26</td>
<td>9</td>
<td>5</td>
<td>29</td>
</tr>
<tr>
<td>Vaccines can cause other health problems</td>
<td>11</td>
<td>15</td>
<td>34</td>
<td>17</td>
<td>7</td>
<td>16</td>
</tr>
<tr>
<td>The HPV (cervical cancer) vaccine can cause cancer</td>
<td>4</td>
<td>4</td>
<td>15</td>
<td>25</td>
<td>24</td>
<td>28</td>
</tr>
<tr>
<td>Only women who are sexually active with multiple partners need to get the HPV (cervical cancer) vaccine</td>
<td>7</td>
<td>5</td>
<td>7</td>
<td>13</td>
<td>59</td>
<td>9</td>
</tr>
<tr>
<td>I have safe sex so I don’t need the HPV (cervical cancer) vaccine</td>
<td>2</td>
<td>3</td>
<td>8</td>
<td>11</td>
<td>68</td>
<td>8</td>
</tr>
</tbody>
</table>

Data source: Online survey of young women born 1990/91, 2011
6.3.2 Access to information

Information sources

In the online survey (2011), young women were asked to identify their sources of information about the HPV vaccine (refer to Table 59). The main source of information is doctors/nurses/health clinics (86% state this as either a main or other source) reflecting that this is the main delivery mechanism for this age group (80% of those vaccinated in 1990/91 age cohort received the vaccine in primary care). Additional information sources include:

- School (35%) reflecting that 20% of those vaccinated in the 1990/91 age cohort received the vaccine in school. The difference reflects that some young women born in 1990/91 heard about the vaccine in school but left before school-based delivery commenced.
- Internet (33%).
- Family/whānau (32%).
- Friends (25%).

Young Pacific women were less likely to mention the doctor/nurse/health clinic as their main source of information (33%) but more likely to mention schools (42%). These findings were reflected in the qualitative interviews with young women from all ethnic groups. Some ethnic differences in the range of information sources accessed were also noted:

- Young vaccinated Māori women mostly identified school and their mothers as their key information sources. Young Māori women did not identify written material such as magazines and newspapers as key information sources.
- Māori women who were not vaccinated reported that they had received little or no information about the vaccine. They did not recall receiving information when they were at school or through their GP. This may reflect the number of Māori who leave school before year 13 who were not being primed at school, the high mobility of Māori population may mean that doctor’s letters do not reach Māori whānau (i.e. around two thirds of Māori teenagers have shifted within the previous five years), and/ or the high level of teenage pregnancy resulting in them not being offered the vaccine as counter-indicated.

Strategies for communicating information about the HPV vaccine to Māori women in this age cohort have not been effective in creating awareness and understanding.

“I got a letter from my GP. Then they sent out a reminder letter. It was like a week out. If the medical centre hadn’t followed us up, then we wouldn’t have had it done.” (Māori woman; vaccinated)

“I haven’t seen any advertising at the Medical Centre. No one has talked to me about it when I’ve gone to the Dr for other stuff. No one has contacted us about it. They are useless there. They don’t follow-up on anything.” (Māori woman; non-vaccinated)

- Beyond schools and TV advertisements, young Pacific women reported receiving information from a range of sources including health professionals (usually nurses from a Pacific health provider), events and sometimes their church. The later reflects the reach of Pacific CAR/whānau engagement.

Unvaccinated Pacific women were also able to recall having seen a range of information sources including information at school, family doctors and friends, letters and pamphlets, television advertisement and posters at university. Some responses
suggested however that some information sources, particularly written material were not very effective.

“We hear about it at our church groups and different community events such as the Polyfest and the market (Otara) sometimes had a tent and had people there with information to give out and talk to people.” (Pacific woman; vaccinated)

“Teenagers with brochures. We get given them but just put them down and carry on.” (Pacific woman; not vaccinated)

- Pākehā women reported having accessed information from a wide range of information sources. Many recalled receiving information from health professionals (via information and follow-up letters, written material from doctor's surgeries and family planning clinics); the doctor themselves (during visits on other unrelated matters). The most common source of information identified by unvaccinated young Pākehā women was television advertisements although there was a perception amongst some that these applied to ‘other’ girls, and not them.

“I got a letter from the GP that said I qualified.” (Pākehā woman; vaccinated)

Information challenges

As was the case for the younger girls, feedback received questions the effectiveness of information for young Māori and Pacific woman about how the vaccine worked and cervical cancer. Some responses suggested that the young women had not read /understood the information and if they had, had low or no recall of the information.

“I didn’t really read what it was protecting against – just that it came in threes.” (Māori woman; vaccinated)

“Plain English – no need for the fancy way. Use facts in relation to the number of Pacific women being affected as that may drive the point home.” (Pacific woman; vaccinated)

“Plain language. In the native language if possible.” (Pacific woman; vaccinated)

Language and cultural taboos

Some young Pacific women emphasised that language problems meant that was difficult for them to communicate with their fānau about the vaccine.

“Both my parents do not speak very good English. I don’t speak a lot of Samoan so there is no real medium for communicating over something of this sort.” (Pacific woman; vaccinated)

“I would have liked my parents to be given more information about the vaccination and be supported to share the information with me because then we would have all felt better. I felt sorry for my parents because their limited understanding of the language was a barrier for them having a more informed decision.” (Pacific woman; vaccinated)

Related to this, and consistent with the experiences of younger girls, some young Pacific women identified that cultural taboos discouraged discussion within their fānau.

“We do not talk about such matters in the family.” (Pacific woman; vaccinated)

“Don’t talk even to my female family about things like this.” (Pacific woman; vaccinated)
Table 59: Sources of information

<table>
<thead>
<tr>
<th>Source of Information</th>
<th>Main source</th>
<th>Other sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctor/nurse/health clinic</td>
<td>57</td>
<td>29</td>
</tr>
<tr>
<td>School</td>
<td>19</td>
<td>16</td>
</tr>
<tr>
<td>Internet</td>
<td>8</td>
<td>25</td>
</tr>
<tr>
<td>Family/whānau</td>
<td>8</td>
<td>24</td>
</tr>
<tr>
<td>Friends</td>
<td>4</td>
<td>21</td>
</tr>
<tr>
<td>Place of training/study</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>No other sources</td>
<td>N/A</td>
<td>22</td>
</tr>
</tbody>
</table>

Data source: Online survey of young women born 1990/91, 2011

6.3.3 Key influencers

In the online survey (2011), young women who had had at least one dose of the HPV vaccine were asked to indicate who was involved, and who had the greatest influence in their decision about whether or not to have the HPV vaccine (refer to Table 60 below). The young woman themselves (35%), parents/caregivers (31%) and to a slightly lesser extent, doctors/nurses (19%) played key roles in making a decision about having the HPV vaccine.

These findings were reflected in the qualitative interviews with young women who mentioned making their own decisions, with reassurance from their mothers, other whānau, and health professionals.

