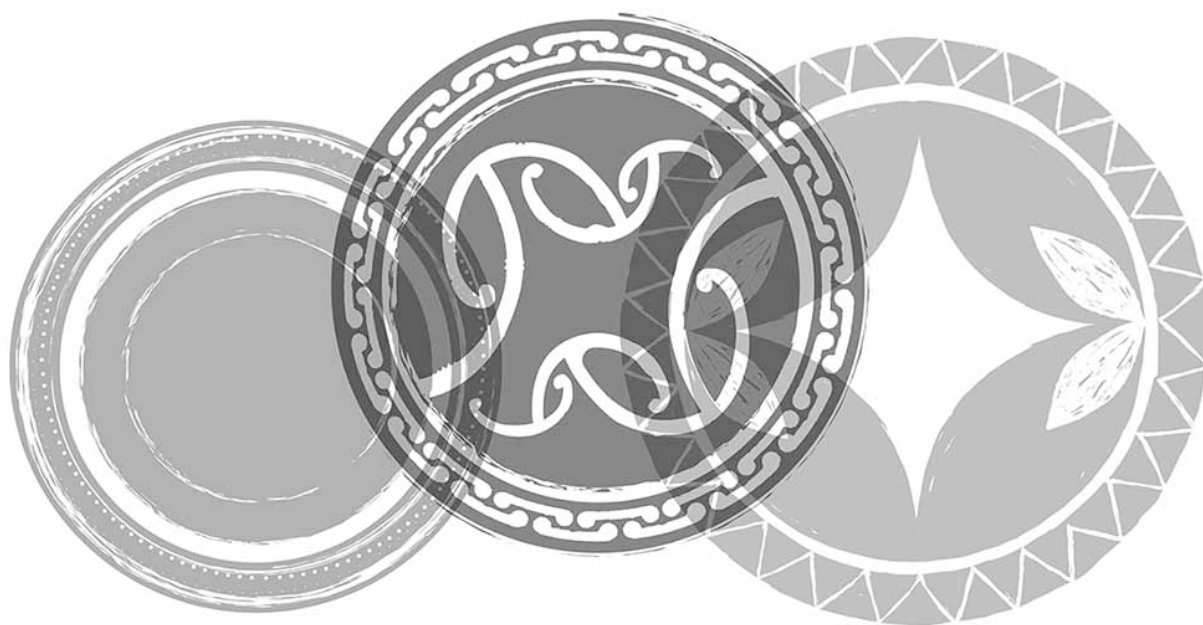


Revitalising the National HPV Immunisation Programme

with agreed outcomes from the
August 2014 workshop



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Commonly used abbreviations

DHB	district health board
GP	general practitioner
GVAP	Global Vaccine Action Plan
HPV	Human Papillomavirus
IMAC	Immunisation Advisory Centre
NIR	National Immunisation Register
NSU	National Screening Unit
PHARMAC	Pharmaceutical Management Agency
PHO	primary health organisation
PHN	public health nurse
PMS	Patient Management System
PTAC	Pharmacology and Therapeutics Advisory Committee
SBIP	school-based immunisation programme
Tdap	the adult tetanus, diphtheria and acellular pertussis vaccine
WHO	World Health Organization

Introduction

In August 2014, the Ministry of Health (the Ministry) held a workshop to discuss strategies for achieving increased coverage of Human Papillomavirus (HPV) immunisation in the future.

This document outlines a plan for progressing and revitalising the HPV Immunisation Programme (the Programme) for 12-year-old girls. The plan uses the underlying principles of the Ministry's modified four-point action plan, *Plan, Engage, Promote and Monitor*, and the World Health Organization (WHO)'s¹ Global Vaccine Action Plan (GVAP).



The Ministry has adopted these plans and applied these models in order to achieve the new HPV immunisation coverage target of 75 percent for all 12-year-old girls by December 2017.

Background

HPV is responsible for a substantial burden of disease in New Zealand women, most importantly in terms of cervical cancer. The virus is highly transmissible and affects the majority of women and men at some stage in their lives. In most cases, the infection will clear spontaneously after some time. However, for a small number of people, persistent HPV infection progresses to changes in the cells and subsequently develops into cervical cancer or cancers of the throat, neck and anogenital region.

In September 2008, the Ministry launched a three-dose HPV immunisation programme for 12-year-old girls as part of the funded National Immunisation Schedule (the Schedule).

The Programme aspires to achieve herd immunity² against HPV at a level that reduces the spread of the HPV infections that lead to cervical and other cancers.

Māori and Pacific women have a higher incidence of HPV-related cancers compared to New Zealand European women. From its outset, the Programme has prioritised Māori and Pacific coverage.

