Sexual Wellbeing Aotearoa

Cervical screening: The significance for people living with HIV

Cervical Cancer in Aotearoa

The Screening Program

Changes to screening

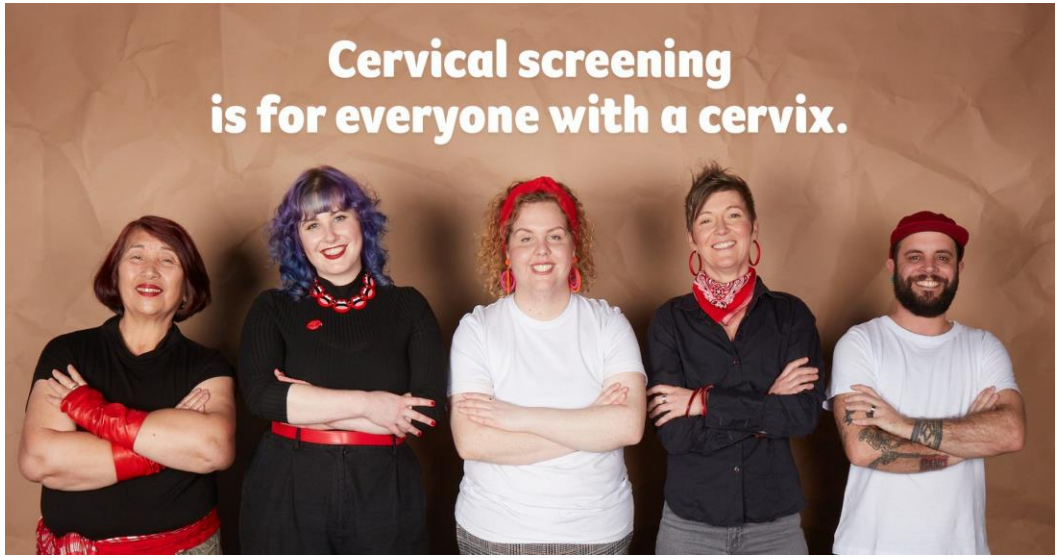
Benefits of screening

Where do people with HIV sit within the data

What is HPV

HPV and HIV

Strategies for reducing cervical cancer in Aotearoa



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It is important to remember that cervical screening should be offered to any person with a cervix or vagina who has ever been sexually active

Cervical Cancer in Aotearoa

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- Approximately 180 people are diagnosed with cervical cancer every year
- 50 deaths per year due to cervical cancer,
- It has been found that 85% of people who develop cervical cancer in Aotearoa New Zealand have never been screened or may have been screened infrequently.
- Māori and Pacific peoples tend to experience higher rates of cervical cancer

National Cervical Screening Programme (NCSP)

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- Established in 1990 to reduce the number of NZ people who develop cancer of the cervix

- Since the introduction of the cervical screening programme in Aotearoa, there has been a 60% decline in cervical cancer mortality (National Screening Unit, 2022)

Screening

- A screening test is carried out on people who do not have any symptoms but are perceived to be at risk of a particular disease.
- It predicts the likelihood of someone having or developing a particular disease.

(National Screening Unit, 2014)

Benefits of Screening

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- Improved prognosis
- HPV screening will detect 95% of people with high-grade cell changes
- Earlier treatment (less radical)

Changes to cervical screening

Elimination

- In 2020, the World Health Organisation launched a global strategy to accelerate the elimination of cervical cancer as a public health problem

- This means reaching and maintaining an incidence of cervical cancer of less than 4 per 100,000 women and people with a cervix

Reaching this goal relies on a combination of strategies

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- Early detection of persistent HPV infections through HPV Primary Screening
- Improving HPV vaccination rates for all tamariki and rangatahi
- Addressing inequities in screening:
  - Free screening for Māori and Pacific peoples, community service card holders and unscreened and under screened people.
  - Free for everyone who needs follow-up liquid based cytology testing
- HPV Primary Screening introduction of self sampling

So why move to self-sampling?

Large-scale trials demonstrated that HPV testing was more sensitive in detecting pre-cancerous abnormalities

HPV primary screening has allowed the screening interval to be extended

HPV screening has allowed self-testing to be safely introduced

Research shows that self-testing increases participation and equitable outcomes by reducing barriers to screening.

HPV primary screening provides 60%-70% more protection against invasive cervical cancer when compared with cytology screening.

Liquid based cytology vs self-sampling

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LBC

- Sampling for cell changes caused by persistent HPV
- Everyone was offered the same test
- Invasive
- Clinician led
- Can be uncomfortable
- Can assesses the cervix, vagina and vulva

Self-sampling

- Swab testing for high-risk HPV
- Some people will still need LBC
- Less invasive
- Client led
- Private
- Painless for most people
- Lose the opportunity to assess the cervix, vagina and vulva

Where do people living with HIV sit within the cervical cancer data?