Self-determination

Unlike the younger girls, young women were actively involved in the decision-making process and came to the decision to vaccinate independently. These young women reported having located and reviewed relevant information and making their decision about whether or not to have the vaccine. This tended to be more common among young Pākehā women. However, decision making was not completely in isolation as some did seek out their mother’s advice on their decision.

“I made my own decision after advice and research.” (Pākehā woman; vaccinated)

“Guess I wanted to get it but sought confirmation from Mum. But at the end of the day it was my choice.” (Pākehā woman; vaccinated)

Mothers

Other young women identified that their mothers had been a strong influence in their decision to vaccinate and this theme came through strongly for young Māori and Pākehā women. These women appeared to be closely connected to their whānau and to have close relationships with their mothers. Their mothers were often also instrumental in seeking further information about the vaccine, ringing and making an appointment, arranging transport and attending the appointment with their daughters. The support of mothers (and fathers) was critical in ensuring that the young women actually had the vaccine.

“Mum pretty much told me I had to. She pretty much didn’t give me a choice. She pretty much pushed me there.” (Māori woman; vaccinated)

“Mum told me to book and then I went three days later (Pākehā woman; vaccinated)
Some Pacific women had also been strongly influenced by their parents to vaccinate. One noted that she was not aware that she had a choice to vaccinate or not, but had trusted her parents' decision. Another mentioned that the key reason she got vaccinated was because she had been told to by her parents.

“I trusted my mother’s wisdom that it was the right thing to do.” (Pacific woman; vaccinated)

Other whānau

As was the case for younger girls, Māori women also identified older sisters and aunties as information sources regarding the vaccine and as having a positive influence on their decision to vaccinate.

“I don’t know what it’s like not to have a Mum in my face… or an aunty… or a sister.” (Māori woman; vaccinated)

Health professionals

A number of young women indicated that they had been encouraged by health professionals to vaccinate when they had attended surgeries/clinics on other matters. In contrast other young women noted that health professionals did not communicate the benefits of the vaccine in a way that they understood.

“I just went to the doctors ’cause I’m on depo as well and she said ‘would you like this?’ So I read about it and thought, ‘Oh okay – yeah – alright’.” (Māori woman; vaccinated)

“Doctor talked to Mum and he said the vaccine was too new.” (Pākehā; not vaccinated)

“I remember when she was trying to get me to go for it but she didn’t really explain much to me about it. Then I got pregnant and they leave you alone when you’re pregnant.” (Māori woman; not vaccinated)

Peer influence

Peer influence does not appear to have been a strong factor in the decision to vaccinate or not. Young women highlighted that subjects like the HPV virus, genital warts and cervical cancer are not the kind of subjects they discuss with their friends. However, they did indicate that attending the vaccine with a friend would enhance the vaccination experience. This point was also raised by young women who had not vaccinated because they were fearful of vaccination process.

“She needs someone to hold her hand.” (Māori woman; not vaccinated)

“If she does then I’ll go. I’ll find out more before the 31st December and yeah, get it done.” (Māori woman; not vaccinated)

No influencers as unaware of HPV vaccine

Generally, young women from the 1990-91 cohort who had not been vaccinated had received very little information about the HPV vaccine. Consequently, they were not in a position to discuss the need for the vaccine with mothers, other whānau or friends.

Unlike young Māori women who had taken up the vaccine, unvaccinated Māori women did not mention engaging with their mothers or wider whānau regarding the merits or otherwise of the vaccine. This may have been because many of these young women tended to be living independently of their whānau.

Fānau influence did not feature strongly for young Pacific women who were unvaccinated. Consistent with the experience of unvaccinated school aged girls, some Pacific young women indicated that there was sensitivity around raising topics of this nature within fānau.
Similarly, young Pākehā women simply did not discuss the vaccine as they and their family were not aware of it.

“Our culture sometimes does not allow the sharing between parents and their kids of some information. Need better communication within families – children are frightened to bring up certain matters.” (Pacific woman; not vaccinated)

[When asked if they would talk to their mother or Aunts about the vaccine] “No – not talk to them about that. Easier to talk to someone your age than have someone talk down to you. Mum has never said anything about HPV.” (Pacific woman; not vaccinated)

<table>
<thead>
<tr>
<th>Who was involved in deciding whether or not you received the HPV (cervical cancer) vaccine? And who had the greatest influence?</th>
<th>All influencers</th>
<th>Main influence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parents/caregivers</td>
<td>45</td>
<td>31</td>
</tr>
<tr>
<td>Doctor/Nurse</td>
<td>23</td>
<td>19</td>
</tr>
<tr>
<td>Friends</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>School teachers/lecturers</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Wider family/whānau, like aunts, grandparents</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>No one else – I made the decision on my own</td>
<td>40</td>
<td>35</td>
</tr>
</tbody>
</table>

Data source: Online survey of young women born 1990/91, 2011

### 6.3.4 Reasons to vaccinate

In the online survey, young women born in 1990/91 were asked if they had received at least one dose of the HPV vaccine (refer to Tables 61-63).

- Half (51%) have received at least one dose, similar to the NIR uptake rate of 48% at dose 1 for all young women born in 1990/91 by the 31 December 2010.
  - The young women were more likely to say ‘yes’ are those who think the vaccine is safe (93%), prevents against genital warts (83%), protects against cervical cancer (81%), and gives life-long protection (90%).
- Women who have received at least one dose, were asked how many doses they had received. The majority have received all three (86%).
- Protecting against cervical cancer was the most frequently mentioned reason for getting the vaccine (60%), followed distantly by recommended by a doctor/nurse (11%) and it sounded like a good idea (10%). Few mentioned a family history of abnormal smears or cervical cancer as their main reason for being vaccinated.

Discussions with young women in the qualitative interviews (2010) strongly reflect these findings with protection and having been exposed to cancer the most frequently cited reasons.