Since 2010, when rates of coverage could be measured, approximately 55 percent of girls in the eligible age ranges have been immunised. For herd immunity, coverage needs to be approximately 75–80 percent. The national coverage target for all other primary childhood immunisations listed on the Schedule is 95 percent. The Ministry considers this Programme should achieve similar rates of coverage.

¹ The World Health Organization is a specialised agency of the United Nations that is concerned with international public health.

² Herd immunity refers to a level of immunity within the population that is sufficient to protect both immunised and unimmunised people.

Implementation to date

Initiation of the Programme

Internationally, HPV immunisation programmes are most commonly offered through school-based immunisation programmes (SBIPs). Since 2009, the Ministry has administered the Programme primarily to girls in school Year 8; public health nurses (PHNs) deliver it in schools. Alternatively, general practitioners (GPs), practice nurses, youth health or other health clinics (such as family planning clinics) offer the vaccine.

When the HPV SBIP was established, the Ministry implemented a ‘catch-up’ programme for a wider age range of girls, offering those in school Years 9–13 immunisation through schools or health providers. In December 2010, the school-delivery component of the catch-up programme ceased.

In Canterbury, the HPV vaccine was previously provided primarily through general practice, with a catch-up school programme in Year 10. Following a recommendation from PHARMAC’s³ Pharmacology and Therapeutics Advisory Committee (PTAC) Immunisation Subcommittee in February 2015, Canterbury DHB will offer HPV immunisation through the SBIP in Year 8 beginning in 2016.

Coverage targets and achievement to date

The initial coverage target was 90 percent for dose three for all 12-year-old girls by 31 December of the year in which the girl became eligible. However, DHBs considered the target to be unachievable (because, in most areas, the SBIP was new), and the Ministry revised the targets.

Up until December 2014, the revised targets for 12-year-old girls were:

- Dose one – 70 percent
- Dose two – 65 percent
- Dose three – 60 percent.⁴

(See also Appendix B, which shows the DHB end-of-year cohorts for 2001.)

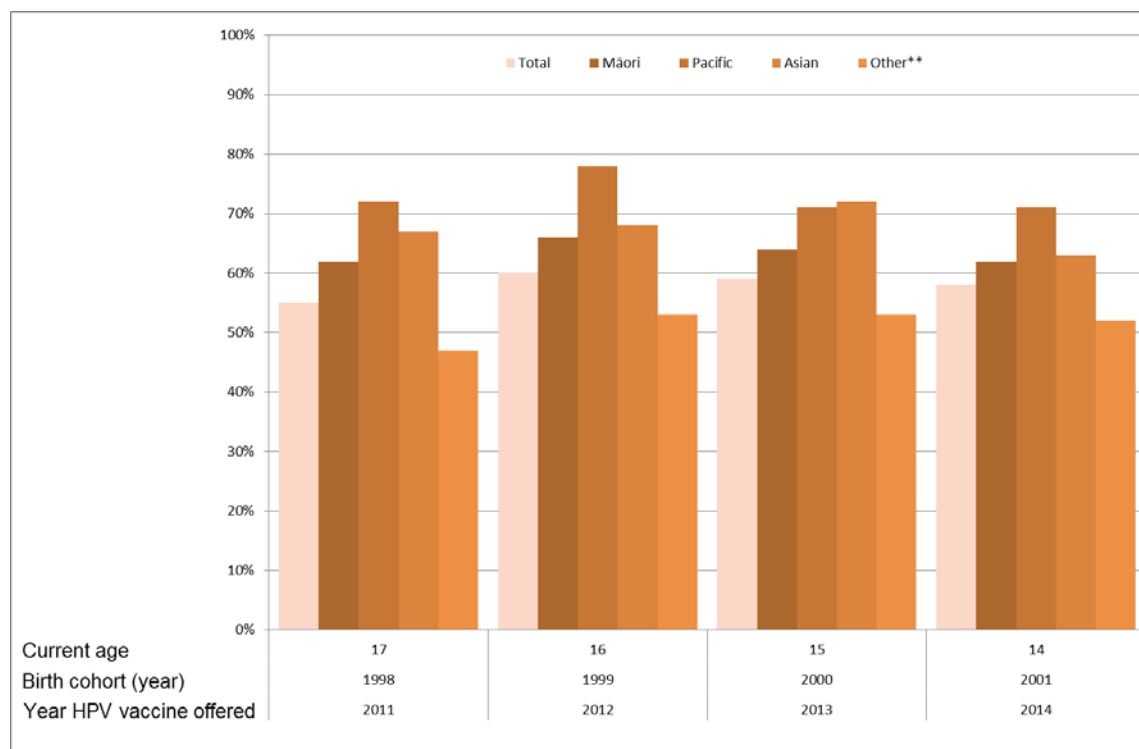
Figure 1 on the following page shows national HPV immunisation dose three coverage from 2011 to 2013 (ie, for birth cohorts 1998–2001). During this period, coverage for Pacific peoples and Asians exceeded the 60 percent target; coverage for other ethnicities and the total population remained below it.

