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Human Papillomavirus and Related Diseases Report

WORLD

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Abbreviations

Table 1: Abbreviations

Abbreviation	Full term
HPV	Human papillomavirus
PREHDICT Project	Health economic modelling of prevention strategies for HPV-related diseases in European countries
HPV Information Centre	ICO Information Centre on HPV and Cervical Cancer
GW	Genital warts
RRP	Recurrent respiratory papillomatosis
SIL	Squamous intraepithelial lesions
LSIL	Low-grade cervical lesions
HSIL	High-grade cervical lesions
ICC	Invasive cervical cancer
CIS	Carcinoma in situ
CIN	Cervical intraepithelial neoplasia
AIN2/3	Anal intraepithelial neoplasia of grade 2 and/or 3
VIN 2/3	Vulvar intraepithelial neoplasia of grade 2 and/or 3
VaIN 2/3	Vaginal intraepithelial neoplasia of grade 2 and/or 3
PeIN 2/3	Penile intraepithelial neoplasia of grade 2 and/or 3
95% CI	95% confidence interval
N	Number of cases tested
HPV Prev	HPV prevalence
ASR	Age-standardised rate
MSM	Men who have sex with men
Non MSM	Heterosexual men
SCC	Squamous cell carcinomas
STI	Sexually transmitted infections
HIV/AIDS	Human immunodeficiency virus/acquired immunodeficiency syndrome
TS	Type specific
EIA	Enzyme immunoassay
RLBM	Reverse line blotting method
RFLP	Restriction fragment length polymorphism
RHA	Reverse hybridisation assay
RLH	Reverse line hybridisation
LiPA	Line probe assay
SBH	Southern blot hybridisation
ISH	In situ hybridisation
MABA	Micro array-based assay
LBA	Line blot assay
HC2	Hybrid Capture 2
SAT	Suspension array technology
PCR	Polymerase chain reaction
SPF	Short primer fragment
q-PCR	Quantitative polymerase chain reaction
RLBH	Reverse line blot hybridisation
RT-PCR	Real-time polymerase chain reaction
DBH	Dot blot hybridisation
HR	High risk
DSA	Direct sequence analysis
MAA	Microchip array assay

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) as well as head and neck cancers. HPV types 16 and 18 are responsible for about 70% of all cervical cancer cases worldwide. HPV vaccines that prevent HPV 16 and 18 infections are now available and have the potential to reduce the incidence of cervical and other anogenital cancers.

This report provides key information for Less developed regions on: cervical cancer; other anogenital cancers and head and neck cancers; HPV-related statistics; factors contributing to cervical cancer; cervical cancer screening practises; 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 region.

The World has a population of 2,784 million women aged 15 years and older who are at risk of developing cervical cancer. Current estimates indicate that every year 527,624 women are diagnosed with cervical cancer and 265,672 die from the disease. Cervical cancer ranks* as the fourth most frequent cancer among women in the World.

* Ranking of cervical cancer incidence to other cancers among all women according to highest incidence rates (ranking 1st). Ranking is based on crude incidence rates (actual number of cervical cancer cases). Ranking using age-standardized rate (ASR) may differ.

Table 2: Key statistics

	World	Less developed regions	More developed regions
Population			
Women at risk for cervical cancer (Female population aged ≥15 yrs) in millions	2,784.9	2,240.4	544.4
Burden of cervical cancer			
Annual number of new cervical cancer cases	527,624	444,546	83,078
Standardized incidence rates per 100,000 population	14.0	15.7	9.9
Annual number of cervical cancer deaths	265,672	230,158	35,514
Standardized mortality rates per 100,000 population	6.8	8.3	3.3
Burden of cervical HPV infection			
Prevalence (%) of HPV 16 and/or HPV 18 among women with:			
Normal cytology	4.1	4.4	3.9
Low-grade cervical lesions (LSIL/CIN-1)	25.8	25.1	25.9
High-grade cervical lesions (HSIL/ CIN-2 / CIN-3 / CIS)	51.9	46.7	54.1
Cervical cancer	69.4	69.5	71.8

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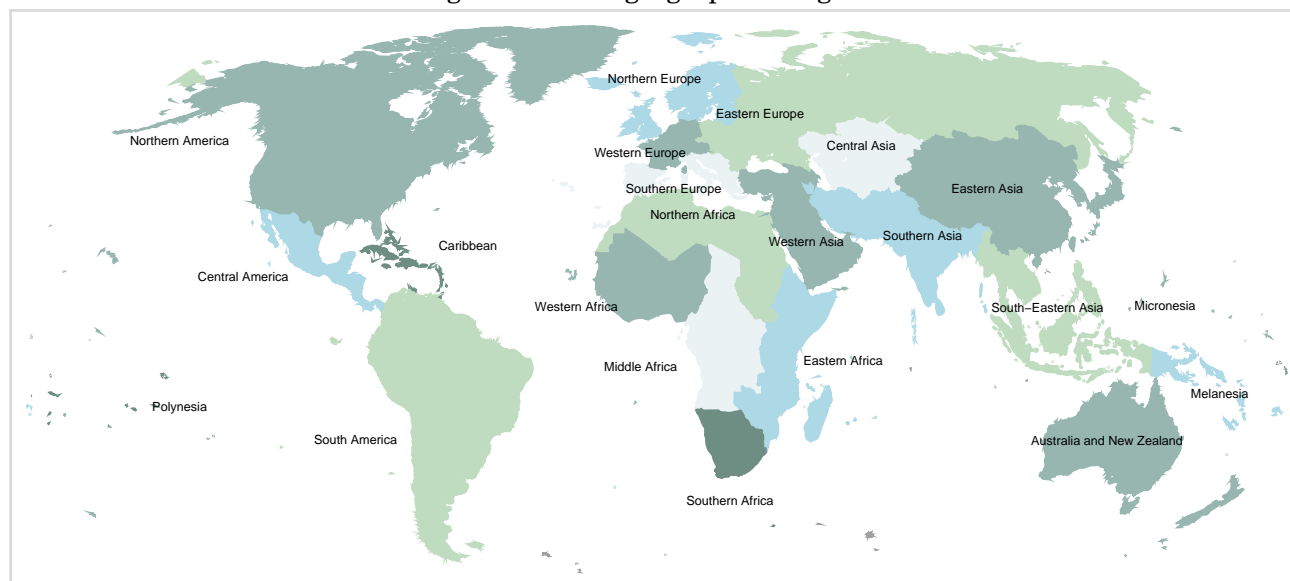
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1 Introduction

Figure 1: World geographical regions



Data sources: United Nations Statistics Division- Standard Country and Area Codes Classifications.

The HPV Information Centre aims to compile and centralize updated data and statistics on HPV and HPV-related cancers. This report aims to summarize the data available to fully evaluate the burden of disease in the World and to facilitate stakeholders and relevant bodies of decision makers to formulate recommendations on the prevention of cervical cancer and other HPV-related cancers. Data include relevant cancer statistic estimates, epidemiological determinants of cervical cancer such as demographics, socioeconomic factors, risk factors, burden of HPV infection in women and men, and cervical screening and immunization practices. The report is structured into the following sections:

Section 2, Demographic and socioeconomic factors. This section summarizes the sociodemographic profile of the World. For analytical purposes, the World is divided into five regions: Africa, the Americas, Asia, Europe and Oceania (Figure 1).

Section 3, Burden of HPV related cancers. This section describes the current burden of invasive cervical cancer and other HPV-related cancers in the World with estimates of prevalence, incidence and mortality rates.

Section 4, HPV related statistics. This section summarizes reports on prevalence of HPV and HPV type-specific distribution in women with normal cytology, women with precancerous lesions and invasive cervical cancer. In addition, the burden of HPV in other anogenital cancers (anus, vulva, vagina, and penis) are presented.

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

Section 6, Sexual behaviour and reproductive health indicators. This section presents sexual behaviour and reproductive health indicators that may be used as proxy measures of risk for HPV infection and anogenital cancers.

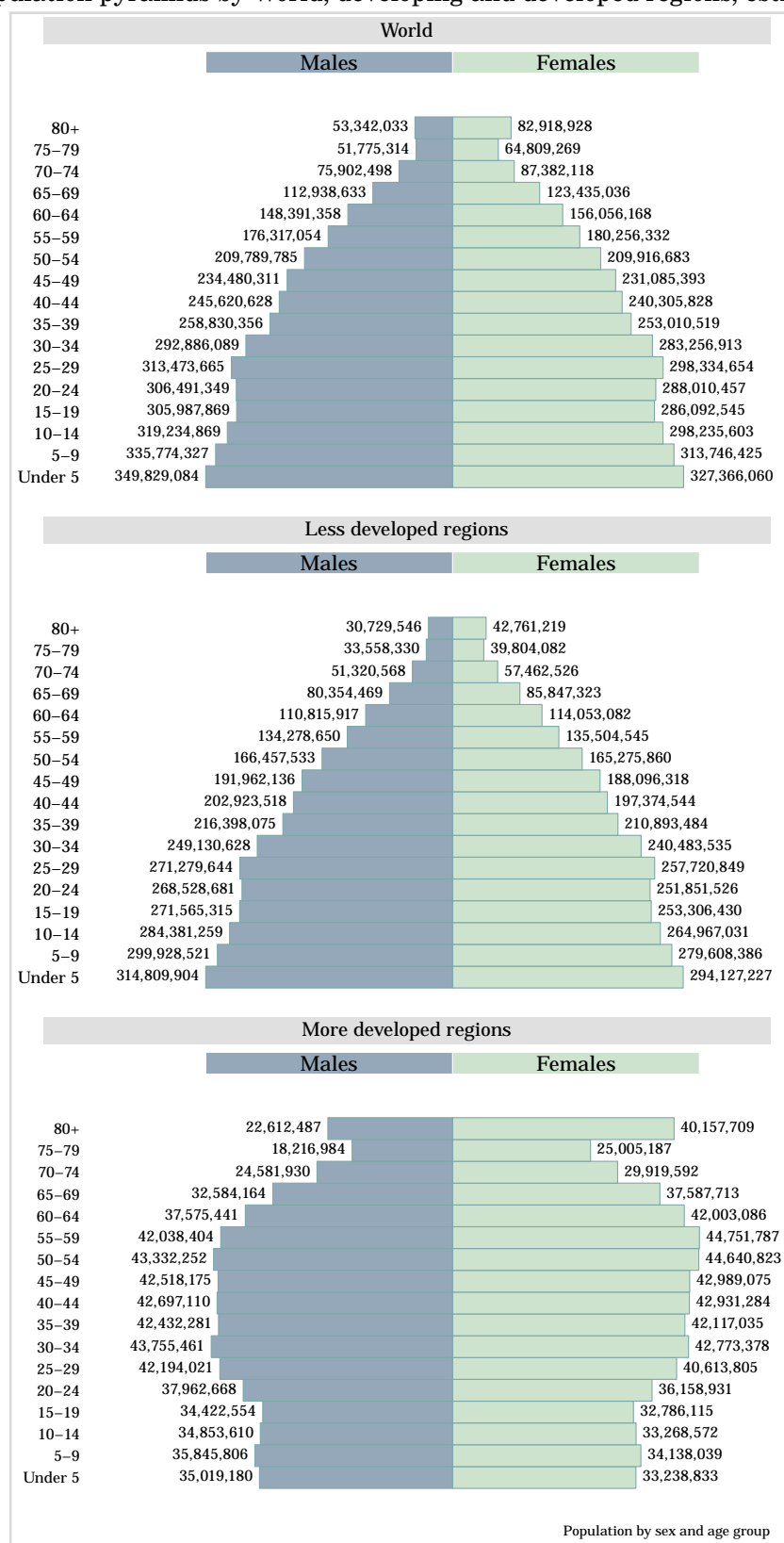
Section 7, HPV preventive strategies. This section presents preventive strategies that include basic characteristics and performance of cervical cancer screening status, status of HPV vaccine licensure

introduction, and recommendations for national immunization programmes.

Section 8, [Protective factors for cervical cancer](#). This section presents the prevalence of male circumcision and condom use.

2 Demographic and socioeconomic factors

Figure 2: Population pyramids by World, developing and developed regions, estimates for 2017



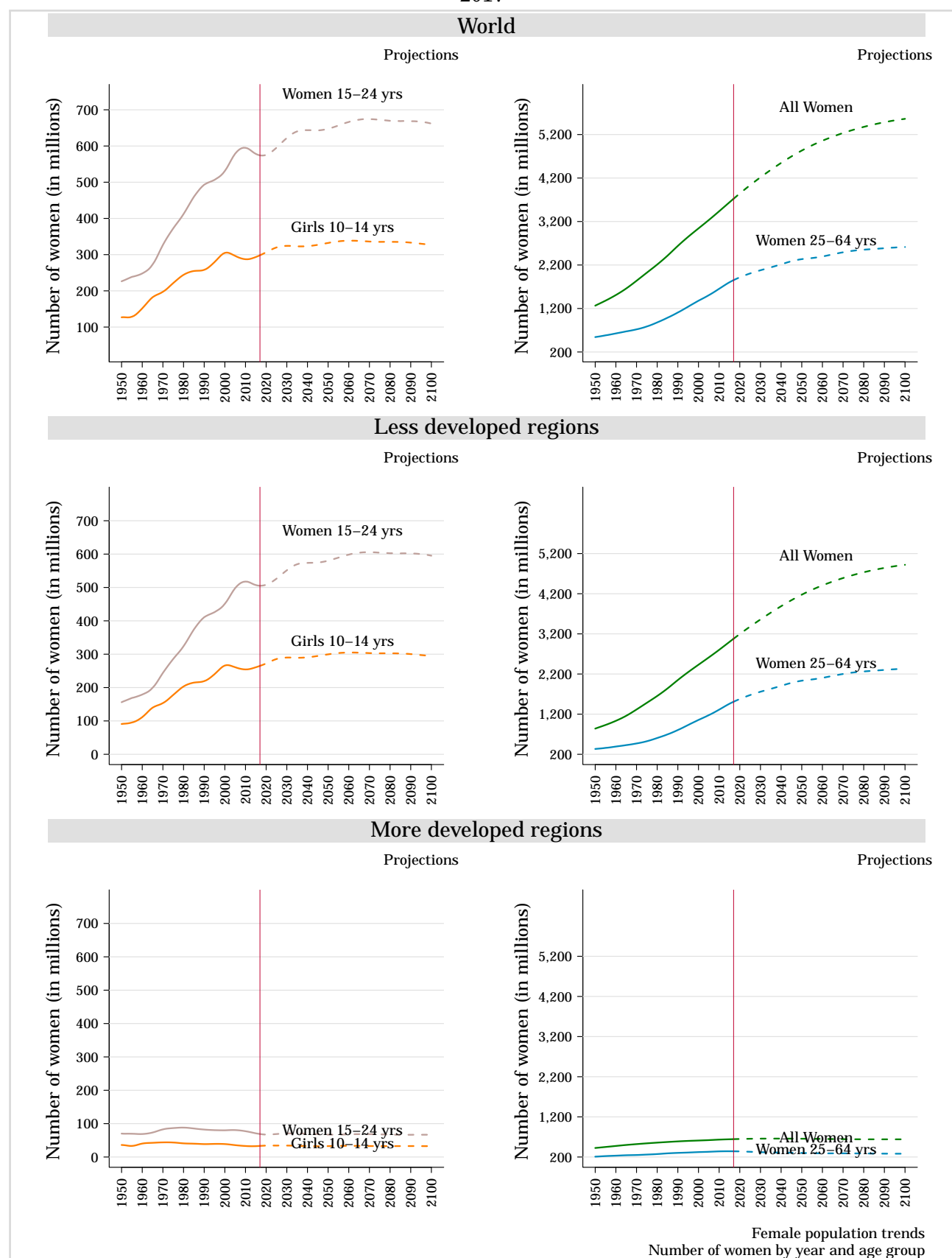
Data accessed on 27 Mar 2017.

Please refer to original source for methods of estimation.

Data sources:

United Nations, Department of Economic and Social Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, DVD Edition. Available at: <https://esa.un.org/unpd/wpp/Download/Standard/Population/>. [Accessed on March 21, 2017].

Figure 3: Population trends in four selected age groups by World, developing and developed regions for 2017



Data accessed on 27 Mar 2017.

Please refer to original source for methods of estimation.

Data sources:

United Nations, Department of Economic and Social Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, DVD Edition. Available at: <https://esa.un.org/unpd/wpp/Download/Standard/Population/>. [Accessed on March 21, 2017].

(Continued on next page)

(Figure 3 – continued from previous page)

Table 3: World population estimates (in millions), 2017

Region / Country	Male			Female		
	10-14 years	15+ years	Total	10-14 years	15+ years	Total
World	319.23	2786.23	3791.07	298.24	2784.87	3724.22
Less developed regions^a	284.38	2279.30	3178.42	264.97	2240.44	3079.14
More developed regions^b	34.85	506.92	612.64	33.27	544.44	645.08
Africa	74.46	366.41	623.91	72.68	372.16	622.59
Eastern Africa	26.43	117.18	207.24	26.18	120.82	209.44
Middle Africa	10.36	43.80	80.44	10.25	44.69	80.80
Northern Africa	11.02	78.21	116.59	10.53	79.00	115.60
Southern Africa	3.04	21.94	31.46	3.03	23.00	32.39
Western Africa ^{c,d}	23.60	105.28	188.18	22.68	104.65	184.37
Americas^e	39.74	383.15	500.03	38.20	398.60	510.76
Caribbean ^f	1.83	16.19	21.68	1.76	16.83	22.09
Central America	8.38	62.80	87.87	8.05	65.33	89.38
Northern America ^g	11.69	145.76	180.10	11.23	150.22	183.12
South America ^h	17.84	158.40	210.37	17.16	166.23	216.18
Asia	184.06	1724.83	2290.13	167.41	1673.22	2188.18
Central Asia	2.93	23.59	34.04	2.80	25.25	35.20
Eastern Asia	46.74	685.40	831.25	40.71	666.46	793.61
South-Eastern Asia	28.15	236.41	323.07	26.76	242.18	324.52
Southern Asia	93.75	681.16	963.08	85.21	650.33	907.38
Western Asia	12.49	98.27	138.70	11.91	88.99	127.47
Europe	19.42	296.45	356.72	18.48	325.29	382.49
Eastern Europe	7.44	112.86	137.40	7.07	131.24	154.51
Northern Europe ⁱ	2.97	41.62	51.04	2.84	43.48	52.44
Southern Europe ^j	3.90	62.96	74.13	3.69	67.36	77.92
Western Europe ^k	5.11	79.01	94.15	4.87	83.21	97.61
Oceania	1.56	15.39	20.27	1.47	15.60	20.20
Australia & New Zealand	0.92	11.70	14.56	0.87	11.97	14.69
Melanesia	0.58	3.26	5.09	0.54	3.19	4.90
Micronesia ^l	0.03	0.19	0.27	0.03	0.19	0.27
Polynesia ^m	0.03	0.25	0.35	0.03	0.24	0.34

Data accessed on 27 Mar 2017.

Please refer to original source for methods of estimation.

