Human Papillomavirus and Related Cancers

Summary Report Update. January 29, 2010.

NEW ZEALAND

World Health Organization

ICO
Institut Català d'Oncologia

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Available at www.who.int/hpvcentre

Preface

Preface to the second edition

The available data on the epidemiology and prevention of HPV infection and HPV-related cancers at the country-specific level has grown substantially since the first edition of the HPV Information Centre in 2007.

This second edition reflects the continuous efforts to update data and to expand the information to include new statistics. Thus, the user of the website (www.who.int/hpvcentre) will be able to find and manage new indicators on the burden of other HPV-related cancers (such as that of the vulva, vagina, anus, penis, oral cavity and pharynx), HPV in anogenital cancers, HPV in men, sexual and reproductive behaviour practices, HPV preventive strategies of cervical screening, HPV vaccine licensure and introduction, and male circumcision.

The HPV Information Centre team hopes that this update will be a useful resource to help formulate recommendations and public health interventions towards the prevention of cervical cancer and HPV-related diseases in each country.

Preface to the first edition

The main aim of this report is to summarize the information available on human papillomavirus (HPV) and cervical cancer at the country-specific level. The World Health Organization (WHO) in collaboration with the Institut Català d'Oncologia (ICO) have developed the WHO/ICO Information Centre on HPV and Cervical Cancer (HPV Information Centre) to evaluate the burden of disease in the country and to help facilitate stakeholders and relevant bodies of decision makers to formulate recommendations on cervical cancer prevention, including the implementation of the newly developed HPV vaccines.

Data aggregated are derived from data and official reports produced by the World Health Organization (WHO), International Agency for Research on Cancer (IARC), United Nations, The World Bank, and published literature. Indicators include relevant statistics on cancer, epidemiological determinants of cervical cancer such as demographics, socioeconomic factors and other risk factors, estimates on the burden of HPV infection, data on immunization and cervical cancer screening. These statistics are essential when planning and implementing cervical cancer prevention strategies. Therefore, we have integrated the most important information for each country into a report and on a website (www.who.int/hpvcentre) to provide a user-friendly tool to assess the best available information in each country.

The information presented here is intended as a resource for all who are working towards the prevention of cervical cancer.

Executive summary

Human papillomavirus (HPV) infection is now a well-established cause of cervical cancer and there is growing evidence of HPV being a relevant factor in other anogenital cancers (anus, vulva, vagina and penis) and head and neck cancers. HPV types 16 and 18 are responsible for about 70% of all cervical cancer cases worldwide. HPV vaccines that prevent against HPV 16 and 18 infection are now available and have the potential to reduce the incidence of cervical and other anogenital cancers.

This report provides key information for New Zealand on cervical cancer, other anogenital cancers and head and neck cancers, HPV-related statistics, factors contributing to cervical cancer, cervical cancer screening practices, HPV vaccine introduction, and other relevant immunization indicators. The report is intended to strengthen the guidance for health policy implementation of primary and secondary cervical cancer prevention strategies in the country.

New Zealand has a population of 1.66 millions women ages 15 years and older who are at risk of developing cervical cancer. Current estimates indicate that every year 228 women are diagnosed with cervical cancer and 82 die from the disease. Cervical cancer ranks as the 8th most frequent cancer among women in New Zealand, and the 3rd most frequent cancer among women between 15 and 44 years of age. Data is not yet available on the HPV burden in the general population of New Zealand , but worldwide about 11.4% of women in the general population are estimated to harbour cervical HPV infection at a given time

Table 1: Key Statistics on New Zealand

Population			
Women at risk for cervical cancer (Female population aged >=15 yrs)			1.66 millions
Burden of cervical cancer and other HPV-related cancers			
Annual number of cervical cancer cases			228
Annual number of cervical cancer deaths			82
Projected number of new cervical cancer cases in 2025*			281
Projected number of cervical cancer deaths in 2025*			118
Crude incidence rates per 100,000 population and year:		Male	Female
	Cervical cancer	-	11.7
	Anal cancer	0.8	1.3
	Vulva cancer	-	2.4
	Vaginal cancer	-	0.6
	Penile cancer	0.7	-
	Oral cavity	7.2	4.7
	Pharynx (excluding nasopharynx)	5.0	0.5
Burden of cervical HPV infection			
HPV prevalence (%) in the general population (among women with normal cytology)			-
Prevalence (%) of HPV 16 and/or HPV 18 among women with:			
	Normal cytology		-
	Low-grade cervical lesions (LSIL/CIN-1)		-
	High-grade cervical lesions (HSIL/ CIN-2 / CIN-3 / CIS)		-
	Cervical cancer		-
Other factors contributing to cervical cancer			
Smoking prevalence (%), women			24.3
Total fertility rate (live births per women)			2.1
Oral contraceptive use (%)			20.5
HIV prevalence (%), adults (15-49 years)			0.1
Sexual behaviour			
Median age at first sexual intercourse among men (25-54 years) / women (25-49 years)			- / -
% of young men/women (15-24 years) who had sex before the age of 15			- / -
Cervical screening practices and recommendations			
Cervical cancer screening coverage, % (age and screening interval, reference)	63.5% (All women aged 20-69 yrs screened every 3yrs; New Zealand Cervical Screening Program (NCSP))		
Screening ages (years)			20-69
Screening interval (years) or frequency of screens			Every 3 years
HPV vaccine			
HPV vaccine licensure			
	Bivalent Vaccine (Cervarix)		Yes
	Quadrivalent Vaccine (Gardasil/Silgard)		Yes
HPV vaccine introduction			
	HPV vaccine schedule		-
	Introduction in entire or part of the country		-
	Comment:		-
HPV vaccine recommendation			
	Recommendation for primary target population:		-
	Recommendation for "catch-up" population:		-
	Recommendation for vaccinating males:		-

*Projected burden in 2025 is estimated by applying current population forecasts for the country and assuming that current incidence/mortality rates of cervical cancer are constant over time.

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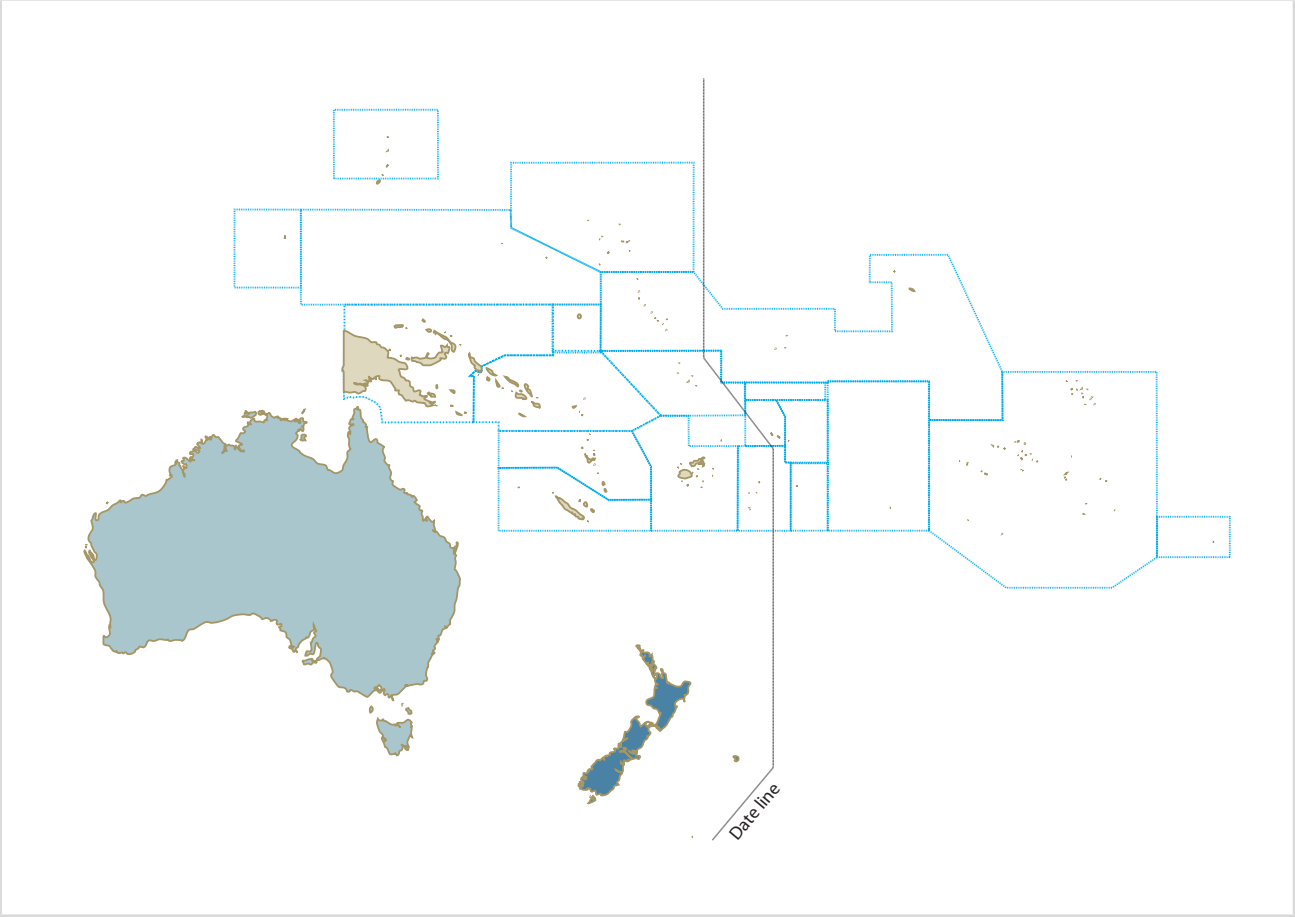


The WHO/ICO Information Centre on HPV and Cervical Cancer (HPV Information Centre) aims to compile and centralize updated data and statistics on human papillomavirus (HPV) and related cancers. This report aims to summarize the data available to fully evaluate the burden of disease in New Zealand and to facilitate stakeholders and relevant bodies of decision makers to formulate recommendations on cervical cancer prevention. Data include relevant cancer statistic estimates, epidemiological determinants of cervical cancer such as demographics, socioeconomic factors, risk factors, burden of HPV infection, screening and immunization. The report is structured into the following sections:

Section 2 summarizes the socio-demographic profile of the country. For analytical purposes, New Zealand is classified in the geographical region of Australia & New Zealand (Figure 1, lighter blue), which is composed of the following countries:* Australia and New Zealand. Throughout the report, New Zealand estimates will be complemented with corresponding estimates in the Australia & New Zealand region to provide the regional situation. When data are not available for New Zealand only regional estimates are shown.

Section 3 describes the current burden of invasive cervical cancer and other HPV-related cancers in New Zealand and the Australia & New Zealand region with estimates of prevalence, incidence and mortality rates.

Section 4 reports on the prevalence of HPV and HPV type-specific distribution in women with normal

*See http://unstats.un.org/unsd/methods/m49/m49regin.htm for more information.

cytology, pre-cancerous lesions and invasive cervical cancer. In addition, the burden of HPV in other anogenital cancers (anal, vulva, vagina and penis) and men are presented.

Section 5 describes factors that can modify the natural history of HPV and cervical carcinogenesis such as the use of smoking, parity, oral contraceptive use and co-infection with HIV.

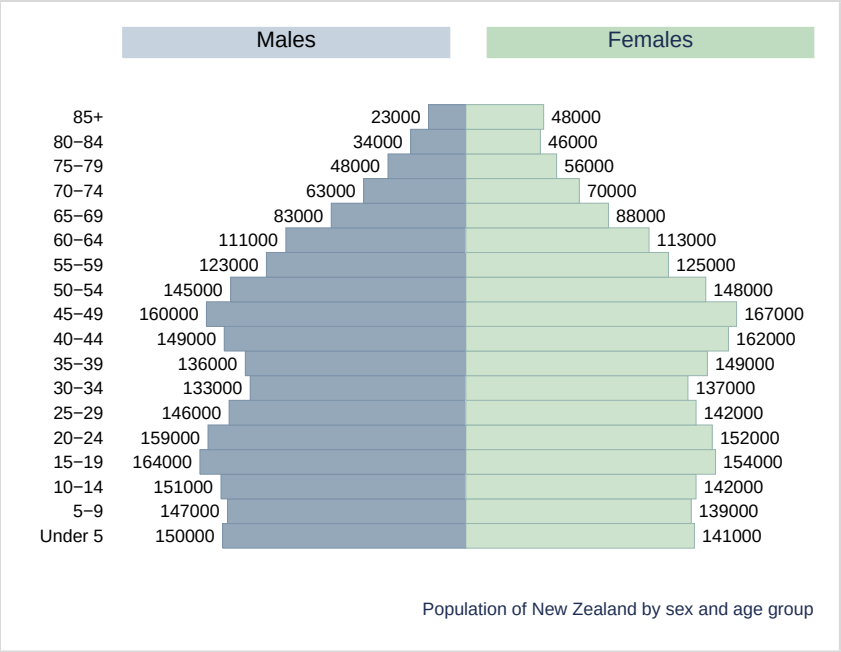
Section 6 describes sexual and reproductive health behaviour indicators that may be used as proxy measures of risk for HPV infection and anogenital cancers.

Section 7 presents preventive strategies that include basic characteristics and peformance of cervical cancer screening status, status of HPV vaccine licensure introduction, and recommendations in national immunization programs and the prevalence of male circumcision and condom use.

Section 8 presents data on immunization coverage and practices for selected vaccines. This information will be relevant for assessing the country's capacity to introduce and implement the new HPV vaccines. The data are periodically updated and posted on the WHO immunization surveillance, assessment and monitoring website. (http://www.who.int/immunization_monitoring/en/).

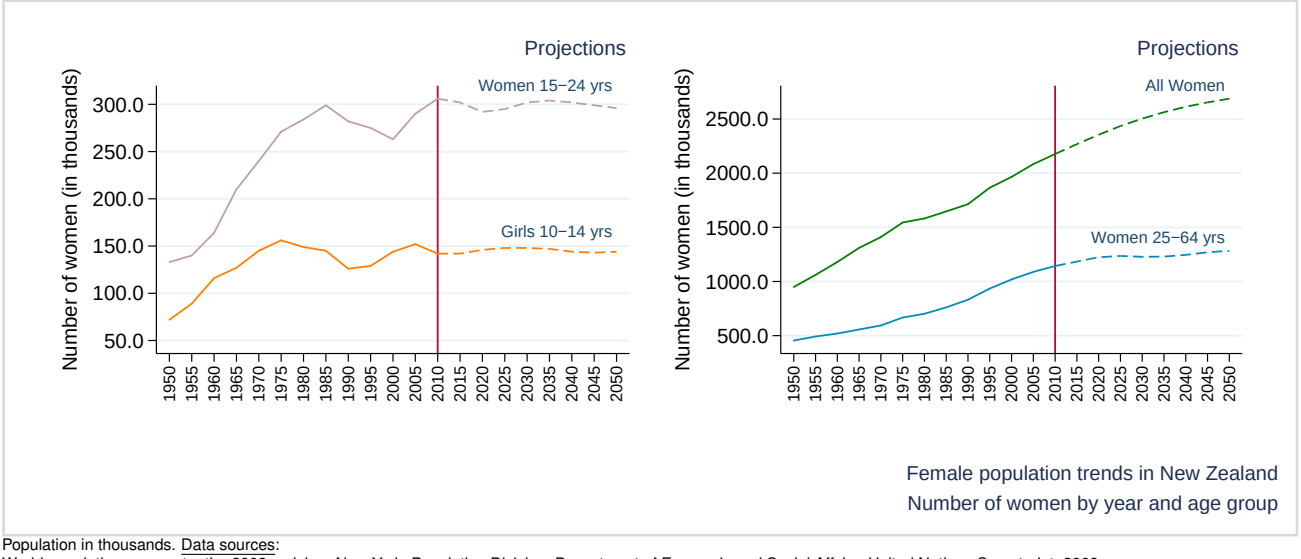
2 Demographic and socioeconomic factors

Figure 2: Population pyramid of New Zealand



Datapoint year 2010.
Data sources:
World population prospects: the 2008 revision. New York, Population Division, Department of Economic and Social Affairs, United Nations Secretariat, 2009.

Figure 3: Population trends of four selected age groups in New Zealand



Population in thousands. Data sources:
World population prospects: the 2008 revision. New York, Population Division, Department of Economic and Social Affairs, United Nations Secretariat, 2009.