**Protection for future**

“Protect for future health.” (Māori woman; vaccinated)

“Feel like I’m protected now from that awful disease and I can put it to the back of my mind and get on with things (Pacific woman; vaccinated)

“Emotionally it puts my mind at rest. I feel I’ve done what I can to prevent cancer.” (Pākehā woman; vaccinated)
Exposure to cancer

“The only reason I had it was because me Mum had cervical cancer. My mum got really sick and it spread right thru her body and she was so sick, Mum’s spread even down there, she had to have a hysterectomy” (Māori woman; vaccinated)

“Both girls have had experiences with close family or friend who have experienced cancer although not cervical cancer and that had somewhat also influenced the wishes to be protected by receiving the vaccination.” (Pacific woman; vaccinated)

“Mum never got a chance [to be vaccinated] and had problems, so wanted to help – I’m her daughter. Generally, [Mums] want daughters to outlive them.” (Pākehā woman; vaccinated)

Free vaccine

“Silly to pass up the opportunity when its free and cervical cancer is so common.” (Pākehā woman; vaccinated)

“Don’t think my sister got it done as it was going to cost her. I remember laughing as I didn’t have to pay.” (Pākehā woman; vaccinated)

Table 61: Received the HPV vaccine

<table>
<thead>
<tr>
<th>Have you had at least one dose of the HPV vaccine?</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>51</td>
</tr>
<tr>
<td>No</td>
<td>48</td>
</tr>
<tr>
<td>Don’t know</td>
<td>1</td>
</tr>
</tbody>
</table>

Data source: Online survey of young women born 1990/91, 2011

Table 62: Number of doses received

<table>
<thead>
<tr>
<th>How many of the HPV (cervical cancer) vaccine doses have you had?</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>86</td>
</tr>
<tr>
<td>Don’t know – but at least 1</td>
<td>2</td>
</tr>
</tbody>
</table>

Data source: Online survey of young women born 1990/91, 2011

Table 63: Reasons for getting vaccinated

<table>
<thead>
<tr>
<th>What were your main and other reasons for getting the HPV vaccine?</th>
<th>Main reason %</th>
<th>Other reasons %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protects against cervical cancer</td>
<td>60</td>
<td>23</td>
</tr>
<tr>
<td>Recommended by Doctor/Nurse</td>
<td>11</td>
<td>42</td>
</tr>
<tr>
<td>Sounded like a good idea</td>
<td>10</td>
<td>29</td>
</tr>
<tr>
<td>Protects against genital warts/HPV virus</td>
<td>7</td>
<td>30</td>
</tr>
<tr>
<td>Free</td>
<td>5</td>
<td>50</td>
</tr>
<tr>
<td>Family/whānau has history of abnormal cervical smears and/or cervical cancer</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Parents/family/whānau wanted me to</td>
<td>1</td>
<td>22</td>
</tr>
<tr>
<td>Friends getting it</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>No other reasons</td>
<td>N/A</td>
<td>7</td>
</tr>
</tbody>
</table>

Data source: Online survey of young women born 1990/91, 2011

N/A – not asked
6.3.5 Reasons for not vaccinating

The online survey for young women born in 1990/91 highlights that:

- Not being aware of the HPV vaccine is the main reason for around a quarter not having it (26%). (Refer to Table 64)
- Two in ten young women (22%) had not had the vaccine of which:
  - Six young women intended to have in the future. Their main reasons for delaying were that they did not know enough about the vaccine/ did not have enough information (n=2) and were afraid of needles (n=1). One did not know why they were putting it off.
  - Fifteen were undecided whether or not to have the HPV vaccine in the future due to concerns about unknown long-term side effects, not having enough information and questions about the vaccine’s effectiveness (refer to Table 65).
  - Nineteen would not have it due to concerns about unknown long-term side effects, not trusting vaccines, uncertainty about the vaccine’s effectiveness in preventing cervical cancer and the vaccine is too new (refer to Table 66).

In the qualitative research with young women, similar reasons were given for not having the vaccine (which are discussed below).

Lack of information and knowledge about the vaccine was a particularly strong theme for young Māori women, which reinforces that they are not receiving information about the vaccine.

“I just don’t know enough about it, so wouldn’t want to do something I know hardly anything about.” (Māori woman; not vaccinated)

In almost all instances, these young women were not consciously opposed to the vaccine. Most indicated that if they were aware of the vaccine, received some information and knew it was free, they would have taken it up. Following the interview and being presented information about the HPV vaccine, a few indicated that they would seek to have the vaccine.

“If I heard about it, like the actual vaccination, like what it’s for and what it’s about and what it protects against, I would probably go for it.” (Māori woman; not vaccinated)

[After reading the pamphlet] Definitely going to get it – why not? Better safe than sorry. If you don’t do it you’ve greater chance of getting cancer – who wants that? (Pākehā woman; not vaccinated)

Ambivalence/ access issues. A common theme to emerge from young women who were not vaccinated was that they simply had not ‘got around to it’. This was particularly true for young Pākehā women. As indicated above, these women had received some information and were to some degree informed about the vaccine. These young women were not opposed to having the vaccine; they had simply not got around to making appointments or, if opportunistically approached, did not want it at that time. Some young Pākehā women also identified accessing the vaccine via GPs was difficult because of work and other commitments. A key difference for these young Pākehā women in not getting the vaccine was no parent or friend took on the role of organising them to get the vaccine.

“Not hard to go to Dr. Just slack. If you really want to go to the Dr just go.” (Pākehā woman; not vaccinated)

“Got a pamphlet – I’ve not read it – just not a priority.” (Pākehā woman; not vaccinated)
“I just put it to the back of my mind and then suddenly realised - too late. I have to pay for it now if I need to do it.” (Pacific; not vaccinated)

“Last time I went to the Doctor, I had to get straight back to work.” (Pākehā woman; not vaccinated)

False perceptions about the vaccine. A number of young women across the ethnic groups had formed inaccurate views about vaccine and cited these as reasons for not vaccinating. Most often mentioned were the views that: it’s only for women who are sexually active or who ‘sleep around’ and that they were protected by the pill or regular smears.

“Thought we were protected by the pill.” (Māori woman; not vaccinated)
“Young are not vulnerable to the disease.” (Pacific woman; not vaccinated)

“Doesn’t apply to me. For people who sleep around.” (Pākehā woman; not vaccinated)

Fear of needles/delivery process. Some young women were consciously opposed to the vaccine because they had had a previous negative immunisation experience and/or an aversion to needles.

“I’m afraid of needles. The Doctor asked me if I wanted the HPV vaccine. But I said no cause still scared of needles. One of my friends had the vaccine. She tells me to get the vaccine. Scared over it…. One day go get it. Last injection was MeNZB and had a big lump and it hurt.” (Pacific woman; not vaccinated)

Vaccine efficacy and side effects. Unlike the feedback from the younger girls and parents, only a few young women had reservations about the efficacy and longer term effects of the vaccine. Concerns about the vaccine were also raised following media coverage suggesting that the death of one young woman had been linked to the vaccine.