The New Zealand Programme did not achieve the same success in reaching high coverage like Australia and the United Kingdom and, of concern for Programme leads, Figure 1 highlights that Māori and Pacific coverage had started to decrease.

³ PHARMAC is the New Zealand Crown agency that decides, on behalf of DHBs, which medicines (including vaccines) and related products to subsidise for use in the community and public hospitals.

⁴ From 1 January 2015, DHBs are aiming at a 65 percent fully immunised dose three target.

Figure 1: HPV immunisation dose three coverage by ethnicity, vaccination and eligible birth cohort, 1 January 2010–31 December 2014



Source: Data Mart, 13 January 2015

Note: The data will be expanded during 2015 to include figures for New Zealand European and a breakdown by deprivation area.

The Ministry needs to revitalise its Programme in order to increase coverage to at least a rate that would provide herd immunity. A national workshop was agreed.

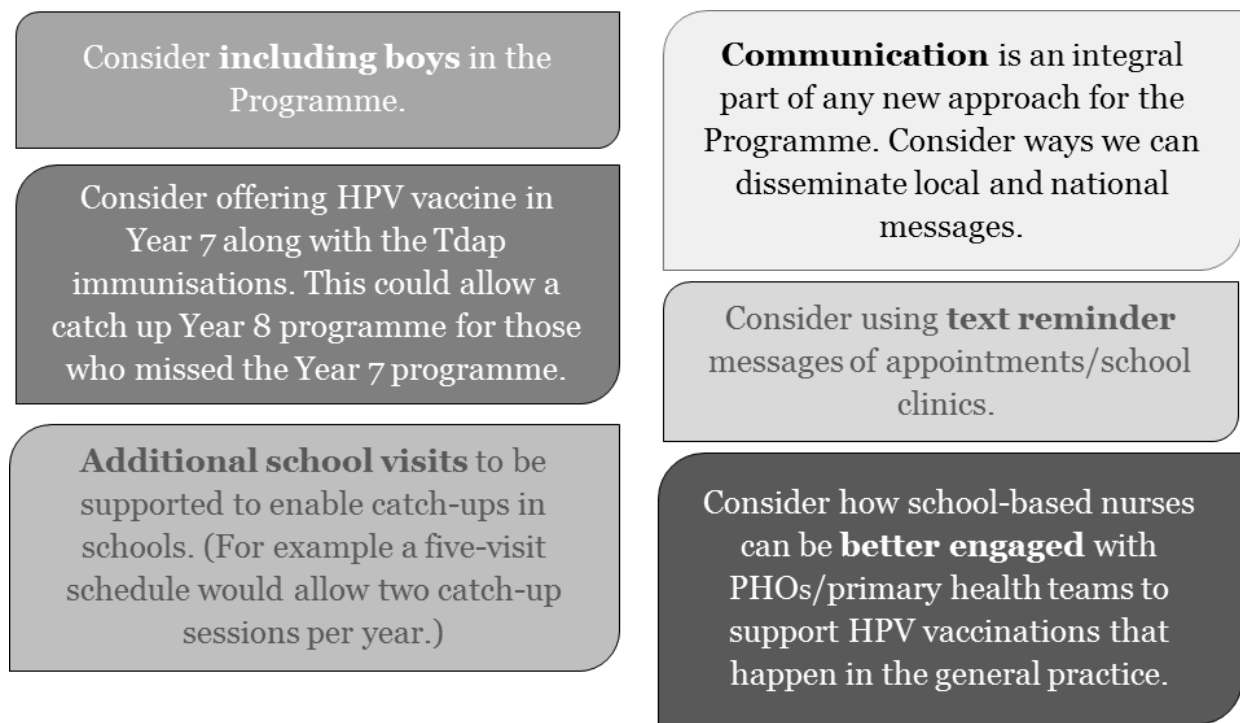
The workshop

The 2014 HPV workshop was held for DHB funding and planning managers who oversee immunisation services, PHNs, primary health organisations (PHOs), the Immunisation Advisory Centre (IMAC) and HPV immunisation programme managers. These workshop participants considered the cost-effectiveness of the Programme at current coverage levels, international approaches to HPV immunisation programmes and the questions listed below.

- a) How do we de-stigmatise/normalise the Programme?
- b) Should we transition the Programme to Year 7 in schools, and if so, how?
- c) What are the key requirements to transitioning from a three-dose HPV schedule to a two-dose schedule?
- d) Should the current 60 percent three-dose HPV target be incrementally increased to reach the recommended 75 percent coverage?