Year of estimate: 2017;

^a Less developed regions comprise all regions of Africa, Asia (except Japan), Latin America and the Caribbean plus Melanesia, Micronesia and Polynesia.^b More developed regions comprise Europe, Northern America, Australia/New Zealand and Japan.^c Including Saint Helena, Ascension and Tristan da Cunha.^d Including Saint Helena, Ascension, and Tristan da Cunha.^e Aggregated by the HPV Information Centre pooling its individual areas/countries.^f Including Anguilla, British Virgin Islands, Caribbean Netherlands, Cayman Islands, Dominica, Montserrat, Saint Kitts and Nevis, Sint Maarten (Dutch part) and Turks and Caicos Islands.^g Including Bermuda, Greenland, and Saint-Pierre-et-Miquelon.^h Including Falkland Islands (Malvinas).ⁱ Including Faeroe Islands, and Isle of Man.^j Including Andorra, Gibraltar, Holy See, and San Marino.^k Including Liechtenstein, and Monaco.^l Including Marshall Islands, Nauru, Northern Mariana Islands, and Palau.^m Including American Samoa, Cook Islands, Niue, Pitcairn, Tokelau, Tuvalu, and Wallis and Futuna Islands.**Data sources:**United Nations, Department of Economic and Social Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, DVD Edition. Available at: <https://esa.un.org/unpd/wpp/Download/Standard/Population/>. [Accessed on March 21, 2017].

Table 4: World sociodemographic indicators, 2017

Indicator	Male	Female	Total
Population in thousands ^{1,±}	3,791,065.3	3,724,218.9	7,515,284.2
Population growth rate (%) ^{1,±}	-	-	1.2
Median age of the population (in years) ^{1,*}	-	-	29.6
Population living in urban areas (%) ^{2,*}	-	-	54
Crude birth rate (births per 1,000) ^{1,±}	-	-	19.6
Crude death rate (deaths per 1,000) ^{1,±}	-	-	7.8
Life expectancy at birth (in years) ^{3,a,b}	-	-	-
Adult mortality rate (probability of dying between 15 and 60 years old per 1,000) ⁴	-	-	-

(Continued on next page)

(Table 4 – continued from previous page)

Indicator	Male	Female	Total
Under age five mortality rate (per 1,000 live births) ^{3,c}	-	-	-
Density of physicians (per 1,000 population) ^{5,d}	-	-	-
Gross national income per capita (PPP current international \$) ^{6,e}	-	-	-
Adult literacy rate (%) (aged 15 and older) ^{7,*}	89.2	81.5	85.3
Youth literacy rate (%) (aged 15-24 years) ^{7,*}	92.6	88.6	90.6
Net primary school enrollment ratio ^{7,f,*}	90.1	88.5	89.3
Net secondary school enrollment ratio ^{7,f,*}	65.1	65	65

Data accessed on 27 Mar 2017.

Please refer to original source for methods of estimation.

^a World Population Prospects, the 2015 revision (WPP2015). New York (NY): United Nations DESA, Population Division.^b WHO annual life tables for 1985–2015 based on the WPP2015, on the data held in the WHO Mortality Database and on HIV mortality estimates prepared by UNAIDS. WHO Member States with a population of less than 90 000 in 2015 were not included in the analysis.^c Levels & Trends in Child Mortality. Report 2015. Estimates Developed by the UN Inter-agency Group for Child Mortality Estimation. New York (NY), Geneva and Washington (DC): United Nations Children's Fund, World Health Organization, World Bank and United Nations; 2015 (http://www.unicef.org/publications/files/Child_Mortality_Report_2015_Web_9_Sept_15.pdf, accessed 26 March 2016).^d Number of medical doctors (physicians), including generalist and specialist medical practitioners, per 1 000 population.^e GNI per capita based on purchasing power parity (PPP). PPP GNI is gross national income (GNI) converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GNI as a U.S. dollar has in the United States. GNI is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad. Data are in current international dollars based on the 2011 ICP round.^f UIS Estimation

Year of estimate: ± 2017; ± 2010-2015; * 2015; * 2014;

Data sources:¹ United Nations, Department of Economic and Social Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, DVD Edition. Available at: <https://esa.un.org/unpd/wpp/Download/Standard/Population/>. [Accessed on March 21, 2017].² United Nations, Department of Economic and Social Affairs, Population Division (2014). World Urbanization Prospects: The 2014 Revision, CD-ROM Edition. Available at: <https://esa.un.org/unpd/wup/CD-ROM/>. [Accessed on March 21, 2017].³ World Health Statistics 2016. Geneva, World Health Organization, 2016. Available at: http://who.int/entity/gho/publications/world_health_statistics/2016/en/index.html. [Accessed on March 21, 2017].⁴ World Health Organization. Global Health Observatory data repository. Available at: <http://apps.who.int/gho/data/view.main.1360?lang=en>. [Accessed on March 21, 2017].⁵ The 2016 update, Global Health Workforce Statistics, World Health Organization, Geneva (<http://www.who.int/hrh/statistics/hwfstats/>). [Accessed on March 21, 2017].⁶ World Bank, World Development Indicators Database. Washington, DC. International Comparison Program database. Available at: <http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators#>. [Accessed on March 21, 2017].⁷ UNESCO Institute for Statistics Data Centre [online database]. Montreal, UNESCO Institute for Statistics. Available at: <http://stats.uis.unesco.org> [Accessed on March 21, 2017].

3 Burden of HPV related cancers

3.1 Cervical cancer

Cancer of the cervix uteri is the 4th most common cancer among women worldwide, with an estimated 527,624 new cases and 265,672 deaths in 2012 (GLOBOCAN). The majority of cases are squamous cell carcinoma followed by adenocarcinomas. (*Vaccine 2006, Vol. 24, Suppl 3; Vaccine 2008, Vol. 26, Suppl 10; Vaccine 2012, Vol. 30, Suppl 5; IARC Monographs 2007, Vol. 90*)

This section describes the current burden of invasive cervical cancer in the World and its regions with estimates of the annual number of new cases, deaths, incidence and mortality.

3.1.1 Incidence

KEY STATS

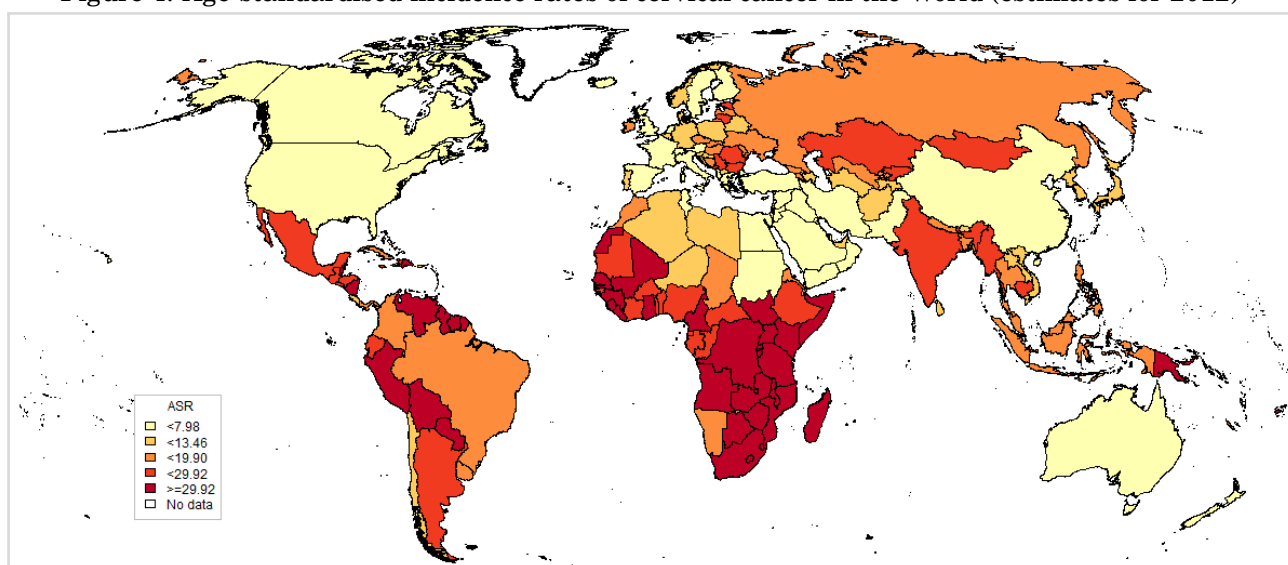
About 527,624 new cervical cancer cases are diagnosed annually in World (estimates for 2012).

Cervical cancer ranks* as the 4th leading cause of female cancer in the World.

Cervical cancer is the 2nd most common female cancer in the women aged 15 to 44 years in World.

* Ranking of cervical cancer incidence to other cancers among all women according to highest incidence rates (ranking 1st). Ranking is based on crude incidence rates (actual number of cervical cancer cases). Ranking using age-standardized rate (ASR) may differ.

Figure 4: Age-standardised incidence rates of cervical cancer in the World (estimates for 2012)



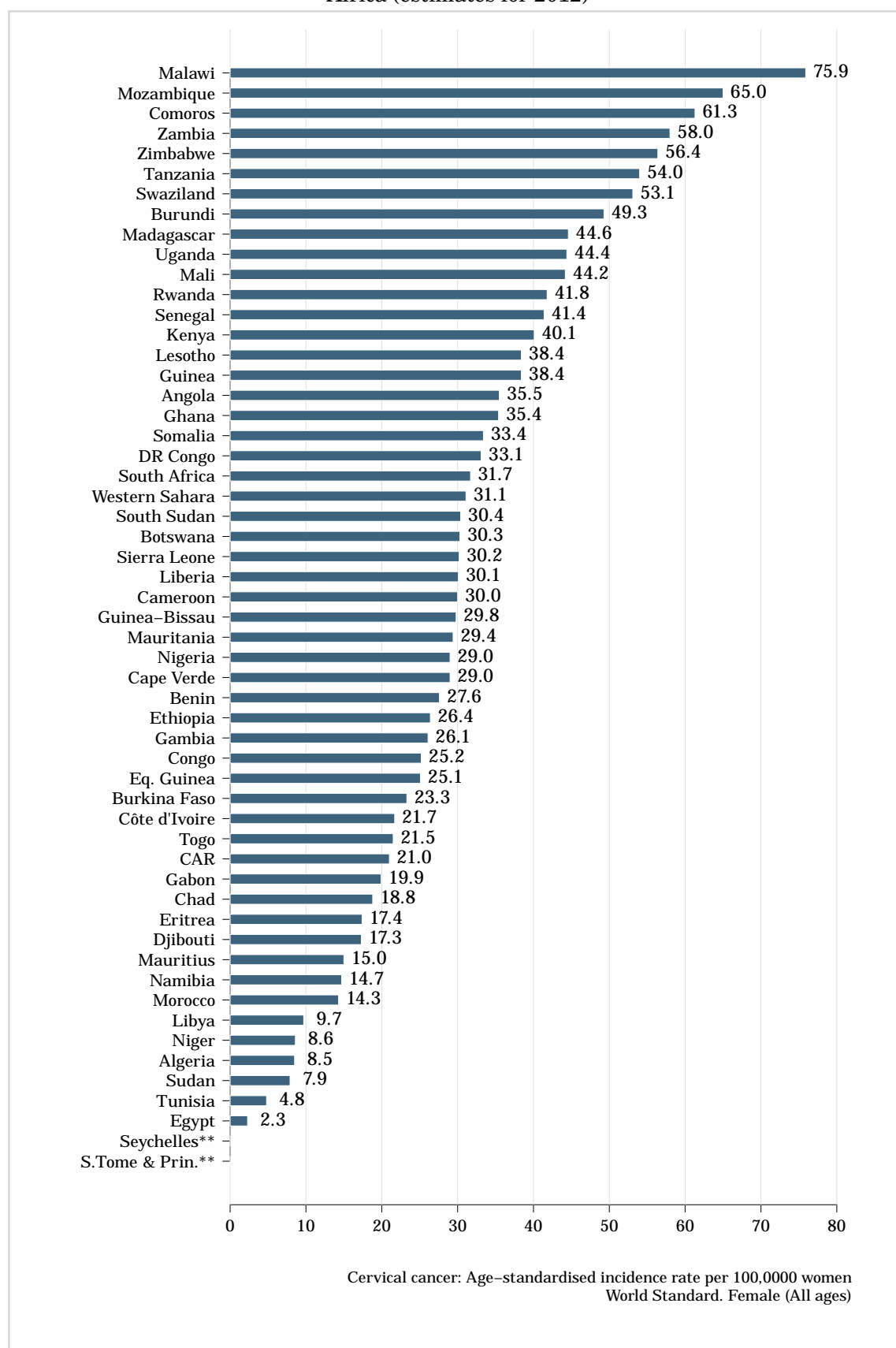
Data accessed on 15 Nov 2015.

Rates per 100,000 women per year.

For Sudan, South Sudan: Estimate for Sudan and South Sudan

Data sources: Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Figure 5: Age-standardised incidence rate of cervical cancer cases attributable to HPV by country in Africa (estimates for 2012)



** No rates are available.

Data accessed on 15 Nov 2015.

Rates per 100,000 women per year.

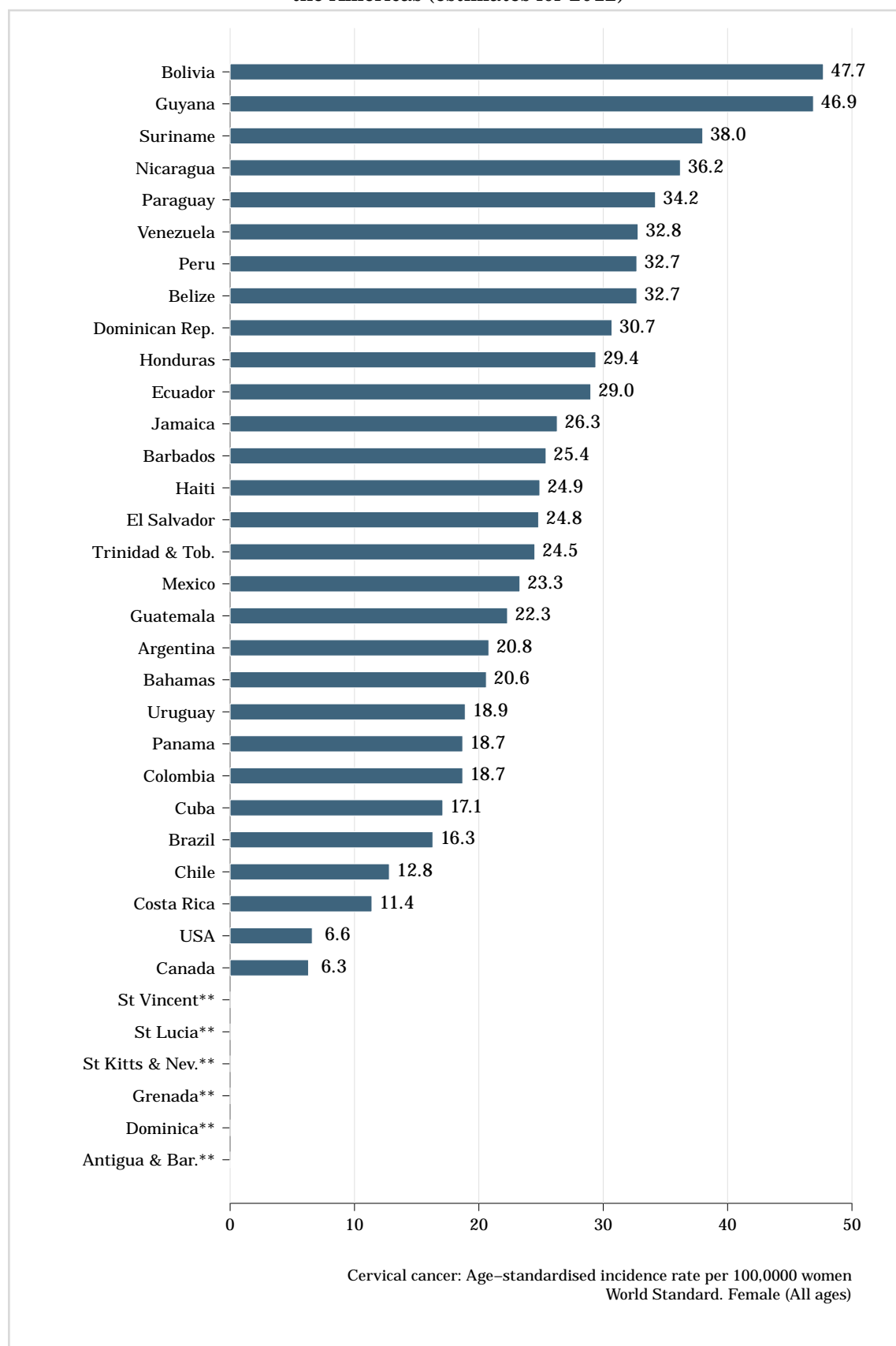
For Sudan, South Sudan: Estimate for Sudan and South Sudan

(Continued on next page)

(Figure 9 – continued from previous page)

Data sources: Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Figure 6: Age-standardised incidence rate of cervical cancer cases attributable to HPV by country in the Americas (estimates for 2012)



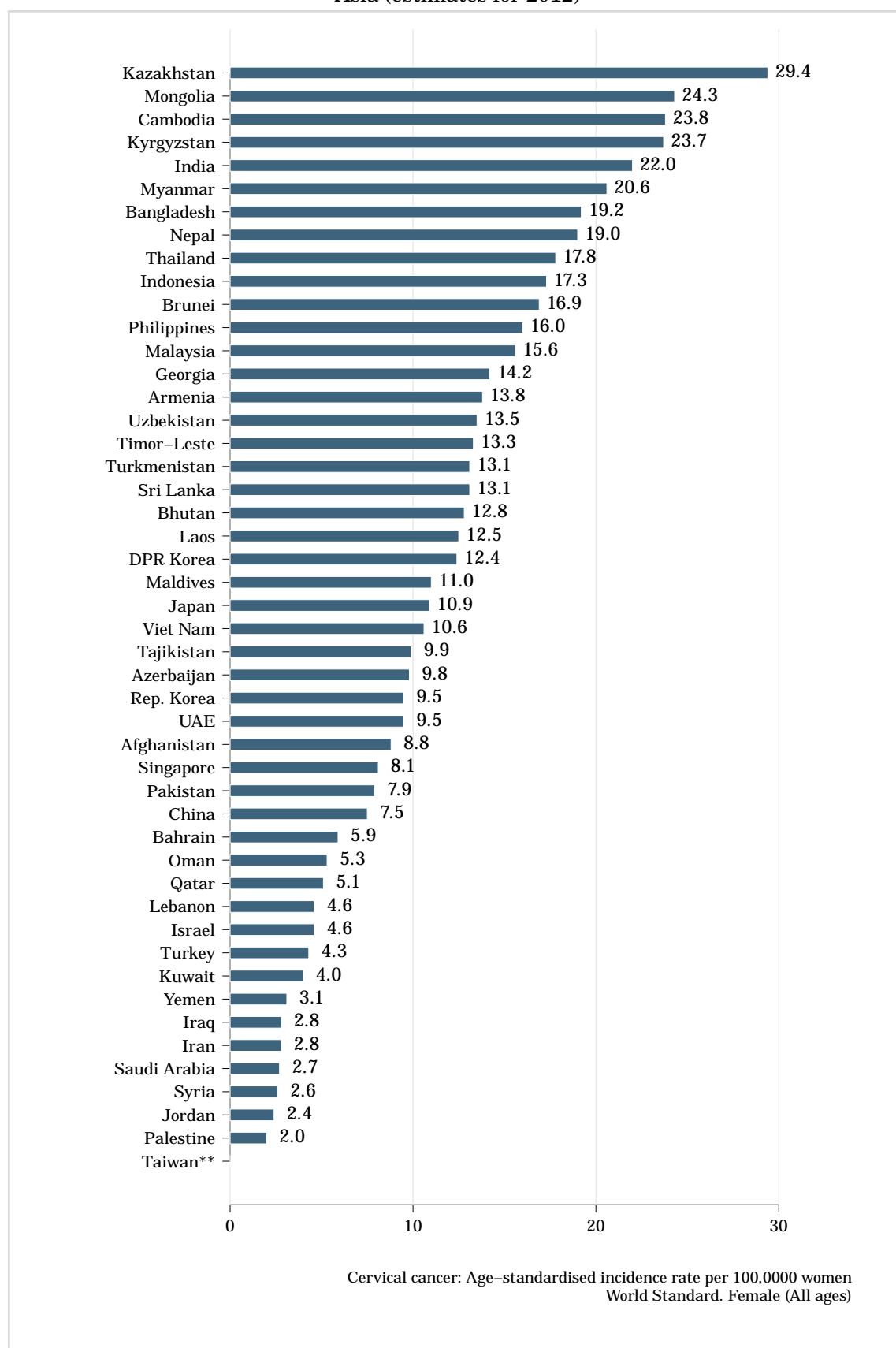
** No rates are available.