Table 2: Sociodemographic indicators in New Zealand

Indicator	Male	Female	Total
Population in 1000s[1]	2027[a]	2084[a]	4111[a]
Population growth rate (%)[1]	-	-	0.92[b]
Median age (years)[1]	-	-	35.6[a]
Population living in urban areas (%)[2]	-	-	86[c]
Crude birth rate (births per 1000 population)[1]	-	-	13.8[b]
Crude death rate (deaths per 1000 population)[1]	-	-	7[b]
Life expectancy at birth (years):[3]	78[c]	82[c]	80[c]
Adult mortaliy rate:[3]	91[c]	59[c]	75[c]
Infant mortality rate (per 1000 live births):[3]	6[c]	4[c]	5[c]
Maternal mortality ratio (per 100,000 live births)[4]	-	-	9[a]
Neonatal mortality rate (per 1000 live births)[5]	-	-	3[d]
Under 5 mortality rate (per 1000 live births):[3]	7[c]	6[c]	6[c]
Gross national income per capita (PPP int $)[6]	-	-	27220[c]
Population living <$1 a day (%: PPP int $)[7]	-	-	-
General government expenditure on health as % of total government expenditure[8]	-	-	18.0[a]
General government expenditure on health as % of total expenditure on health[8]	-	-	77.4[a]
Total expenditure on health as % of gross domestic product[8]	-	-	8.9[a]
Per capita total expenditure on health at average exchange rate (US$)[8]	-	-	2403.0[a]
Per capita government expenditure on health at average exchange rate (US$)[8]	-	-	1860.0[a]
Private expenditure on health as % of total expenditure on health[8]	-	-	22.6[a]
Density of physicians (per 10,000 population)[9]	-	-	21[e]
Number of physicians[9]	-	-	8190[e]
Adult (15 years and over) literacy rate (%)[10]	-	-	-
Youth (15-24 years) literacy rate (%):[10]	-	-	-
Net primary school enrollment ratio:[10]	99[e]	99[e]	-
Net secondary school enrollment ratio:[10]	90.8[e]	93.2[e]	-

Year of estimation: [a] 2005; [b] 2005-2010; [c] 2006; [d] 2004; [e] 2000-2006;
Data notes and sources:
[1] World population prospects: the 2008 revision. New York, Population Division, Department of Economic and Social Affairs, United Nations Secretariat, 2009.
[2] World population prospects: the 2006 revision. New York, Population Division, Department of Economic and Social Affairs, United Nations Secretariat, 2007.
[3] Life tables for WHO Member States. Geneva, World Health Organization, 2006 (http://www.who.int/whosis/database/life_tables/life_tables.cfm, accessed 18 March 2008).
[4] Maternal mortality in 2005: estimates developed by WHO, UNICEF, UNFPA and the World Bank. Geneva, World Health Organization, 2007 (http://www.who.int/reproductive-health/publications/maternal_mortality_2005/mme_2005.pdf, accessed 18 March 2008).
[5] Neonatal and perinatal mortality: country, regional and global estimates 2004. Geneva, World Health Organization, 2007. (http://whqlibdoc.who.int/publications/2007/9789241596145_eng.pdf, accessed 18 March 2008).
[6] PPP int. $, purchasing power parity at international dollar rate.
GNI per capita 2007, atlas method and PPP. Washington, DC, World Bank, 2007.
[7] PPP int. $, purchasing power parity at international dollar rate.
World development indicators 2007. Washington, DC, International Bank for Reconstruction World Bank, 2007.
[8] Fiscal year ends in June; expenditure data have been allocated to the previous calendar year, e.g. data for 2005 are for the fiscal year 2005-2006.
Adoption of A System of Health Accounts (SHA) methodology, classifications and recommended documen
National health accounts: country information. Geneva, World Health Organization, 2007 (http://www.who.int/nha/country/en/index.html, accessed 17 March 2008).
[9] Global atlas of the health workforce [online database]. Geneva, World Health Organization, 2008 (http://www.who.int/globalatlas/autologin/hrh_login.asp, accessed 17 March 2008).
[10] UNESCO Institute for Statistics Data Centre [online database]. Montreal, UNESCO Institute for Statistics, 2007 (http://stats.uis.unesco.org, accessed 16 March 2008).

3 Burden of HPV related cancers

3.1 Cervical cancer

Cancer of the cervix uteri is the second most common cancer among women worldwide, with an estimated 493,000 new cases and 274,000 deaths in 2002. About 83% of the cases occur in developing countries, representing 15% of female cancers. Worldwide, mortality rates of cervical cancer are substantially lower than incidence with a ratio of mortality to incidence to 55%. The majority of cases are squamous cell carcinoma and adenocarcinomas are less common. (*Vaccine 2006, Vol. 24, Supl 3; Vaccine 2008, Vol. 26, Supl 10; IARC Monographs 2007, Vol. 90*)

This section describes the current burden of invasive cervical cancer in New Zealand and the Australia & New Zealand region with estimates of annual number of new cases, deaths, and incidence and mortality rates.

3.1.1 Incidence

Table 3: Incidence of cervical cancer in New Zealand, Australia & New Zealand and the World

Indicator	New Zealand	Australia & New Zealand	World
Crude incidence rate[1]	11.7	9.1	16.0
Age-standardized incidence rate[1]	10.0	7.4	16.2
Cumulative risk (%) ages 0-64 years[1]	0.7	0.5	1.3
Standardized incidence ratio (SIR)[1]	58.0	44.0	100.0
Annual number of new cancer cases	228	1063	493243

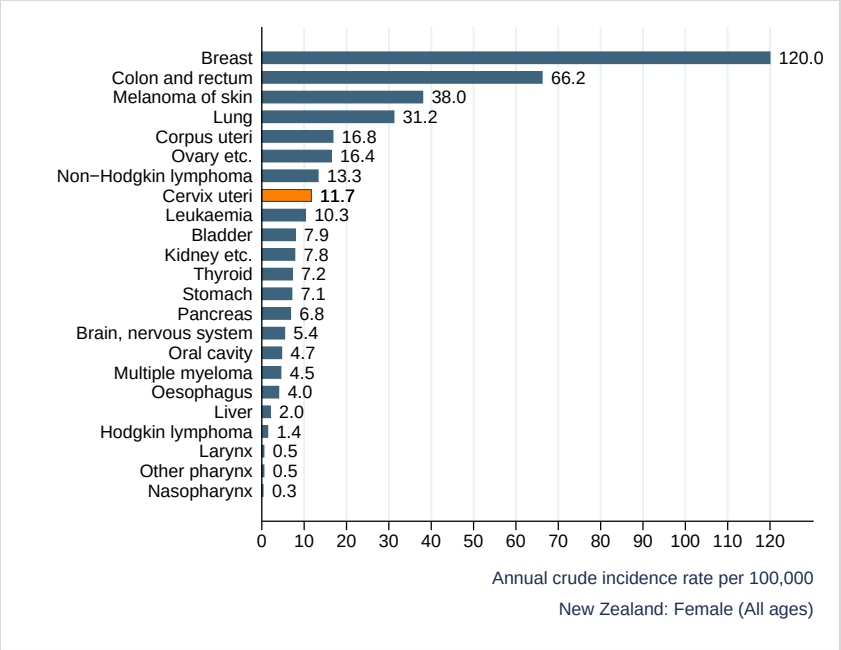
Standardized rates have been estimated using the direct method and the World population as the reference.
[1] Rates per 100,000 women per year.
Data sources:
IARC, Globocan 2002 | WHO GBD 2004 (for WHO region estimates only)

Table 4: Incidence of cervical cancer in New Zealand by cancer registry

Cancer registry	Period	N cases[1]	Crude rate[2]	ASR[2]
National	1998-2002	993	10.1	8.0

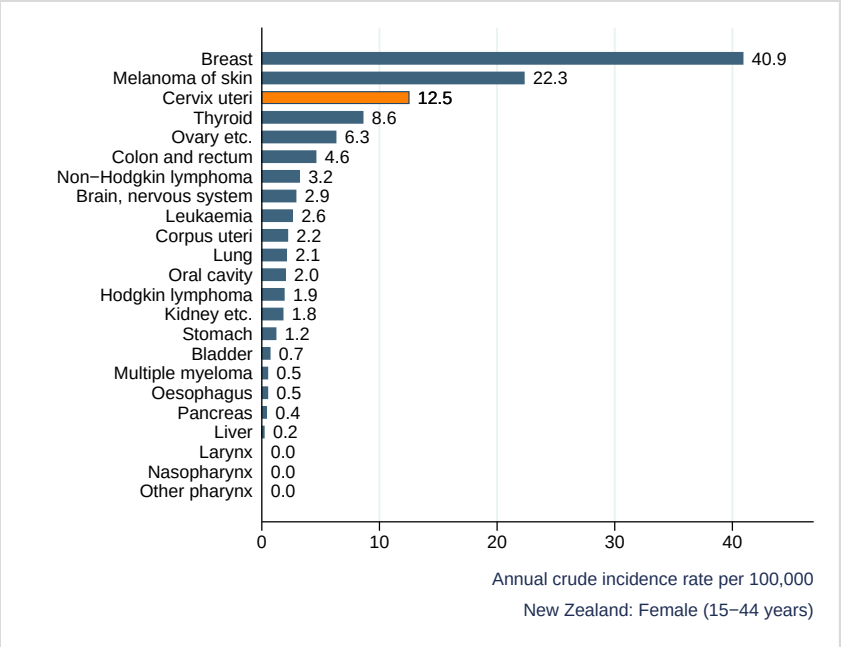
ASR: Age-standardized rate. Standardized rates have been estimated using the direct method and the World population as the reference.
[1] Accumulated number of cases during the period
[2] Rates per 100,000 women per year.
Data sources:
IARC, Cancer Incidence in 5 Continents, Vol IX

Figure 4: Incidence of cervical cancer compared to other cancers in women of all ages in New Zealand



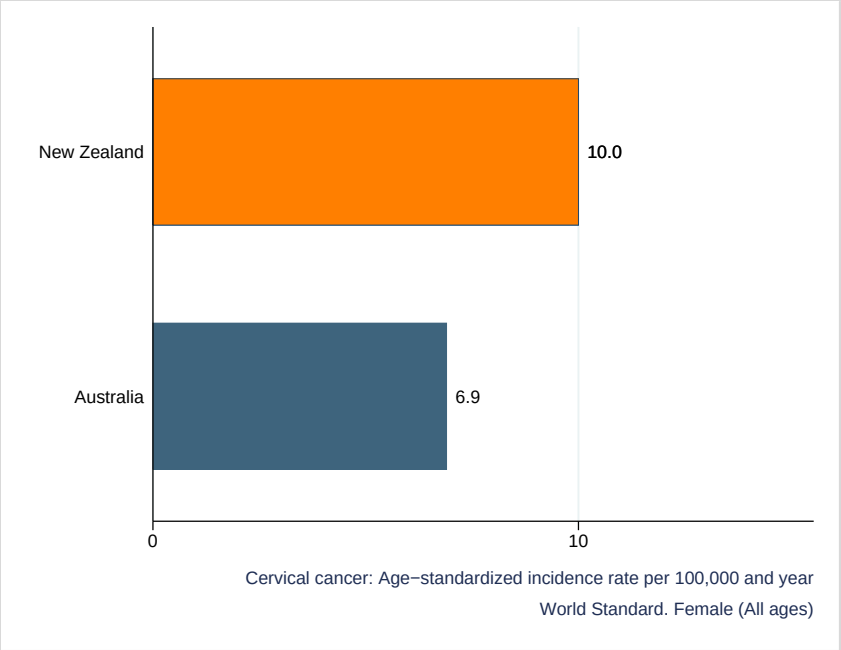
Data sources:
IARC, Globocan 2002

Figure 5: Age-specific cervical cancer incidence compared to age-specific incidence of other cancers among women 15-44 years of age in New Zealand



Data sources:
IARC, Globocan 2002

Figure 6: Age-standardized incidence rates (ASR) of cervical cancer in countries of Australia & New Zealand



Rates per 100,000 women per year. ** No rates are available
Data sources:
IARC, Globocan 2002 | WHO GBD 2004 (for WHO region estimates only)

Table 5: Age-standardized incidence rates of cervical cancer by histological type and cancer registry in New Zealand

		Carcinoma			
Cancer registry	**Period**	**Squamous**	**Adeno**	**Other**	**Unspec.**
National	1998-2002	6.1	1.2	0.5	0.1

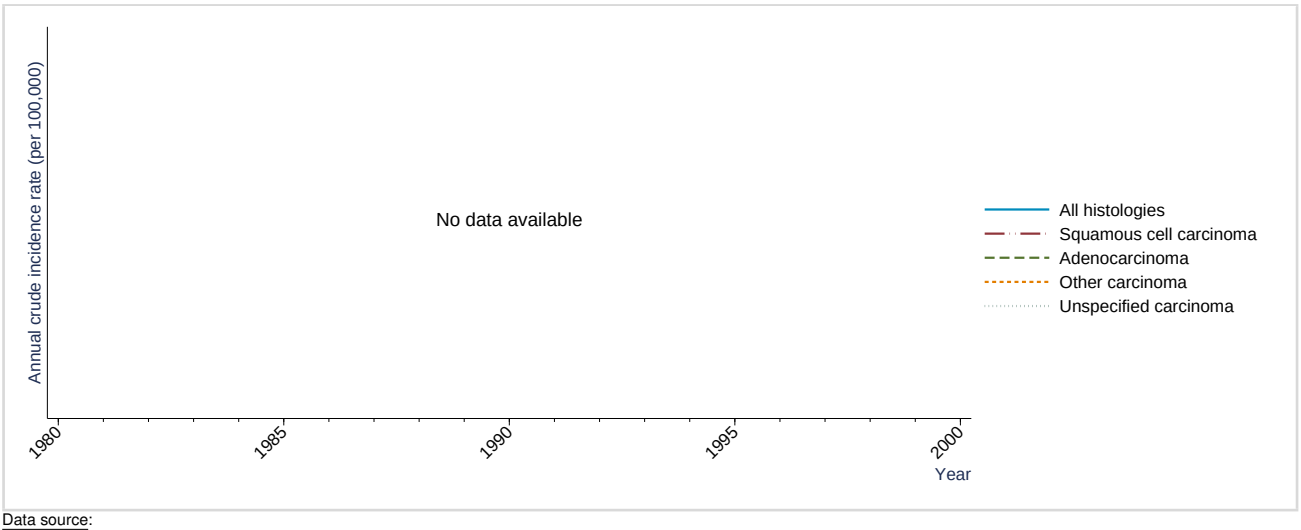
Standardized rates have been estimated using the direct method and the World population as the reference.
Rates per 100,000 women per year.
Data sources:
IARC, Cancer Incidence in 5 Continents, Vol IX

Table 6: Percentage distribution of microscopically verified cases of cervical cancer by histological type and cancer registry in New Zealand

		Histology				Number of cases	
Cancer registry	Period	Squamous	Adeno	Other	Unspec.	MV cases	Total cases
National	1998-2002	76.4	15.6	6.0	1.3	979	993

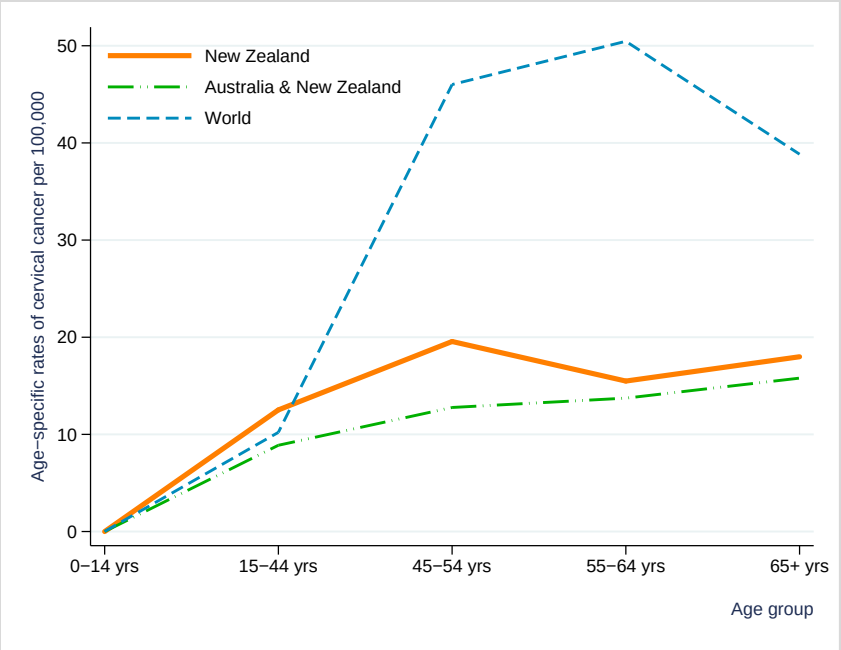
Standardized rates have been estimated using the direct method and the World population as the reference.
Accumulated number of cases during the period.
MV: Microscopically Verified.
Data sources:
IARC, Cancer Incidence in 5 Continents, Vol IX

Figure 7: Time trends of age-truncated (15-85 years) incidence rates of cervical cancer by histological type in New Zealand



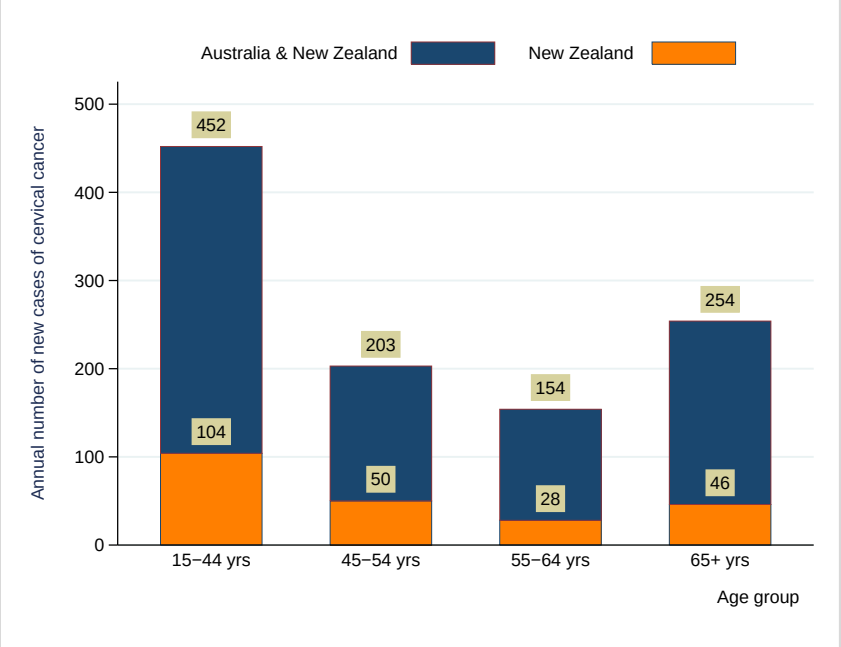
Data source:
IARC, Cancer Incidence in 5 Continents, Vol I-VIII

Figure 8: Age-specific incidence rates of cervical cancer in New Zealand compared to estimates in Australia & New Zealand and the World