“On the news there were a couple of concerns aye? [Referring to media coverage of the death of a young woman in Lower Hutt].” (Māori woman; Canterbury)

Table 64: Vaccine uptake

<table>
<thead>
<tr>
<th>Vaccine uptake</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base: n=224 (excludes those who say they do not know)</td>
<td></td>
</tr>
<tr>
<td>Had at least one dose</td>
<td>52</td>
</tr>
<tr>
<td>Not aware of the vaccine</td>
<td>26</td>
</tr>
<tr>
<td>Not had it</td>
<td>22</td>
</tr>
</tbody>
</table>

Data source: Online survey of young women born 1990/91, 2011

Table 65: Future intentions

<table>
<thead>
<tr>
<th>Will you get the HPV (cervical cancer) vaccine in the future?</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base: n=50 (not had vaccine)</td>
<td></td>
</tr>
<tr>
<td>Yes (delayers)</td>
<td>12</td>
</tr>
<tr>
<td>No</td>
<td>38</td>
</tr>
<tr>
<td>Undecided</td>
<td>50</td>
</tr>
</tbody>
</table>

Data source: Online survey of young women born 1990/91, 2011
### Table 66: Reasons for being undecided about getting vaccinated

<table>
<thead>
<tr>
<th>What is your main and other reasons for being undecided about getting the HPV vaccine?</th>
<th>Main reason</th>
<th>Other reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base: n=31</td>
<td>Number</td>
<td>Number</td>
</tr>
<tr>
<td>Long term side effects of the vaccine are unknown</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Don’t know enough about it/not enough information</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Not sure how effective the vaccine is</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Vaccine is too new</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Afraid of needles</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Not sexually active so don’t need the vaccine</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Don’t trust vaccines</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Expensive</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Don’t know</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>No other reasons</td>
<td>N/A</td>
<td>2</td>
</tr>
</tbody>
</table>

Data source: Online survey of young women born 1990/91, 2011
N/A – not asked;

### Table 67: Reasons for not wanting to get vaccinated

<table>
<thead>
<tr>
<th>What are your main and other reasons for not wanting to get the HPV (cervical cancer) vaccine?</th>
<th>Main reason</th>
<th>Other reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base: n=19</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>Long term side effects of the vaccine are unknown</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Don’t trust vaccines</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Rely on smear tests to check for cervical cancer</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Not sure how effective the vaccine is in preventing cervical cancer</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Don’t get any immunisations</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>A Doctor/Nurse said not to have the vaccine/the vaccine is not for me</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Don’t know much about the vaccine</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Expensive</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Vaccine is too new</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Parents said no</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Afraid of needles</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Not sure how long the vaccine lasts for</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Not sexually active so don’t need the vaccine</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Friends not having the vaccine</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>No other reasons</td>
<td>N/A</td>
<td>2</td>
</tr>
</tbody>
</table>

Data source: Online survey of young women born 1990/91, 2011
N/A – not asked
Due to small base numbers, percentages are not presented in this table.
6.3.6 Vaccine access and experience

In terms of the vaccination experience, most young women noted some anxiety or fear about the injections and some recalled some discomfort afterwards. Overall however, they were positive about the actual vaccination experience.

In the online survey, 70% of young women disagreed or strongly disagreed with the statement that ‘it is not easy to get to the doctor or health clinic to get the HPV vaccine’. Groups more likely to agree or strongly agree they have difficulty getting to a clinic are young Pacific women (30%) and young unemployed women (33%).

In contrast, feedback in the qualitative interviews highlighted that young women who had not been vaccinated and some vaccinated Pākehā women identified finding it challenging to get time off work or study; or they were too busy to arrange appointments/transport to the doctors. For some their mothers took on these roles which facilitated access to the vaccine (e.g. booking appointments, transport to the doctors).

Across all ethnic groups there seemed to be a general consensus that they would have preferred to have received the vaccine at school, partly to avoid the challenges outlined above but mainly because they felt being vaccinated with peers would have been a more supportive process.

“Having it at school like the MeNZB vaccine would have meant that we had our friends to be with, to chat to and support each other.” (Pacific woman; vaccinated)

“If it was in school we would have had friends to talk to – it would have been easier and they would have had it as well.” (Pākehā woman; vaccinated)

Table 68: Views about accessing the HPV vaccine

<table>
<thead>
<tr>
<th>Please tell us how strongly you agree or disagree with each of these statements. Base: total sample (n=226)</th>
<th>Strongly agree %</th>
<th>Agree %</th>
<th>Neither %</th>
<th>Disagree %</th>
<th>Strongly disagree %</th>
<th>Don’t know %</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is not easy to get to the doctor or health clinic to get the HPV (cervical cancer) vaccine</td>
<td>8</td>
<td>7</td>
<td>9</td>
<td>20</td>
<td>50</td>
<td>6</td>
</tr>
</tbody>
</table>

Data source: Online survey of young women born 1990/91, 2011

6.3.7 Awareness eligibility running out

In the online survey, young women who have not had the HPV vaccine were asked whether they were aware that after 31 December 2011, the HPV vaccine is no longer free for young women born in 1990 and 1991, and after that date they will have to pay around $500 to receive the vaccine. The majority of unvaccinated young women did not know they will need to pay for the vaccine from 2012 onwards (86%) – refer to Table 69.

Almost half (46%) said that as a result of knowing this fact, they are now likely or very likely to have the vaccine before this cut-off date. However, it is likely that only a proportion of the 20% who say they are very likely to act will actually do so due to barriers or simply their ambivalence (refer to Table 70). This finding suggests that being aware of the price of the vaccine and the end of eligibility will not in itself drive significant uptake.
In the qualitative interviews, once young women learnt through the interview process that after December 2011 the vaccine would no longer be free, some noted they would have it. Others however questioned the cut-off and noted that the vaccine cost would be a significant barrier to vaccine uptake after this date.

“I’ll be honest. I wouldn’t pay $500 to get it done.” (Māori woman; not vaccinated)

“Make people aware how much it will cost if they don’t step up while it’s free.” (Pacific woman; not vaccinated)

“$500 cost would have a big impact on my decision. I’d be less likely to get it.” (Pākehā; not vaccinated)

Table 69: Awareness of cost

<table>
<thead>
<tr>
<th>Before this survey, were you aware that after 31 December 2011, the HPV (cervical cancer) vaccine is no longer free for young women born in 1990 and 1991, and after this date you will have to pay around $500 to receive the vaccine?</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>14</td>
</tr>
<tr>
<td>No</td>
<td>86</td>
</tr>
</tbody>
</table>

Data source: Online survey of young women born 1990/91, 2011

Table 70: Likelihood of having the vaccine

<table>
<thead>
<tr>
<th>Knowing that after December 2011 you will have to pay around $500 for the vaccine, how likely are you to have the vaccine for free before this cut-off date?</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very likely</td>
<td>20</td>
</tr>
<tr>
<td>Quite likely</td>
<td>26</td>
</tr>
<tr>
<td>Not likely</td>
<td>12</td>
</tr>
<tr>
<td>Not at all likely</td>
<td>28</td>
</tr>
<tr>
<td>Don’t know/undecided</td>
<td>14</td>
</tr>
</tbody>
</table>

Data source: Online survey of young women born 1990/91, 2011

6.3.8 Recognition of need for cervical smears

Most young women were aware that after having the vaccine they still needed to have cervical smears (81% agree or strongly agree – refer to Table 71). Young Pacific women had a lower level of agreement with the need for cervical smears (68%). However, as indicated in the qualitative interviews confusion continues for some who perceived they no longer needed to have cervical smears. This finding reinforces the ongoing importance of the promoting cervical smears to young women and in particular Māori and Pacific women.

