The HPV Immunisation Programme in NZ

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Background of NZ’s HPV Immunisation Programme

**Aim:** To protect young women from Human Papillomavirus (HPV) infections and the risk of developing cervical cancer later in life.

**HPVs:**
- small, non-enveloped DNA viruses from the Papillomavirus family
- about 150 different HPV serotypes
- infecting squamous epithelium at different sites, e.g., palmar, plantar or anogenital
- > 40 HPV types can infect the anogenital tract.
HPV types

• causal link to cancer – high risk types: 16, 18, 31, 33, 45, 52 and 58 (16 and 18 associated with cervical cancer)

• low-risk types include 6, 11, 40, 42, 43, 44, 54, 61, 70, 72, 81 and 89, (6 and 11 associated with genital)

• Data from the US cancer registry indicates that HPV is linked to:
  ➢ 99.7% of cervical cancers  ➢ 35% of penile cancers
  ➢ 50% of vulvar cancers    ➢ 95% of anal cancers
  ➢ 65% of vaginal cancers   ➢ 60% of oropharyngeal cancers
• Perinatal transmission can cause laryngeal infection in infants → recurrent respiratory papillomatosis (rare)

• Infection results from skin-to-skin contact with a person with HPV infection.

• Data from the NZ Youth 2012 survey suggests that approximately:

  - 8 percent of New Zealand adolescents may have had sexual intercourse before the age of 13 years.
  - 24 percent by 15 years
  - 46 percent by age 17 years and
  - 17 percent of sexually active students don’t use a condom or other contraception.
NZ HPV Immunisation programme

- **1 September 2008** - Commenced HPV immunisation catch-up programme for young women born in 1990 and 1991. Secondary schools and GPs

- **2009** - catch-up programme extended to include girls born from 1992 -1996.

- **31 Dec 2010** - catch-up programme completed.

- **2010** – School Immunisation Programme for girls in school year 8 (age range 11-13 years) as part of National Immunisation schedule
  - also available from general practices for girls aged 12 to 19 years
National Immunisation Register (NIR)

- **NIR**: computerised information system; has collected childhood immunisation since 2005 & and since July 2014 some adult immunisation information.

- **Purpose**: to facilitate immunisation delivery and provide an accurate record of an individual’s immunisation history.

- **Provides**: an accurate record of immunisation coverage rates – regionally & nationally enabling programme planning to target populations with the lowest immunisation rates.

- **Assists**: to improve its immunisation rates and improve the delivery of immunisations across the primary, community and secondary health sector.

- **Access**: authorised health professionals; non-identifiable information for research; parents can request record of child’s immunisations.
HPV Immunisation Programme

Vaccines approved for use and available in NZ:

- **HPV4, Gardasil**, (bioCSL/MSD) – contains HPV types:
  - 16 & 18 – causes 70% of cervical cancers
  - 6 & 11 – causes 90% of genital warts
  - **Funded for:**
    - girls and young women aged under 20 years
    - individuals under 26 years with confirmed HIV infections
    - for use in transplant patients

- **HPV2 vaccine** (Cervarix, GSK) - contains HPV types 16 & 18 (not funded)

- Large study – 85 770 Australian born patients seen for the first time at sexual health services
  9.0% (7686) were found to have genital warts.

- Large declines in number of women diagnosed with genital warts occurred –
  - under 21 year olds: 11.5% in 2007 to 0.85% in 2011 (P<0.001)
  - 21-30 year old: 11.3% in 2007 to 3.1% in 2011 (P<0.001)

Concluded: The significant declines in the proportion of young women with genital warts and the absence of genital warts in vaccinated women in 2011 suggests that the human papillomavirus vaccine has a high efficacy outside of the trial setting. Large declines in diagnoses of genital warts in heterosexual men.
Crowe et al (2014) looked at the effectiveness of the vaccine on cervical abnormalities

- Women eligible for free vaccination (aged 12-26 years in 2007) and attending for their first cervical smear test between April 2007 and March 2011.
  - high grade cervical abnormalities with confirmed histology (n=1062)
  - “other cases”- women with any other abnormality at cytology or histology (n=10,887).
  - controls were women with normal cytology (n=96,404).

**Concluded:** The quadrivalent HPV vaccine conferred statistically significant protection against cervical abnormalities in young women who had not started screening before the implementation of the vaccination programme in Queensland, Australia.
Smith et al (2015) study assessed the impact of the qHPV vaccine and Ontario’s grade 8 qHPV vaccination program on cervical dysplasia and anogenital warts


- 131,781 ineligible and 128,712 eligible girls (n = 260,493). Identified 2436 cases of dysplasia and 400 cases of anogenital warts.