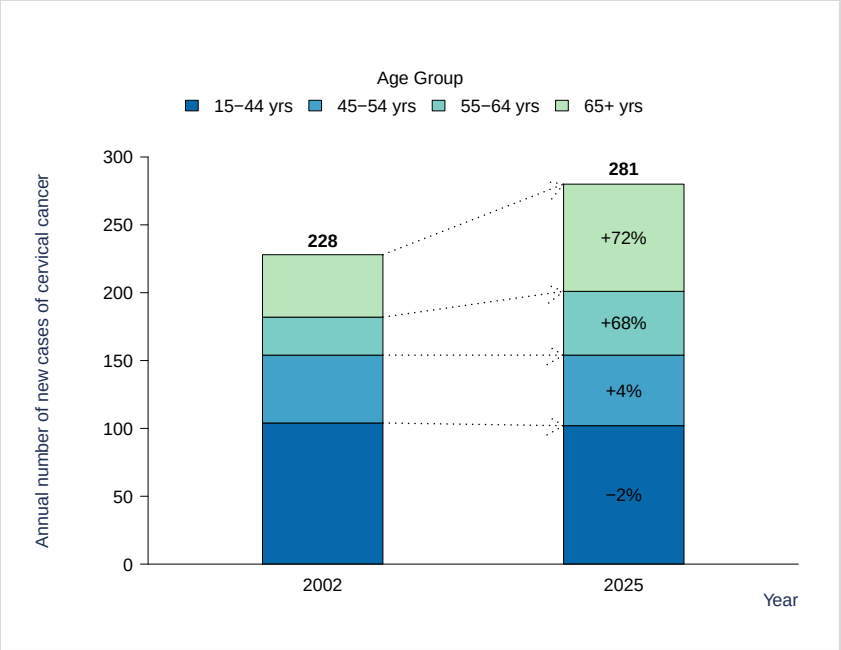
Rates per 100,000 women per year.
Data sources:
IARC, Globocan 2002 | WHO GBD 2004 (for WHO region estimates only)

Figure 9: Annual number of new cases of cervical cancer by age group in New Zealand and Australia & New Zealand



Data sources:
IARC, Globocan 2002 | WHO GBD 2004 (for WHO region estimates only)

Figure 10: Estimated number of new cases of cervical cancer in New Zealand by age group, in 2002 and projected in 2025



Projected burden in 2025 is estimated by applying current population forecasts for the country and assuming that current incidence rates of cervical cancer are constant over time.
Data sources:
IARC, Globocan 2002

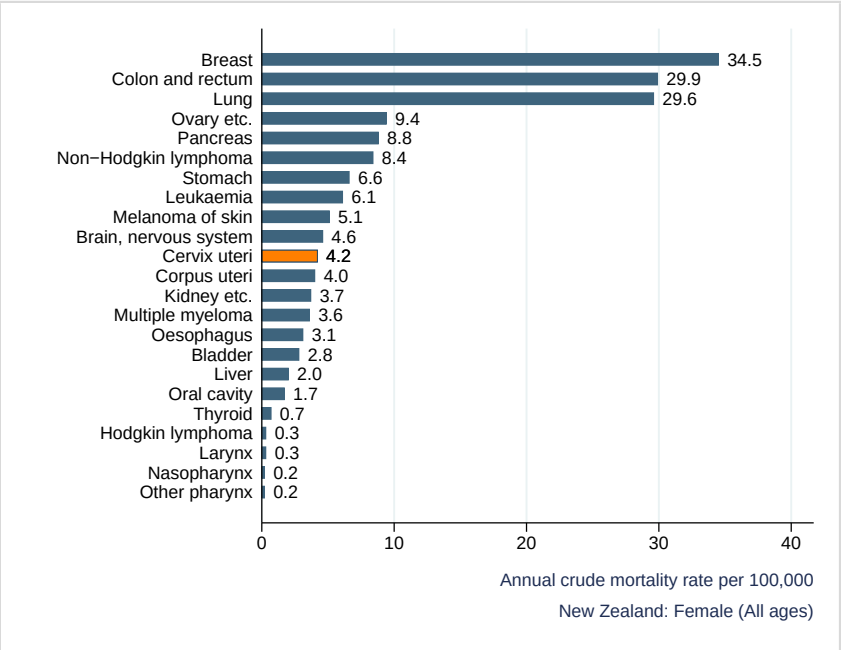
3.1.2 Mortality

Table 7: Mortality of cervical cancer in New Zealand, Australia & New Zealand and the World

Indicator	New Zealand	Australia & New Zealand	World
Crude mortality rate[1]	4.2	2.8	8.9
Age-standardized mortality rate[1]	3.2	2.0	9.0
Cumulative risk (%) ages 0-64 years[1]	0.2	0.1	0.7
Standardized mortality ratio (SMR)[1]	36.0	23.0	100.0
Annual number of deaths	82	330	273505

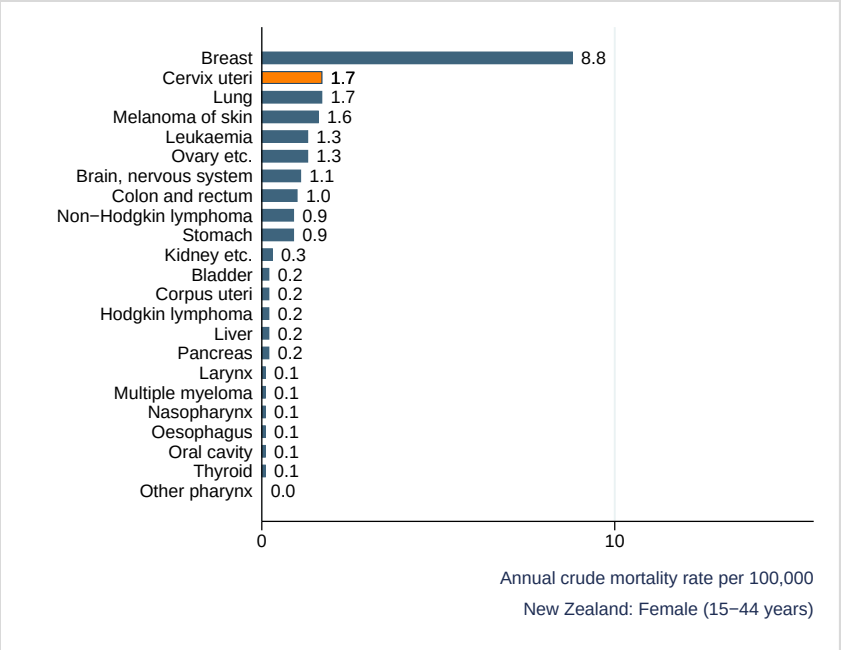
Standardized rates have been estimated using the direct method and the World population as the reference.
[1] Rates per 100,000 women per year.
Data sources:
IARC, Globocan 2002 | WHO GBD 2004 (for WHO region estimates only)

Figure 11: Cervical cancer mortality compared to other cancers in women of all ages in New Zealand



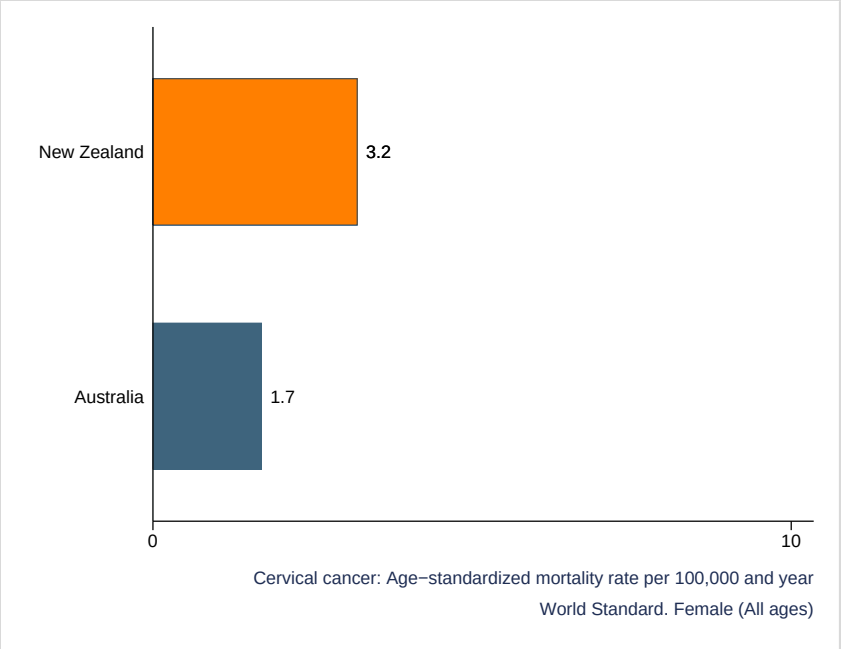
Data sources:
IARC, Globocan 2002

Figure 12: Age-specific mortality rates of cervical cancer compared to age-specific mortality rates of other cancers among women 15-44 years of age in New Zealand



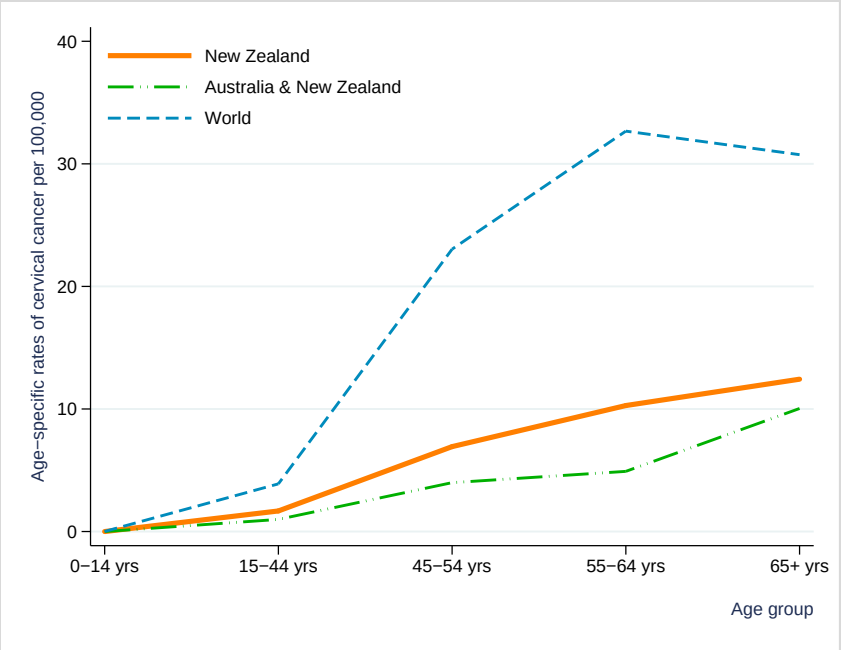
Data sources:
IARC, Globocan 2002

Figure 13: Age-standardized (ASR) mortality rates of cervical cancer in countries of Australia & New Zealand



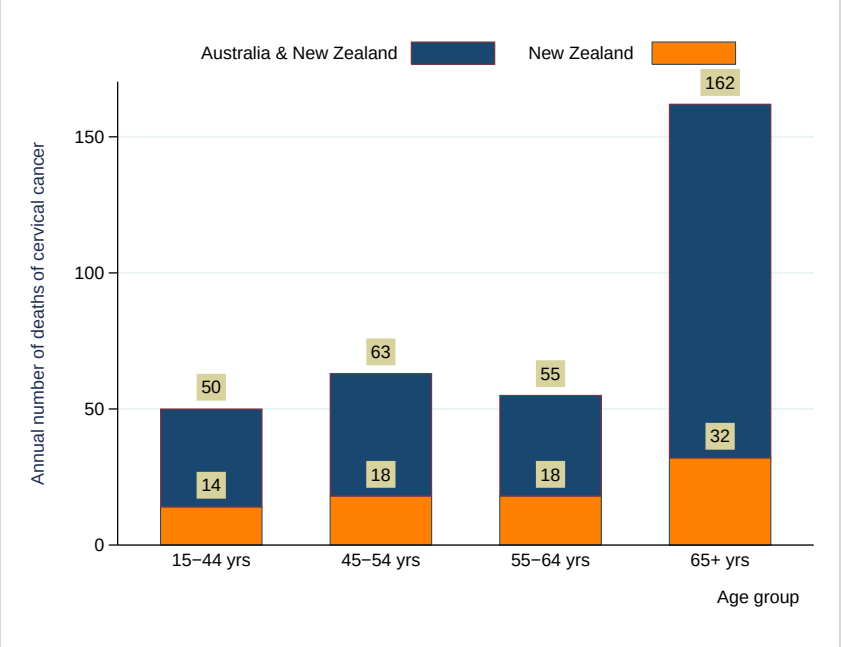
Rates per 100,000 women per year. ** No rates are available
Data sources:
IARC, Globocan 2002 | WHO GBD 2004 (for WHO region estimates only)

Figure 14: Age-specific mortality rates of cervical cancer in New Zealand compared to estimates in Australia & New Zealand and the World



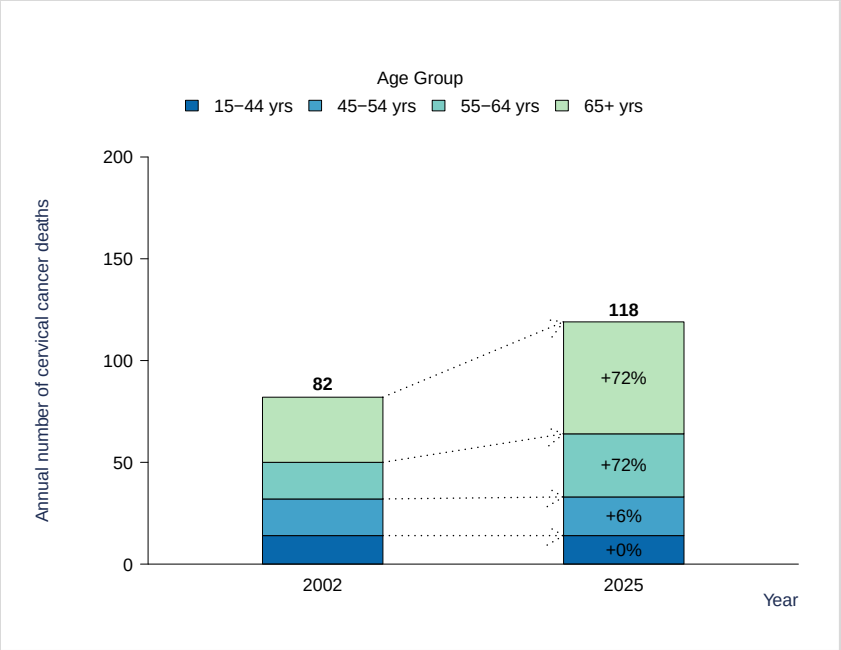
Rates per 100,000 women per year.
Data sources:
IARC, Globocan 2002 | WHO GBD 2004 (for WHO region estimates only)

Figure 15: Annual number of deaths of cervical cancer by age group in New Zealand and Australia & New Zealand



Data sources:
IARC, Globocan 2002 | WHO GBD 2004 (for WHO region estimates only)

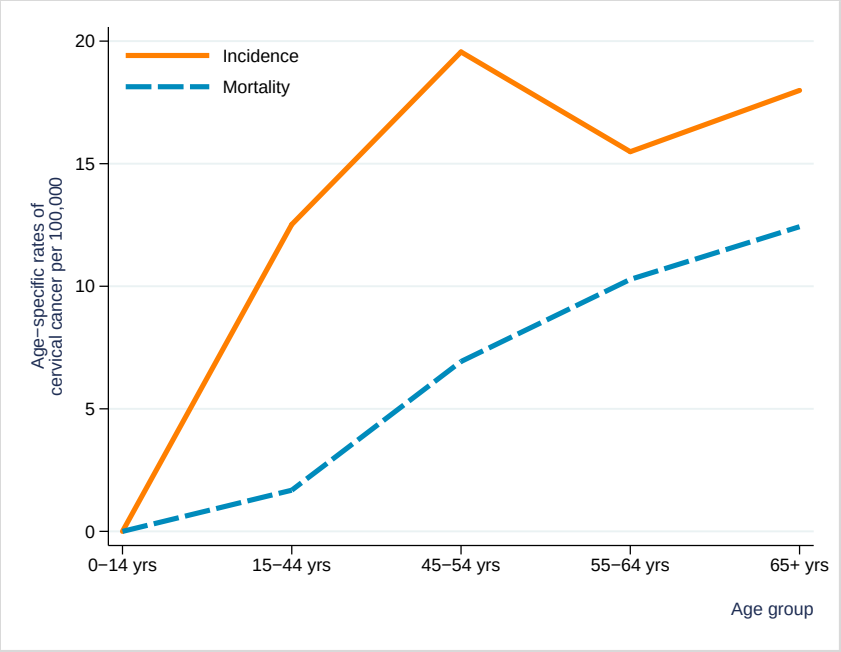
Figure 16: Estimated number of deaths of cervical cancer in New Zealand by age group, in 2002 and projected in 2025



Projected burden in 2025 is estimated by applying current population forecasts for the country and assuming that current mortality rates of cervical cancer are constant over time.
Data sources:
IARC, Globocan 2002

3.1.3 Comparison of incidence and mortality

Figure 17: Comparison of age-specific incidence and mortality rates of cervical cancer in New Zealand



Rates per 100,000 women per year.
Data sources:
IARC, Globocan 2002 | WHO GBD 2004 (for WHO region estimates only)

3.2 Anogenital cancers other than the cervix

Data on the role of HPV in anogenital cancers other than the cervix are limited, but there is an increasing body of evidence strongly linking HPV DNA with cancers of the anus, vulva, vagina, and penis. Although these cancers are much less frequent compared to cancer of the cervix, their association with HPV make them potentially preventable and subject to similar preventative strategies as those for cervical cancer.
(*Vaccine 2006, Vol. 24, Supl 3; Vaccine 2008, Vol. 26, Supl 10; IARC Monographs 2007, Vol. 90*)

3.2.1 Anal cancer

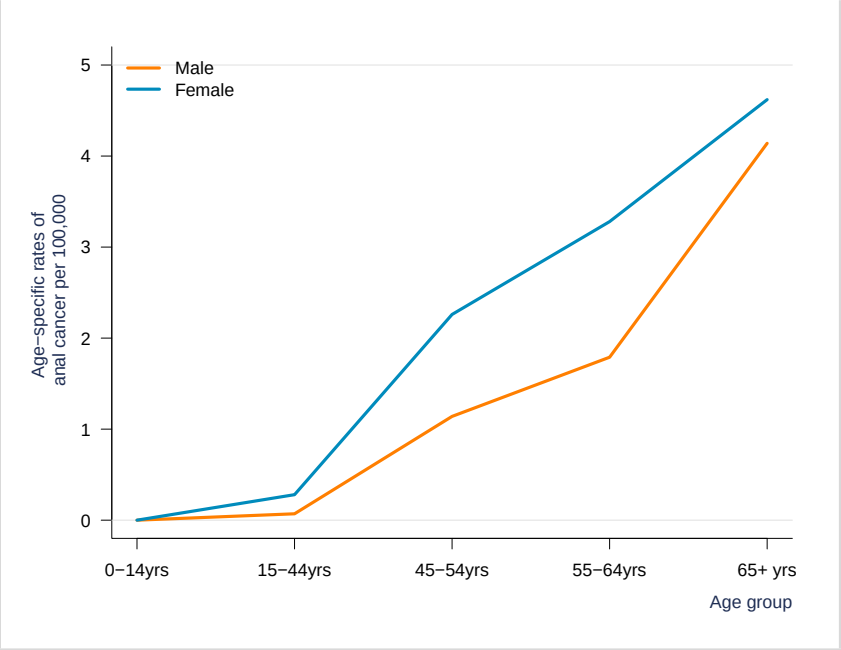
Cancer of the anus is rare, with an estimated 99,000 new cases in 2002, 40% of cases in men and 60% in women. Incidence has been increasing in both men and women over the last five decades, and incidence is particularly high among populations of men who have sex with men (MSM) and those who are HIV-infected. These cancers are predominantly squamous cell carcinoma, adenocarcinomas, or basaloid and cloacogenic carcinomas.