[When questioned about cervical smears] “Do we still have to do that? I thought we didn’t anymore. Are you being serious?” (Māori woman; vaccinated)
Table 71: Agreement of the ongoing need for cervical cancer smears

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neither</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Once you’ve had the HPV (cervical cancer) vaccine you still need to get cervical smears</td>
<td>71</td>
<td>10</td>
<td>6</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Data source: Online survey of young women born 1990/91, 2011

6.3.9 Vaccination typologies

Four typologies are apparent for young women born in 1990/91 who are not vaccinated: ‘Ambivalents’, ‘Vulnerables’, ‘Fearfuls’, and ‘Rejecters’. Each of these typologies has different characteristics and there are different mechanisms for change to facilitate immunisation decisions.

- **‘Ambivalents’** – mainly young Pākeha women who just “had not got around to it”. These young women were not opposed to the HPV vaccine. However, the logistics of taking time off work or study and having to get straight back to work were a barrier to getting the vaccine.
  
  “Friends/flatmates who haven’t had it, it’s because of logistics – getting to the Dr.” (Pākehā woman; vaccinated)

- **‘Vulnerables’** – mainly Māori and Pacific women who are not opposed to immunisation, but are simply not aware they are eligible to receive the HPV vaccine or if aware do not understand what the vaccine is for. Like the parents of girls born in 1997, they face barriers to accessing meaningful information about the HPV vaccine on which to make an informed decision. These young women often indicated that had they been better informed, they would have had the vaccine.
  
  “I would get it done if I knew more information about it, what ways would it help me ‘cause how it helps me could be different for other people.” (Māori woman; not vaccinated)

  “I haven’t heard much about the vaccine… I haven’t been done because I don’t know much information about it” (Māori woman; not vaccinated)

Well I’ll try it because it would prevent cancer. I’d rather try not getting cancer than nothing. This [the interview] has just helped me, urged me, to go get it done. I go for aids test and stuff and I haven’t done this, I just don’t know why.” (Māori woman; not vaccinated)

- **‘Fearfuls’** – concerned about the efficacy and long-term side effects of the HPV vaccine, and some find the immunisation experience emotionally distressing (i.e. a fear of needles).
  
  “I just don’t like needles so not having it.” (Pacific young women; not vaccinated)

- **‘Rejecters’** – opposed to the most or all immunisations tend to be Pākehā. A few more specifically rejected the HPV vaccine as not for them but for more promiscuous young women.
  
  “Not for me - for others – those who are multiple partners.’ (Pākehā women; not vaccinated)

The ‘unwell’, ‘delayers’ and ‘nurturers’ typologies have not been included as no one fitted these groups.
6.3.10 Opportunities to increase uptake for catch up cohort

While young women born in 1990/91 are coming to the end of their eligibility for the vaccine, consideration needs to be given to young women born in 1992/96 who make up the rest of the catch up cohort. The greatest opportunity to increase the uptake of the vaccine for the catch up cohort is to target ‘ambivalent’ and ‘vulnerables’ (refer to Table 72).

‘Ambivalents’ are especially challenging given the need to overcome their inertia and create a very compelling reason to act. Focus on their limited eligibility and future cost will get some but not all to act. Key levers appear to be emphasising protection against genital warts, and in the long-term protection against cervical cancer as well as reiterating vaccine efficacy and longevity. Opportunistic vaccination at GPs and via other sexual and reproductive providers is likely to be the key mechanism.

For ‘vulnerables’, it is critical that all eligible young women are aware of the HPV vaccine, its safety and the health benefits it offers. In creating awareness, consideration needs to be given to a wider range of communication tools, building on existing approaches (e.g. television campaigns), using other technologies (e.g. Facebook) and delivery via other sexual and reproductive health services.
Table 72: Summarising potential opportunities and strategies

| Ambivalents | 
|---|---|
| **Opportunities for engagement:** | Visits to GP  
Visits to Family Planning and other sexual and reproductive health providers  
(If possible) through workplaces/ study/ places where young people gather (e.g. sports/cultural events) |
| **Potential messages:** | Young Pākehā women not vaccinated are at risk  
High prevalence of HPV amongst Pākehā women  
Vaccine is safe and works  
Release of vaccine results and research demonstrating effectiveness |
| **Systems:** | Opportunistic vaccination at GPs  
Mobile services  
Active recruitment/follow-up by GPs |

| Vulnerables – Māori and Pacific women | 
|---|---|
| **Opportunities for engagement:** | GP reminders  
Outreach services, e.g. Whānau Ora  
Unrelated health visits (e.g. GP, Family Planning) visits |
| **Potential messages:** | Vaccine is safe/has few side-effects  
Vaccines do work |
| **Systems:** | Outreach services, e.g. Whānau Ora  
Responsive health services (Māori/Pacific) |

| Fearful | 
|---|---|
| **Opportunities for engagement:** | GP reinforcing benefits of vaccine |
| **Potential messages:** | Immunisation has more benefits than risks  
Immunisation takes minutes and provides protection for years |
| **Systems:** | Supported vaccination process at GPs |

6.3.11 Feedback on HPV vaccine information

Greater clarity is needed in the HPV vaccine information to ensure it can be understood by those with lower health literacy. Information is also required which offers to more detailed, evidence-referenced information about HPV and the vaccine. Consequently, a tiered and ideally targeted information approach is required:

- **level 1:** summarising the need for the vaccine (i.e. key facts), key benefits of having the vaccine, it is safe and works
- **level 2:** overview of relevant information as in the existing pamphlet and consent form with emphasis on need for vaccine
- **level 3:** detailed information with links to relevant and credible research.

Information needs to focus on vaccine efficacy (side effects, duration of protection, vaccination research/results). Showcasing the international research demonstrating the positive results of the HPV vaccine on genital warts and cervical abnormalities provides an excellent opportunity for promoting the important benefits of the HPV vaccine. In reviewing the information, wording in relation to the duration of protection and the reasons for immunising at 12 years needs refinement. Table 72 below details parents and young women feedback on the information supporting the HPV Immunisation Programme, and their suggested enhancements.
Table 73: Issues with current information and consumer suggested solutions