Possible solutions were suggested on how coverage could improve (see Figure 2).

Figure 2: Possible solutions to improve coverage discussed at the workshop



There was agreement by the workshop participants that one of the keys to increasing the HPV coverage was to incrementally increase the dose three coverage target to achieve 75 percent by 31 December 2017. DHBs and IMAC, who provided feedback, also support this change.

Increasing HPV coverage: discussion

This section sets out some of the discussion points noted above in Figure 2 for achieving increased HPV immunisation coverage in the future, using the WHO's GVAP objectives as a framework.

The WHO GVAP objectives

As a platform for all the Ministry's immunisation programmes, the Ministry's Immunisation Team has adapted the six core objectives of WHO's GVAP: ownership, shared responsibility and partnership, equity, integration, sustainability and innovation (see Appendix A, which sets out how these objectives have been adapted for New Zealand in a broader sense).

The Ministry recommends applying these objectives to the current Programme, as follows.

Table 1: Application of the GVAP principles to the Programme

Objective	Description
Ownership	All providers and the wider health sector recognise the importance of the Programme and work collectively to achieve agreed targets.
Shared responsibility and partnership	The Ministry, the National Screening Unit (NSU) and DHBs, as partners and customers, respect the role of primary health care providers and the community itself in increasing coverage, and actively look for opportunities to improve the Programme.
Equity	The Programme deliverables are fair and just; in particular for vulnerable populations such as Māori, Pacific peoples and low-income groups.
Integration	The Programme is integrated with other programmes on the Schedule in order to achieve better outcomes for young women and improve the efficiency of SBIP delivery.
Sustainability	The Programme continues to receive funding and remains a government priority.
Innovation	The Programme undergoes continuous improvement, with an aim to increase coverage rates and quality.

Using the modified WHO GVAP, the Ministry's Immunisation Team continues to work with the NSU and DHBs to improve the HPV immunisation coverage.

A more detailed exploration of the six objectives follows.

Ownership

'Ownership' of immunisation programmes occurs at multiple levels. The Minister continues to support the delivery of the Schedule. In 2010, the Health Select Committee inquiry into how to improve completion rates of childhood immunisation considered that immunisation is a highly effective strategy for preventing infectious diseases throughout life. The Government, through a number of recommendations, supports timely immunisation.

In alignment with the recommendations of the 2010 Health Select Inquiry, many DHBs demonstrate ownership by providing resources for the delivery of SBIPs.

Currently there is an opportunity to expand ownership of the Programme to PHOs and general practices. This would be a way to actively involve families in the effort to ensure that girls aged 14 years complete their HPV immunisation. PHNs and general practice teams could work together to develop initiatives to engage with families to this end.

Shared responsibility and partnership

Up until 2014, there was a disconnection between the SBIP and general practice delivery of the HPV vaccine. The Programme is delivered mainly through the SBIP, but general practices were not well equipped to specifically offer the vaccine to those who declined it at school.

To date, general practice teams have not been given clear guidelines about the optimal time for recalling girls who have not received the vaccination at school. Moreover, anecdotal evidence suggests that many practices do not routinely stock the HPV vaccine. Although the SBIP notifies individual girls' vaccine records to their GPs, in reality these records are frequently inadequate or incomplete.

There is an opportunity for the DHBs and PHOs to work collaboratively with general practice leads to re-establish best practice guidelines and more systematic approaches. DHBs who provided feedback on the draft of this document, have emphasised the need for better communication between the SBIP and general practice teams. Expanding ownership of the Programme to include general practice teams and PHNs will enable better engagement and communication.

Equity

The initial focus for the Programme was on reducing inequalities. Ethnic inequalities in cancer rates result from multiple influences, including differences in:

- underlying determinants of health
- exposure to risk and protective factors
- access to screening
- access to timely, high-quality treatment.⁵

Māori and Pacific peoples are at increased risk of developing and dying from cervical cancer compared with the New Zealand European population. Since the start of the Programme, coverage rates for Māori and Pacific have been higher than those for New Zealand European and other ethnicities and have reached the dose three coverage target of 60 percent. These rates are positive but need to be increased or at least maintained to reduce the burden of disease for these groups and to increase herd immunity.

Immunisation providers need to re-engage with communities with low coverage, to understand their concerns and provide assurances about the vaccine. One strategy that has worked effectively in the childhood immunisation programme is the use of community immunisation champions who are willing to front local campaigns.

There is an opportunity to liaise with Whānau Ora providers, the Māori Women's Welfare League and the Pacific Allied (Women's) Council with a view to increasing coverage in communities with low immunisation rates.