Table 8: Incidence of anal cancer by cancer registry and sex in New Zealand

		MALE			FEMALE		
Cancer registry	**Period**	**N cases[1]**	**Crude rate[2]**	**ASR[2]**	**N cases[1]**	**Crude rate[3]**	**ASR[3]**
National	1998-2002	73	0.8	0.6	127	1.3	0.9

ASR: Age-standardized rate. Standardized rates have been estimated using the direct method and the World population as the reference.
[1] Accumulated number of cases during the period
[2] Rates per 100,000 men per year.
[3] Rates per 100,000 women per year.
Data sources:
IARC, Cancer Incidence in 5 Continents, Vol IX

Figure 18: Incidence rates of anal cancer by age group in New Zealand



Estimates of anal cancer incidence from the national cancer registry of New Zealand.

Data sources:
Cancer Incidence in Five Continents Vol. IX

3.2.2 Vulvar Cancer

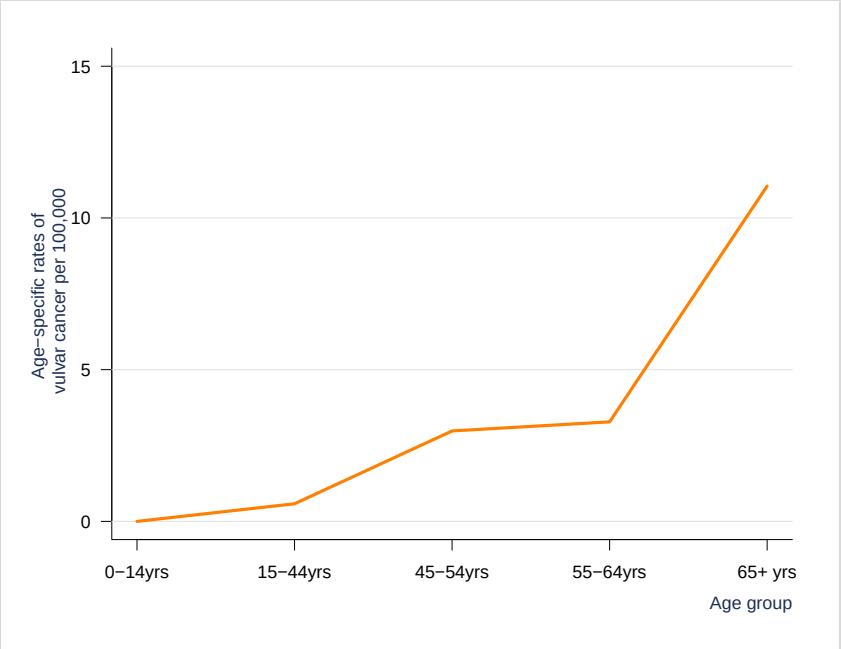
Cancer of the vulva is rare among women worldwide, with an estimated 26,800 new cases in 2002, representing 3% of all gynaecologic cancers. Worldwide, about 60% of all vulvar cancer cases occur in developed countries, indicating the limited impact of cervical screening programmes to prevent vulvar and vaginal cancers. Vulvar cancer is common in older women with approximately 66% of cases diagnosed at >=70 years. The majority of vulvar cancer cases are squamous cell carcinoma (90%), followed by melanoma, Bartholin gland carcinoma, basal cell carcinoma, verrucous carcinoma, and Paget's disease.

Table 9: Incidence of vulvar cancer by cancer registry in New Zealand

Cancer registry	Period	N cases[1]	Crude rate[2]	ASR[2]
National	1998-2002	231	2.4	1.4

ASR: Age-standardized rate. Standardized rates have been estimated using the direct method and the World population as the reference.
[1] Accumulated number of cases during the period
[2] Rates per 100,000 women per year.
Data sources:
IARC, Cancer Incidence in 5 Continents, Vol IX

Figure 19: Incidence rates of vulvar cancer by age group in New Zealand



Estimates of vulvar cancer incidence from the national cancer registry of New Zealand.

Data sources:
Cancer Incidence in Five Continents Vol. IX

3.2.3 Vaginal cancer

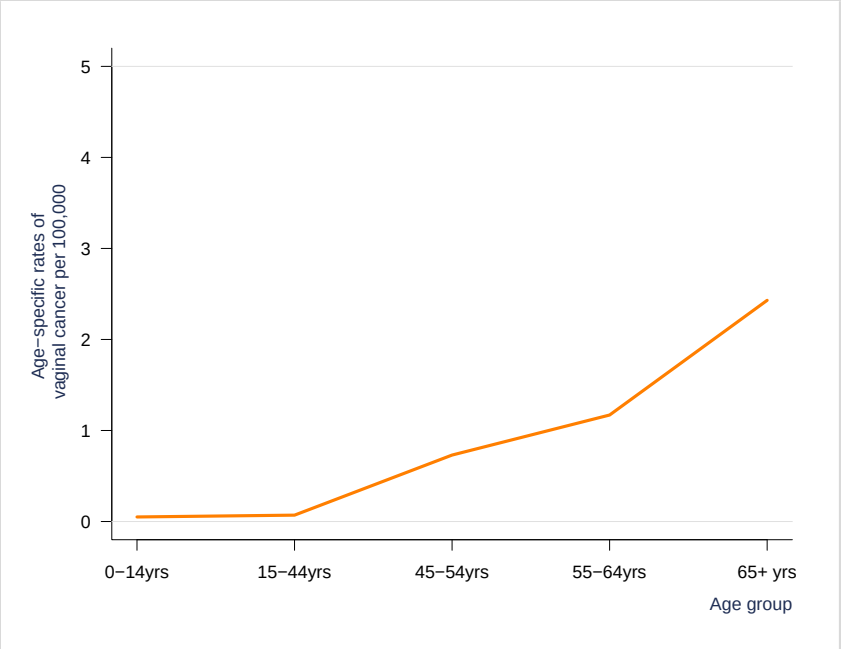
Cancer of the vagina is a rare cancer, with an estimated 13,200 of new cases in 2002, representing 2% of all gynaecologic cancers. Similar to cervical cancer, the majority of vaginal cancer cases (68%) occur in developing countries. Most vaginal cancers are squamous cell carcinoma (90%), followed by clear cell adenocarcinomas and melanoma. There are few data available on vaginal cancers, which are primarily reported in developed countries, and in some settings, metastatic cervical cancer can be misclassified as cancer of the vagina. Vaginal cancer is diagnosed primarily in older women (>=65 years) with a median age at diagnosis of 69 years, and the incidence of carcinoma in situ is diagnosed between the ages of 55 and 70 years.

Table 10: Incidence of vaginal cancer by cancer registry in New Zealand

Cancer registry	Period	N cases[1]	Crude rate[2]	ASR[2]
National	1998-2002	54	0.6	0.4

ASR: Age-standardized rate. Standardized rates have been estimated using the direct method and the World population as the reference.
[1] Accumulated number of cases during the period
[2] Rates per 100,000 women per year.
Data sources:
IARC, Cancer Incidence in 5 Continents, Vol IX

Figure 20: Incidence rates of vaginal cancer by age group in New Zealand



Estimates of vaginal cancer incidence from the national cancer registry of New Zealand.

Data sources:
Cancer Incidence in Five Continents Vol. IX

3.2.4 Penile cancer

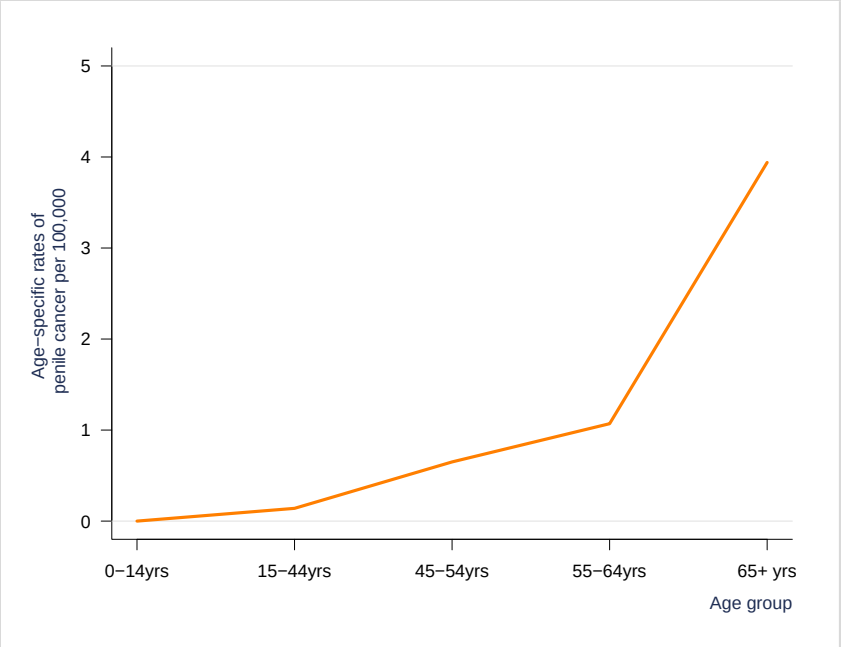
Cancer of the penis represents less than 0.5% of cancers in men. Incidence rates are less than 1 per 100,000 in Western countries, with higher rates found in Latin America such as Brazil, Colombia, and Peru, Uganda, and specific regions in India and Thailand. A geographical correlation between the incidence of cancer of the penis and cervix and the concordance of these two cancers in married couples suggested the common aetiology of HPV. Cancers of the penis are primarily of the squamous cell histological type.

Table 11: Incidence of penile cancer by cancer registry in New Zealand

Cancer registry	Period	N cases[1]	Crude rate[2]	ASR[2]
National	1998-2002	62	0.7	0.5

ASR: Age-standardized rate. Standardized rates have been estimated using the direct method and the World population as the reference.
[1] Accumulated number of cases during the period
[2] Rates per 100,000 men per year.
Data sources:
IARC, Cancer Incidence in 5 Continents, Vol IX

Figure 21: Incidence rates of penile cancer by age group in New Zealand



Estimates of penile cancer incidence from the national cancer registry of New Zealand.

Data sources:
Cancer Incidence in Five Continents Vol. IX

3.3 Head and neck cancers

Cancer of the aerodigestive tract (oral cavity, oropharynx, hypopharynx, and larynx) is commonly referred to as head and neck cancer and represents the 6^{th} most common cancer. About 405,000 new cases of head and neck cancers and 211,000 deaths occurred worldwide in 2002. Two-thirds of cases occur in developing countries. The majority of head and neck cancers is associated with high tobacco and alcohol consumption and is highly prevalent in regions of South-central Asia. Oceania (Australia and Papa New Guinea), Switzerland, The Netherlands, France, Latin America (Brazil), and Southern Africa. However, there are about 15-20% of head and neck cancer cases that are associated with HPV and there is growing evidence that these HPV-related cases, particularly oral pharyngeal cancers, are associated with sexual behaviour, including the practice of oral sex.

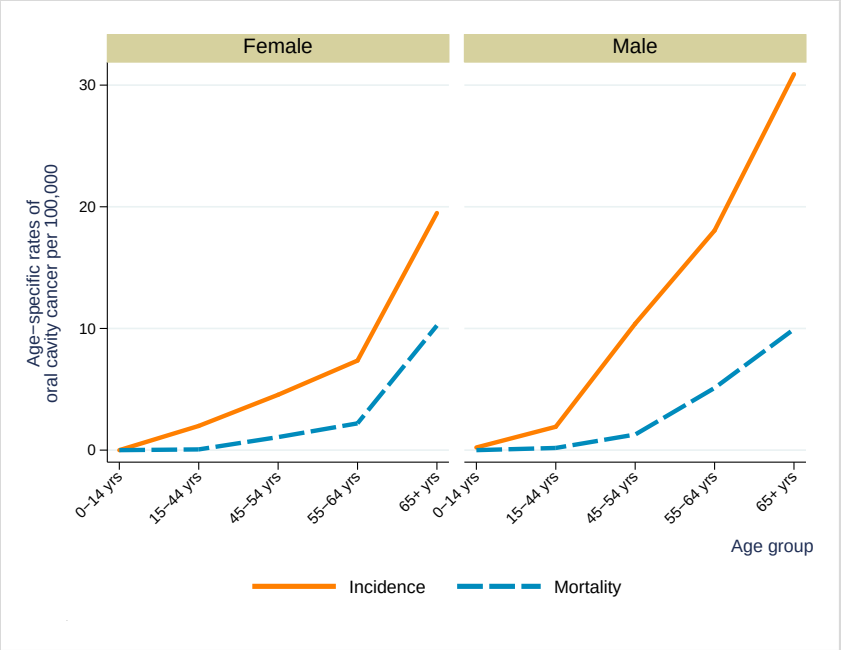
3.3.1 Oral cavity

Table 12: Incidence and mortality of cancer of the oral cavity by sex in New Zealand, Australia & New Zealand and the World

Indicator	MALE			FEMALE		
	New Zealand	Australia & New Zealand	World	New Zealand	Australia & New Zealand	World
INCIDENCE						
Crude incidence rate[1]	7.2	13.4	5.6	4.7	6.7	3.2
Age-standardized incidence rate[1]	5.6	10.2	6.3	3.3	4.5	3.2
Cumulative risk (%) ages 0-64 years[1]	0.3	0.7	0.4	0.2	0.3	0.2
Standardized Incidence Ratio (SIR)[1]	89	159	100	106	146	100
Annual number of new cancer cases	136	1551	175916	92	788	98373
MORTALITY						
Crude mortality rate[1]	1.8	2.3	2.6	1.7	1.6	1.5
Age-standardized mortality rate[1]	1.3	1.7	2.9	1.0	0.9	1.5
Cumulative risk (%) ages 0-64 years[1]	0.1	0.1	0.2	0.0	0.0	0.1
Standardized mortality ratio (SMR)[1]	47	60	100	81	71	100
Annual number of deaths	33	272	80736	33	183	46723

Standardized rates have been estimated using the direct method and the World population as the reference.
[1] Male: Rates per 100,000 men per year. Female: Rates per 100,000 women per year.
Data sources:
IARC, Globocan 2002 | WHO GBD 2004 (for WHO region estimates only)

Figure 22: Comparison of incidence and mortality rates of oral cavity cancer by age group in New Zealand



Data sources:
IARC, Globocan 2002 | WHO GBD 2004 (for WHO region estimates only)

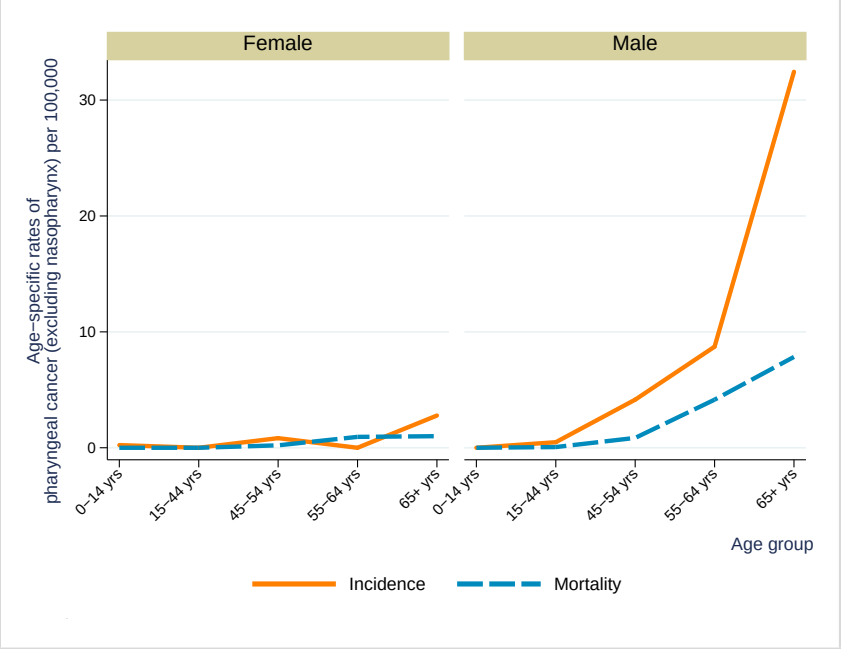
3.3.2 Pharynx (excluding nasopharynx)

Table 13: Incidence and mortality of cancer of the pharynx (excluding nasopharynx) by sex in New Zealand, Australia & New Zealand and the World

Indicator	MALE			FEMALE		
	New Zealand	Australia & New Zealand	World	New Zealand	Australia & New Zealand	World
INCIDENCE						
Crude incidence rate[1]	5.0	4.6	3.4	0.5	1.1	0.8
Age-standardized incidence rate[1]	3.6	3.4	3.8	0.4	0.8	0.8
Cumulative risk (%) ages 0-64 years[1]	0.1	0.2	0.3	0.0	0.1	0.1
Standardized incidence ratio (SIR)[1]	101	91	100	49	100	100
Annual number of new cancer cases	94	538	106219	10	129	24077
MORTALITY						
Crude mortality rate[1]	1.4	2.0	2.2	0.2	0.5	0.5
Age-standardized mortality rate[1]	1.0	1.4	2.5	0.2	0.3	0.5
Cumulative risk (%) ages 0-64 years[1]	0.1	0.1	0.2	0.0	0.0	0.0
Standardized mortality ratio (SMR)[1]	42	60	100	34	68	100
Annual number of deaths	25	233	67964	6	59	16029

Standardized rates have been estimated using the direct method and the World population as the reference.
[1] Male: Rates per 100,000 men per year. Female: Rates per 100,000 women per year.
Data sources:
IARC, Globocan 2002 | WHO GBD 2004 (for WHO region estimates only)

Figure 23: Comparison of incidence and mortality rates of pharyngeal cancer by age group in New Zealand



Data sources:
IARC, Globocan 2002 | WHO GBD 2004 (for WHO region estimates only)

4 HPV related statistics

Human papillomavirus infection is commonly found in the anogenital tract of men and women with and without clinical lesions. The aetiological role of HPV infection among women with cervical cancer is well-established, and there is growing evidence of its central role in other anogenital sites This section presents the HPV burden at each of the anogenital tract sites. The methodologies used to compile the information on HPV burden are derived from systematic reviews and meta-analyses of the literature. Due to the limitations of HPV DNA detection methods and study designs used, these data should be interpreted cautiously and used only as a guidance to assess the burden of HPV infection in the population. (*Vaccine 2006, Vol. 24, Supl 3; Vaccine 2008, Vol. 26, Supl 10; IARC Monographs 2007, Vol. 90*)

4.1 HPV burden in women with normal cytology, precancerous cervical lesions or invasive cervical cancer

The statistics shown in this section focus on HPV infection in the cervix uteri. HPV cervical infection results in cervical morphological lesions ranging from normalcy (cytologically normal women) to different stages of precancerous lesions (CIN-1, CIN-2, CIN-3/CIS) and invasive cervical cancer. HPV infection is measured by means of HPV DNA detection in cervical cells (fresh tissue, paraffin embedded or exfoliated cells).