Data accessed on 15 Nov 2015.

Rates per 100,000 women per year.

Data sources: Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Figure 7: Age-standardised incidence rate of cervical cancer cases attributable to HPV by country in Asia (estimates for 2012)



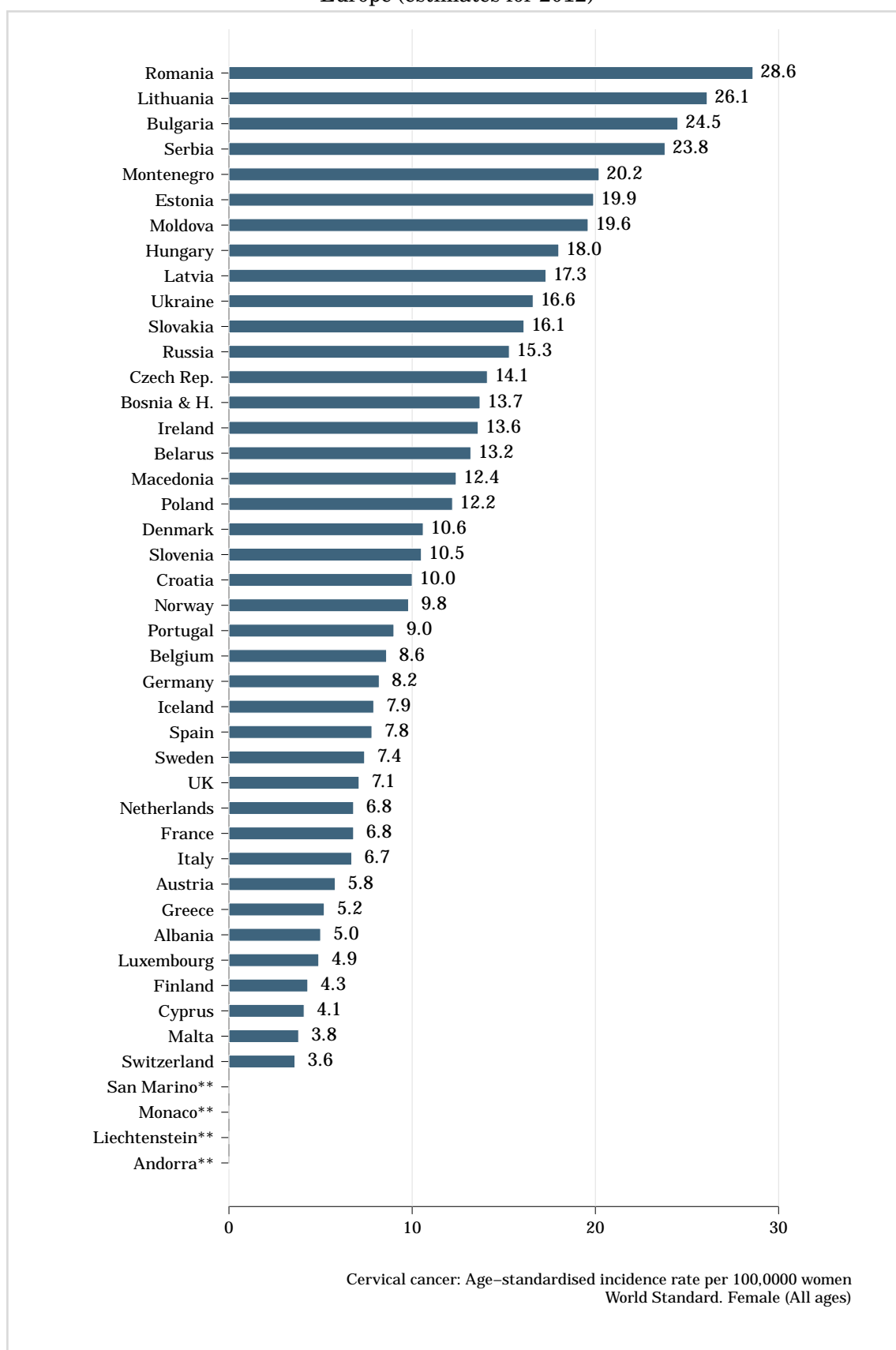
** No rates are available.

Data accessed on 15 Nov 2015.

Rates per 100,000 women per year.

Data sources: Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Figure 8: Age-standardised incidence rate of cervical cancer cases attributable to HPV by country in Europe (estimates for 2012)



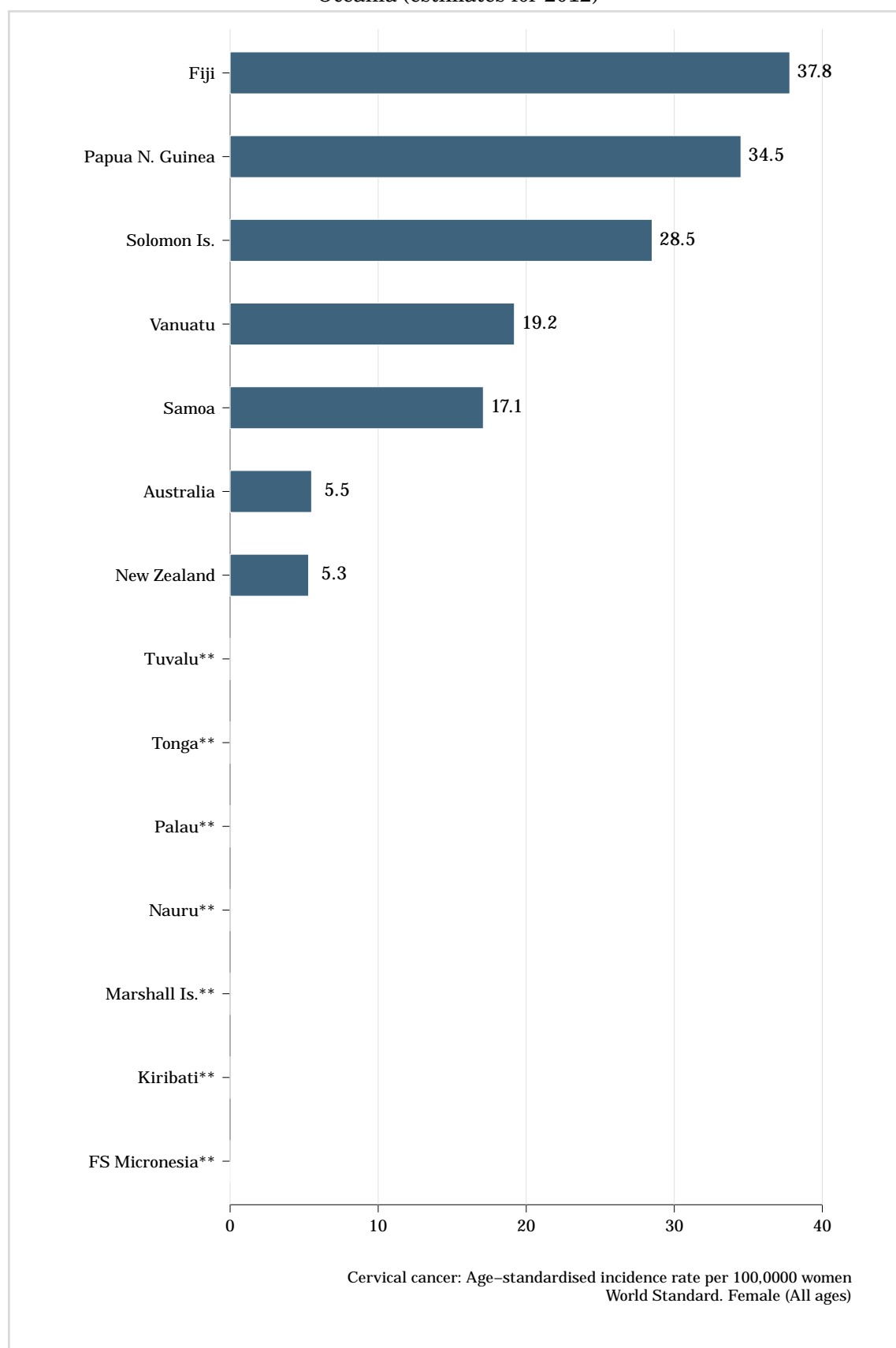
** No rates are available.

Data accessed on 15 Nov 2015.

Rates per 100,000 women per year.

Data sources: Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Figure 9: Age-standardised incidence rate of cervical cancer cases attributable to HPV by country in Oceania (estimates for 2012)



** No rates are available.

Data accessed on 15 Nov 2015.

Rates per 100,000 women per year.

Data sources: Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Table 5: Incidence of cervical cancer by World region and sub regions (estimates for 2012)

Area	N cases	Crude rate ^a	ASR ^a	Cumulative risk (%) ages 0-74 years ^b	Ranking of CC	
					All women	Women 15-44 years
World	527,624	15.1	14.0	1.4	4	2
Less developed regions	444,546	15.6	15.7	1.6	2	2
More developed regions	83,078	13.0	9.9	0.9	11	2
Africa	99,038	18.5	27.6	3.0	2	2
Eastern Africa	45,707	25.8	42.7	4.6	1	1
Middle Africa	11,540	17.2	30.6	3.4	1	2
Northern Africa	5,813	5.6	6.6	0.7	4	4
Southern Africa	8,652	29.3	31.5	3.1	2	1
Western Africa	27,326	17.2	29.3	3.2	2	2
Americas	83,195	17.2	14.9	1.4	4	2
Caribbean	5,018	23.6	21.0	2.0	2	2
Central America	18,792	23.1	23.5	2.3	2	1
Northern America	14,377	8.1	6.6	0.6	13	4
South America	45,008	22.2	20.3	2.0	2	2
Asia	284,823	13.7	12.7	1.3	3	2
Central Asia	5,850	18.5	18.6	1.8	2	1
Eastern Asia	78,006	10.1	7.9	0.7	7	2
Southern Asia	145,946	17.1	19.3	2.1	2	2
South-Eastern Asia	50,566	16.6	16.3	1.7	2	2
Western Asia	4,455	3.8	4.4	0.5	11	4
Europe	58,373	15.2	11.4	1.1	6	2
Eastern Europe	33,882	21.7	16.3	1.5	4	2
Northern Europe	5,382	10.6	8.7	0.8	10	3
Southern Europe	9,285	11.6	8.5	0.8	11	2
Western Europe	9,824	10.2	7.3	0.7	14	4
Oceania	2,195	11.7	10.2	0.9	8	3
Australia & New Zealand	938	6.8	5.5	0.5	12	4
Melanesia	1,198	26.8	33.3	3.2	2	1
Micronesia	23	8.5	8.7	0.9	6	4
Polynesia	36	10.8	11.0	1.1	5	3

Data accessed on 15 Nov 2015.

Standardised rates have been estimated using the direct method and the World population as the reference.

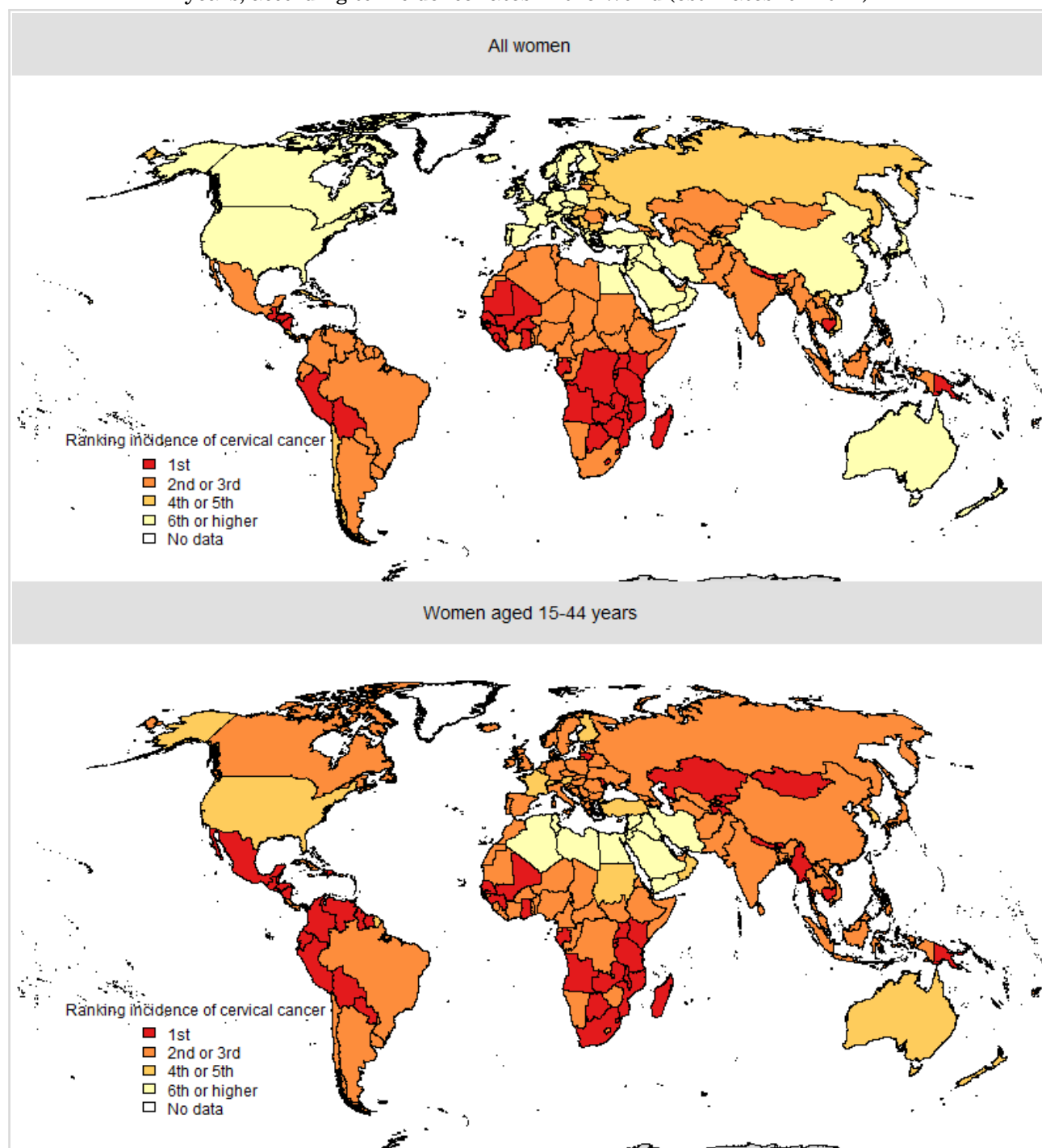
Ranking of cervical cancer incidence to other cancers among all women ages 15-44 years according to highest incidence rates (ranking 1st). Ranking is based on crude incidence rates (actual number of cervical cancer cases). Ranking using ASR may differ.

^a Rates per 100,000 women per year.^b Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

Data sources:

¹ Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

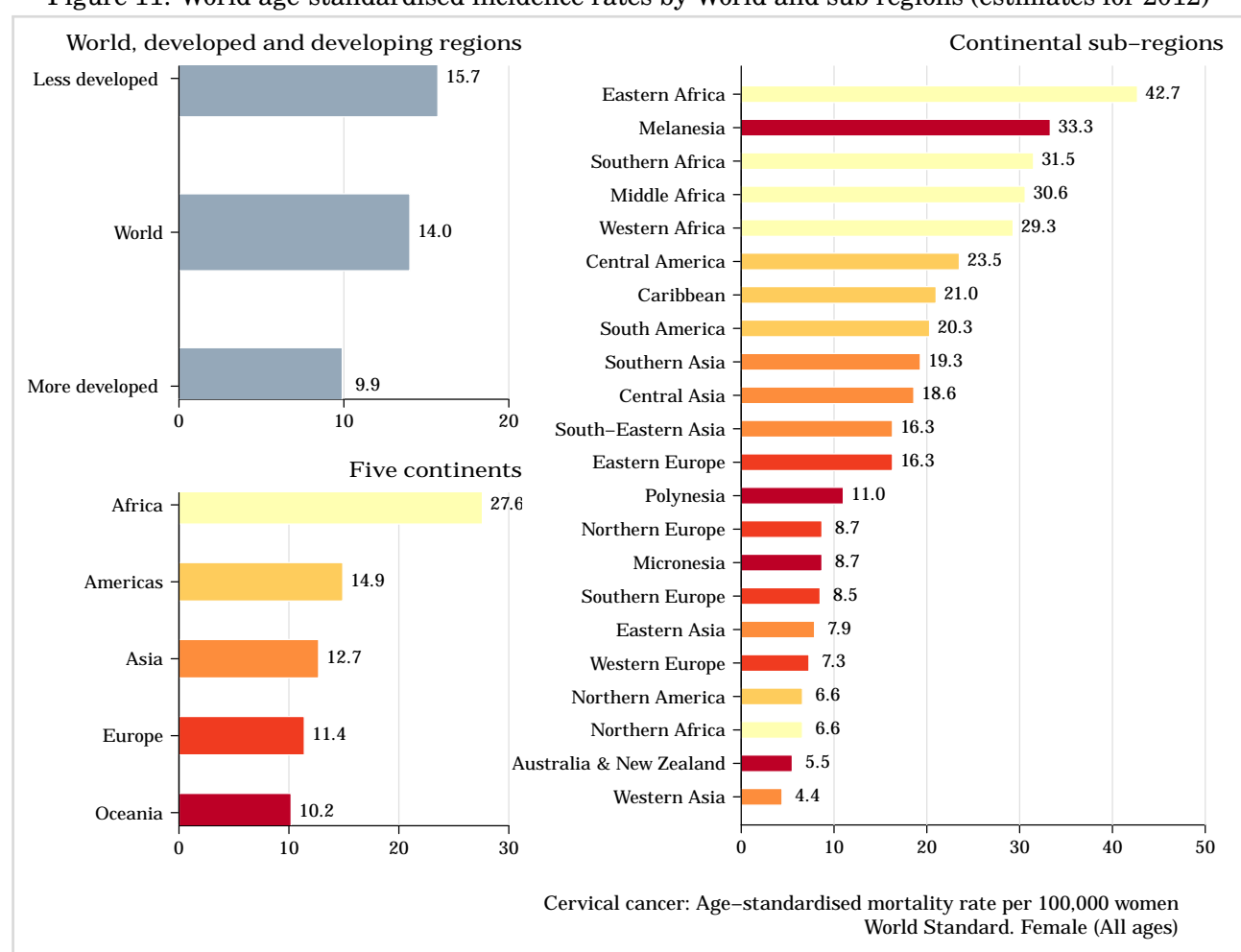
Figure 10: Ranking of cervical cancer versus other cancers among all women and women aged 15-44 years, according to incidence rates in the World (estimates for 2012)



Data accessed on 15 Nov 2015.