⁵ Cormack D, Purdie G, Robson B. 2007. Cancer. In: Robson B, Harris R. (eds). *Hauora: Māori Standards of Health IV: A study of the years 2000–2005*. Wellington: Te Rōpū Rangahau Hauora a Eru Pōmare.

Integration

The Programme may benefit from integration with other childhood immunisations on the Schedule. Possible options for improving integration include:

- positioning the Programme in the context of the whole Schedule, as part of an ‘immunisation across the lifespan’ approach
- offering the Programme at Year 7, to align with tetanus, diphtheria and acellular pertussis (Tdap) immunisation offered at age 11
- establishing and maintaining closer working relationships between Programme providers (SBIP), general practice teams, public health, Māori and Pacific immunisation leads and local cervical screening programmes.

Sustainability

Changing the number of doses in the Programme from three to two would be more cost effective and could help increase coverage across New Zealand. In April 2014, the WHO Strategic Advisory Group of Experts on Immunisation recommended a two-dose schedule for girls if vaccination is initiated before 15 years of age. The two doses could be delivered either in Year 7, with a six-month gap between the doses, or in Years 7 and 8; the first could be delivered alongside the Tdap vaccine.

In addition to savings in the cost of vaccine, there may be significant savings to DHBs by reducing the number of school visits.

Note: any changes to the funding and eligibility criteria for vaccines on the Schedule must be approved through PHARMAC’s assessment, prioritisation and approval processes.

DHBs who provided feedback are generally supportive of a two-dose programme.

Innovation

This section presents some ideas and questions about potential innovations in the Programme for further consideration.

One possible innovative option would be to upgrade our National Immunisation Register (NIR) to provide accurate monitoring to measure effectively against the HPV target. DHBs are local experts and know how to get the best out of their communities, health partners and IT tools.

There is potential for including boys in the Programme, as they are in Australia. Including boys in the Programme would de-stigmatise/normalise the vaccine as part of the routine childhood immunisation programme.

The current Programme appears to be cost-effective and a good use of health expenditure.⁶ Adding boys to the Programme would deliver some extra health benefits but at very high cost and so does not appear to be cost-effective at this point in time. In order for vaccination of

⁶ Blakely T, Kvizhinadze G, Karvonen T, et al. 2014. Cost-effectiveness and equity impacts of three HPV vaccination programmes for school-aged girls in New Zealand. *Vaccine* 2014, 32: 2645–56. URL: www.otago.ac.nz/wellington/otago068857.pdf.

school-aged boys to be cost-effective in New Zealand, the vaccine would need to be supplied at very low prices and administration costs would need to be minimised.⁷

There are opportunities for better engagement within the education sector, with a view to:

- dispelling negative myths about the safety of the vaccine
- ensuring providers have the knowledge and resources to understand parental concerns and reassure them about the safety and effectiveness of the vaccine (IMAC are currently looking into implementing an online learning module for the Programme)
- stressing the importance of vaccinating young people because they develop a stronger immune response from the vaccine compared with older people
- including education around immunisation as part of the school health curriculum.

Increasing HPV coverage: an action plan

In 2012, the Ministry developed a four-point action plan to assist with achieving the immunisation health targets.

In light of the WHO objectives and ideas arising from consultation with DHBs, the Ministry has expanded and modified its four-point action plan used for the 'Under 5s' programme to increase HPV immunisation coverage. The action plan's underlying principles are:

- trusting relationships with parents
- more functional relationships between SBIP and general practice teams
- better quality processes, based on the Plan, Do, Check, Act cycle
- recognising the role of the community.



The four-point action plan uses '*Plan, Engage, Promote and Monitor*' to activate change. Its implementation within the SBIP will support a coordinated approach between school delivery and general practice to identify girls who have not been vaccinated by age 16 years. There is general support to use this plan to achieve the new HPV target of 75 percent coverage of girls fully immunised at 12 years old by 31 December 2017.

The Programme is underpinned by effective monitoring by the Programme and NIR administrators. Better liaison between SBIP, general practice teams and a network of immunisation coordinators is important to improve the Programme's success.

The key actions will result in increased coverage, more timely HPV immunisations, more transparent and consistent delivery of immunisation services, better integration of services and better engagement between health professionals.

Table 2 sets out the principles of the plan alongside associated activities and explanations in more detail. In addition, it sets out the relevant WHO GVAP objectives that apply to each principle.