The prevalence of HPV increases with severity of the lesion. HPV causes virtually 100% of cases of cervical cancer, and an underestimation of HPV prevalence in cervical cancer is most likely due to the limitations of study methodologies. Worldwide, HPV-16 and 18, the two vaccine-preventable types. contribute to over 70% of all cervical cancer cases, between 41% and 67% of high-grade cervical lesions and 16-32% of low-grade cervical lesions. After HPV-16/18, the six most common HPV types are the same in all world regions, namely 31, 33, 35, 45, 52 and 58; these account for an additional 20% of cervical cancers worldwide (*Clifford G et al. Vaccine 2006;24(S3):26-34*).

HPV is also responsible for other benign genital infections such as recurrent juvenile respiratory papillomatosis and genital warts, both mainly caused by HPV types 6 and 11 (*Lacey CJ et al. Vaccine 2006; 24(S3):35-41*).

4.1.1 Terminology

Cytologically normal women

No abnormal cells are observed on the surface of their cervix upon cytology.

Cervical Intraepithelial Neoplasia (CIN) / Squamous Intraepithelial Lesions (SIL)

SIL and CIN are two commonly used terms to describe precancerous lesions or the abnormal growth of squamous cells observed in the cervix. SIL is an abnormal result derived from cervical cytological screening or Pap smear testing. CIN is a histological diagnosis made upon analysis of cervical tissue obtained by biopsy or surgical excision.

Low-grade cervical lesions (LSIL/CIN-1)

Low-grade cervical lesions are defined by early changes in size, shape, and number of abnormal cells formed on the surface of the cervix and may be referred to as mild dysplasia, LSIL, or CIN-1.

High-grade cervical lesions (HSIL/ CIN-2 / CIN-3 / CIS)

High-grade cervical lesions are defined by a large number of precancerous cells on the surface of the cervix that are distinctly different from normal cells. They have the potential to become cancerous cells and invade deeper tissues of the cervix. These lesions may be referred to as moderate or severe dysplasia, HSIL, CIN-2, CIN-3, or cervical carcinoma in situ (CIS).

Carcinoma in situ (CIS)

Cancerous cells are confined to the cervix and have not spread to other parts of the body.

Invasive cervical cancer (ICC) / Cervical cancer

If the high-grade precancerous cells invade deeper tissues of the cervix or to other tissues or organs, then the disease is called invasive cervical cancer or cervical cancer.

Invasive squamous cell carcinoma

Invasive carcinoma composed of cells resembling those of squamous epithelium.

Adenocarcinoma

Invasive tumour with glandular and squamous elements intermingled.

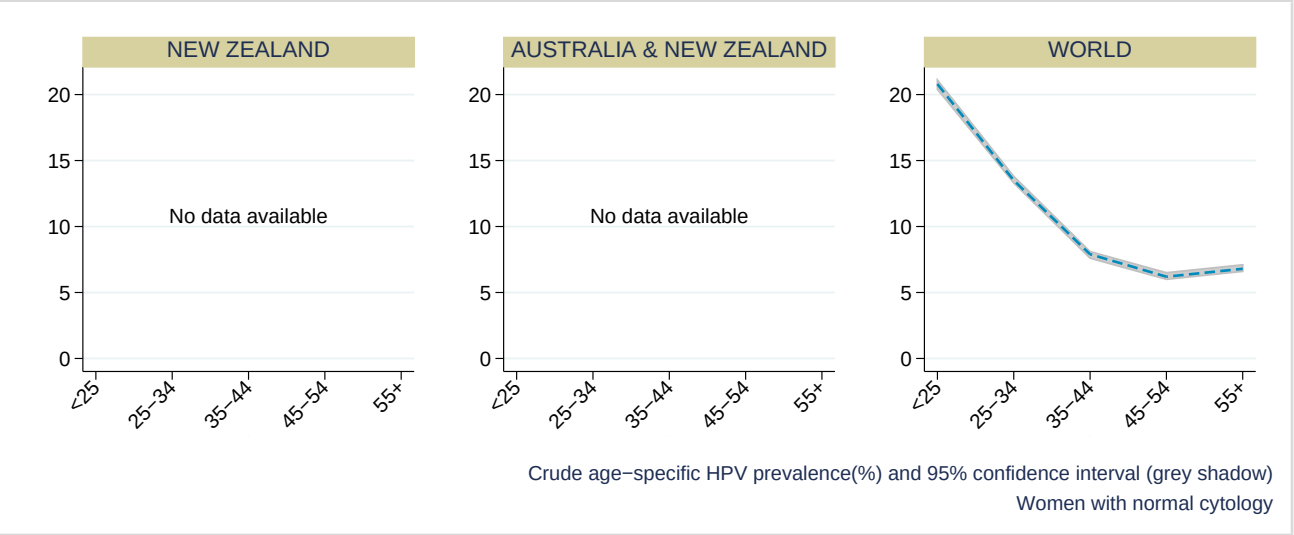
4.1.2 HPV prevalence in women with normal cytology

Table 14: Prevalence of HPV among women with normal cytology

Country/Region	Number of women tested	HPV prevalence %	(95% CI)
New Zealand	-	-	-
Australia & New Zealand	-	-	-
World	436430	11.4	(11.3-11.5)

Data sources:
Data have been compiled by the HPV Information Centre in the Unit of Infections and Cancer at the Institut Catala d'Oncologia and have been published as meta-analysis in: De Sanjosé S, Lancet Infect Dis 2007; 7: 453 and Bruni L, 25th IPV Society Meeting, Malmo, Sweden, 8-14 May 2009 (Manuscript in preparation).
For Australia & New Zealand and the World, refer to specific reports or methods document for complete data sources.

Figure 24: Crude age-specific HPV prevalence in women with normal cytology in New Zealand compared to Australia & New Zealand and the World.



Data sources:
Data have been compiled by the HPV Information Centre in the Unit of Infections and Cancer at the Institut Catala d'Oncologia and have been published as meta-analysis in: De Sanjosé S, Lancet Infect Dis 2007; 7: 453 and Bruni L, 25th IPV Society Meeting, Malmo, Sweden, 8-14 May 2009 (Manuscript in preparation).
For Australia & New Zealand and the World, refer to specific reports or methods document for complete data sources.

4.1.3 HPV type distribution among women with normal cytology, precancerous cervical lesions and cervical cancer

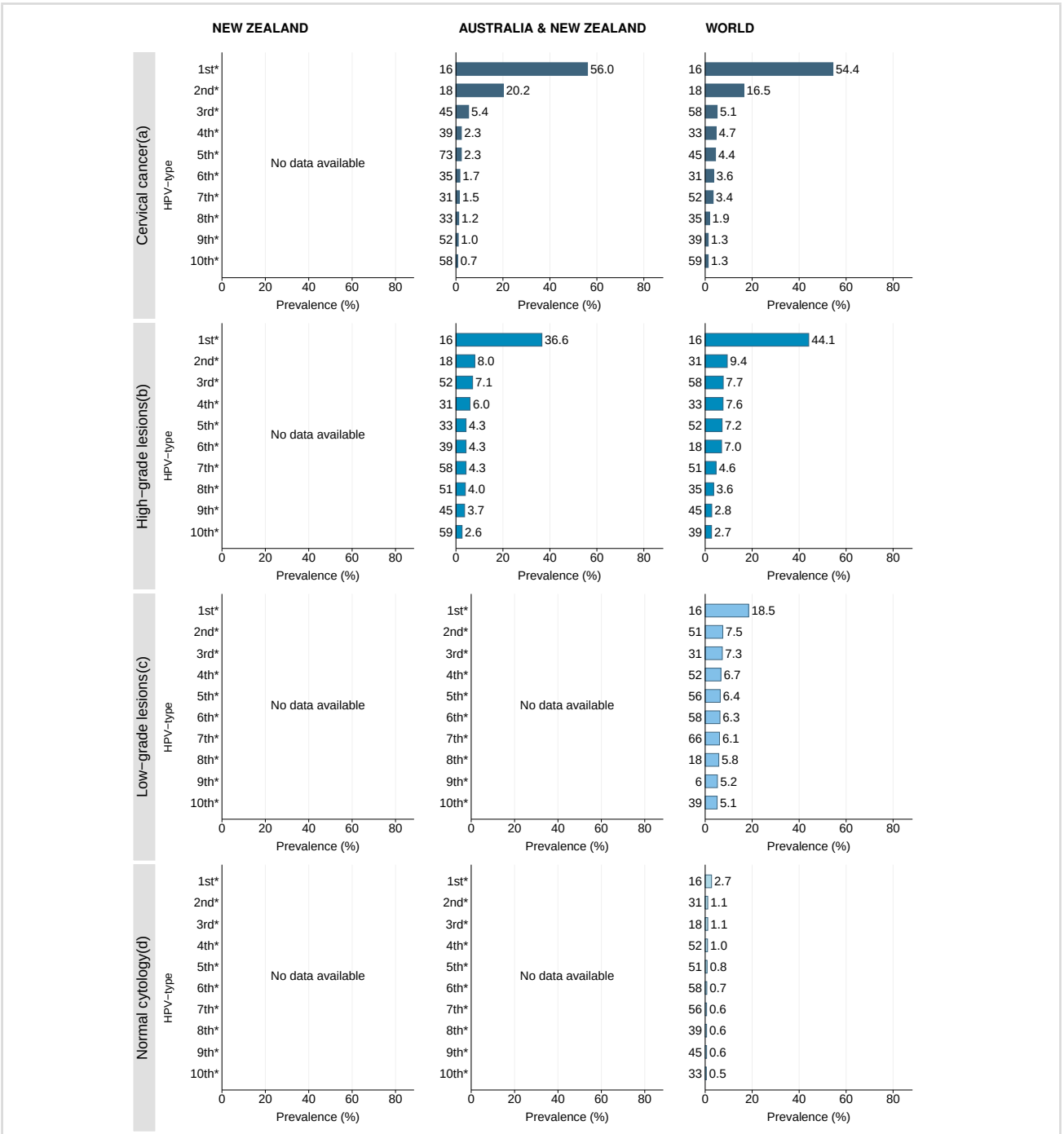
Table 15: Prevalence of HPV-16 and HPV-18 by cytology in New Zealand, Australia & New Zealand and the World

	New Zealand		Australia & New Zealand		World	
	No. tested	HPV 16/18 Prevalence % (95% CI)	No. tested	HPV 16/18 Prevalence % (95%CI)	No. tested	HPV 16/18 Prevalence % (95%CI)
Normal cytology[a]	-	- -	-	- -	218339	3.8 (3.7-3.9)
Low-grade lesions†[b]	-	- -	-	- -	14762	24.3 (23.6-25.0)
High-grade lesions‡[c]	-	- -	350	44.6 (39.3-49.9)	14901	51.1 (50.3-51.9)
Cervical cancer[d]	-	- -	625	76.2 (72.6-79.5)	22826	70.9 (70.3-71.5)

The samples for HPV testing come from cervical specimens (fresh / fixed biopsies or exfoliated cells).
Abbreviations used:
95% CI: 95% Confidence Interval
†Low-grade lesions: LSIL or CIN-1
‡High-grade lesions: CIN-2, CIN-3, CIS or HSIL
Data sources:
[a] Data have been compiled by the HPV Information Centre in the Unit of Infections and Cancer at the Institut Catala d'Oncologia and have been published as meta-analysis in: De Sanjosé S, Lancet Infect Dis 2007; 7: 453 and Bruni L, 25th IPV Society Meeting, Malmo, Sweden, 8-14 May 2009 (Manuscript in preparation).
[b] Data have been compiled by the IARC Infection and Cancer Epidemiology Group and have been published as a systematic review and meta-analysis in: Clifford GM, Cancer Epidemiol Biomarkers Prev 2005; 14: 1157
[c] Data have been compiled by the IARC Infection and Cancer Epidemiology Group and have been published as a systematic review and meta-analysis in: Clifford G, Br J Cancer 2003;89:101 | Smith JS Int J Cancer 2007;121:621
[d] Data have been compiled by the IARC Infection and Cancer Epidemiology Group and have been published as a systematic review and meta-analysis in: Clifford G, Br J Cancer 2003;88:63 | Clifford G, Int J Cancer 2008; 122: 1684

For Australia & New Zealand and the World, refer to specific reports or methods document for complete data sources.

Figure 25: Ten most frequent HPV types among women with and without cervical lesions in New Zealand compared to Australia & New Zealand and the World



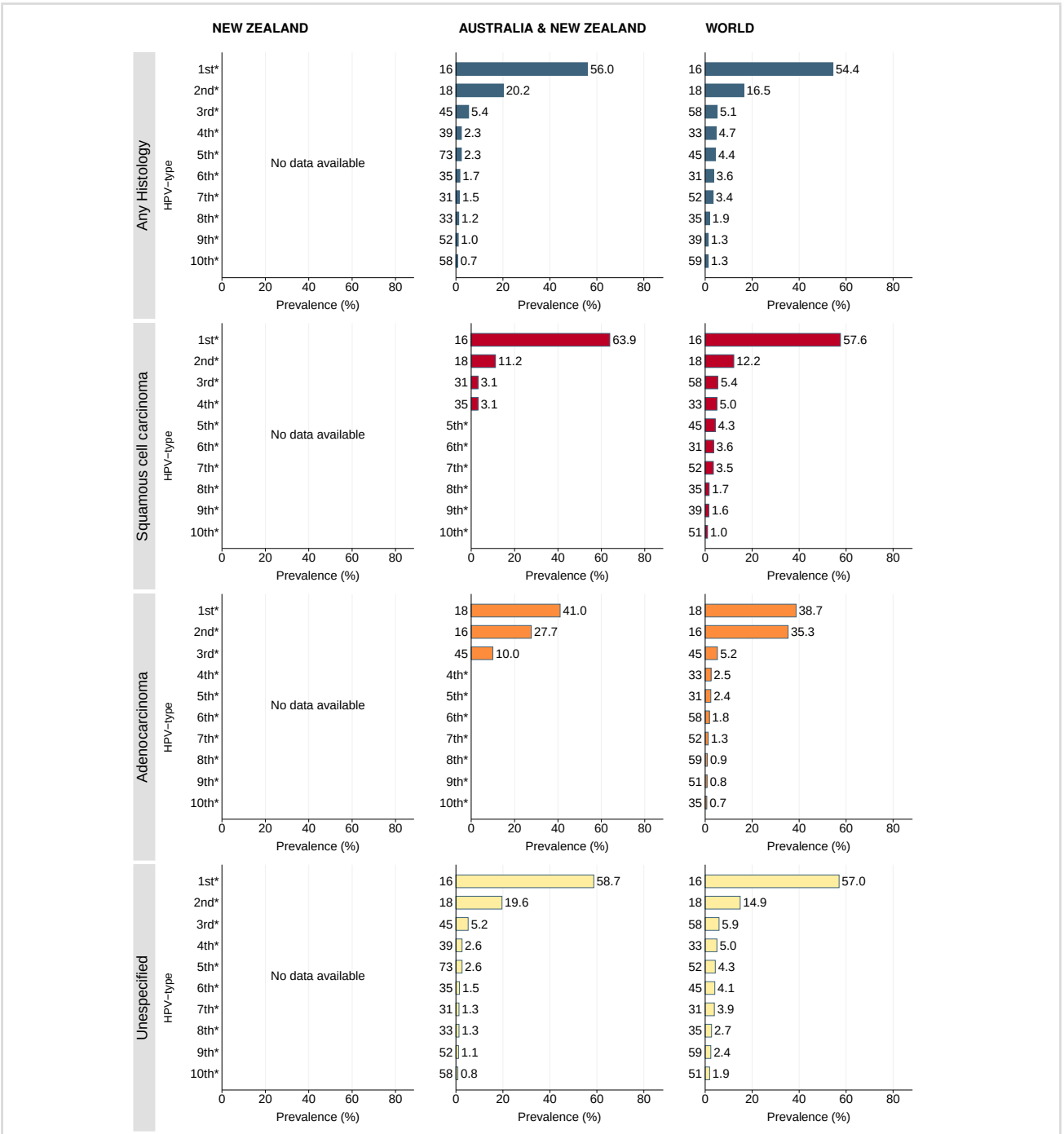
The samples for HPV testing come from cervical specimens (fresh / fixed biopsies or exfoliated cells).
∗No data available. No more types than shown were tested or were positive

The ranking of the ten most frequent HPV types may present less than ten types because only a limited number of types were tested or were HPV-positive.