Data sources: Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Figure 11: World age-standardised incidence rates by World and sub regions (estimates for 2012)



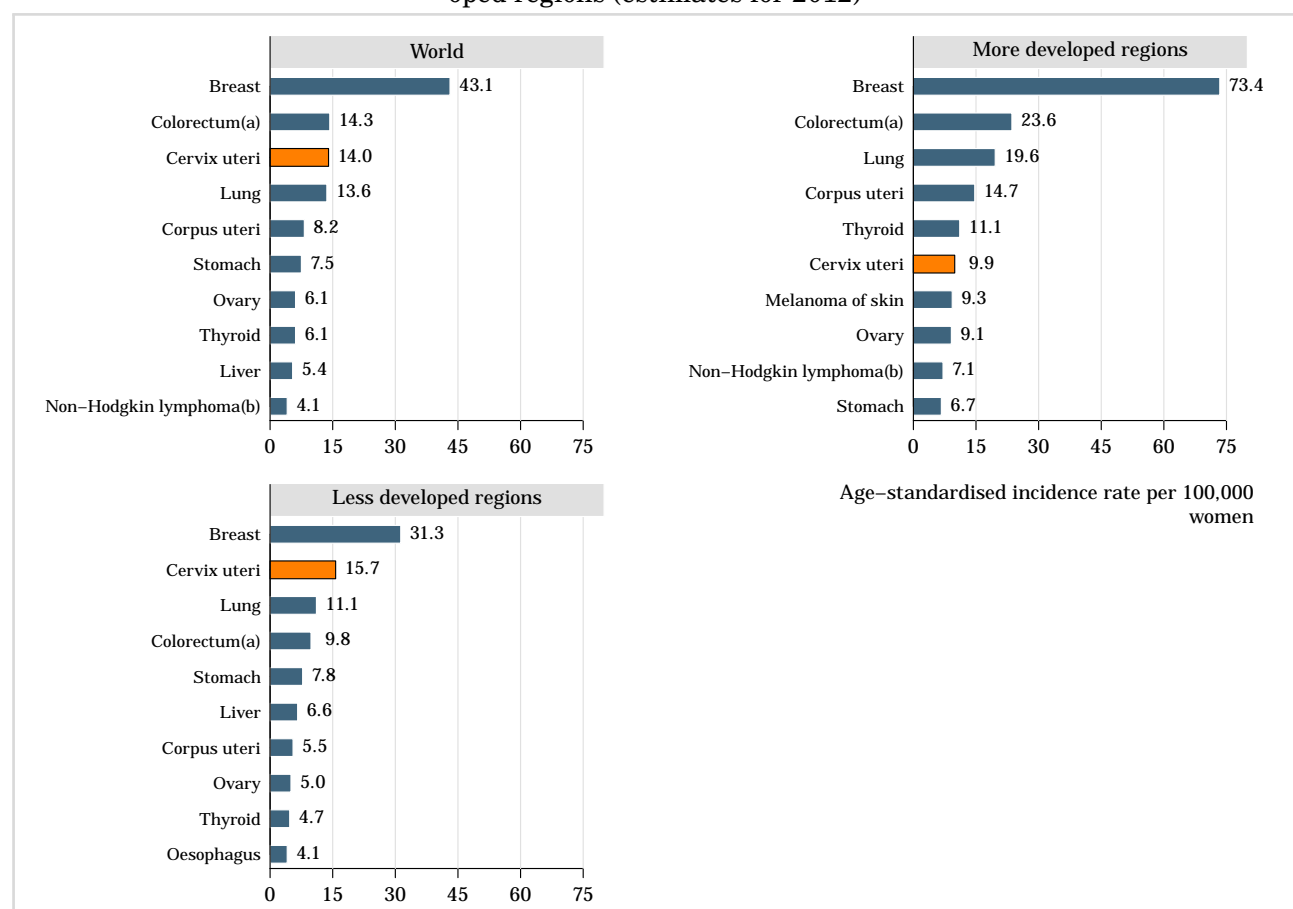
Data accessed on 15 Nov 2015.

Rates per 100,000 women per year.

Data sources:

Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Figure 12: Comparison of the ten most frequent cancers in all women by World, developing and developed regions (estimates for 2012)



Data accessed on 15 Nov 2015.

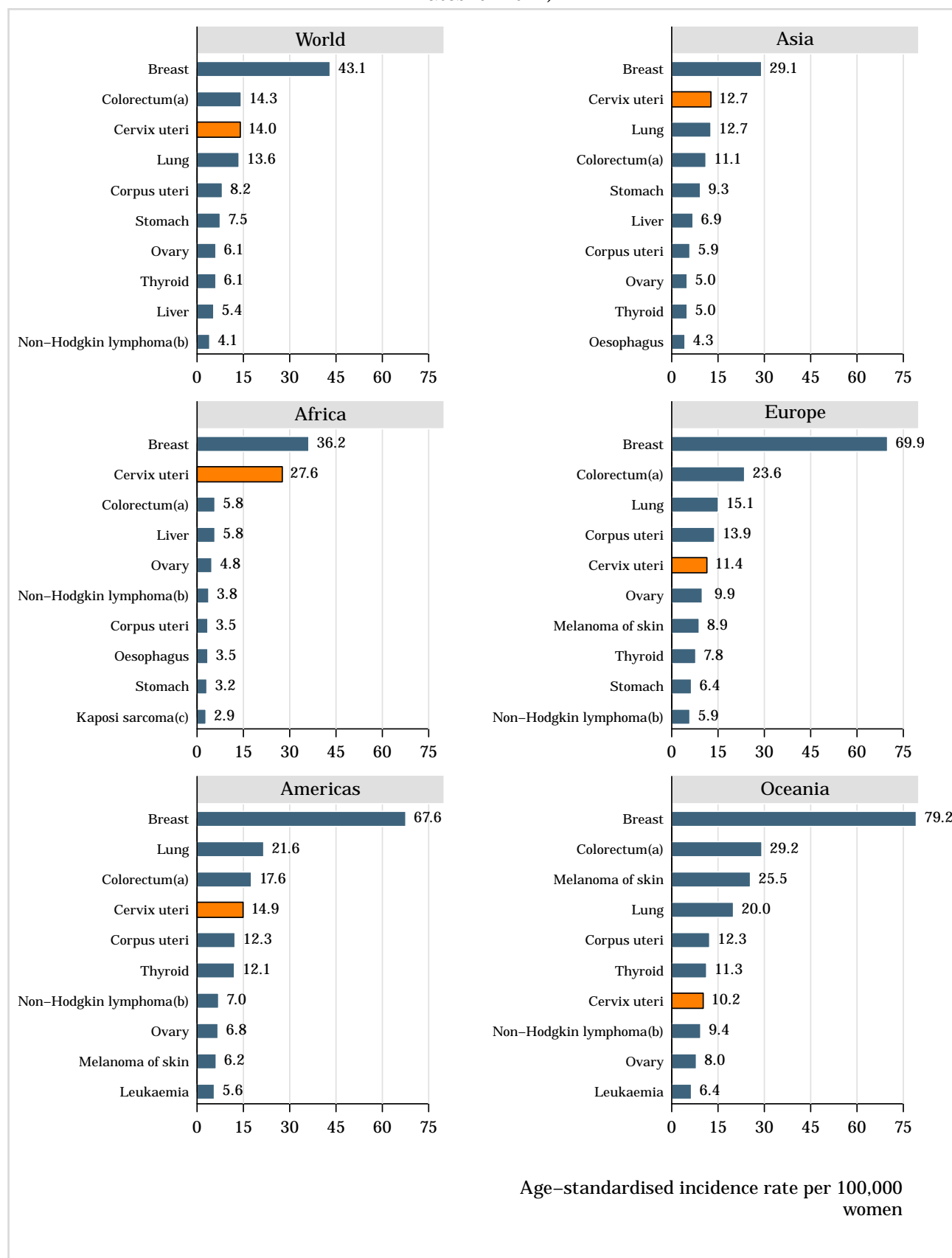
^a Includes anal cancer (C21).

^b Includes HIV disease resulting in malignant neoplasms (B21).

Data sources:

Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Figure 13: Comparison of the ten most frequent cancers in all women by World and continents (estimates for 2012)



Data accessed on 15 Nov 2015.

^a Includes anal cancer (C21).

^b Includes HIV disease resulting in malignant neoplasms (B21).

^c Includes B21.0 (HIV disease resulting in Kaposi sarcoma).

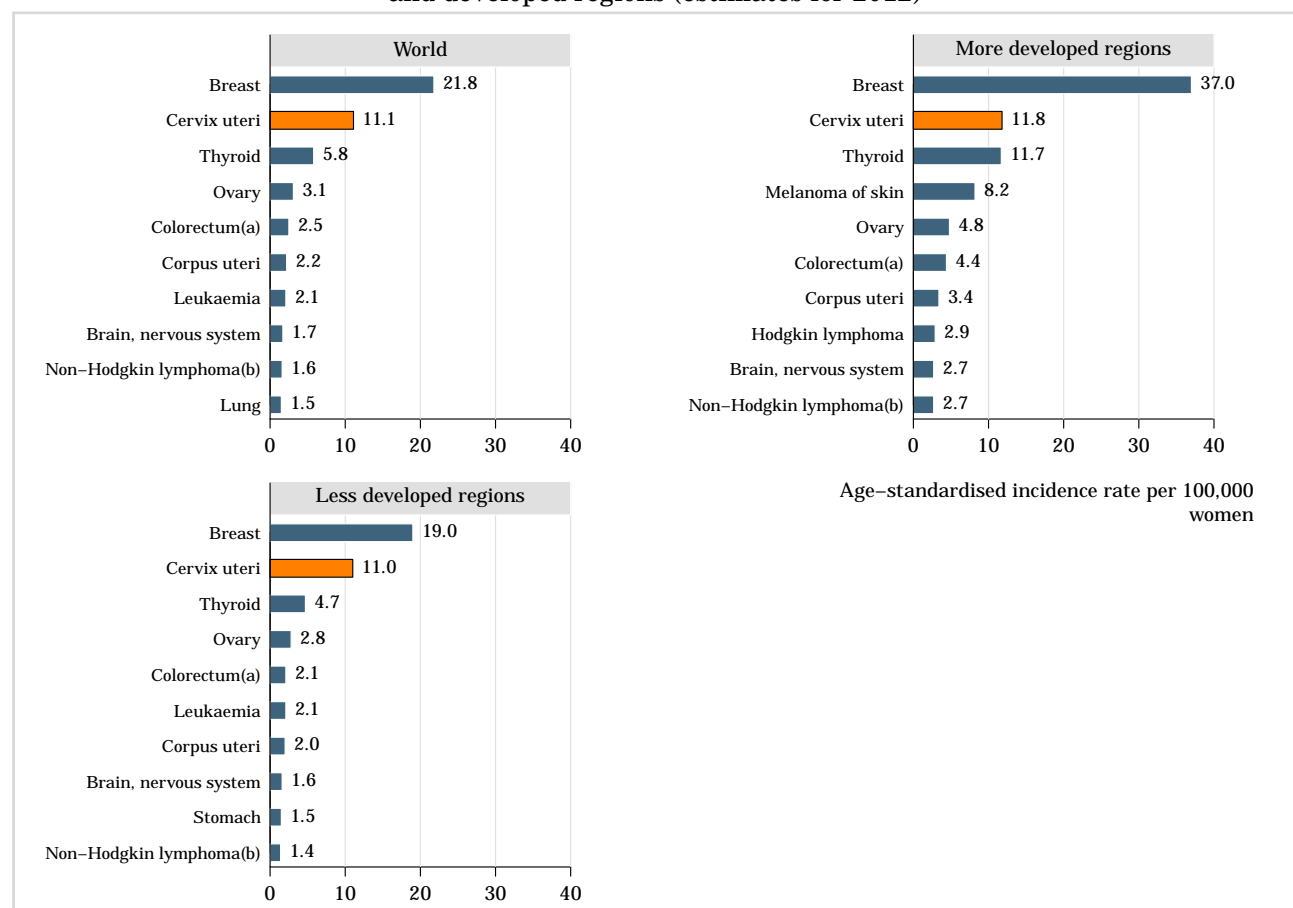
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(Figure 13 – continued from previous page)

Data sources:

Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Figure 14: Comparison of the ten most frequent cancers in women aged 15-44 years by World developing and developed regions (estimates for 2012)



Data accessed on 15 Nov 2015.

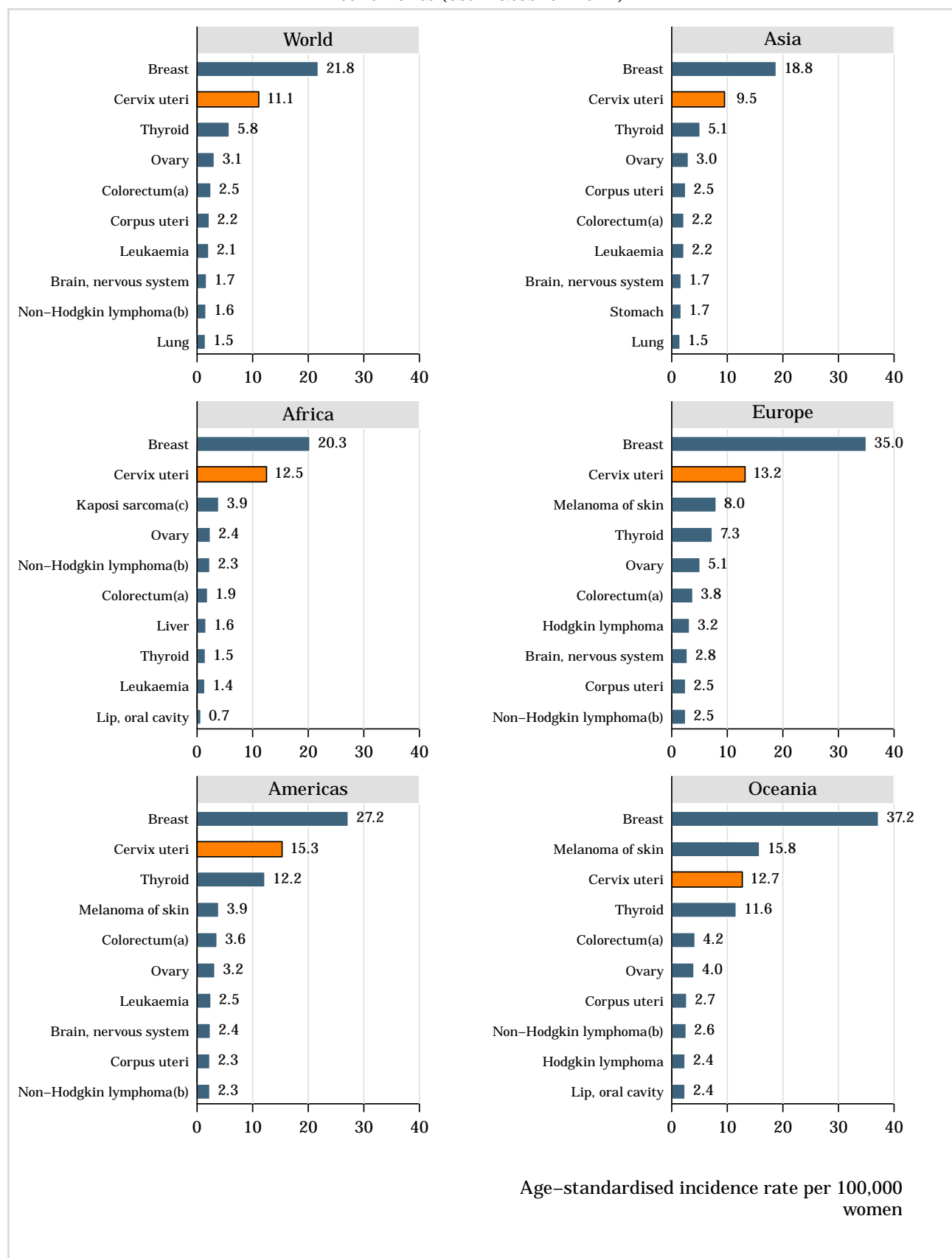
^a Includes anal cancer (C21).

^b Includes HIV disease resulting in malignant neoplasms (B21).

Data sources:

Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Figure 15: Comparison of the ten most frequent cancers in women aged 15-44 years by World and continents (estimates for 2012)



Data accessed on 15 Nov 2015.

^a Includes anal cancer (C21).

^b Includes HIV disease resulting in malignant neoplasms (B21).

^c Includes B21.0 (HIV disease resulting in Kaposi sarcoma).