⁷ Pearson A, Kvizhinadze G, Wilson N, et al. 2014. Is expanding HPV vaccination programs to include school-aged boys likely to be value-for-money: a cost-utility analysis in a country with an existing school-girl program. *BMC Infectious Diseases* 2014, 14:351. URL: www.biomedcentral.com/content/pdf/1471-2334-14-351.pdf

Table 2: Action plan principles and associated activities

Principle	Activity
Plan WHO GVAP objectives 1, 2, 3, 4 and 5	All DHBs plan to offer an HPV SBIP for girls in either school Year 7 or 8 by 1 February 2017.
	School-based nurses and PHO staff collaborate to share methods to better engage with PHOs/general practice teams to work towards systematically delivering HPV vaccines in general practice to those girls aged 14 who are not fully vaccinated.
	General practice teams work with nurse leads to develop a follow-up process and provide catch-up for unimmunised or incompletely immunised girls, for example an annual recall was undertaken by GPs in November/December of their 14-year-old girls not fully protected against HPV.
	DHBs set yearly incremental milestone targets (eg, 2015 – 65%; 2016 – 70% and 2017 – 75%) for all ethnicities.
	Plan to transition from three doses to two doses when PHARMAC approve changes to the Programme.
Engage WHO GVAP objectives 2, 4 and 5	DHBs encourage local health professionals and community leaders to become immunisation champions. The local cervical screening units may have champions that are keen to support the Programme.
	School-based nurse leads notify children's nominated GPs when parents or legal guardians indicate they wish their child to be vaccinated in general practice. When GPs receive this notification, the practice team pre-calls these girls at 12 years.
	School-based nurse leads engage with general practice teams to develop systems to recall all unvaccinated girls in their 14th year who have not received all doses of the HPV vaccine.
	General practice teams use practice systems to engage and enable opportunistic immunisation at each contact with the health system for all eligible girls 14 years and older.
Promote WHO GVAP objectives 1, 2 and 4	DHBs, in conjunction with their immunisation steering group leads, create specifically tailored promotional plans for particular local population groups. Key messages align across different promotional plans, including the cervical screening programme.
	Promote immunisation through school newsletters, primary care, NSUs (eg, providers discuss with family members presenting for cervical smears or primary HPV screening) and youth services.
	DHBs and PHOs promote immunisation through local media and parent groups via good news stories. Communications feature targeted messages, individual stories and shared personal experiences.
	DHBs provide pro-immunisation resources to schools and locations relevant to the target population (eg, recreation centres, libraries, pharmacies).
	DHBs, with support from IMAC, rebut anti-immunisation information where necessary, using pre-prepared statements making key points.
	DHBs support GPs and nurses with good resources and training, so that they can inform parents with confidence about vaccine-preventable diseases and effectively manage parental anxiety.
Monitor WHO GVAP objectives 2, 3, 4 and 5	Nurse leads and general practice teams work together to address parents' and girls' concerns and identify access barriers for girls who do not respond within three months of a recall.
	The Ministry develops a 14-year milestone report and shares DHB coverage information with steering groups (from 2017 identifiable individual practice, PHO and DHB information will be included in the reports).
	The Ministry measures and reports to the WHO on coverage for girls aged 15 years.
	The Ministry reports on coverage by ethnicity (and from 2017, by socioeconomic status).
	The Ministry, DHBs and PHOs work together to address NIR/patient management system (PMS) interface issues before 2016/17.

Timelines

Table 3 sets out key events in the process of consultation on, and activities towards, achieving increased coverage.

Table 3: Timeline for achieving increased coverage in the Programme

Actions	How	Who	When	Support
2015	12-year-old HPV immunisation coverage target increases to 65%	SBIP	From February 2015	Monitoring, quarterly data, regional teleconferences
	General practice teams notified by SBIP of 12-year-old girls who have declined HPV vaccination at school, for follow-up by GP	SBIP, general practice teams	By December 2015	
	General practice teams recall all 14-year-old girls who are not fully immunised	General practice teams	From October 2015	
2016	12-year-old HPV immunisation coverage target increases to 70%	SBIP	From February 2016	Monitoring, quarterly data, regional teleconferences
	General practice teams notified by SBIP of 12-year-old girls who have declined HPV vaccination at school, for follow-up by GP	SBIP, general practice teams	By December 2016	
	General practice teams recall all 14-year-old girls who are not fully immunised	General practice teams	From January 2016	
	Be prepared for a likely introduction of a two-dose schedule change			
2017	12-year-old HPV immunisation coverage target increases to 75%	SBIP	From February 2017	Monitoring, quarterly data, regional teleconferences
	General practice teams notified by SBIP of 12-year-old girls who have declined HPV vaccination at school, for follow-up by GP	SBIP, general practice teams	By December 2017	
	General practice teams recall all 14-year-old girls who are not fully immunised	General practice teams	From January 2017	
	DHBs offer HPV immunisation through the SBIP for girls in Year 7 or 8	DHBs	By 1 February 2017 (planned)	
	Be prepared for a likely introduction of a two-dose schedule change			

Appendices

Appendix A: WHO GVAP objectives, adapted for New Zealand

Ownership

The New Zealand Government has primary ownership and responsibility for establishing good governance and for ensuring effective, timely and quality immunisation services for all.