<table>
<thead>
<tr>
<th>Issue</th>
<th>Potential enhancements</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Cause we’re in a small town, they came to town and had a meeting when the Programme was launched so the younger ones got the message. But it hasn’t happened since so people won’t know.” (Māori woman)</td>
<td>- Refresh information campaign in communities to maintain levels of awareness of the vaccine</td>
</tr>
<tr>
<td>▪ Some parents and girls noted that the programme “started off with a bang” but that awareness and interest in the community has diminished since its launch.</td>
<td></td>
</tr>
<tr>
<td>“They could have had an evening about it and what it was about. A group session would be good aye? Then you could talk about the pros and cons.”</td>
<td>- More appropriate information dissemination</td>
</tr>
<tr>
<td>▪ Māori and Pacific parents expressed a preference for kanohi ki te kanohi (face-to-face) engagement about the vaccine via hui and in Māori settings (e.g. marae; events; whānau hui). They suggested that opportunities to meet and discuss would be beneficial and lead to Māori being better able to exercise informed consent.</td>
<td></td>
</tr>
<tr>
<td>▪ Further testing of how effective written materials are at informing Māori and Pacific stakeholders – perceived use, readability, and accessibility.</td>
<td></td>
</tr>
<tr>
<td>▪ Provision of information in Pacific languages – while some Pacific fānau were comfortable with information in English, many identified language as a potential barrier to Pacific fānau consenting to the vaccine. Pacific parents stressed the need for information in Pacific languages and where necessary, interpreters. Pacific parents do not appear to be receiving the information translated into Pacific languages.</td>
<td>- Wider distribution of Pacific language resources</td>
</tr>
<tr>
<td>“Schools should have an evening with the parents of all the girls and talk them through the purpose of the vaccination and its importance for the protection of Pacific girls from cervical cancer. It isn’t appropriate to target the churches because not all parents and their children go to church. Church has a different purpose whereas the school is more for general education and will be more appropriate for parents to be educated there about all sorts of stuff including such topics as vaccinations.”</td>
<td>- Use a variety of means for disseminating information</td>
</tr>
<tr>
<td>▪ It cannot be assumed that all Pacific people go to church or take advice from their elders/parents teacher.</td>
<td></td>
</tr>
<tr>
<td>“I think maybe a follow-up would have been good. Especially for the girls, as my niece sounded really confused after she had had it done.”</td>
<td>Follow-up with:</td>
</tr>
<tr>
<td>▪ Low levels of awareness and knowledge of girls who have been vaccinated requires some kind of follow-up to ensure that they understand what it is that they have received and what protection it provides.</td>
<td>- Girls that have been vaccinated so they understand what it is they have received.</td>
</tr>
<tr>
<td>▪ Many girls and parents suggested that this should be done through health/sexual health programmes in schools.</td>
<td>- Young women to address their concerns and questions about future health care.</td>
</tr>
<tr>
<td>▪ Concerns among young woman about long-term effects of the vaccine and questions about if they need follow-up vaccines or cervical smears.</td>
<td></td>
</tr>
<tr>
<td>Talatalai fale: Koe faka'amu ke melino mo 'aonga ha fakataha hange pe ha alea ha famili</td>
<td></td>
</tr>
<tr>
<td>▪ Promoting ways that whānau can discuss and share information within the households, families and groups in a peaceful, shared understanding that will be meaningful and supportive of each other.</td>
<td>- Information strategies that acknowledge cultural taboos</td>
</tr>
<tr>
<td>“Information was too wishy-washy – should be more exact.”</td>
<td>- Give the facts</td>
</tr>
<tr>
<td>▪ More factual information about the incidence of cervical cancer, the efficacy of the vaccine and the pros and cons of vaccinating.</td>
<td></td>
</tr>
<tr>
<td>“More appropriate ads targeted at young people like the women in the van.”</td>
<td>- Distribution of new DVD</td>
</tr>
<tr>
<td>▪ Have real people that have had the experience of surviving cervical cancer talk about the issue. Have members of families who have been affected by the problem deliver the message.</td>
<td></td>
</tr>
<tr>
<td>▪ Provision of written and TV ads that target the girls.</td>
<td></td>
</tr>
<tr>
<td>▪ Māori in particular, did not appear to have received much information or follow-up from GPs.</td>
<td>- More proactive, information provision, promotion and follow-up by GPs</td>
</tr>
<tr>
<td>▪ More active promotion could include via mail or texting and engaging with Māori consumers when they are at the doctor for other matters.</td>
<td></td>
</tr>
<tr>
<td>▪ Provide immunisations at tertiary institutions, events, mobile clinic.</td>
<td>- Make vaccinations more accessible</td>
</tr>
</tbody>
</table>
7. Conclusions

7.1 Introduction

The Ministry commissioned Litmus to evaluate the implementation of the Programme to assess how well it is achieving its short-term goals, objectives and implementation priorities. Based on the evidence of this evaluation, this section presents:

- conclusions on the Programme’s success
- drivers for achieving the Programme’s health equity goal
- enhancing the current Programme’s implementation
- key learnings to inform future immunisation programmes.

7.2 Programme success

Central to the success of the HPV Immunisation Programme was ensuring existing health inequalities in cervical cancer were not increased with its implementation. A core success of the Programme is therefore achieving target uptake and equity of uptake by those women who experience the greatest burden of cervical cancer and who are at highest risk of missing out on the Programme, specifically Māori and Pacific girls born in 1997 (i.e. the ongoing cohort). Positively, evidence of this success is noted in the next ongoing birth year cohort of Māori and Pacific girls born in 1998. Equity of uptake is also noted for young Pacific women born in 1990/91, but not Māori in this birth year.

Uptake of the HPV vaccine by other girls born in 1997 and 1990/91 is just over 40% at dose 1. While, these young women based on cervical cancer trends, have less risk long-term of developing cervical cancer (Blakely et al., 2010), their low levels of uptake are of concern (due to the negative effects of cervical abnormalities and genital warts). Other girls in the 1997 birth cohort represent 67% of the total birth cohort for those born in 1997. Consequently, around 50% of girls eligible for the HPV vaccine have not received dose 1.

Evidence suggests that Pākehā parents of non-vaccinated girls born in 1997 are not opposed to the vaccine but have decided to delay uptake until their daughters are in their late teens. Additionally other Pākehā parents perceive the HPV vaccine is not for their daughters, an unintended consequence of the Programme’s targeting of Māori and Pacific girls. Amongst Pākehā young women, while there is recognition of the benefits of the vaccine, they have not got around to getting it. In contrast, Māori young women born in 1990/91 appear to be less aware that they are eligible to receive the HPV vaccine.

In conclusion, the Programme has achieved the equity uptake goal, but not the desired population uptake goal. Consequently, two key challenges for the Programme going forward are: 1) maintaining equity of uptake by Māori and Pacific girls in the ongoing cohort, and 2) increasing uptake of the vaccine by other girls born in 1997 and in ongoing birth cohorts. Consideration is also needed on the extent to which further resource is used to increase uptake in the catch up cohort, given the HPV vaccine is more effective before contact with the virus.
7.3 Achieving the Programme’s health equity goal

In implementing the HPV Immunisation Programme, the Ministry applied a systems-based health equity approach that flowed from the design through the implementation and is evident in the response by Māori and Pacific girls and for Pacific young women. Achievement of equitable uptake varied across DHBs. Table 74 uses Kaipuke’s (unpublished) equity framework to demonstrate how success case DHBs achieved equity of uptake.