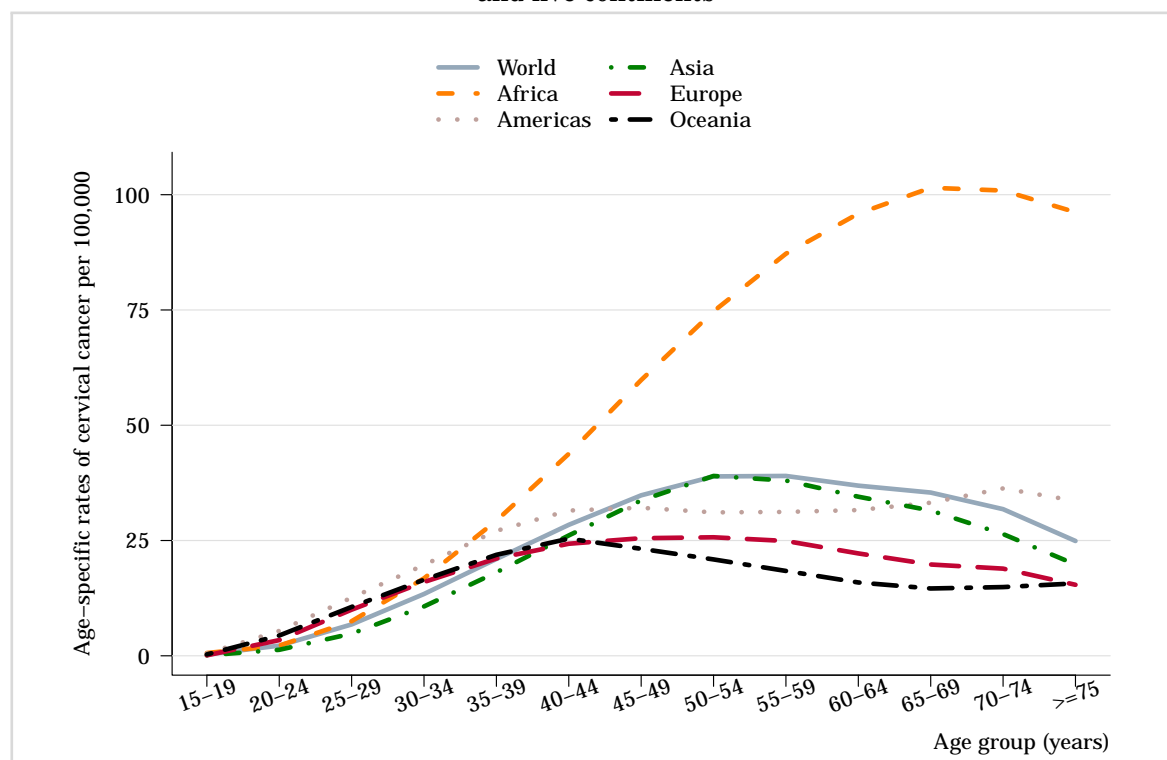
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(Figure 15 – continued from previous page)

Data sources:

Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Figure 16: Age-specific incidence of cervical cancer by World, developed and developing regions and five continents

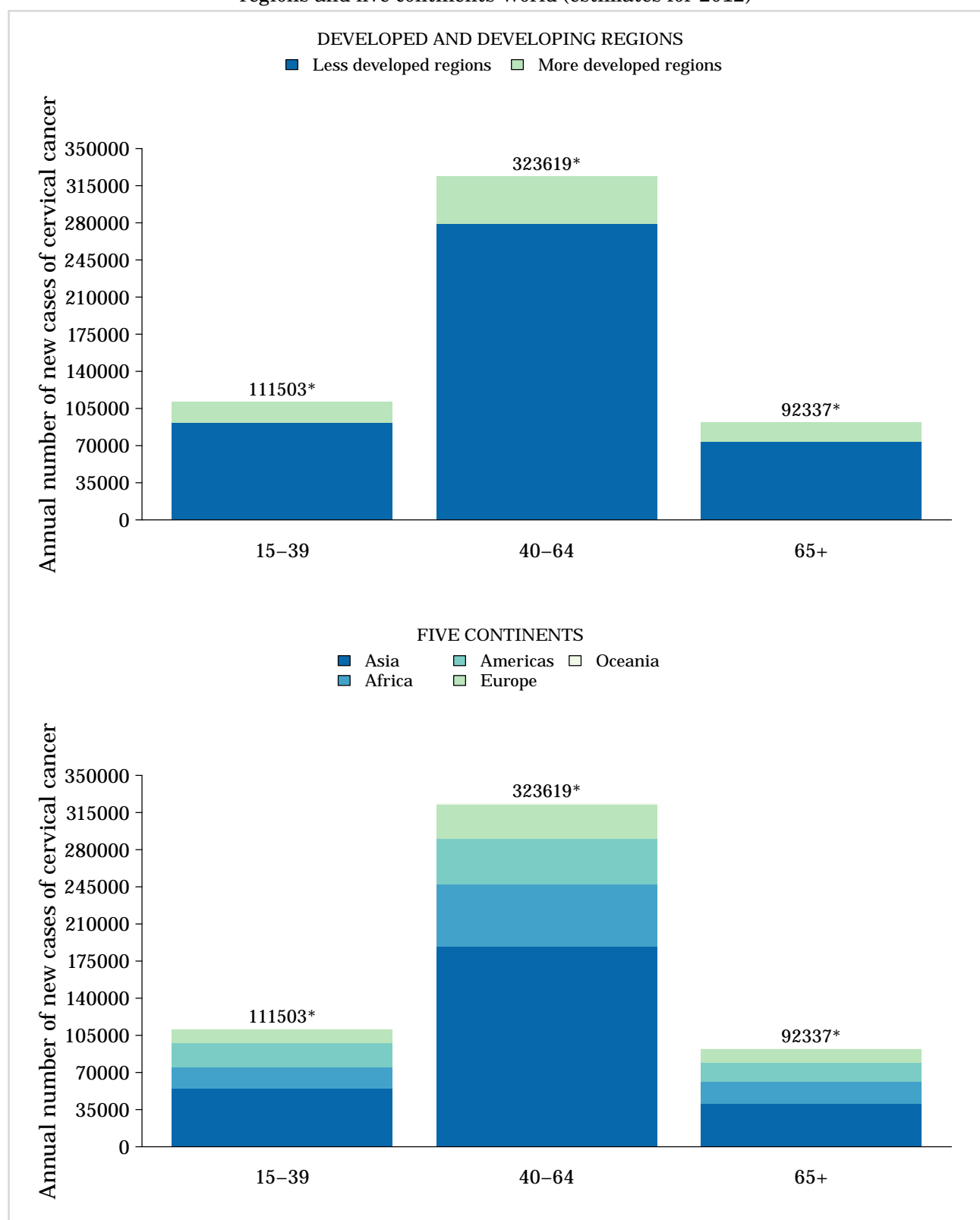


Data accessed on 15 Nov 2015.

Rates per 100,000 women per year.

Data sources: Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Figure 17: Annual number of new cases of cervical cancer by age group in developing and developed regions and five continents World (estimates for 2012)



* Less developed regions 15-39 years: 91746 cases. 40-64 years: 278880 cases. 65+ years: 73762 cases.

* More developed regions 15-39 years: 19757 cases. 40-64 years: 44739 cases. 65+ years: 18575 cases.

* Asia 15-39 years: 55178 cases. 40-64 years: 188892 cases. 65+ years: 40668 cases.

* Africa 15-39 years: 19650 cases. 40-64 years: 58316 cases. 65+ years: 21014 cases.

* Americas 15-39 years: 22725 cases. 40-64 years: 42915 cases. 65+ years: 17537 cases.

* Europe 15-39 years: 13249 cases. 40-64 years: 32345 cases. 65+ years: 12775 cases.

* Oceania 15-39 years: 701 cases. 40-64 years: 1151 cases. 65+ years: 343 cases.

Data accessed on 15 Nov 2015.

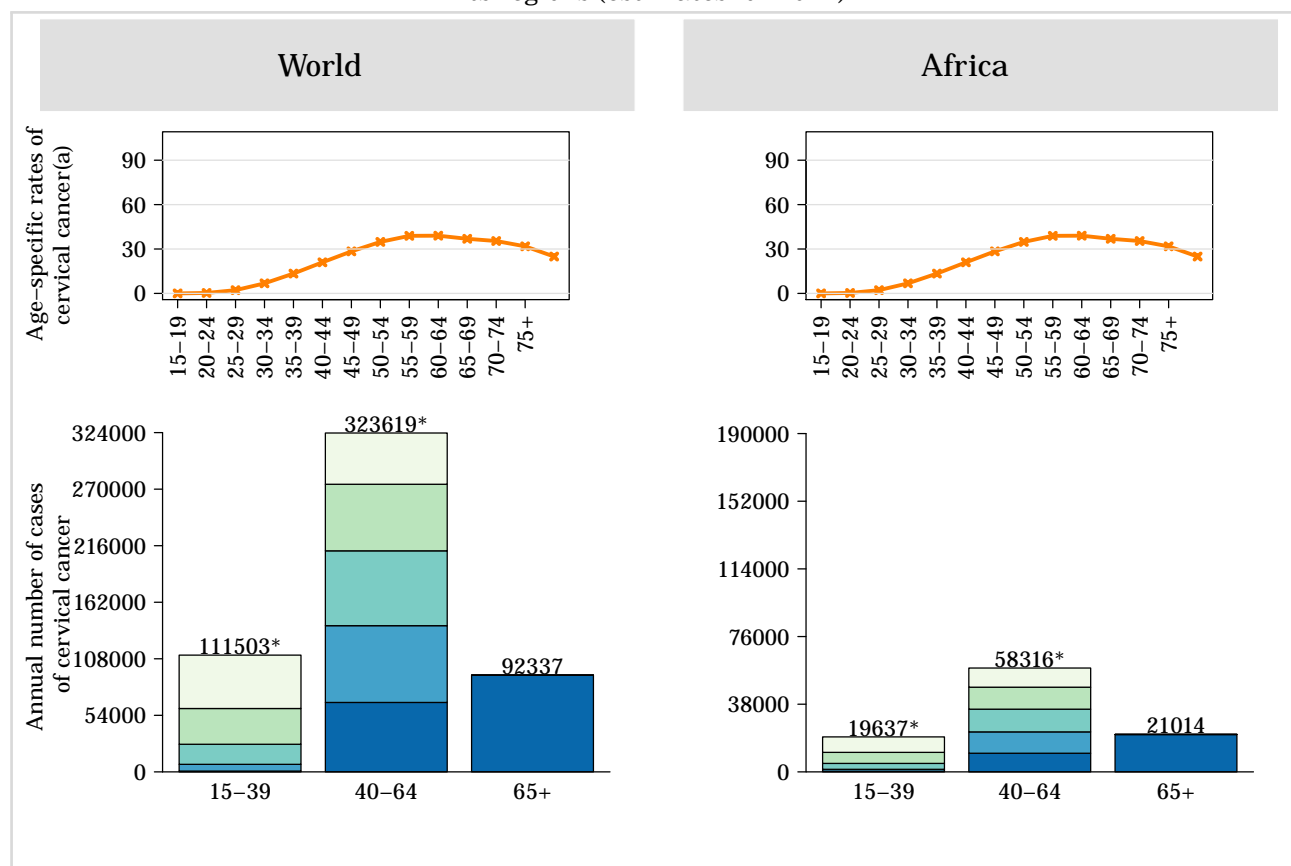
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(Figure 17 – continued from previous page)

Data sources:

Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Figure 18: Annual number of cases and age-specific incidence rates of cervical cancer in the World and its regions (estimates for 2012)



* World 15-19 yrs: 754 cases. 20-24 yrs: 6445 cases. 25-29 yrs: 19167 cases. 30-34 yrs: 34149 cases. 35-39 yrs: 50988 cases. 40-44 yrs: 66308 cases. 45-49 yrs: 73307 cases. 50-54 yrs: 71492 cases. 55-59 yrs: 63571 cases. 60-64 yrs: 48941 cases.

* Africa 15-19 yrs: 352 cases. 20-24 yrs: 1091 cases. 25-29 yrs: 3310 cases. 30-34 yrs: 6198 cases. 35-39 yrs: 8686 cases. 40-44 yrs: 10474 cases. 45-49 yrs: 11987 cases. 50-54 yrs: 12753 cases. 55-59 yrs: 12342 cases. 60-64 yrs: 10760 cases.

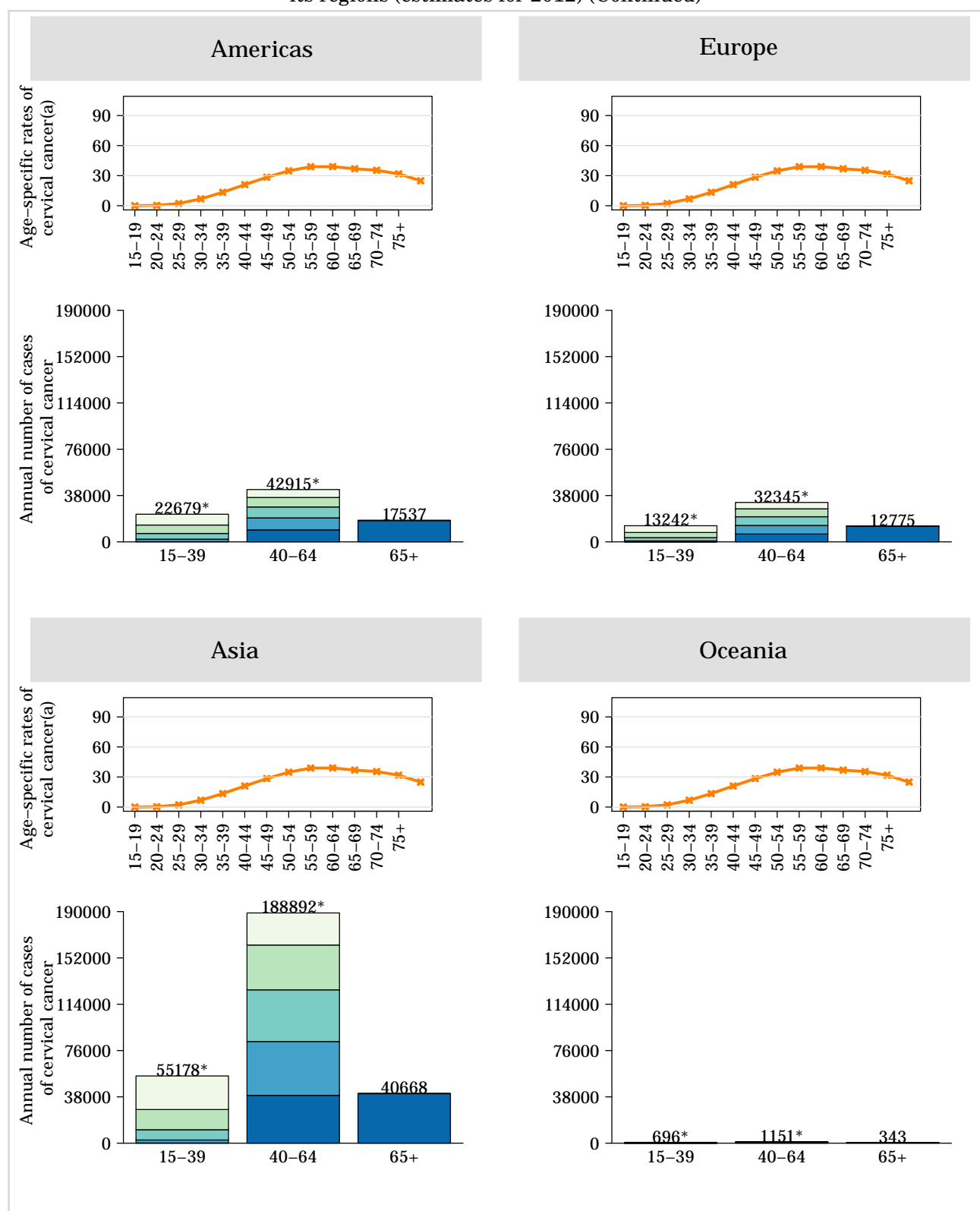
Data accessed on 15 Nov 2015.

^a Rates per 100,000 women per year.

Data sources:

Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Figure 19: Annual number of cases and age-specific incidence rates of cervical cancer in the World and its regions (estimates for 2012) (Continued)



* Americas 15-19 yrs: 180 cases. 20-24 yrs: 2047 cases. 25-29 yrs: 4668 cases. 30-34 yrs: 6901 cases. 35-39 yrs: 8883 cases. 40-44 yrs: 9817 cases. 45-49 yrs: 9862 cases. 50-54 yrs: 8951 cases. 55-59 yrs: 7771 cases. 60-64 yrs: 6514 cases.

* Asia 15-19 yrs: 195 cases. 20-24 yrs: 2443 cases. 25-29 yrs: 8394 cases. 30-34 yrs: 16585 cases. 35-39 yrs: 27561 cases. 40-44 yrs: 39251 cases. 45-49 yrs: 44160 cases. 50-54 yrs: 42416 cases. 55-59 yrs: 36759 cases. 60-64 yrs: 26306 cases.

* Europe 15-19 yrs: 22 cases. 20-24 yrs: 798 cases. 25-29 yrs: 2639 cases. 30-34 yrs: 4235 cases. 35-39 yrs: 5548 cases. 40-44 yrs: 6449 cases. 45-49 yrs: 7020 cases. 50-54 yrs: 7137 cases. 55-59 yrs: 6518 cases. 60-64 yrs: 5221 cases.

* Oceania 15-19 yrs: 4 cases. 20-24 yrs: 60 cases. 25-29 yrs: 144 cases. 30-34 yrs: 208 cases. 35-39 yrs: 280 cases. 40-44 yrs: 317 cases. 45-49 yrs: 278 cases. 50-54 yrs: 235 cases. 55-59 yrs: 181 cases. 60-64 yrs: 140 cases.

Data accessed on 15 Nov 2015.

(Continued on next page)

(Figure 19 – continued from previous page)

^a Rates per 100,000 women per year.

Data sources:

Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

NOTE

For time trends in cervical cancer incidence, please refer to individual country data.

3.1.2 Mortality

KEY STATS

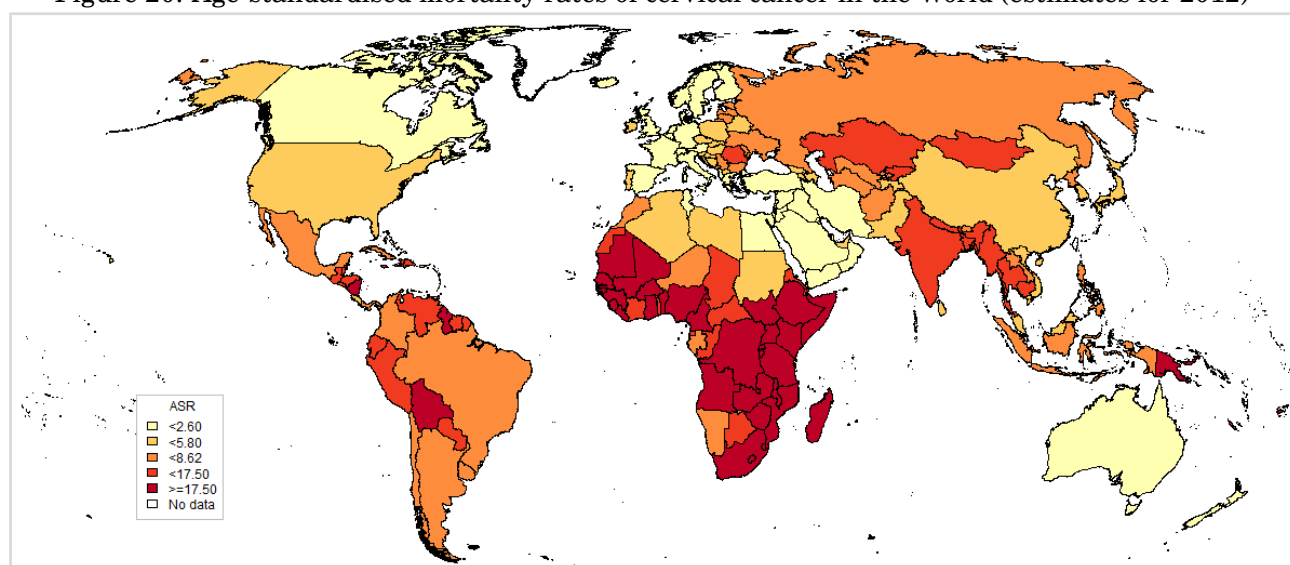
About **265,672 new cervical cancer deaths** occur **annually** in the **World** (estimations for 2012).