Data sources:
[a] Data have been compiled by the IARC Infection and Cancer Epidemiology Group and have been published as a systematic review and meta-analysis in: Clifford G, Br J Cancer 2003;88:63 | Clifford G, Int J Cancer 2008; 122: 1684
[b] Data have been compiled by the IARC Infection and Cancer Epidemiology Group and have been published as a systematic review and meta-analysis in: Clifford G, Br J Cancer 2003;89:101 | Smith JS Int J Cancer 2007;121:621
[c] Data have been compiled by the IARC Infection and Cancer Epidemiology Group and have been published as a systematic review and meta-analysis in: Clifford GM, Cancer Epidemiol Biomarkers Prev 2005; 14: 1157
[d] Data have been compiled by the HPV Information Centre in the Unit of Infections and Cancer at the Institut Catala d'Oncologia and have been published as meta-analysis in: De Sanjosé S, Lancet Infect Dis 2007; 7: 453 and Bruni L, 25th IPV Society Meeting, Malmo, Sweden, 8-14 May 2009 (Manuscript in preparation).

For Australia & New Zealand and the World, refer to specific reports or methods document for complete data sources.

Figure 26: Ten most frequent HPV types among women with invasive cervical cancer in New Zealand compared to Australia & New Zealand and the World, by histology



The samples for HPV testing come from cervical specimens (fresh / fixed biopsies or exfoliated cells).
∗No data available. No more types than shown were tested or were positive

The ranking of the ten most frequent HPV types may present less than ten types because only a limited number of types were tested or were HPV-positive.
Data sources:
Data have been compiled by the IARC Infection and Cancer Epidemiology Group and have been published as a systematic review and meta-analysis in: Clifford G, Br J Cancer 2003;88:63 | Clifford G, Int J Cancer 2008; 122: 1684
For Australia & New Zealand and the World, refer to specific reports or methods document for complete data sources.

Table 16: Type-specific HPV prevalence in women with normal cytology, precancerous cervical lesions and invasive cervical cancer in New Zealand

HPV Type	Normal cytology[a]		Low-grade lesions†[b]		High-grade lesions‡[c]		Cervical cancer[d]	
	No. tested	HPV Prev % (95%CI)	No. tested	HPV Prev % (95%CI)	No. tested	HPV Prev % (95%CI)	No. tested	HPV Prev % (95%CI)
6	-	- -	-	- -	-	- -	-	- -
11	-	- -	-	- -	-	- -	-	- -
13	-	- -	-	- -	-	- -	-	- -
16	-	- -	-	- -	-	- -	-	- -
18	-	- -	-	- -	-	- -	-	- -
26	-	- -	-	- -	-	- -	-	- -
30	-	- -	-	- -	-	- -	-	- -
31	-	- -	-	- -	-	- -	-	- -
32	-	- -	-	- -	-	- -	-	- -
33	-	- -	-	- -	-	- -	-	- -
34	-	- -	-	- -	-	- -	-	- -
35	-	- -	-	- -	-	- -	-	- -
39	-	- -	-	- -	-	- -	-	- -
40	-	- -	-	- -	-	- -	-	- -
42	-	- -	-	- -	-	- -	-	- -
43	-	- -	-	- -	-	- -	-	- -
44	-	- -	-	- -	-	- -	-	- -
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51	-	- -	-	- -	-	- -	-	- -
52	-	- -	-	- -	-	- -	-	- -
53	-	- -	-	- -	-	- -	-	- -
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70	-	- -	-	- -	-	- -	-	- -
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83	-	- -	-	- -	-	- -	-	- -
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89	-	- -	-	- -	-	- -	-	- -
90	-	- -	-	- -	-	- -	-	- -
91	-	- -	-	- -	-	- -	-	- -

The samples for HPV testing come from cervical specimens (fresh / fixed biopsies or exfoliated cells).
Abbreviations used:
95% CI: 95% Confidence Interval
†Low-grade lesions: LSIL or CIN-1
‡High-grade lesions: CIN-2, CIN-3, CIS or HSIL
Data sources:
[a] Data have been compiled by the HPV Information Centre in the Unit of Infections and Cancer at the Institut Catala d'Oncologia and have been published as meta-analysis in: De Sanjosé S, Lancet Infect Dis 2007; 7: 453 and Bruni L, 25th IPV Society Meeting, Malmo, Sweden, 8-14 May 2009 (Manuscript in preparation).
[b] Data have been compiled by the IARC Infection and Cancer Epidemiology Group and have been published as a systematic review and meta-analysis in: Clifford GM, Cancer Epidemiol Biomarkers Prev 2005; 14: 1157
[c] Data have been compiled by the IARC Infection and Cancer Epidemiology Group and have been published as a systematic review and meta-analysis in: Clifford G, Br J Cancer 2003;89:101 | Smith JS Int J Cancer 2007;121:621
[d] Data have been compiled by the IARC Infection and Cancer Epidemiology Group and have been published as a systematic review and meta-analysis in: Clifford G, Br J Cancer 2003;88:63 | Clifford G, Int J Cancer 2008; 122: 1684

Table 17: Type-specific HPV prevalence among invasive cervical cancer cases in New Zealand, by histology

HPV Type	Any Histology		Squamous cell carcinoma		Adenocarcinoma		Unespecified	
	No. tested	HPV Prev % (95%CI)	No. tested	HPV Prev % (95%CI)	No. tested	HPV Prev % (95%CI)	No. tested	HPV Prev % (95%CI)
6	-	- -	-	- -	-	- -	-	- -
11	-	- -	-	- -	-	- -	-	- -
16	-	- -	-	- -	-	- -	-	- -
18	-	- -	-	- -	-	- -	-	- -
31	-	- -	-	- -	-	- -	-	- -
33	-	- -	-	- -	-	- -	-	- -
35	-	- -	-	- -	-	- -	-	- -
39	-	- -	-	- -	-	- -	-	- -
45	-	- -	-	- -	-	- -	-	- -
51	-	- -	-	- -	-	- -	-	- -
52	-	- -	-	- -	-	- -	-	- -
56	-	- -	-	- -	-	- -	-	- -
58	-	- -	-	- -	-	- -	-	- -
59	-	- -	-	- -	-	- -	-	- -
66	-	- -	-	- -	-	- -	-	- -
68	-	- -	-	- -	-	- -	-	- -
70	-	- -	-	- -	-	- -	-	- -
73	-	- -	-	- -	-	- -	-	- -
82	-	- -	-	- -	-	- -	-	- -

The samples for HPV testing come from cervical specimens (fresh / fixed biopsies or exfoliated cells).
Abbreviations used:
95% CI: 95% Confidence Interval

Data sources:
Data have been compiled by the IARC Infection and Cancer Epidemiology Group and have been published as a systematic review and meta-analysis in: Clifford G, Br J Cancer 2003;88:63 | Clifford G, Int J Cancer 2008; 122: 1684

4.2 HPV burden in anogenital cancers other than the cervix

4.2.1 Anal cancer

Anal cancer is similar to cervical cancer with respect to overall HPV DNA positivity, with approximately 85% of cases associated with HPV infection worldwide. HPV-16 is the most common detected type, representing 87% of all HPV-positive tumours. HPV-18 is the second most common type detected and is found in approximately 9% of cases. HPV DNA is also detected in the majority of precancerous anal lesions (AIN) and the prevalence of HPV increases with the severity of the lesion, 75% in AIN1, 86% in AIN2, and 94% in AIN3. In this section, the burden of HPV among cases of anal cancers in New Zealand is presented.
(*Vaccine 2006, Vol. 24, Supl 3; Vaccine 2008, Vol. 26, Supl 10; IARC Monographs 2007, Vol. 90*)

Table 18: Studies on HPV prevalence among cases of anal cancer in New Zealand

Study	HPV detection method	No. tested	HPV prevalence % (95% CI)	
No data available	-	-	-	-

Data sources:
Ongoing data are compiled by the HPV Information Centre in the Unit of Infections and Cancer at the Institut Catala d'Oncologia based on the initial meta-analysis conducted by the IARC Infection and Cancer Epidemiology Group in: De Vuyst H, Int J Cancer 2009; 124: 1626.

Table 19: Pooled estimate of HPV prevalence among cases of anal cancer by sex in New Zealand

Sex	No. tested	HPV prevalence % (95% CI)
Female	-	- -
Male	-	- -
Unespecified	-	- -

Data sources:
Ongoing data are compiled by the HPV Information Centre in the Unit of Infections and Cancer at the Institut Catala d'Oncologia based on the initial meta-analysis conducted by the IARC Infection and Cancer Epidemiology Group in: De Vuyst H, Int J Cancer 2009; 124: 1626.

Table 20: Pooled estimate of HPV prevalence among men who have sex with men (MSM) and non-MSM with anal cancer in New Zealand

MSM	No. tested	HPV prevalence % (95% CI)
MSM	-	- -
Non-MSM	-	- -
Unespecified	-	- -

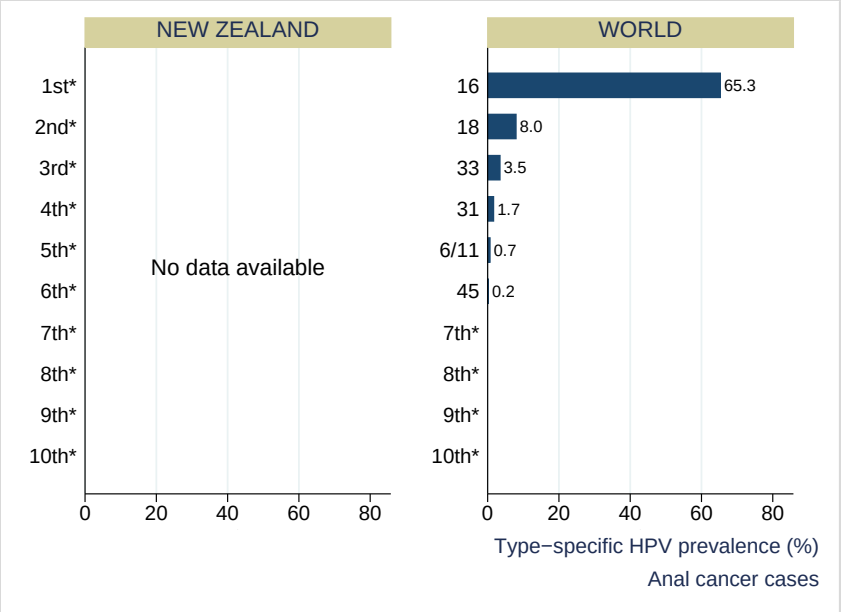
Data sources:
Ongoing data are compiled by the HPV Information Centre in the Unit of Infections and Cancer at the Institut Catala d'Oncologia based on the initial meta-analysis conducted by the IARC Infection and Cancer Epidemiology Group in: De Vuyst H, Int J Cancer 2009; 124: 1626.

Table 21: Pooled estimate of HPV prevalence among cases of anal cancer by histology in New Zealand

Histology	No. tested	HPV prevalence % (95% CI)
Any Histology	-	- -
Basaloid/Cloacogenic SCC	-	- -
Keratinizing SCC	-	- -
Unespecified SCC	-	- -
Adenocarcinoma	-	- -
Others	-	- -

Data sources:
Ongoing data are compiled by the HPV Information Centre in the Unit of Infections and Cancer at the Institut Catala d'Oncologia based on the initial meta-analysis conducted by the IARC Infection and Cancer Epidemiology Group in: De Vuyst H, Int J Cancer 2009; 124: 1626.

Figure 27: Ten most frequent HPV types among cases of anal cancer in New Zealand compared to the World



∗Not available. No more types than shown were tested or were positive

Data sources:

Ongoing data are compiled by the HPV Information Centre in the Unit of Infections and Cancer at the Institut Catala d'Oncologia based on the initial meta-analysis conducted by the IARC Infection and Cancer Epidemiology Group in: De Vuyst H, Int J Cancer 2009; 124: 1626.

World: Refer to specific World report or methods document for data sources

4.2.2 Vulvar cancer

Vulvar cancer has two distinct histological patterns with two different risk factor profiles: (1) basaloid/warty types (2) keratanizing types. The majority of vulvar carcinomas are of the basaloid warty type (>55%), which occur mainly in younger women compared to the keratanizing types, and are associated with similar risk factors for HPV infection in the cervix. In contrast, keratanizing vulvar carcinomas are associated with a low prevalence of HPV DNA (<=10%) that occur mainly in older women and are associated with lichen planus. In a case series, HPV DNA prevalence ranged from 72-100% among cases of high-grade vulvar neoplasias (VIN3) and 27.3-100% among vulvar carcinomas (3.9-6.3% in keratinzing types). Similarly, a meta-analysis estimated a HPV prevalence of 76% for VIN and 36% for vulvar carcinomas. HPV-16 is the most common detected type (65-93% in VIN and 71% for vulvar cancer) followed by HPV-18. In this section, the HPV burden among cases of vulvar cancers in New Zealand is presented.
(*Vaccine 2006, Vol. 24, Supl 3; Vaccine 2008, Vol. 26, Supl 10; IARC Monographs 2007, Vol. 90*)

Table 22: Studies on HPV prevalence among cases of vulvar cancer in New Zealand

Study	HPV detection method	No. tested	HPV prevalence % (95% CI)
Park 1991	PCR for HPV6, 11, 16 & 18	6	83.3 (35.9-99.6)

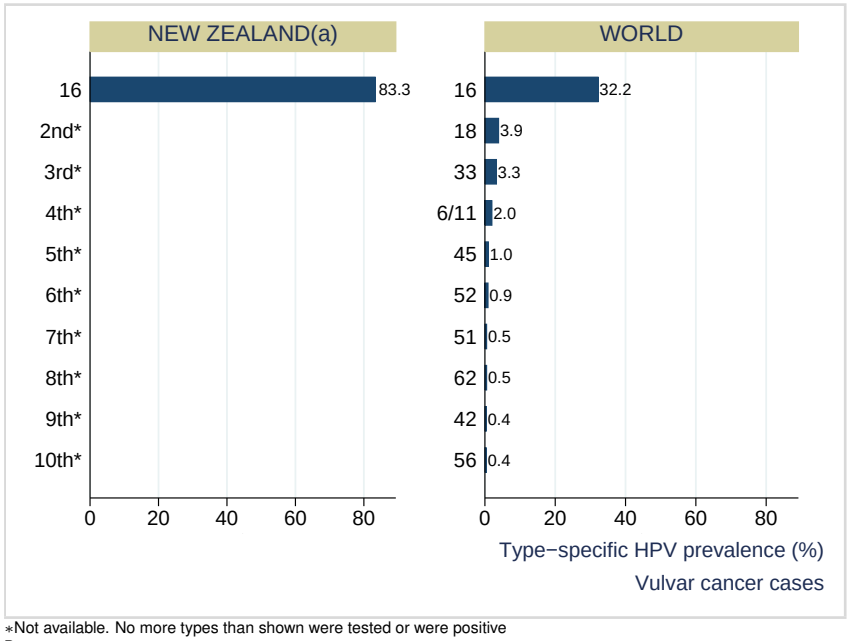
Data sources:
Ongoing data are compiled by the HPV Information Centre in the Unit of Infections and Cancer at the Institut Catala d'Oncologia based on the initial meta-analysis conducted by the IARC Infection and Cancer Epidemiology Group in: De Vuyst H, Int J Cancer 2009; 124: 1626.
Park JS, Gynecol Oncol 1991; 42: 250

Table 23: Pooled estimate of HPV prevalence among cases of vulvar cancer by histology in New Zealand

Histology	No. tested	HPV prevalence % (95% CI)
Any Histology	6	83.3 (35.9-99.6)
Warty-Basaloid SCC	6	83.3 (35.9-99.6)
Keratinizing SCC	-	- -
Verrucous SCC	-	- -
Unespecified SCC	-	- -
Adenocarcinoma	-	- -

Data sources:
Ongoing data are compiled by the HPV Information Centre in the Unit of Infections and Cancer at the Institut Catala d'Oncologia based on the initial meta-analysis conducted by the IARC Infection and Cancer Epidemiology Group in: De Vuyst H, Int J Cancer 2009; 124: 1626. Park JS, Gynecol Oncol 1991; 42: 250

Figure 28: Ten most frequent HPV types among cases of vulvar cancer in New Zealand compared to the World



∗Not available. No more types than shown were tested or were positive
Data sources:
Ongoing data are compiled by the HPV Information Centre in the Unit of Infections and Cancer at the Institut Catala d'Oncologia based on the initial meta-analysis conducted by the IARC Infection and Cancer Epidemiology Group in: De Vuyst H, Int J Cancer 2009; 124: 1626.
[a] Park JS, Gynecol Oncol 1991; 42: 250

World: Refer to specific World report or methods document for data sources

4.2.3 Vaginal cancer

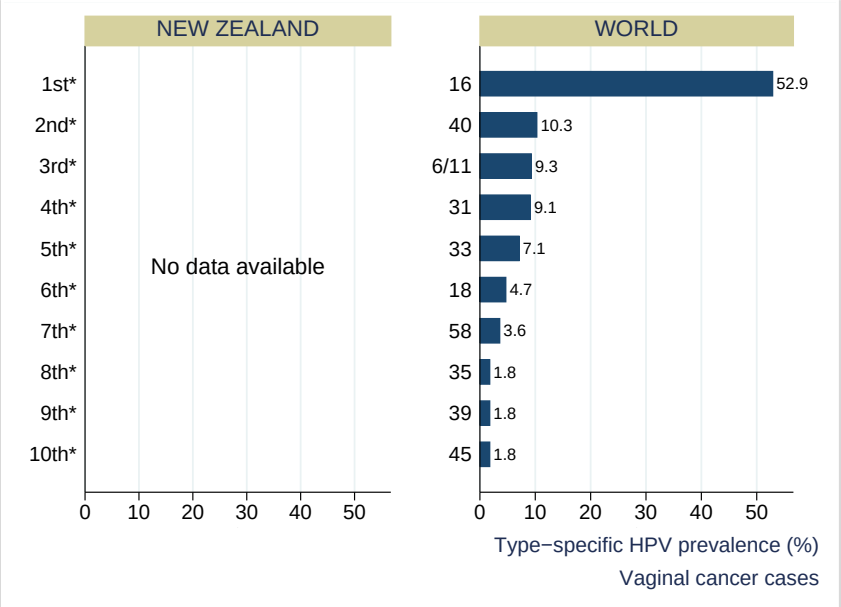
Vaginal and cervical cancers share similar risk factors and it is generally accepted that both carcinomas share the same aetiology of HPV infection although there is limited evidence available. Women with vaginal cancer are more likely to have a history of other ano-genital cancers, particularly of the cervix, and these two carcinomas are frequently diagnosed simultaneously. HPV DNA is detected among 91% of invasive vaginal carcinomas and 82% of high-grade vaginal neoplasias (VAIN3).In a case series of vaginal cancers, HPV-16 is the most common type in at least 70% of HPV-positive carcinomas. In this section, the HPV burden among cases of vaginal cancers in New Zealand is presented.
(*Vaccine 2006, Vol. 24, Supl 3; Vaccine 2008, Vol. 26, Supl 10; IARC Monographs 2007, Vol. 90*)

Table 24: Studies on HPV prevalence among cases of vaginal cancer in New Zealand

Study	HPV detection method	Histology	No. tested	HPV prevalence % (95% CI)
No data available	-	-	-	- -

Data sources:
Ongoing data are compiled by the HPV Information Centre in the Unit of Infections and Cancer at the Institut Catala d'Oncologia based on the initial meta-analysis conducted by the IARC Infection and Cancer Epidemiology Group in: De Vuyst H, Int J Cancer 2009; 124: 1626.