Table 74: Achievement of the Programme’s Equity Goal

| Result | Māori girls born in 1997 achieved target uptake and equity of uptake (but not for Māori women 1990/91). Uptake varied across DHBs. Pacific girls and young women born in 1997 and 1990/91 exceeded target uptake and achieved equity of uptake. More consistent target uptake and equity of uptake was achieved for Pacific young women across those DHBs with a high Pacific population. 1998 data indicates equity of uptake for Māori and Pacific girls is holding with the move to business-as-usual. |
| Design | Design based on equity principles:  
- Young Māori and Pacific women prioritised.  
- Leadership through Ministry and MEAG and PEAG resulted in clear strategies to specifically and uniquely target Māori and Pacific women and their whānau.  
- MEAG focused on engagement of Māori in design, implementation and delivery and system levers to support prioritised targeting across a diverse and diffused population, barriers to uptake identified.  
- PEAG used careful positioning and communication to overcome ‘cultural taboos’ and mobilised Pacific health and community leaders at national, regional and local levels to support uptake. Vaccine was accepted as ’socially acceptable’ and the community was mobilised to receive the vaccine.  
- Equitable funding to enable contracting for equity.  
- Monitoring of uptake to identify whether equal opportunity was occurring.  
- Communication strategy focused on young Māori and Pacific women. Results for communication strategy are mixed as awareness and knowledge is lower amongst Māori and Pacific parents. Evidence that Pākehā parents and girls did not relate to the Programme. |
| Delivery | Delivery of the Programme varied significantly across DHBs as reflected in the variation of vaccine uptake by DHB. Across the differing delivery mechanisms, the following variables appear to have consistently contributed to high and equitable uptake of the HPV vaccine for young Māori and Pacific women:  
- Effective DHB, school-based and primary care leadership driving a focus on equitable uptake – understanding of and commitment to implementing the Programme to achieve health equity.  
- Engagement with Māori and Pacific health and community leaders at governance, management, operational and community levels.  
- Use of trusted and knowledgeable whānau engagement and CAR to create supportive environment as well as integration of whānau engagement with the vaccination process.  
- Equitable funding to enable targeted strategies. |
- Collaborative, dedicated teams across and within delivery components implementing multiple and targeted strategies to achieve equitable uptake.
- Eligible girls had a number of routes via which to access the vaccine – school-based, primary care and other alternative providers which maximised opportunity.
- Integration and monitoring across all service delivery components.
- Sharing and discussion of monitored results which were used to modify approach to achieve desired results.

<table>
<thead>
<tr>
<th>Response</th>
<th>The response of young Māori and Pacific women to the implementation of the HPV Immunisation Programme is critical in delivering the desired outcomes from the Programme.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Awareness of Programme appears low amongst non-vaccinated Māori and Pacific parents, girls and young women.</td>
</tr>
<tr>
<td></td>
<td>Māori and Pacific girls and young women who were vaccinated appear to have limited knowledge about HPV and the short and long-term benefits of the vaccine.</td>
</tr>
<tr>
<td></td>
<td>Uptake decision for young Māori and Pacific women based on trust, sense of protection from cancer, family history of cancer or social desirability (i.e. vaccinated to please parent, doctor or others).</td>
</tr>
<tr>
<td></td>
<td>Those vaccinated are aware of need for cervical smears when older but will need to be reminded.</td>
</tr>
<tr>
<td></td>
<td>Evidence that sexuality education severely lacking across all young women.</td>
</tr>
<tr>
<td></td>
<td>Young Māori women born in 1990/91 have a low awareness of the vaccine.</td>
</tr>
</tbody>
</table>

The delivery components detailed above are inter-related and the differing weighting of each component to the overall achievement of equity of uptake is unknown. The Ministry working with a MEAG and PEAG appear to have a critical role in determining the appropriate Programme design. The Ministry however needs to strengthen internal capability to facilitate system change through engaging with external stakeholder conflict on Programmes so tension can drive change without impeding forward momentum.

Evidence highlights that trusted and knowledge-based whānau engagement integrated with the vaccine process can facilitate high vaccine uptake by Māori and Pacific girls. However, there is little evidence on whether or not non-integrated whānau engagement and CAR creates a readied environment to support vaccine uptake of the vaccine by Māori and Pacific girls.

Consideration needs to be given to whether the achievement of targeted uptake and equity of uptake for Māori and Pacific girls could have been achieved without the explicit focus on health equity in the design and implementation of the HPV Immunisation Programme. While a definitive position cannot be taken, the current rates of childhood immunisation for Māori suggest that, without this focus, uptake by young Māori women could be significantly lower.

For young Pacific women, the picture is less clear, due to Pacific people having very high childhood immunisation rates, and the ability to successfully mobilise Pacific communities on single-health issues. Given Pacific women’s lower cervical screening rates and the vaccine targeting an STI (a cultural taboo), it could not to be assumed that Pacific people would automatically embrace this vaccine in the way they have with early childhood vaccines.
In conclusion, when health equity approaches were embedded by the DHB through integrated delivery components, higher vaccine uptake rates were achieved for Māori girls and Pacific girls and young women.

7.4 Enhancing the Programme’s implementation

The following are suggestions to enhance the current Programme focus at the system level and opportunities to increase vaccine uptake - success of the latter is likely to be dependent on system improvements noted.

System improvements

- Increase integration of school-based and primary care delivery. Both delivery mechanisms are integral to ensuring high vaccine uptake, particularly as a significant proportion of Pākehā girls in the ongoing cohort are delaying uptake. A risk for the Programme is these girls will miss out when older if they are not proactively targeted by primary care.

- Enhance the IT systems to facilitate identification, targeting, follow-up and monitoring at a regional and local level, and in particular improve the PMS and NIR interface for the HPV vaccine.

Opportunities to increase uptake for the ongoing cohort

The greatest opportunity to increase the uptake of the vaccine for the ongoing cohort is to target ‘delayers’ and address low uptake by Pākehā girls. A two-pronged strategy is required to target those who have made a delay decision already and potential delayers in the ongoing school year 8 cohort:

- For non-vaccinated girls born in 1997 either opportunistically offer the vaccine when at the GP for another medical reason, or conduct a more systematic recall via primary care when the young woman turns 16 years old.

- For the ongoing year 8 cohort (via school-based delivery) implement strategies to potentially decrease the size of the delayer group through reinforcing the messages that early uptake results in a stronger immunity response, longevity of the vaccine, and creating awareness of the prevalence of the HPV virus.

In maintaining equity of uptake for Māori and Pacific girls, consideration is needed on how to effectively address the information needs of those with low health literacy. The presentation and layering of information is particularly important given that whānau engagement may not be funded on an ongoing basis.

Opportunities to increase uptake for the catch-up cohort

While young women born in 1990/91 are coming to the end of their eligibility for the vaccine, consideration needs to be given to young women born in 1992/96 who make up the rest of the catch up cohort. The greatest opportunity to increase the uptake of the vaccine for the catch up cohort is to target the ‘ambivalent’ and ‘vulnerables’ groups.