Cervical cancer **ranks*** as the **4th** leading cause of female cancer deaths in the **World**.

Cervical cancer is the **2nd** most common female cancer deaths in **women aged 15 to 44 years** in the **World**.

* Ranking of cervical cancer incidence to other cancers among all women according to highest incidence rates (ranking 1st). Ranking is based on crude incidence rates (actual number of cervical cancer cases). Ranking using age-standardized rate (ASR) may differ.

Figure 20: Age-standardised mortality rates of cervical cancer in the World (estimates for 2012)



Data accessed on 15 Nov 2015.

ASR: Age-standardized rate, Standardized rates have been estimated using the direct method and the World population as the reference; Rates per 100,000 women per year.

For Sudan, South Sudan: Estimate for Sudan and South Sudan

Data sources: Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Table 6: Cervical cancer mortality by World region and sub regions (estimates for 2012)

Area	N cases	Crude rate ^a	ASR ^a	Cumulative risk (%) ages 0-74 years ^b	Ranking of CC	
					All women	Women 15-44 years
World	265,672	7.6	6.8	0.8	4	2
Less developed regions	230,158	8.1	8.3	0.9	3	2
More developed regions	35,514	5.6	3.3	0.3	9	2
Africa	60,098	11.2	17.5	2.0	2	2
Eastern Africa	28,197	15.9	27.6	3.1	1	1
Middle Africa	7,917	11.8	22.2	2.6	1	2
Northern Africa	2,717	2.6	3.2	0.4	8	8
Southern Africa	4,721	16.0	17.9	1.9	1	1
Western Africa	16,546	10.4	18.5	2.1	2	2
Americas	35,673	7.4	5.9	0.6	5	2
Caribbean	2,254	10.6	8.6	0.9	4	2
Central America	6,937	8.5	8.9	1.0	2	1
Northern America	7,108	4.0	2.6	0.3	11	2
South America	19,374	9.5	8.6	0.9	3	2
Asia	144,434	7.0	6.4	0.7	6	2
Central Asia	2,286	7.2	7.7	0.8	3	2
Eastern Asia	36,320	4.7	3.3	0.3	8	2
Southern Asia	79,958	9.4	11.0	1.2	2	2
South-Eastern Asia	23,989	7.9	7.9	0.9	3	2
Western Asia	1,881	1.6	1.9	0.2	11	9
Europe	24,404	6.4	3.8	0.4	7	2
Eastern Europe	15,436	9.9	6.2	0.6	7	1
Northern Europe	1,963	3.9	2.2	0.2	16	2
Southern Europe	3,526	4.4	2.4	0.2	13	3
Western Europe	3,479	3.6	1.8	0.2	15	4
Oceania	1,063	5.6	4.5	0.5	6	2
Australia & New Zealand	357	2.6	1.5	0.2	17	5
Melanesia	684	15.3	20.7	2.2	1	1
Micronesia	6	2.2	2.7	0.4	5	12
Polynesia	16	4.8	5.1	0.6	4	2

Data accessed on 15 Nov 2015.

Standardised rates have been estimated using the direct method and the World population as the reference.

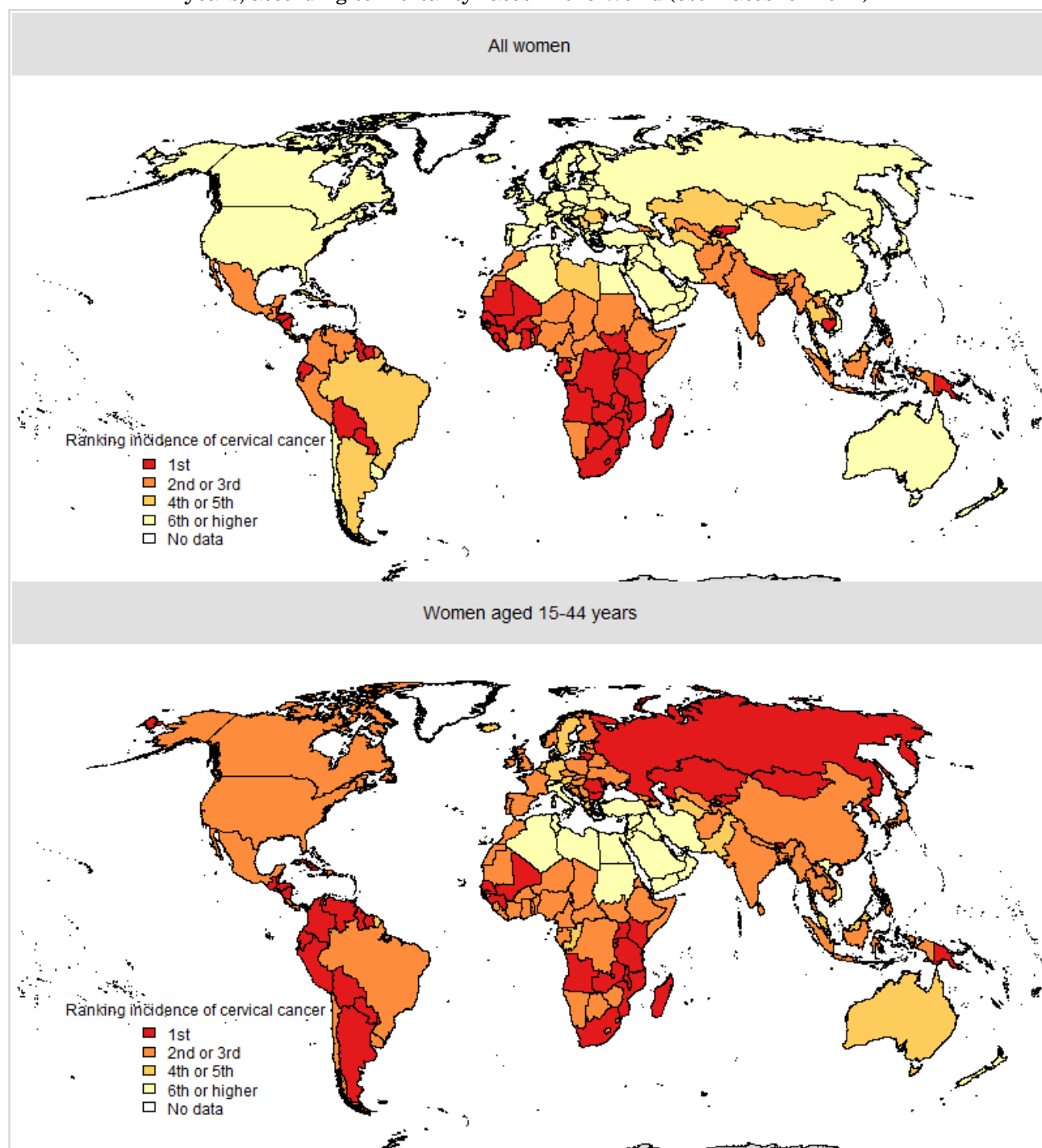
Ranking of cervical cancer mortality to other cancers among all women ages 15-44 years according to highest mortality rates (ranking 1st). Ranking is based on crude mortality rates (actual number of cervical cancer deaths). Ranking using AST may differ.

^a Rates per 100,000 women per year.^b Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

Data sources:

¹ Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

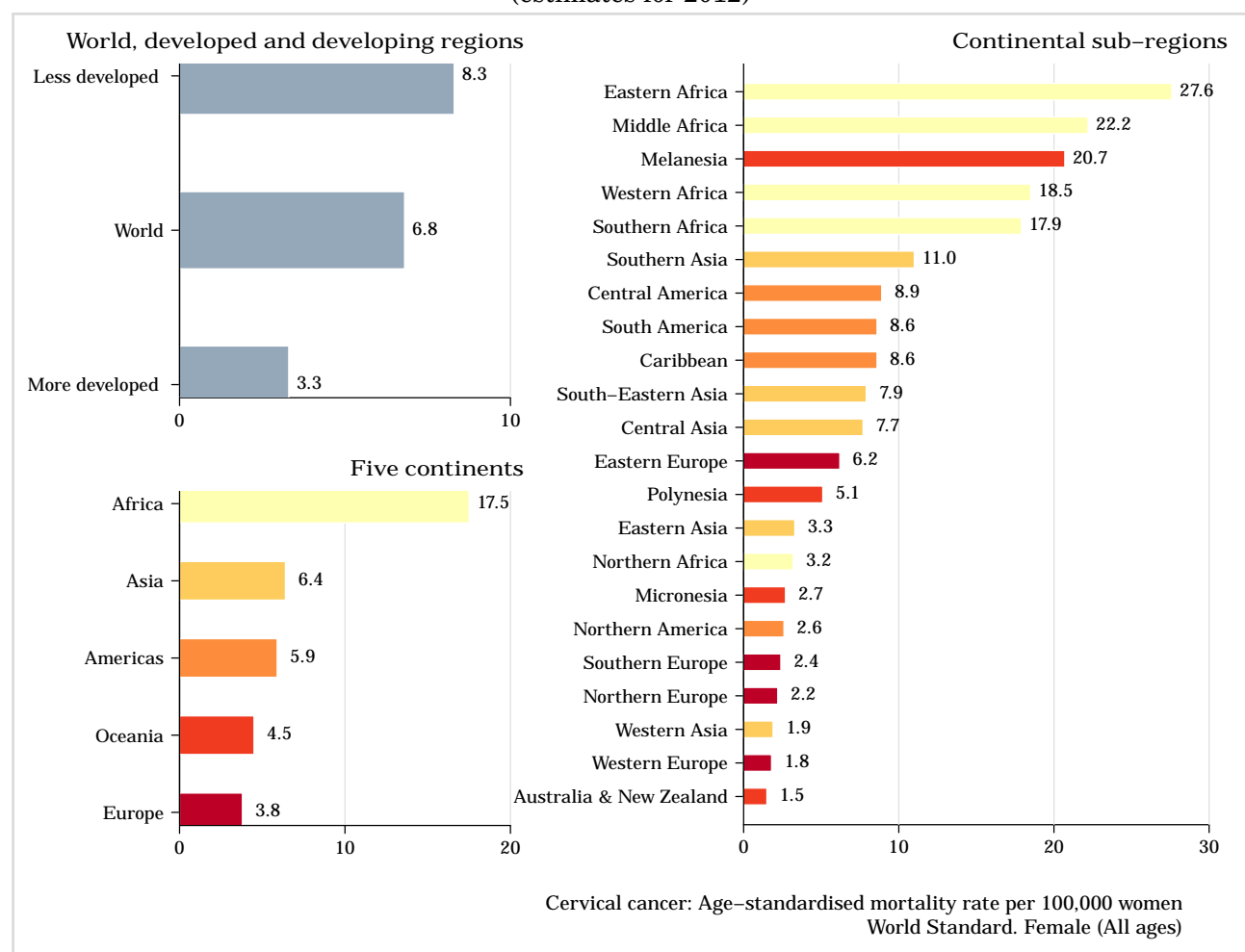
Figure 21: Ranking of cervical cancer versus other cancers among all women and women aged 15-44 years, according to mortality rates in the World (estimates for 2012)



Data accessed on 15 Nov 2015.

Data sources: Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Figure 22: World age-standardised mortality rates of cervical cancer by World and sub regions World (estimates for 2012)



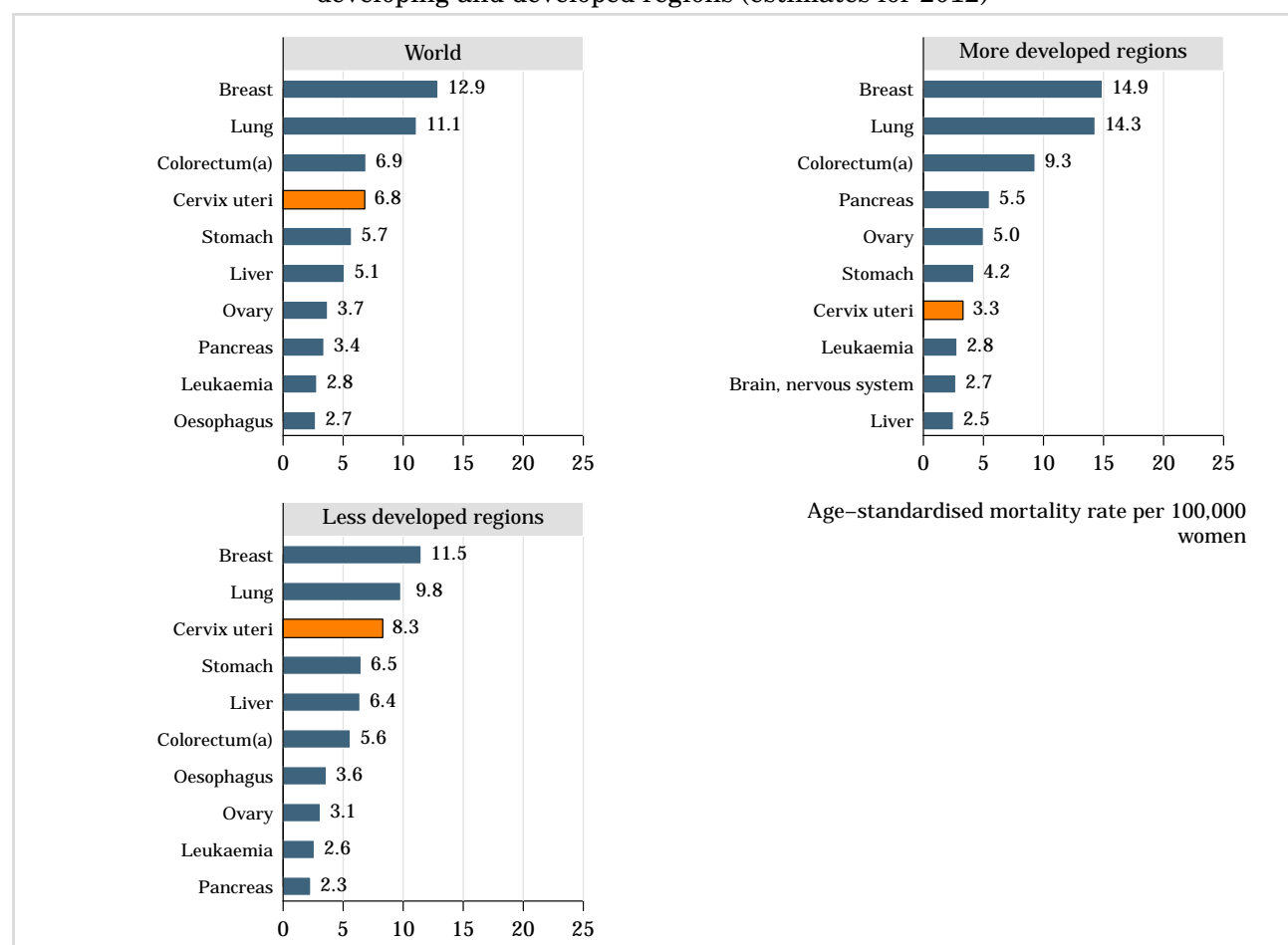
Data accessed on 15 Nov 2015.

Rates per 100,000 women per year.

Data sources:

Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Figure 23: Comparison of the ten most frequent cancer deaths in all women in the World compared to developing and developed regions (estimates for 2012)



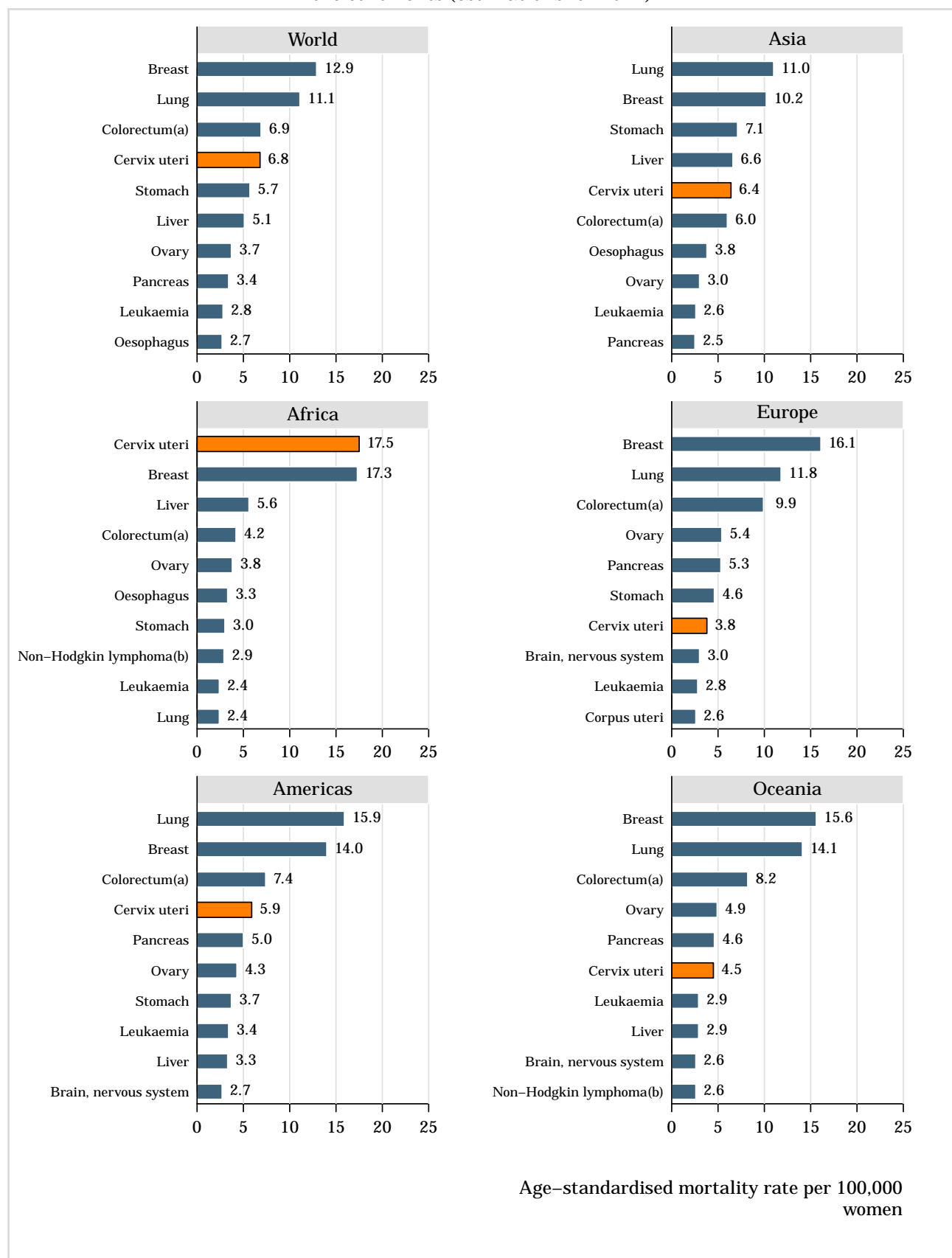
Data accessed on 15 Nov 2015.