Figure 29: Ten most frequent HPV types among vaginal cancer cases in New Zealand compared to the World



∗Not available. No more types than shown were tested or were positive
Data sources:
Ongoing data are compiled by the HPV Information Centre in the Unit of Infections and Cancer at the Institut Catala d'Oncologia based on the initial meta-analysis conducted by the IARC Infection and Cancer Epidemiology Group in: De Vuyst H, Int J Cancer 2009; 124: 1626.
World: Refer to specific World report or methods document for data sources

4.2.4 Penile cancer

The geographical correlation between the incidence of penile and cervical cancers and the concordance of these two cancers among married couples suggested the common aetiology of HPV infection. HPV DNA is detectable in approximately 40-50% of all penile cancers. HPV DNA is detectable among penile intraepithelial neoplasias with the basoloid histological type, ranging from 75-80% of cases, and decreasing to 30-60% among invasive squamous cell carcinomas (SCC). The majority of penile carcinomas are squamous cell carcinomas (SCC), and it has been observed that some cases of penile SCC are HPV DNA negative. HPV DNA positvity among penile cancers varies with histopathological type, with a prevalence of 47% in basaloid/warty types, 75% in purely basaloid types, and 11% in keratinizing SCC. Among HPV-DNA positive cases, HPV-16 is the most common type. In this section, the HPV burden among cases of penile cancers in New Zealand is presented. (*Vaccine 2006, Vol. 24, Supl 3; Vaccine 2008, Vol. 26, Supl 10; IARC Monographs 2007, Vol. 90*)

Table 25: Studies on HPV prevalence among cases of penile cancer in New Zealand

Study	HPV detection method	No. tested	HPV prevalence % (95% CI)	
No data available	-	-	-	-

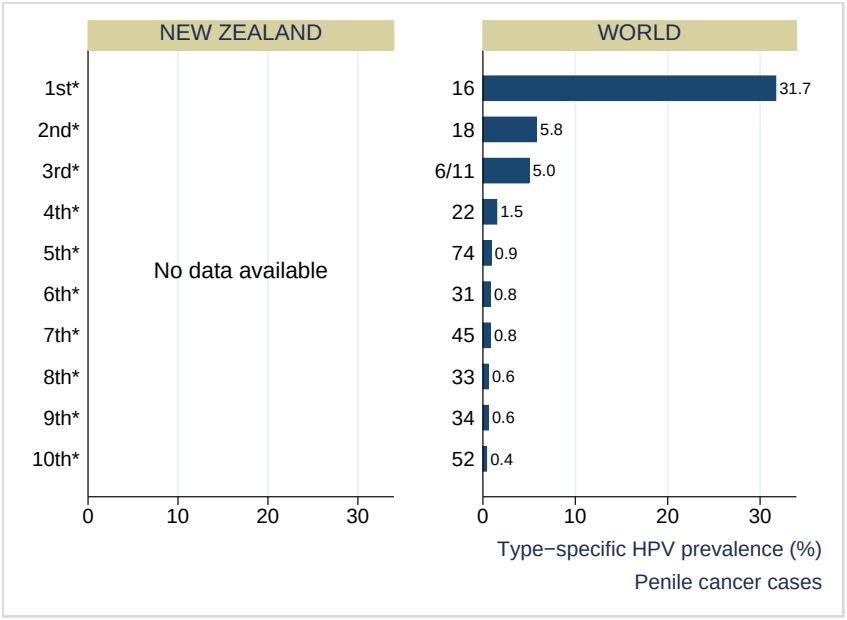
Data sources:
Data have been compiled by the HPV Information Centre in the Unit of Infections and Cancer at the Institut Catala d'Oncologia and have been published as systematic review in: Miralles-Guri C, J Clin Pathol 2009; In press

Table 26: Pooled estimate of HPV prevalence among cases of penile cancer by histology in New Zealand

Histology	No. tested	HPV prevalence % (95% CI)
Any Histology	-	- -
Carc. In situ	-	- -
Non-keratinizing SCC	-	- -
SCC (unspecified)	-	- -
Keratinizing SCC	-	- -
Warty SCC	-	- -
Verrucous SCC	-	- -
Basaloid SCC	-	- -

Data sources:
Data have been compiled by the HPV Information Centre in the Unit of Infections and Cancer at the Institut Catala d'Oncologia and have been published as systematic review in: Miralles-Guri C, J Clin Pathol 2009; In press

Figure 30: Ten most frequent HPV types among cases of penile cancer in New Zealand compared to the World



∗Not available. No more types than shown were tested or were positive
Data sources:
Data have been compiled by the HPV Information Centre in the Unit of Infections and Cancer at the Institut Catala d'Oncologia and have been published as systematic review in: Miralles-Guri C, J Clin Pathol 2009; In press
World: Refer to specific World report or methods document for data sources

4.3 HPV burden in men

The information to date regarding penile HPV infection is primarily derived from studies that examined husbands of female cervical cancer cases, cross-sectional studies of selected populations such as individuals with sexually transmitted infections (STI) and military recruits, as well as from small prospective studies. HPV infection in the genital tract has been detected in up to 73% of healthy men. Like other STIs, HPV may be transmitted more readily from men to women than from women to men. In this section, the HPV burden among men in New Zealand is presented.

(*Vaccine 2008, Vol. 26, Supl 10*)

Table 27: Studies on HPV prevalence among men in New Zealand

Study	Anatomic sites samples	HPV detection method	Population	Age (years)	HPV prevalence		
					Men tested	%	(95% CI)
No data available	-	-	-	-	-	-	-

Table 28: Studies on high-risk HPV Prevalence among men in New Zealand

Study	Anatomic sites samples	High-risk HPV tested	Population	Age (years)	HPV prevalence		
					Men tested	%	(95% CI)
No data available	-	-	-	-	-	-	-

5 Factors contributing to cervical cancer

HPV is a necessary cause of cervical cancer, but it is not a sufficient cause. Other cofactors are necessary for progression from cervical HPV infection to cancer. Tobacco smoking, high parity, long-term hormonal contraceptive use, and co-infection with HIV have been identified as established cofactors. Co-infection with Chlamydia trachomatis and herpes simplex virus type-2, immunosuppression, and certain dietary deficiencies are other probable cofactors. Genetic and immunological host factors and viral factors other than type, such as variants of type, viral load and viral integration, are likely to be important but have not been clearly identified. (*Muñoz N, Vaccine 2006; 24S3: S3-1*)

In this section, the prevalence of smoking, parity (fertility), oral contraceptive use, and HIV in New Zealand are presented.

Table 29: Factors contributing to cervical carcinogenesis (cofactors) in New Zealand

INDICATOR		MALE	FEMALE	TOTAL
Smoking[1]				
Smoking of any tobacco prevalence (%)	Current	25.8[a]	24.3[a]	-
	Daily	20.7[a]	19.3[a]	-
Cigarette smoking prevalence (%)	Current	25.8[a]	24.3[a]	-
	Daily	20.7[a]	19.3[a]	-
Parity[2,3]				
Total fertility rate per woman		-	2.1[b]	-
Age-specific fertility rate (per 1000 women)	15-19 yrs	-	27[b]	-
	20-24 yrs	-	76[b]	-
	25-29 yrs	-	110[b]	-
	30-34 yrs	-	128[b]	-
	35-39 yrs	-	61[b]	-
	40-44 yrs	-	13[b]	-
	44-49 yrs	-	1[b]	-
Hormonal contraception[4]				
Oral contraceptive use (%)		-	-	20.5[c]
HIV				
Adult (15-49 yrs) prevalence percent [low estimate - high estimate][5]		-	-	0.1 [<0.1-0.2][d]
Young adults (15-24 yrs) rate of HIV (%) [low estimate - high estimate][5]		0.1 [<0.1-0.2][d]	-	-
Estimated number of adults and children living with HIV [low estimate - high estimate][5]		-	-	1400 [<1000-2600][d]
Estimated number of adults (15+ yrs) living with HIV [low estimate - high estimate][5]		-	-	1400 [<1000-2600][d]
Estimated number of AIDS deaths in adults and children [low estimate - high estimate][5]		-	-	-
Estimated antiretroviral therapy coverage (%) [low estimate - high estimate][6,7]		-	-	-
Estimated number of people receiving antiretroviral therapy [low estimate - high estimate][6,7]		-	-	-
HIV prevalence (%) among female sex workers in the capital city[5]		-	0.0[d]	-
HIV prevalence (%) among men who have sex with men in the capital city[5]		0.9[d]	-	-

Year of estimation: [a] 2008; [b] 2004; [c] 1995; [d] 2007;

[2] Fertility rate is a proxy measure of parity.

[6] The coverage estimates are based on the estimated unrounded numbers of people receiving antiretroviral therapy and the estimated unrounded need for antiretroviral therapy (based on UNAIDS/WHO methodology). The ranges in coverage estimates are based on plausibility bounds in the denominator: that is, low and high estimates of need.

Data sources:

[1] WHO Report on the Global Tobacco Epidemic, 2008 - The MPOWER package. Tobacco Free Initiative, World Health Organization, 2008 (http://www.who.int/tobacco/mpower/gtcr_download/en/index.html)

[3] World fertility patterns 2007 [wall chart]. New York, Population Division, Department of Economic and Social Affairs, United Nations Secretariat, 2008.

[4] United Nations, Department of Economic and Social Affairs, Population Division. World Contraceptive Use 2005 (http://www.un.org/esa/population/publications/contraceptive2005/WCU2005.htm)

[5] 2008 Report on the global AIDS epidemic, UNAIDS/WHO, July 2008.

[7] World Health Organization. WHO and HIV/AIDS. Towards universal access: scaling up priority HIV/AIDS interventions in the health sector: progress report 2008.

6 Sexual and reproductive health behaviour indicators

Sexual intercourse is the primary route of transmission of genital HPV infection. Information about sexual and reproductive health behaviours is essential to the design of effective preventive strategies against anogenital cancers. In this section, we describe sexual and reproductive health indicators that may be used as proxy measures of risk for HPV infection and anogenital cancers.

Table 30: Time of sexual intercourse and high-risk sexual behaviour in New Zealand, for females and males

Indicator	Male	Female
Time of sexual intercourse		
Median age at first sex among young men and women (15-24 years)	-	-
Median age at first sexual intercourse among men (25-54 years) and women (25-49 years)	-	-
% of young people (15-24 years) who have had sex before the age of 15	-	-
Abstinence of never-married young men and women (age 15-24 years)	-	-
High-risk sexual behaviour		
Extramarital sex in the last year	-	-
Multiple partners in the last year among sexually active respondents aged 15-49	-	-
Commercial sex in last year	-	-

Table 31: Reproductive health indicators in New Zealand

Factor	Indicator		Male	Female	Total
Age at first marriage[1]	Average age at first marriage:		28.8[a]	26.8[a]	-
	Percentage of ever married	15-19 yrs	0.4[a]	1.1[a]	-
		20-24 yrs	9.7[a]	22.4[a]	-
		45-49 yrs	92.8[a]	95.3[a]	-
	Difference in average at first marriage between men and women		-	-	2.1[a]
Married or in union[2]	Women aged 15-49 married or in union (thousands)		-	556[b]	-
Contraceptive use[3]	Any contraceptive method (%)		-	74.1[b]	-
	Annual change (1997 to 2007): any contraceptive method		-	-	-
	Annual change (1997 to 2007): modern methods		-	-	-
	Modern methods	Condom (%)	-	11.3[b]	-
		IUD (%)	-	3.3[b]	-
		Injectable or implant (%)	-	1.8[b]	-
		Pill/Oral contraceptive (%)	-	20.5[b]	-
		Sterilization (%)	19.3[b]	14.4[b]	-
		Vaginal barrier method (%)	-	0.8[b]	-
		Other modern methods (%)	-	0.0[b]	-
		Prevalence of modern methods (%)	-	71.4[b]	-
	Traditional methods	With-drawal (%)	-	1.0[b]	-
		Rhythm (%)	-	1.6[b]	-
		Other traditional methods (%)	-	0.1[b]	-

Year of estimation: [a] 1991; [b] 1995;
Data sources:
[1] World Bank HNPStats [online database]. Washington DC, World Bank Health, Nutrition and Population (HNP) statistics, 2007 (http://go.worldbank.org/N2N84RDV00, accessed 28 Jan 2009).
[2] United Nations, Department of Economic and Social Affairs, Population Division. World Contraceptive Use 2005 (http://www.un.org/esa/population/publications/contraceptive2005/WCU2005.htm)
[3] United Nations, Department of Economic and Social Affairs, Population Division. World Contraceptive Use 2005 (http://www.un.org/esa/population/publications/contraceptive2007/contraceptive2007.htm)

7 HPV preventive strategies

It is established that well-organised cervical screening programmes or widespread good quality cytology can reduce cervical cancer incidence and mortality. The introduction of HPV vaccination could also effectively reduce the burden of cervical cancer in the coming decades. In addition, male circumcision and the use of condoms have shown a significant protective effect against HPV transmission and may offer an alternative preventative strategy. This section presents indicators on basic characteristics and performance of cervical cancer screening, status of HPV vaccine licensure, introduction and country recommendations and the prevalence of male circumcision and condom use in New Zealand.

7.1 Cervical cancer screening practices

Table 32: Main characteristics of cervical cancer screening in New Zealand

Indicator	Value
Screening ages (years)	20-69
Screening interval (years) or frequency of screens	Every 3 years
Lifetime number of recommended smears	-
Smear taker	Medical practitioners (70%), specialists(5%), nurse smear-takers (25%),and two lay smear-takers without aprofessional background.

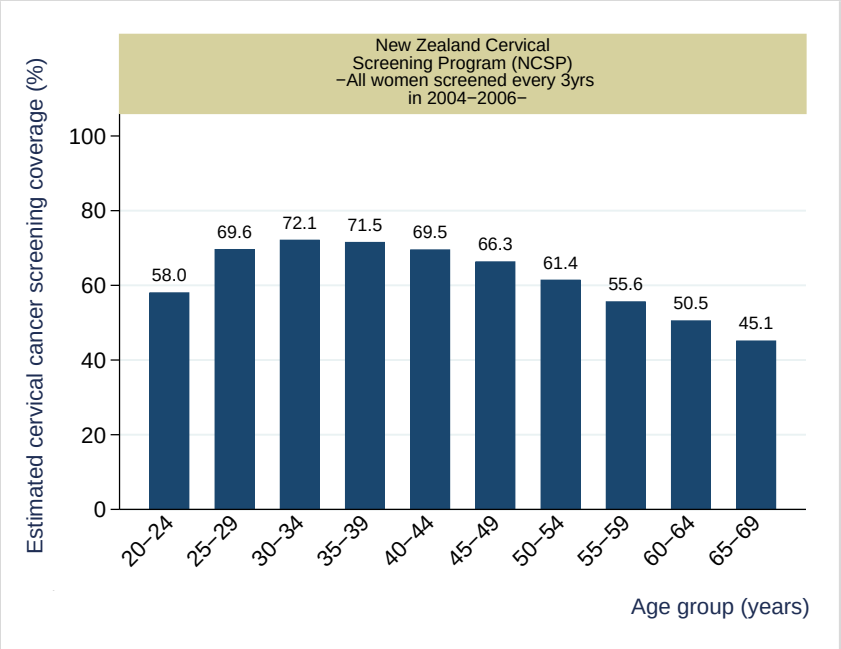
Variable screening ages and screening intervals or frequency of screens depend on different guidelines followed in the country.
Data sources:
IARC Handbooks of Cancer Prevention Vol. 10: Cervix Cancer Screening. IARC Press. Lyon, 2005.