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Results of 2 large studies conducted 14 years apart (2007 and 2021) are consistent in reporting that cervical cancer incidence remains approximately 6 times higher in women living with HIV compared with the general population within any given setting/geographic region

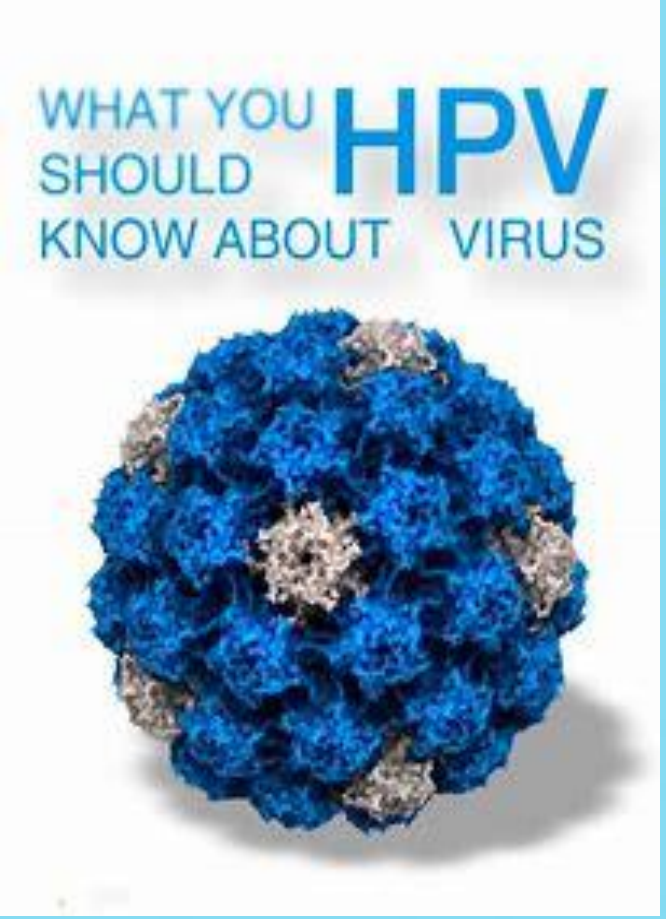
Why is this?

There are 4 key stages in the development of cervical cancer:

- **HPV acquisition**
- **HPV persistence**
- progression to cervical precancer
- development of invasive cancer

Research shows that HIV coinfection, although not causal, has a profound impact on several steps in the natural history of HPV that increases their HPV-related cancer risk compared with HIV-negative women.

HIV exerts its effects by acting as an HPV cofactor to increase the likelihood of viral persistence and perhaps progression and invasion



What is HPV?

- Human papillomavirus (HPV) is the most common sexually transmitted infection
- A common group of DNA viruses that live in the skin and mucous membranes
- Most infections are asymptomatic
- Over 200 different types of HPV, 40 of these can infect the genital region

HPV Transmission

- HPV is spread by skin-to-skin contact infecting the epithelial cells in skin and mucous membranes
- It can be passed on by intimate touching including oral, vaginal, or anal intercourse, close genital contact, sharing of sex toys

High risk HPV

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There are 14 high-risk HPV types associated with the development of cervical cancers

Over 95% of cervical cancer is caused by these high-risk HPV types

Persistent infection with one or more of these types is the primary cause of cancer

Type 16 & 18 have the highest risk

Latency and reactivation

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- Most people with HPV will clear their infection and HPV will no longer be detectable
- Some people will clear the virus completely
- It is also possible for the immune system to suppress the virus to undetectable levels which may reactivate at a later stage.

HPV and immunodeficiencies

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Similar associations between immunosuppression and HPV risk have been observed in HIV-negative populations with impaired immune system

HPV infection can be persistent in people who are immunocompromised . Those with:

- Primary immunodeficiencies - genetic
- Secondary immunodeficiencies e.g organ transplant using immunosuppressive drugs
- Acquired immunodeficiencies relating to people living with HIV

Why does HIV have an impact on HPV

Data and research are limited due to lack of studies and small study groups

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- In immunocompromised individuals, persistent and extensive HPV infection can result from an inadequate immune response
- Depending on the period between HIV establishment and HPV infection, the immune system, may already be affected increasing host susceptibility to persistent HPV infection.
- Recent evidence suggests that immunosuppression leads to higher probability of HPV reactivation, potentially due to incomplete clearance of HPV DNA
- HPV persistence likely plays an important role in the interactions between HIV and HPV. HIV-positive women with persistent HPV infection have a higher incidence of precancerous lesions compared to those infected with HPV for <6 months

- Studies of HIV positive participants with HPV and HSIL were more likely to have the higher risk HPV 16 or 18 than participants without HIV

- Participants with HIV may have multiple HPV type

- It may be that HPV 16 and 18 are better at evading the host immune system and are less impacted by HIV-associated immunosuppression

CD4 cell count

- The destruction of CD4 cells by HIV may increase the likelihood of HPV establishing infection
- CD4 cell count in HIV-positive women is inversely associated with risk of HPV infection and cervical lesion progression.
- Low CD4 count was associated with decreased HPV clearance
- People with high CD4 count (>500 cells/mm^3) had similar risk of HPV disease progression as HIV-negative women

Does antiretroviral therapy (ART) help?