‘Ambivalents’ are especially challenging given the need to overcome their inertia and create a very compelling reason to act. A focus on their limited eligibility and the future cost of the vaccine will encourage some but not all to act. Key levers appear to be emphasising
protection against genital warts, and in the long-term protection against cervical cancer as well as reiterating vaccine efficacy and longevity. Opportunistic vaccination at GPs and via other sexual and reproductive health providers is likely to be the key mechanism.

For ‘vulnerables’, it is critical that all eligible young women are aware of the HPV vaccine, its safety and the health benefits it offers. In creating awareness, consideration needs to be given to a wider range of communication tools, building on existing approaches (e.g. television campaigns), using other technologies (e.g. Facebook) and delivery via other sexual and reproductive health services. Greater clarity is needed in the information to ensure it can be understood by those with lower health literacy. However, others want more detailed, evidence-referenced information. Consequently, a tiered and ideally targeted information approach is required.

7.5 Key learnings to inform future immunisations programmes

- The most beneficial programme design and implementation is based on an integrated multi-component delivery model of school-based and primary care. Analysis of uptake data highlights inconclusive evidence that school-based delivery is more effective in achieving higher vaccine uptake than primary care. However, the data does suggest that school-based delivery results in faster uptake and has better completion rates for a three dose vaccine. This suggests school-based delivery may be more appropriate when seeking to vaccinate for an immediate life-threatening epidemic with a multi-dose vaccine.

- Consider ways to minimise the variability of delivery across DHBs, while ensuring flexibility to meet regional population needs.

- The Ministry and DHBs need evidence-based strategies to address misinformation about vaccines.

- Reflection on potential enhancements to primary care delivery including the clarification of the role and levers of PHOs to enable system based health equity approaches in general practice. Vaccine uptake may be more effective if funding for vaccination in general practice covered actual costs.

- Ensure integration of trusted and knowledgeable whānau engagement and/or outreach providers with the actual vaccination process in school-based and primary care delivery.

- Ensure IT systems facilitate and do not impede delivery. Consideration is needed on targeting, determining vaccine status, consent and monitoring across delivery mechanisms.

- Effective communication strategies particularly when communicating the need for a vaccine for an STI to parents. Strategies need to be cognisant of low health literacy for Māori and Pacific women creating an understanding about the vaccine and protection offered. Further recognition is needed that communication strategies targeting a particular ethnic group are unlikely to resonate with other groups.
8. Principles for Equitable Vaccination Programmes

Drawing from this evaluation, the following are guiding principles in implementing a vaccination programme that seeks to create equal opportunity for those at greatest risk from the disease. Acknowledgement is given that the principles need to be considered in relation to the targeted population and tailored to recognise the diversity within the targeted population. Further, as shown with the HPV Immunisation Programme tailored strategies and approaches are needed for different targeted groups (i.e. the transferability of approaches from one ethnic or other group to another should not be assumed).

- Use the existing evidence base to identify the potential risk of creating or widening existing inequalities with the introduction of a vaccination programme (i.e. who is the target population?)
- Explicitly state which population/s is/are being prioritised and gain system-wide recognition and support for an equity approach across all Programme components.
- Tailor the Programme design to make it accessible, responsive and effective for targeted population/s, and create a shared understanding of health equity and approaches being used.
- Ensure buy-in by leaders across all Programme components to place focus on the importance of an equitable Programme.
- Offer equitable and dedicated funding to enable effective targeting.
- Early engagement with and involvement of targeted populations’ health and community leaders and providers and their inclusion in the Programme at governance, management, operational and community engagement levels.
- Use of multiple strategies and tactics tailored to the DHB region and the diversity within their targeted populations, while maintaining core elements of consistency in the quality of vaccine delivery in the community. A planned and persistent approach is critical with the flexibility to review and revise to achieve desired outcomes.
- Use of both school-based and primary care delivery mechanisms (both in general practice and other primary care providers) to maximise uptake across the eligible population and to target those at risk. Care is needed in ensuring collaboration and information sharing to maximise uptake.
- The use of trusted, known and knowledgeable whānau engagement providers who are closely interlinked and have synchronised their interactions around the vaccination process. Whānau engagement providers need to particularly focus on health literacy issues and ensure uptake or not is based on informed consent.
- Ongoing monitoring and sharing of vaccine results to determine changes to the Programme to achieve target uptake at all levels of Programme delivery.
9. Future Research Areas

Based on this evaluation a number of future research areas have been identified:

- **Monitoring towards the biological impact of the Programme on cervical abnormalities and cervical cancer.** Compared to other countries, New Zealand is well placed with the National Cervical Screening Programme and national cancer registry to monitor the impact of the HPV Immunisation Programme on cervical abnormalities and cervical cancer. The results from this monitoring would be an extremely important component in demonstrating the reduction of inequities for Māori and Pacific women.

- **Clarifying and identifying effective system-based strategies that could be used by PHOs and General Practice** to facilitate the targeting of Māori and Pacific women in immunisation programmes. As highlighted by Ringfold (2005) alternative service providers reach relatively small populations as 80-90 per cent of Māori participate in mainstream health services. Consequently, there is a need for identifying effective system-based strategies within primary care, particularly the role of PHOs.

- **Exploring how to maximise the effectiveness of communication strategies** to successfully target specific at-risk populations without the unintended consequence of other populations not identifying with the key messages.

- **Identifying frameworks to monitor and measure the success of whānau engagement** and its explicit contribution to vaccine uptake within immunisation programmes (as well as other health prevention programmes).

- **Identifying the most effective strategies to address anti-immunisation messages.** Findings from this evaluation emphasised the important role of the Ministry and ideally a well-known and respected clinical champion in addressing misinformation from the anti-immunisation groups. While DHBs and other stakeholders expect the Ministry to take a strong proactive stance in this area, the most effective strategies to respond to perceived ‘evidence-based’ criticisms (i.e. misinformation) are not known. In this context, research is needed to identify these strategies, given the risk of inappropriate responses from perceived untrusted sources may reinforce anti-immunisation positions (i.e. the perceptions that information from the Ministry and IMAC is biased as pro-vaccine).

- **Understanding the cultural perceptions of sexuality and HPV vaccine uptake.** The HPV vaccine is unique as it offers protection against an STI which is the precursor to cancer. Anecdotally, it appears that Māori have a holistic appreciation of young Māori women’s sexuality and journey to adulthood/motherhood – a positive model of strengthening future generations. In contrast, Pākehā parents delaying tactics appears to reflect a perceived denial of when sexual initiation occurs in New Zealand.
References


Telford, M., Caygill, R. (2007). New Zealand’s 15-year-olds are more ready for tomorrow’s world than the majority of their international counterparts. Wellington: Ministry of Education, Comparative Education Research Unit.