Equity

Equitable access to immunisation is a core component of health care.

Sustainability

Informed decisions and implementation strategies, annual planning, appropriate levels of financial investment, and improved financial management and oversight are critical to ensuring the sustainability of New Zealand's immunisation programme.

Shared responsibility and partnership

Immunisation against vaccine-preventable diseases is a shared responsibility between individuals, families, communities, primary health care services and DHBs nationally.

Integration

Strong immunisation systems are part of the broader health system and are closely coordinated with other primary health care delivery programmes, through the Better Public Service initiative.

Innovation

The full potential of immunisation can only be realised through learning, continuous improvement and innovation in research and development. Innovation and quality improvement should be continuous goals.

Appendix B: 2014 HPV coverage for 2001 birth cohort (1 January 2014–30 June 2015)

HPV coverage report – June 2015
Report run date: 07 July 2015

Girls turning 12 years old in 2014 [Birth Cohort: 2001]
Period covered: 1 January 2010 to 30 June 2015

The information contained in this report has been derived from the National Immunisation Register database. While the Ministry of Health has taken all reasonable steps to ensure that the information contained within the report is accurate and complete, it accepts no liability or responsibility for the manner in which the information is subsequently used or relied on.

DHB	Vaccination	Number of HPV doses given (numerator)					Estimated eligible population* (denominator)					Immunisation coverage				
		Maori	Pacific	Asian	Other**	All	Maori	Pacific	Asian	Other**	All	Maori	Pacific	Asian	Other**	All
Auckland	HPV-1 Quadrivalent	211	411	462	725	1809	270	450	630	860	2210	78%	91%	73%	84%	82%
	HPV-2 Quadrivalent	214	414	462	711	1801						79%	92%	73%	83%	81%
	HPV-3 Quadrivalent	203	401	444	689	1737						75%	89%	70%	80%	79%
Bay of Plenty	HPV-1 Quadrivalent	434	20	36	431	921	570	30	30	810	1440	76%	67%	120%	53%	64%
	HPV-2 Quadrivalent	430	20	37	416	903						75%	67%	123%	51%	63%
	HPV-3 Quadrivalent	394	17	31	389	831						69%	57%	103%	48%	58%
Canterbury	HPV-1 Quadrivalent	188	53	116	1240	1597	420	110	190	2290	3010	45%	48%	61%	54%	53%
	HPV-2 Quadrivalent	170	47	110	1140	1467						40%	43%	58%	50%	49%
	HPV-3 Quadrivalent	118	29	88	921	1156						28%	26%	46%	40%	38%
Capital & Coast	HPV-1 Quadrivalent	233	157	119	709	1218	330	220	170	990	1700	71%	71%	70%	72%	72%
	HPV-2 Quadrivalent	227	151	118	693	1189						69%	69%	69%	70%	70%
	HPV-3 Quadrivalent	217	150	119	672	1158						66%	68%	70%	68%	68%
Counties Manukau	HPV-1 Quadrivalent	668	972	433	633	2706	910	1190	690	1140	3930	73%	82%	63%	56%	69%
	HPV-2 Quadrivalent	650	955	448	648	2701						71%	80%	65%	57%	69%
	HPV-3 Quadrivalent	550	867	422	594	2433						60%	73%	61%	52%	62%
Hawke's Bay	HPV-1 Quadrivalent	339	49	21	336	745	430	60	10	600	1100	79%	82%	210%	56%	68%
	HPV-2 Quadrivalent	329	48	21	322	720						77%	80%	210%	54%	65%
	HPV-3 Quadrivalent	315	48	19	305	687						73%	80%	190%	51%	62%