- Vaccination reduced the incidence of dysplasia by:
  5.70 per 1000 girls (95% CI 29.91 to 21.50),
  corresponding to a relative reduction of 44% (RR 0.56; 95% CI 0.36 to 0.87).

**Concluded:** the effectiveness of HPV on cervical lesion showed - vaccination significantly reduced the incidence of dysplasia by 5.70 per 1000 girls (ie, a 44 percent reduction).
NZ’s HPV Immunisation Coverage

- 2011-2014 the HPV immunisation coverage ranged in mid to high 50’s

Percentage Coverage for Maori and Pacific 2010 -2014
(Report run date: 13 January 2015)

- Coverage for 12 year old girls immunised in 2014 as at 30 June 2015 reached 60%
How does this compare to other countries

<table>
<thead>
<tr>
<th>Country</th>
<th>HPV Coverage for girls 2014</th>
</tr>
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<tbody>
<tr>
<td>New Zealand</td>
<td>60</td>
</tr>
<tr>
<td>Canada</td>
<td>70.2</td>
</tr>
<tr>
<td>Australia</td>
<td>73</td>
</tr>
<tr>
<td>UK</td>
<td>85.9</td>
</tr>
</tbody>
</table>
Revitalising the HPV Immunisation Programme

Up until December 2014, the targets for 12-year-old girls were:
- Dose one – 70%
- Dose two – 65%
- Dose three – 60%

1 January 2015, agreed HPV fully immunised (dose three) target was 75% by December 2017. Incremental increases:
- Dec 2015 – 65%
- Dec 2016 – 70%
- Dec 2017 – 75%
The Ministry recommends applying GAVI immunisation objectives to the current Programme, as follows

<table>
<thead>
<tr>
<th>Objective</th>
<th>Description</th>
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<tbody>
<tr>
<td>Ownership</td>
<td>All providers and the wider health sector recognise the importance of the Programme and work collectively to achieve agreed targets.</td>
</tr>
<tr>
<td>Shared responsibility and partnership</td>
<td>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.</td>
</tr>
<tr>
<td>Equity</td>
<td>The Programme deliverables are fair and just; in particular for vulnerable populations such as Māori, Pacific peoples and low-income groups.</td>
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<tr>
<td>Integration</td>
<td>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.</td>
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<td>Sustainability</td>
<td>The Programme continues to receive funding and remains a government priority.</td>
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<td>Innovation</td>
<td>The Programme undergoes continuous improvement, with an aim to increase coverage rates and quality.</td>
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Use of Ministry’s four-point action plan to activate change

**Underlying principles of action plan:**

- 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.
# Timeline

<table>
<thead>
<tr>
<th>Year</th>
<th>Action</th>
<th>GP’s</th>
<th>SBIP</th>
<th>DHB’s</th>
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<tbody>
<tr>
<td>2015 - 2017</td>
<td>Recall 14 year olds who are unimmunised or incomplete olds</td>
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<tr>
<td>2015 - 2017</td>
<td>Notify GP’s 12 year old girls who choose GP to vaccinate instead of SBIP</td>
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<td>√</td>
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<tr>
<td>2015</td>
<td>Achieve <strong>65%</strong> fully immunised for HPV</td>
<td></td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>Achieve <strong>70%</strong> fully immunised for HPV</td>
<td></td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>Achieve <strong>75%</strong> fully immunised for HPV</td>
<td></td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>Offer HPV in School Year 7 with Tdap</td>
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Future Possible Options

- Closer working relationship with NSU to achieve Parliamentary recommendations June 2015
- Implementing 2 dose HPV immunisation schedule for girls aged under 15 years
- Including boys in HPV programme
- New NIR
- Primary HPV testing for women (self sampling, test interpretation less subjective, 5 year smears, potentially more cost effective). Consultation paper available in October on nsu.govt.nz
Current age in 2015 of girls offered vaccination from 2008 - 2015

Current Age in 2015:
Early (anecdotal) evidence from 6 monthly independent monitoring reports (Smith, M. 2015)

Cytologically detected HSIL in 20-24 years olds between Jan 2013 – Dec 2014 show reducing trend. Possible associated with early Vaccination effects.
Longer term trends in the proportion of total satisfactory samples reported as HSIL (July 2008 – December 2014), selected age groups (Smith, M. 2015)