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- The effect of ART on HPV-related disease isn't clear.
- There are a lack of studies investigating impact of ART on HPV disease progression using objective measures of adherence (e.g. viral suppression)
- There are equal numbers of studies that find ART is associated with reduced HPV disease progression and find no association between ART and HPV disease progression

More studies to assess ARTs impact on HPV are clearly needed.

HPV and HIV

Studies of HIV positive participants with HPV and HSIL were more likely to have the higher risk HPV 16 or 18 than participants without HIV

Participants with HIV may have multiple HPV types

In immunocompetent individuals, cervical cancer can take 15-20 years to develop, compared to 5-10 years in the setting of HIV co-infection.

Primary HPV testing: what to know

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- People who have had previous abnormal screening and have not yet returned to the normal screening recall will be advised by their healthcare provider of how they may be able to transition to self-sampling
- For those new to screening or on a routine recall, self-sampling can be undertaken by anyone who is asymptomatic (no irregular, intermenstrual bleeding (IMB) or postcoital bleeding (PCB))

This includes those who are immune deficient

- Those living with HIV
- Pharmaceutically immunosuppressed individuals
- Individuals who are otherwise immunocompromised

Participants aged between 25 and 74 years who have a new diagnosis of HIV should have a review of their cervical screening history to ensure they are up to date with screening in line with the recommended three-yearly interval for this group

What if I'm 70 or over, immune deficient and have never had a cervical screen?

- Participants between the ages of 70 and 74 who have not had an HPV not detected result in the three years prior to age 70 should have an HPV test and can cease screening if the HPV result is not detected.

Results

Immune deficient participants with a test result of HPV not detected

HPV not detected.

Recommended follow up:
Should be screened every three years with an HPV test

Unless symptomatic this can be a self-sample

Results

Immune deficient participants with an HPV detected (any type) test result

HPV other / 16 / 18 detected

Recommended follow up:
Referred to colposcopy

Colposcopy assessment -The entire lower anogenital tract will be assessed, because for immune deficient participants, the same risk factors apply for cervical, vaginal, vulval, perianal and anal lesions

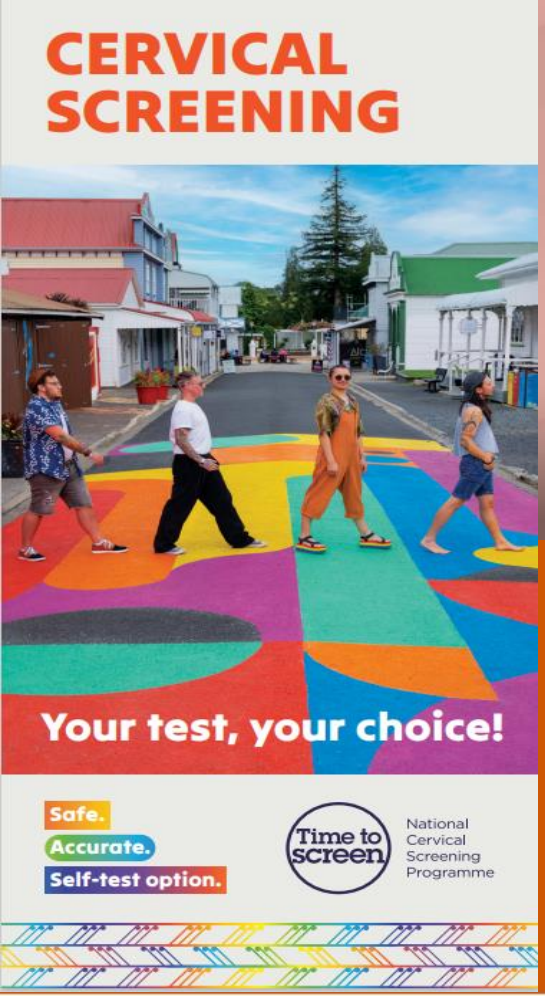
HPV vaccination

- HPV vaccination combined with regular screening provides the best protection from cervical cancer
- HPV vaccination is only prophylactic and not therapeutic, the ideal timing of HPV vaccination is before sexual initiation and exposure to HPV
- The Gardasil vaccine protects against seven oncogenic (high-risk) viruses as well as two low-risk types of HPV that cause genital warts
- 92% of cancers attributable to HPV can be prevented by Gardasil®9

- HPV vaccination is only prophylactic and not therapeutic, the ideal timing of HPV vaccination is before sexual initiation and exposure to HPV
- Gardasil 9 vaccine is funded on the National Immunisation Schedule for all aged 9 years to under 27 years.
- HPV vaccination in people living with HIV has been well tolerated and safe and has resulted in good immune responses, hoever data is limited and studies are small.
- Again, there is still a need to assess the efficacy and effectiveness of the immune response to prophylactic HPV vaccines in people living with HIV

Take home messages

- HPV vaccination combined with regular screening provides the best protection from cervical cancer
- Although people living with HIV are at higher risk for cervical abnormalities and cervical cancer, it remains that those who are unscreened or underscreened have the highest risk
- Regular primary HPV screening is the best tool in cervical cancer prevention and elimination



Thank you for your time