Table 33: Estimated coverage of cervical cancer screening in New Zealand

Reference	Year	Population studied	Rural or Urban	N Women	Age range	Coverage (%)	Within the last year(s)
New Zealand Cervical Screening Program (NCSP)	2004-2006	General female population	All	1311070	20-69	63.5	3y

Notes and sources:
Report on performance indicators of the National Cervical Screening Programme (NCSP) for the period 1 January 2006 to 31 December 2006. Unadjusted coverage rates: number of women aged 20-69 years at 30 June 2006 who were recorded on the NCSP Register as being alive on 30 June 2006 and who had a smear or histology result recorded on the NCSP Register between 1 January 2004 and 31 December 2006 was calculated. This number of women was then divided by the number of women aged 20-69 years who were alive and resident in New Zealand on 30 June 2006, according to population projections from Statistics New Zealand based on the 2001 Census.
Cervical screening in New Zealand: A brief statistical review of the first decade. Wellington: National Cervical Screening Programme, Ministry of Health; 2005.

Figure 31: Estimated coverage of cervical cancer screening in New Zealand, by age and study



Notes and sources:
Report on performance indicators of the National Cervical Screening Programme (NCSP) for the period 1 January 2006 to 31 December 2006. Unadjusted coverage rates: number of women aged 20-69 years at 30 June 2006 who were recorded on the NCSP Register as being alive on 30 June 2006 and who had a smear or histology result recorded on the NCSP Register between 1 January 2004 and 31 December 2006 was calculated. This number of women was then divided by the number of women aged 20-69 years who were alive and resident in New Zealand on 30 June 2006, according to population projections from Statistics New Zealand based on the 2001 Census.
Cervical screening in New Zealand: A brief statistical review of the first decade. Wellington: National Cervical Screening Programme, Ministry of Health; 2005.

Table 34: Estimated coverage of cervical cancer screening in New Zealand, by region

Region	N women	Age range	Coverage (%)	LY*	Population	Reference
Auckland	-	20-69	60.2	3y	General female population	New Zealand Cervical Screening Program (NCSP)
Bay of Plenty	-	20-69	65.3	3y	General female population	New Zealand Cervical Screening Program (NCSP)
Canterbury	-	20-69	65.4	3y	General female population	New Zealand Cervical Screening Program (NCSP)
Hawke's Bay	-	20-69	62.7	3y	General female population	New Zealand Cervical Screening Program (NCSP)
Manawatu/ Wanganui	-	20-69	61.4	3y	General female population	New Zealand Cervical Screening Program (NCSP)
Nelson /Marlborough	-	20-69	64.4	3y	General female population	New Zealand Cervical Screening Program (NCSP)
Northland	-	20-69	60.6	3y	General female population	New Zealand Cervical Screening Program (NCSP)
Otago/Southland	-	20-69	67.2	3y	General female population	New Zealand Cervical Screening Program (NCSP)
Tairawhiti	-	20-69	69.1	3y	General female population	New Zealand Cervical Screening Program (NCSP)
Taranaki	-	20-69	73.7	3y	General female population	New Zealand Cervical Screening Program (NCSP)
Waikato	-	20-69	63.8	3y	General female population	New Zealand Cervical Screening Program (NCSP)
Wellington	-	20-69	67.3	3y	General female population	New Zealand Cervical Screening Program (NCSP)
West Coast	-	20-69	62.7	3y	General female population	New Zealand Cervical Screening Program (NCSP)

LY*: Within the last year(s)
Notes and sources:
Report on performance indicators of the National Cervical Screening Programme (NCSP) for the period 1 January 2006 to 31 December 2006. Unadjusted coverage rates: number of women aged 20-69 years at 30 June 2006 who were recorded on the NCSP Register as being alive on 30 June 2006 and who had a smear or histology result recorded on the NCSP Register between 1 January 2004 and 31 December 2006 was calculated. This number of women was then divided by the number of women aged 20-69 years who were alive and resident in New Zealand on 30 June 2006, according to population projections from Statistics New Zealand based on the 2001 Census.
Cervical screening in New Zealand: A brief statistical review of the first decade. Wellington: National Cervical Screening Programme, Ministry of Health; 2005.

7.2 HPV vaccination

7.2.1 HPV vaccine licensure and introduction

Table 35: Licensure status of current HPV vaccines in New Zealand

HPV vaccine	Date	Licensure
Bivalent vaccine/Cervarix	2009	Yes
Quadrivalent vaccine/Gardasil	2009	Yes

Due to importation, distribution, and other regulatory requirements, as well as price negotiations, a licensed vaccine may not necessarily be marketed in a given country.
Data sources:
Bivalent: GlaxoSmithKline Biologicals, Rixensart, Belgium, March 2009 | Quadrivalent: Merck & Co., Inc., Whitehouse Station, NJ, USA, March 2009

Table 36: HPV vaccine introduction in New Zealand

Indicator	Value
HPV vaccine schedule	-
Introduction in entire or part of the country	-
Comment	-

Data sources:
WHO-UNICEF Joint Reporting Form and WHO Regional offices 2009, WHO Immunization surveillance, assessment, and monitoring (http://www.who.int/immunization_monitoring/data/data_subject/en/index.html)

7.2.2 Country recommendations on the inclusion of HPV vaccines in national immunization programmes

Table 37: Summary of national HPV vaccine recommendations and programmatic aspects in New Zealand

Indicator	Date	Value
Finance mechanism	-	-
Delivery strategy	-	-
Integration of vaccination and cervical cancer screening program	-	-
Announcement date and type; and recommendation committee	-	-
Recommendation for primary target population	-	-
Recommendation for catch-up population	-	-
Recommendation for vaccinating males	-	-
Comments	-	-

7.3 Male circumcision and condom use

Table 38: Prevalence of male circumcision in New Zealand

Reference	Prevalence % (95%CI)	Method
Fergusson 2006	26.1 (22.3-30.2)	N=498: Longitudinal study of a birth cohort of children born in mid-1977
Dickson 2005	40.2 (35.6-45.0)	N=435: Children born between April 1972 and March 1973
WHO 2007	<20	Data from Demographic and Health Surveys (DHS) and other publications to categorize the country-wide prevalence of male circumcision as <20%, 20-80%, or >80%.

Data sources:
Dickson N, Sex Transm Dis 2005; 32: 517 | Fergusson DM, Pediatrics 2006; 118: 1971 | WHO 2007: Male circumcision: Global trends and determinants of prevalence, safety and acceptability

Table 39: Prevalence of condom use in New Zealand

Indicator	Prevalence %	Year of estimation
Condom use	11.3	1995

Data sources:
United Nations, Department of Economic and Social Affairs, Population Division. World Contraceptive Use 2005 (http://www.un.org/esa/population/publications/contraceptive2007/contraceptive2007.htm)

8 Indicators related to immunzation practices other than HPV vaccines

This section presents data on immunization coverage and practices for selected vaccines. This information will be relevant for assessing the country's capacity to introduce and implement the new HPV vaccines. The data are periodically updated and posted on the WHO Immunization surveillance, assessment and monitoring website.
(http://www.who.int/immunization_monitoring/en/).

8.1 Immunization schedule

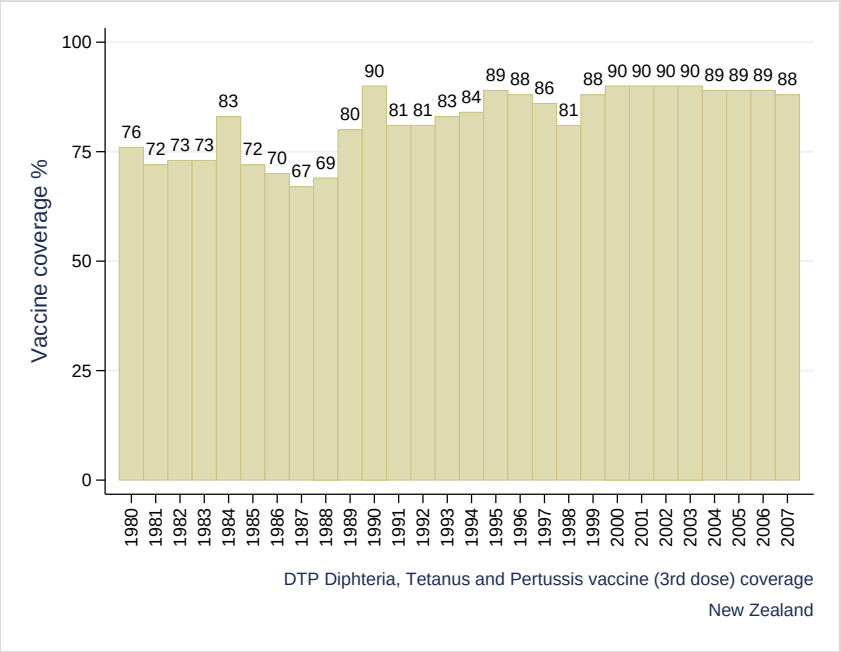
Table 40: General immunization schedule in New Zealand

Vaccine	Schedule	Coverage†	Comment
Diphtheria and tetanus toxoid with acellular pertussis, and IPV vaccine	6 weeks; 3, 5 months; 4, 11 years	entire	-
Hepatitis B vaccine	5 months	entire	-
Haemophilus influenzae type b vaccine	15 months	entire	-
Haemophilus influenzae type b vaccine and Hepatitis B vaccine	6 weeks; 3 months	entire	-
Influenza	> 64 years	entire	all ages with chronic medical conditions
Measles mumps and rubella vaccine	15 months; 4 years	entire	-
Pneumococcal conjugate vaccine	-	entire	From June 2008
Tetanus and diphtheria toxoid for older children / adults	45, 65 years	entire	-

†Entire or part of the population covered.
Notes and sources:
WHO Immunization surveillance, assessment and monitoring (http://www.who.int/immunization_monitoring/data/data_subject/en/)

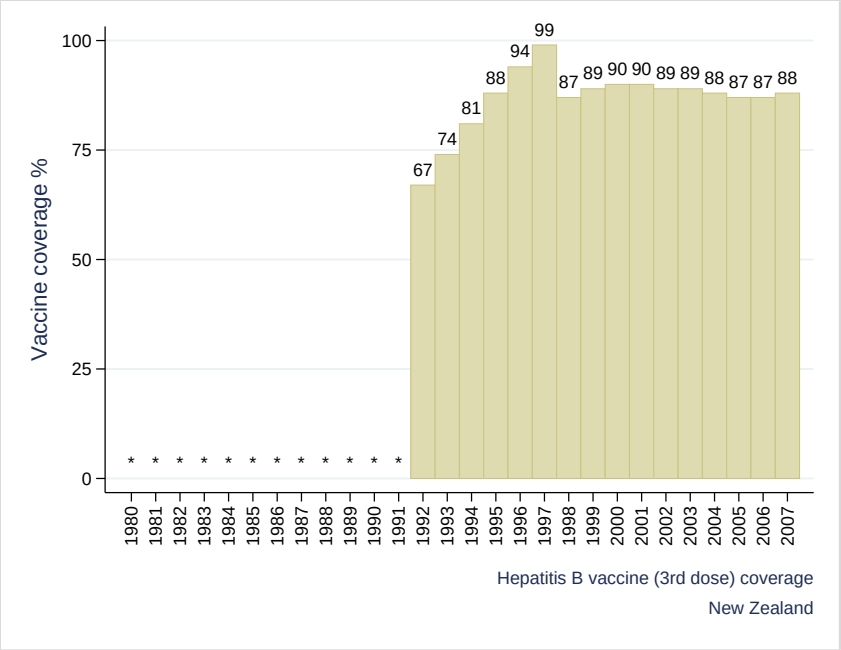
8.2 Immunization coverage estimates

Figure 32: DTP (Diphtheria, Tetanus and Pertussis) vaccine coverage (3rd dose completed) in New Zealand



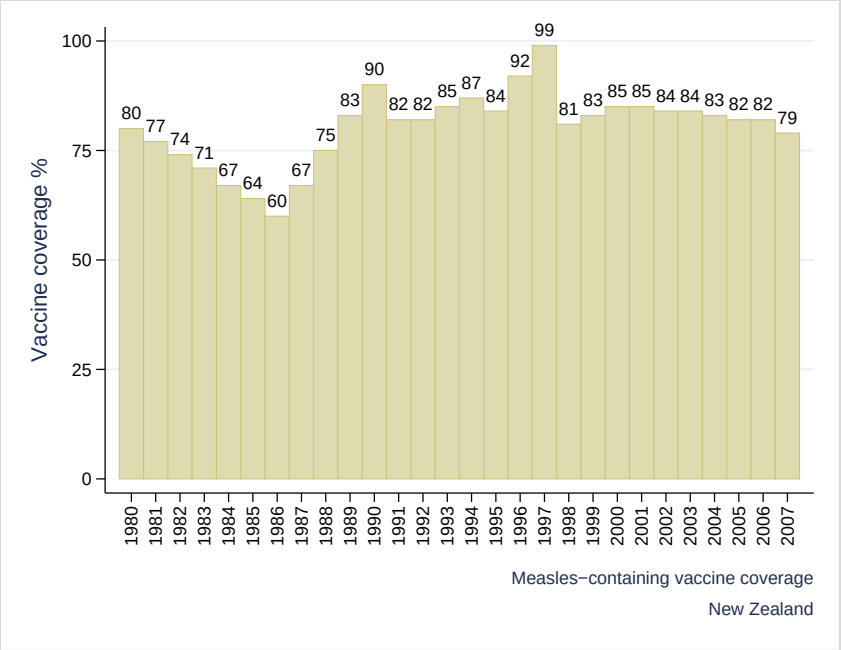
∗Data not available
Data sources:
WHO Immunization surveillance, assessment and monitoring (http://www.who.int/immunization_monitoring/data/data_subject/en/)

Figure 33: Hepatitis B vaccine coverage (3rd dose completed) in New Zealand



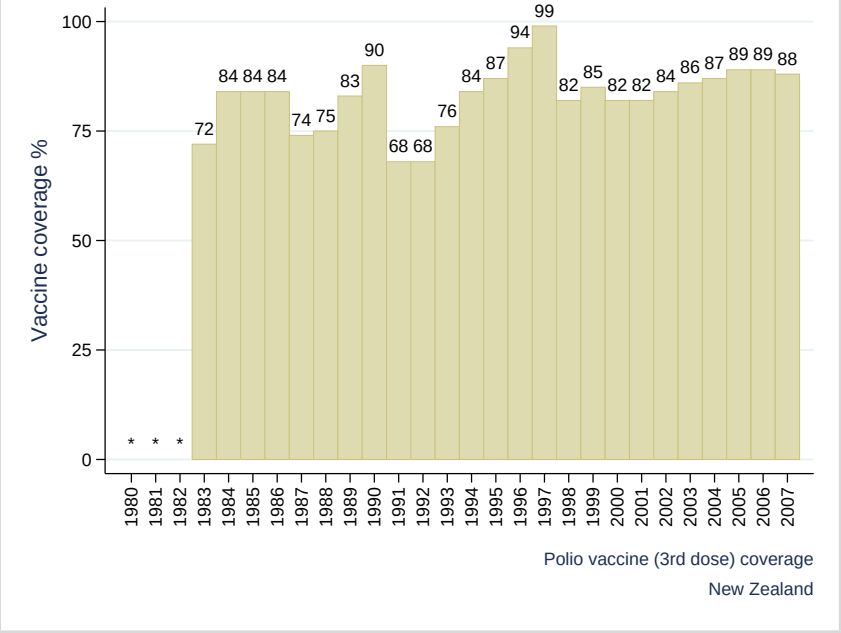
∗Data not available
Data sources:
WHO Immunization surveillance, assessment and monitoring (http://www.who.int/immunization_monitoring/data/data_subject/en/)

Figure 34: Measles-containing vaccine coverage in New Zealand



∗Data not available
Data sources:
WHO Immunization surveillance, assessment and monitoring (http://www.who.int/immunization_monitoring/data/data_subject/en/)

Figure 35: Polio vaccine coverage (3rd dose completed) in New Zealand



∗Data not available
Data sources:
WHO Immunization surveillance, assessment and monitoring (http://www.who.int/immunization_monitoring/data/data_subject/en/)

8.3 Other immunization indicators

Table 41: Relevant indicators of vaccine implementation in New Zealand.

Indicator		Value[a]
Immunization planning and management	Does the country have a multi-year plan (MYP) for immunization?	No
	What years does the MYP cover?	-
	Is MYP costing included?	-
	Is the MYP for immunization integrated into the broader health sector plan?	-
	Year of last inventory (models: location; age and working status) of all refrigeration equipment assigned for public immunization services in the country	2003
Immunization system performance	Total number of districts in country	-
	% of districts >=80% DTP3 coverage	-
	Drop-out rate between DTP1 and DTP3 coverage	4.4
Surveillance	Is there a system in place, with laboratory confirmation, to measure the impact of vaccination against invasive bacterial diseases, for example bacterial meningitis or pneumonia?	Yes
Safety	Non AD disposables: Type of injection equipment used for routine immunizations	Yes
	Sterilizable: Type of injection equipment used for routine immunizations	No
	Are safety boxes distributed with all vaccine deliveries?	No
	Was there any monitoring for immunization safety (i.e. monitoring of adverse events following immunization)?	Yes
Finance	Was there any monitoring for immunization safety (i.e. monitoring of adverse events following immunization)?	Yes
	What percentage of routine vaccine costs was financed by the government (including loans)?	100
	Was there a line item in the national budget for purchase of injection supplies (syringes: needles, sharp boxes) for routine immunizations?	No
	% of immunization spending financed using Government funds	100
New vaccine introduction	Is Hepatitis B vaccine integrated into the routine immunization systems?	Yes
	Is Rubella vaccine integrated into the routine immunization systems?	Yes

'A' means Adolescents, 'E' means Estimates and 'P' means Partial.
Reported for year: [a] 2007;
Data sources:
WHO Immunization surveillance, assessment and monitoring (http://www.who.int/immunization_monitoring/data/data_subject/en/)

Note to the reader

Anyone who is aware of relevant published data that may not have been included in the WHO/ICO Information Centre on HPV and Cervical Cancer is encouraged to contact the HPV Information Centre for potential contributions.

Although efforts have been made by the HPV Information Centre to prepare and include as accurately as possible the data presented, mistakes may occur. Readers are requested to communicate any errors to the HPV Information Centre, so that corrections can be made in future volumes.

Acknowledgments

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