^aIncludes anal cancer (C21).

Data sources:

Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Figure 24: Comparison of the ten most frequent cancer deaths in all women in the World compared to the continents (estimations for 2012)



Data accessed on 15 Nov 2015.

^a Includes anal cancer (C21).

^b Includes HIV disease resulting in malignant neoplasms (B21).

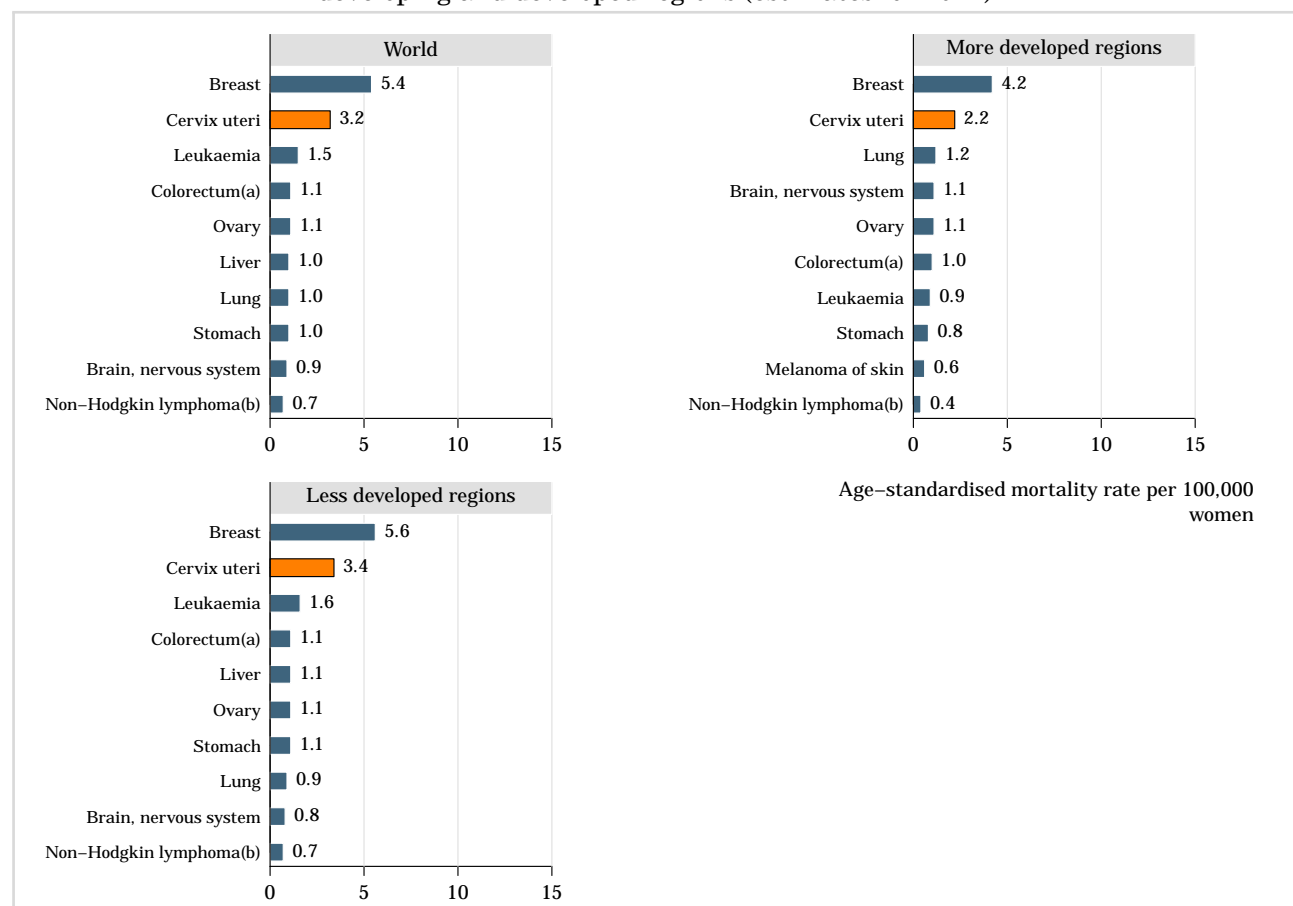
Data sources:

(Continued on next page)

(Figure 24 – continued from previous page)

Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Figure 25: Comparison of the ten most frequent cancer deaths in women aged 15-44 years by World, developing and developed regions (estimates for 2012)



Data accessed on 15 Nov 2015.

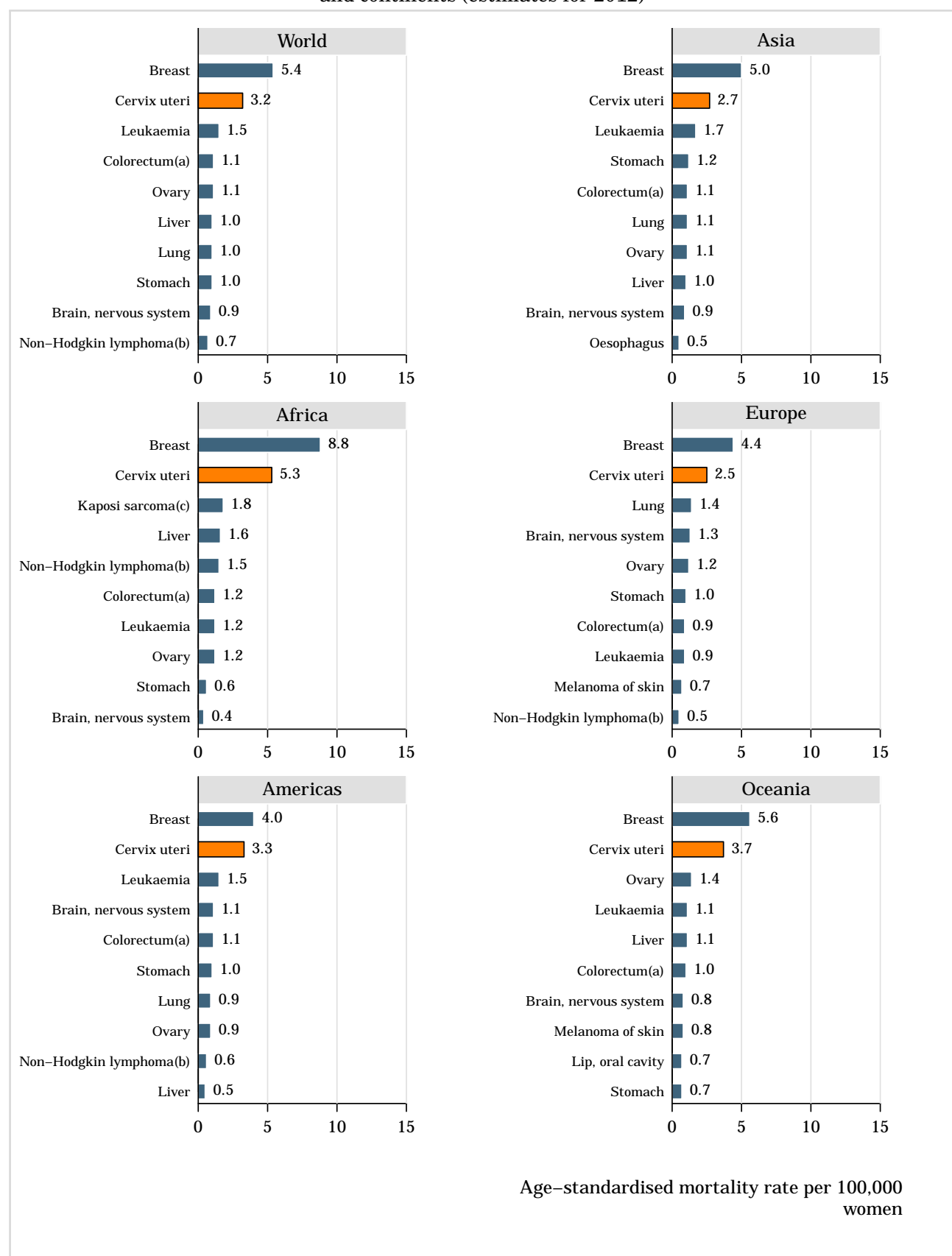
^aIncludes anal cancer (C21).

^bIncludes HIV disease resulting in malignant neoplasms (B21).

Data sources:

Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Figure 26: Comparison of the ten most frequent cancer deaths in women aged 15-44 years by World and continents (estimates for 2012)



Data accessed on 15 Nov 2015.

^a Includes anal cancer (C21).

^b Includes HIV disease resulting in malignant neoplasms (B21).

^c Includes B21.0 (HIV disease resulting in Kaposi sarcoma).

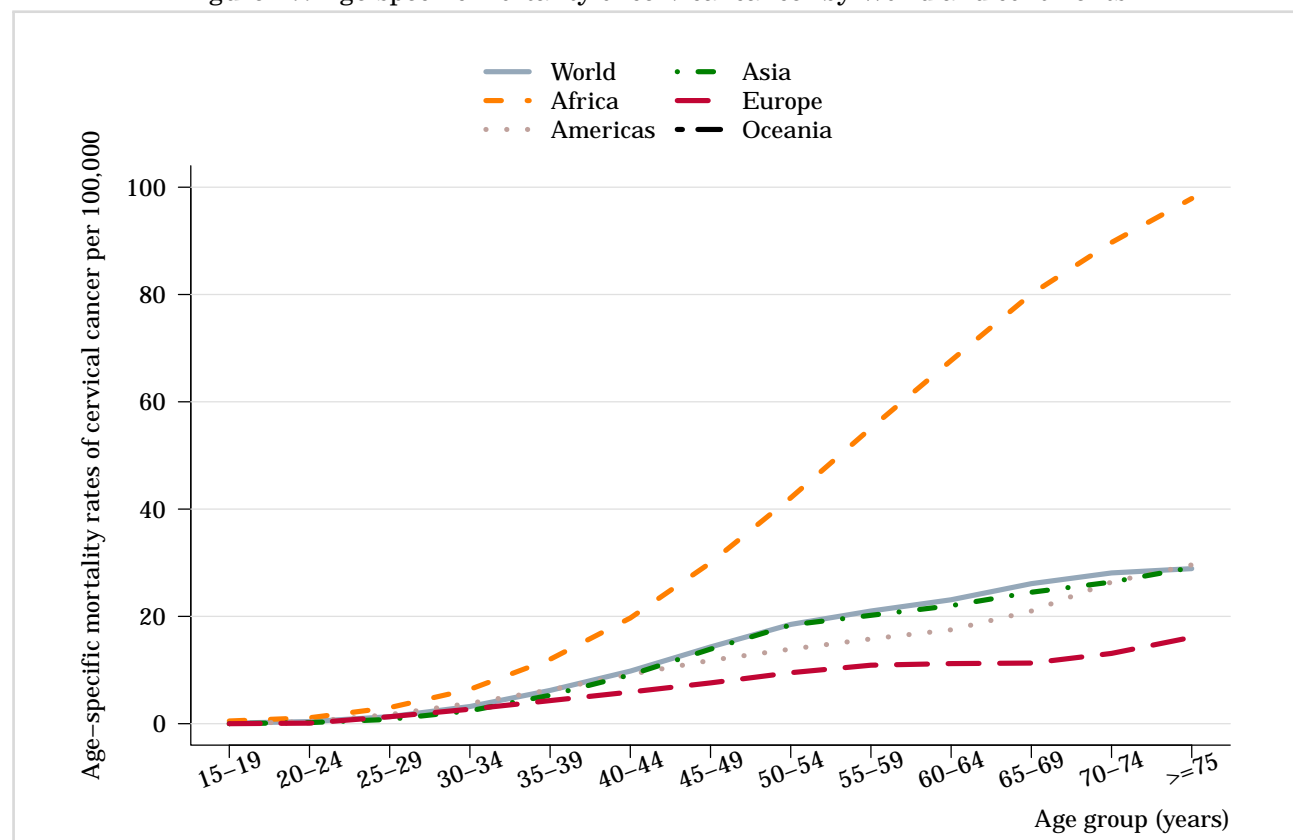
(Continued on next page)

(Figure 26 – continued from previous page)

Data sources:

Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

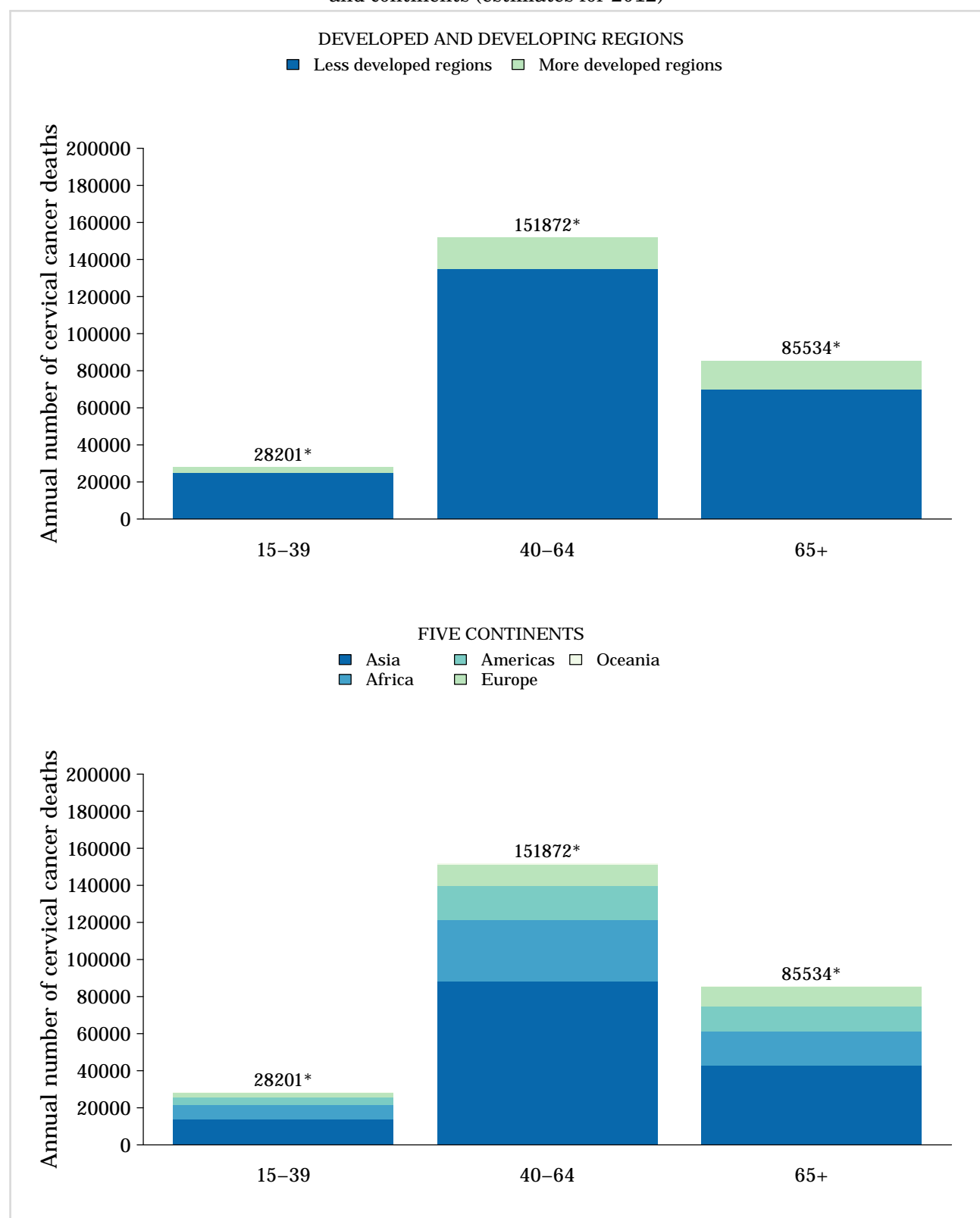
Figure 27: Age-specific mortality of cervical cancer by World and continents

**Data accessed on 15 Nov 2015.**

Rates per 100,000 women per year.

Data sources: Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Figure 28: Annual number of deaths of cervical cancer by age group by developing and developed regions and continents (estimates for 2012)



* Less developed regions 15-39 years: 25130 cases. 40-64 years: 134922 cases. 65+ years: 70041 cases.

* More developed regions 15-39 years: 3071 cases. 40-64 years: 16950 cases. 65+ years: 15493 cases.

* Asia 15-39 years: 13567 cases. 40-64 years: 88208 cases. 65+ years: 42647 cases.

* Africa 15-39 years: 8065 cases. 40-64 years: 33320 cases. 65+ years: 18669 cases.

* Americas 15-39 years: 4168 cases. 40-64 years: 18020 cases. 65+ years: 13476 cases.

* Europe 15-39 years: 2212 cases. 40-64 years: 11779 cases. 65+ years: 10413 cases.

* Oceania 15-39 years: 189 cases. 40-64 years: 545 cases. 65+ years: 329 cases.

Data accessed on 15 Nov 2015.