DHB	Vaccination	Number of HPV doses given (numerator)					Estimated eligible population* (denominator)					Immunisation coverage				
		Maori	Pacific	Asian	Other**	All	Maori	Pacific	Asian	Other**	All	Maori	Pacific	Asian	Other**	All
Hutt Valley	HPV-1 Quadrivalent	216	81	74	351	722	270	120	90	520	1010	80%	68%	82%	68%	71%
	HPV-2 Quadrivalent	210	80	69	330	689						78%	67%	77%	63%	68%
	HPV-3 Quadrivalent	203	76	73	334	686						75%	63%	81%	64%	68%
Lakes	HPV-1 Quadrivalent	265	15	16	176	472	370	20	20	320	730	72%	75%	80%	55%	65%
	HPV-2 Quadrivalent	261	15	16	173	465						71%	75%	80%	54%	64%
	HPV-3 Quadrivalent	250	15	16	172	453						68%	75%	80%	54%	62%
MidCentral	HPV-1 Quadrivalent	246	32	41	410	729	340	40	50	700	1130	72%	80%	82%	59%	65%
	HPV-2 Quadrivalent	238	32	43	398	711						70%	80%	86%	57%	63%
	HPV-3 Quadrivalent	226	32	42	377	677						66%	80%	84%	54%	60%
Nelson Marlborough	HPV-1 Quadrivalent	96	15	17	392	520	120	15	20	710	850	80%	100%	85%	55%	61%
	HPV-2 Quadrivalent	87	15	16	384	502						73%	100%	80%	54%	59%
	HPV-3 Quadrivalent	84	15	16	359	474						70%	100%	80%	51%	56%
Northland	HPV-1 Quadrivalent	398	23	14	274	709	530	30	30	580	1170	75%	77%	47%	47%	61%
	HPV-2 Quadrivalent	383	23	14	262	682						72%	77%	47%	45%	58%
	HPV-3 Quadrivalent	361	22	12	253	648						68%	73%	40%	44%	55%
South Canterbury	HPV-1 Quadrivalent	24	4	8	150	186	40	5	0	270	320	60%	80%	-%	56%	58%
	HPV-2 Quadrivalent	24	4	8	145	181						60%	80%	-%	54%	57%
	HPV-3 Quadrivalent	23	3	8	140	174						58%	60%	-%	52%	54%
Southern	HPV-1 Quadrivalent	179	41	44	947	1211	260	35	20	1330	1660	69%	117%	220%	71%	73%
	HPV-2 Quadrivalent	176	42	42	933	1193						68%	120%	210%	70%	72%
	HPV-3 Quadrivalent	169	39	42	898	1148						65%	111%	210%	68%	69%
Tairāwhiti	HPV-1 Quadrivalent	174	8	2	67	251	220	10	5	140	370	79%	80%	40%	48%	68%
	HPV-2 Quadrivalent	173	8	2	64	247						79%	80%	40%	46%	67%
	HPV-3 Quadrivalent	164	6	2	62	234						75%	60%	40%	44%	63%
Taranaki	HPV-1 Quadrivalent	134	11	14	356	515	190	10	20	480	690	71%	110%	70%	74%	75%
	HPV-2 Quadrivalent	131	11	15	348	505						69%	110%	75%	73%	73%
	HPV-3 Quadrivalent	118	11	14	329	472						62%	110%	70%	69%	68%

DHB	Vaccination	Number of HPV doses given (numerator)					Estimated eligible population* (denominator)					Immunisation coverage				
		Maori	Pacific	Asian	Other**	All	Maori	Pacific	Asian	Other**	All	Maori	Pacific	Asian	Other**	All
Waikato	HPV-1 Quadrivalent	549	73	100	880	1602	790	90	140	1470	2490	69%	81%	71%	60%	64%
	HPV-2 Quadrivalent	539	71	99	866	1575						68%	79%	71%	59%	63%
	HPV-3 Quadrivalent	505	67	93	833	1498						64%	74%	66%	57%	60%
Wairarapa	HPV-1 Quadrivalent	51	2	5	123	181	60	5	10	150	220	85%	40%	50%	82%	82%
	HPV-2 Quadrivalent	48	2	4	124	178						80%	40%	40%	83%	81%
	HPV-3 Quadrivalent	46	2	2	114	164						77%	40%	20%	76%	75%
Waitemata	HPV-1 Quadrivalent	339	279	398	1142	2158	530	380	660	2020	3580	64%	73%	60%	57%	60%
	HPV-2 Quadrivalent	329	271	389	1124	2113						62%	71%	59%	56%	59%
	HPV-3 Quadrivalent	301	255	382	1071	2009						57%	67%	58%	53%	56%
West Coast	HPV-1 Quadrivalent	11	0	4	100	115	40	5	5	160	210	28%	0%	80%	63%	55%
	HPV-2 Quadrivalent	11	0	4	99	114						28%	0%	80%	62%	54%
	HPV-3 Quadrivalent	11	0	3	97	111						28%	0%	60%	61%	53%
Whanganui	HPV-1 Quadrivalent	128	10	8	167	313	170	5	10	240	420	75%	200%	80%	70%	75%
	HPV-2 Quadrivalent	120	10	8	166	304						71%	200%	80%	69%	72%
	HPV-3 Quadrivalent	110	9	8	154	281						65%	180%	80%	64%	67%
Total	HPV-1 Quadrivalent	4883	2256	1932	9609	18,680	6860	2830	2800	15,780	28,240	71%	80%	69%	61%	66%
	HPV-2 Quadrivalent	4750	2219	1925	9346	18,240						69%	78%	69%	59%	65%
	HPV-3 Quadrivalent	4368	2064	1836	8763	17,031						64%	73%	66%	56%	60%