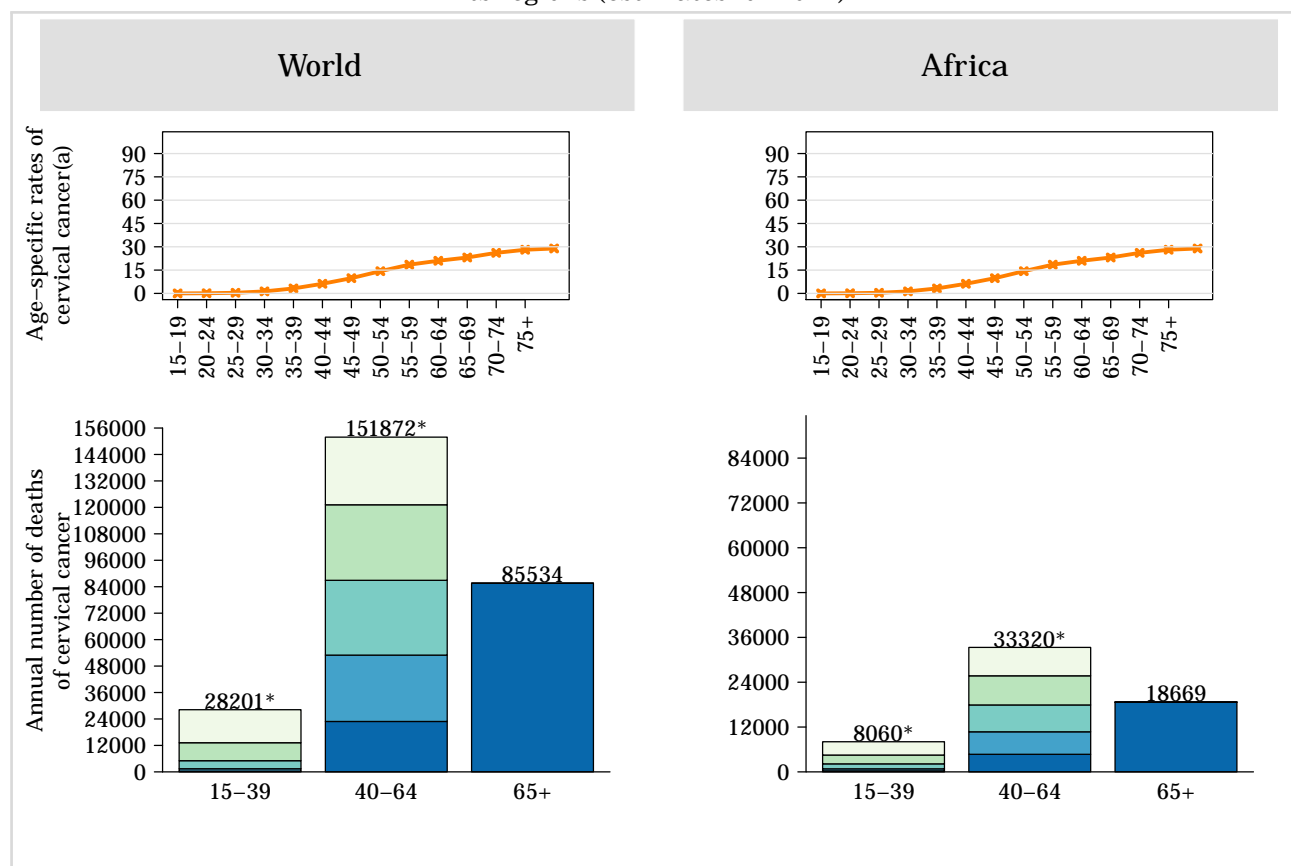
(Continued on next page)

(Figure 28 – continued from previous page)

Data sources:

Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Figure 29: Annual number of deaths and age-specific mortality rates of cervical cancer in the World and its regions (estimates for 2012)



World 15-19 yrs: 314 cases. 20-24 yrs: 1101 cases. 25-29 yrs: 3654 cases. 30-34 yrs: 8158 cases. 35-39 yrs: 14974 cases. 40-44 yrs: 22872 cases. 45-49 yrs: 30105 cases. 50-54 yrs: 33939 cases. 55-59 yrs: 34263 cases. 60-64 yrs: 30693 cases. Africa 15-19 yrs: 265 cases. 20-24 yrs: 553 cases. 25-29 yrs: 1331 cases. 30-34 yrs: 2360 cases. 35-39 yrs: 3551 cases. 40-44 yrs: 4707 cases. 45-49 yrs: 6021 cases. 50-54 yrs: 7190 cases. 55-59 yrs: 7801 cases. 60-64 yrs: 7601 cases.

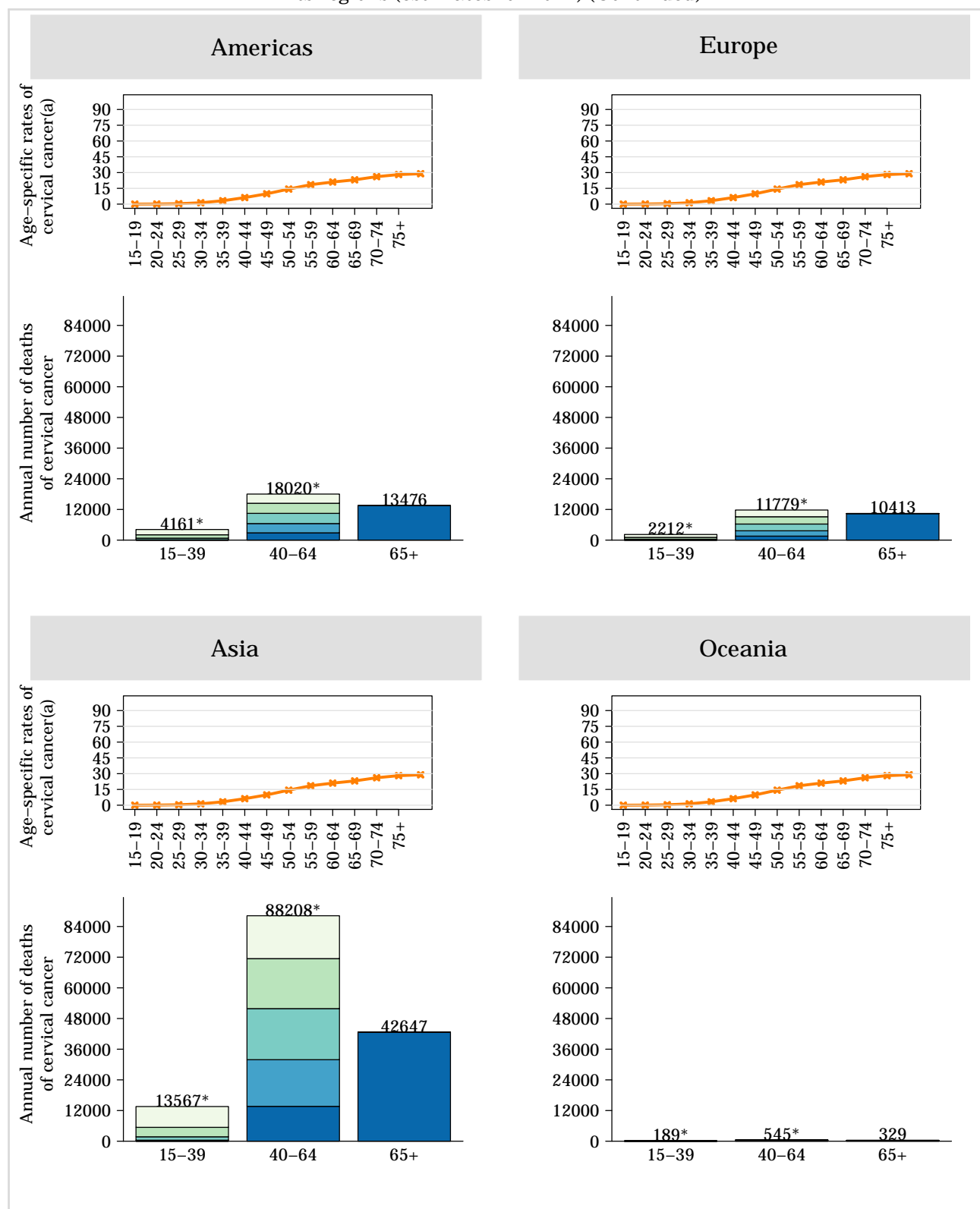
Data accessed on 15 Nov 2015.

^a Rates per 100,000 women per year.

Data sources:

Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Figure 30: Annual number of deaths and age-specific mortality rates of cervical cancer in the World and its regions (estimates for 2012) (Continued)



Americas 15-19 yrs: 12 cases, 20-24 yrs: 137 cases, 25-29 yrs: 620 cases, 30-34 yrs: 1325 cases, 35-39 yrs: 2067 cases, 40-44 yrs: 2852 cases, 45-49 yrs: 3629 cases, 50-54 yrs: 3997 cases, 55-59 yrs: 3944 cases, 60-64 yrs: 3598 cases. Asia 15-19 yrs: 34 cases, 20-24 yrs: 363 cases, 25-29 yrs: 1333 cases, 30-34 yrs: 3699 cases, 35-39 yrs: 8138 cases, 40-44 yrs: 13641 cases, 45-49 yrs: 18256 cases, 50-54 yrs: 19983 cases, 55-59 yrs: 19563 cases, 60-64 yrs: 16765 cases. Europe 15-19 yrs: 2 cases, 20-24 yrs: 32 cases, 25-29 yrs: 332 cases, 30-34 yrs: 715 cases, 35-39 yrs: 1131 cases, 40-44 yrs: 1565 cases, 45-49 yrs: 2088 cases, 50-54 yrs: 2647 cases, 55-59 yrs: 2850 cases, 60-64 yrs: 2629 cases. Oceania 15-19 yrs: 1 cases, 20-24 yrs: 16 cases, 25-29 yrs: 36 cases, 30-34 yrs: 56 cases, 35-39 yrs: 80 cases, 40-44 yrs: 107 cases, 45-49 yrs: 111 cases, 50-54 yrs: 122 cases, 55-59 yrs: 105 cases, 60-64 yrs: 100 cases.

Data accessed on 15 Nov 2015.

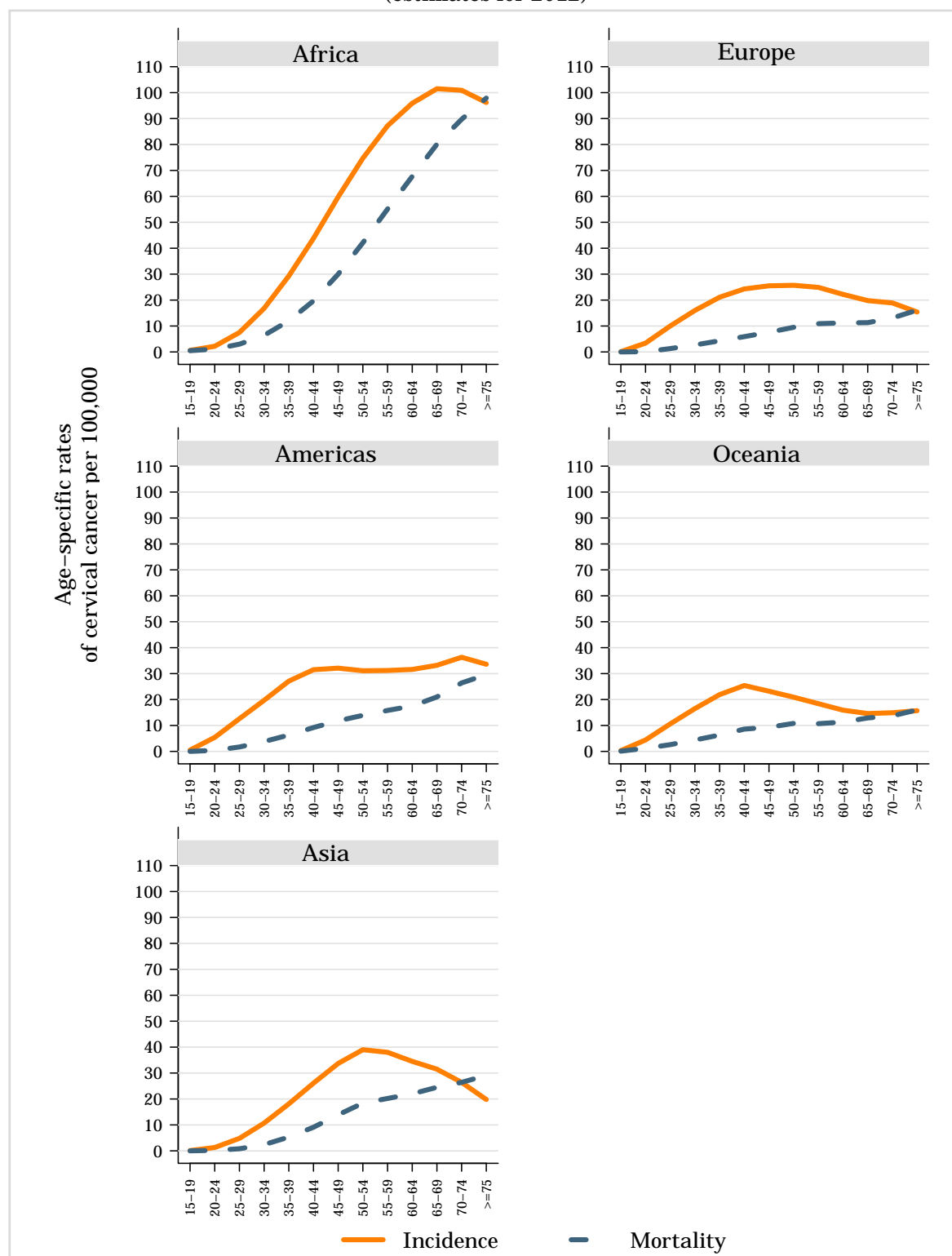
^aRates per 100,000 women per year.

Data sources:

Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

3.1.3 Comparison of incidence and mortality

Figure 31: Age-specific incidence and mortality rates of cervical cancer in the World and its regions (estimates for 2012)



Data accessed on 15 Nov 2015.

Rates per 100,000 women per year.

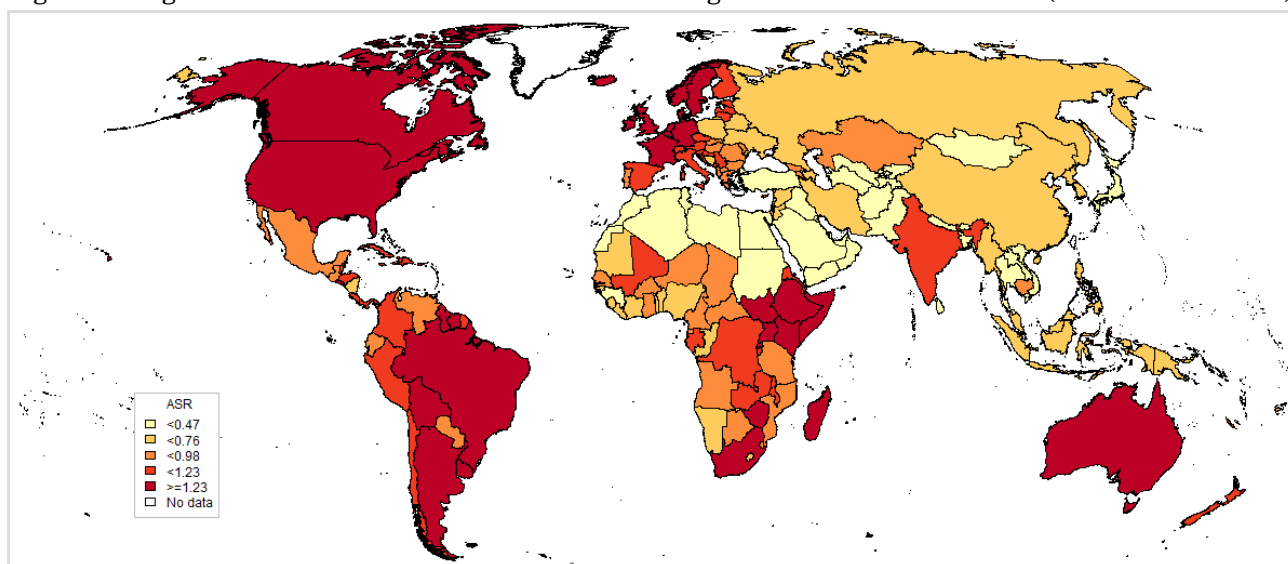
Data sources:

Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

3.2 Anogenital cancers other than the cervix

Data on HPV role 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 cervical cancer, their association with HPV make them potentially preventable and subject to similar preventative strategies as those for cervical cancer. (*Vaccine 2006, Vol. 24, Suppl 3; Vaccine 2008, Vol. 26, Suppl 10; Vaccine 2012, Vol. 30, Suppl 5; IARC Monographs 2007, Vol. 90*)

Figure 32: Age-standardised incidence rates of other anogenital cancer in the World (estimates for 2012)



Data accessed on 08 May 2017.

ASR: Age-standardized rate, rates per 100,000 per year.

Please refer to original source for methods.

Other anogenital cancer cases (vulvar, vaginal, anal, and penile).

GLOBOCAN quality index for availability of incidence data:

- For Afghanistan, Angola, Albania, Armenia, Azerbaijan, Burundi, Bahamas, Belize, Bolivia, Barbados, Central African Republic, DR Congo, Comoros, Cape Verde, Djibouti, Dominican Republic, Eritrea, Western Sahara, Georgia, Guadeloupe, Guinea-Bissau, Equatorial Guinea, Greece, Guatemala, French Guiana, Guyana, Honduras, Haiti, Hungary, Kazakhstan, Kyrgyzstan, Cambodia, Laos, Liberia, Lesotho, Republic of Moldova, Madagascar, Maldives, Macedonia, Myanmar, Montenegro, Mauritania, Nicaragua, Nepal, Panama, Papua New Guinea, DPR Korea, Paraguay, Senegal, Solomon Islands, Sierra Leone, El Salvador, Somalia, South Sudan, Suriname, Syria, Chad, Tajikistan, Turkmenistan, Timor-Leste, Uzbekistan, Venezuela: No data.

- For United Arab Emirates, Bosnia & Herzegovina, Bhutan, Botswana, Fiji, Gambia, Guam, Jordan, Lebanon, Sri Lanka, Luxembourg, Mongolia, Mauritius, Namibia, New Caledonia, French Polynesia, Reunion, Russian Federation, Saudi Arabia, Swaziland, Trinidad & Tobago, Vanuatu, Samoa, South Africa: National data (rates).

- For Argentina, Brazil, Switzerland, Germany, Spain, France, Italy, Japan, Philippines, Serbia, Thailand: High quality regional (coverage between 10% and 50%).

- For Australia, Austria, Belgium, Bulgaria, Bahrain, Belarus, Canada, Costa Rica, Cyprus, Czech Republic, Denmark, Estonia, Finland, United Kingdom, Croatia, Ireland, Iceland, Israel, Republic of Korea, Kuwait, Lithuania, Latvia, Malta, Martinique, Netherlands, Norway, New Zealand, Oman, Puerto Rico, Qatar, Singapore, Slovakia, Slovenia, Sweden, Ukraine, Uruguay, USA: High quality national data or high quality regional (coverage greater than 50%).

- For Benin, Burkina Faso, Bangladesh, Brunei, Côte d'Ivoire, Gabon, Ghana, Indonesia, Iraq, Palestine, Rwanda, Sudan, Togo: Frequency data.

- For Chile, China, Colombia, Cuba, Algeria, Ecuador, Egypt, India, Iran, Jamaica, Libya, Malawi, Malaysia, Poland, Portugal, Tunisia, Turkey, Uganda, Zimbabwe: High quality regional (coverage lower than 10%).

- For Cameroon, Congo, Ethiopia, Guinea, Kenya, Morocco, Mexico, Mali, Mozambique, Niger, Nigeria, Pakistan, Peru, Romania, Tanzania, Viet Nam, Yemen, Zambia: Regional data (rates).

GLOBOCAN quality index of methods for calculating incidence: Methods to estimate the sex- and age-specific incidence rates of cancer for a specific country:

- For Afghanistan, Angola, Burundi, Benin, Central African Republic, DR Congo, Comoros, Cape Verde, Djibouti, Eritrea, Western Sahara, Guinea-Bissau, Equatorial Guinea, Cambodia, Laos, Liberia, Lesotho, Madagascar, Maldives, Myanmar, Montenegro, Mauritania, Nepal, DPR Korea, Rwanda, Senegal, Solomon Islands, Sierra Leone, Somalia, South Sudan, Syria, Chad, Timor-Leste: The rates are those of neighbouring countries or registries in the same area

- For Albania, Greece, Hungary, Luxembourg, Republic of Moldova, Macedonia, Portugal, Romania, Serbia: Estimated from national mortality estimates by modelling using incidence mortality ratios derived from recorded data in local cancer registries in neighbouring countries

- For United Arab Emirates, Belgium, Bosnia & Herzegovina, Bhutan, Botswana, Cyprus, Gambia, Guam, Lebanon, Sri Lanka, Mongolia, Mauritius, Namibia, New Caledonia, Oman, Qatar, Swaziland, Ukraine, Uruguay, Samoa: Most recent rates applied to 2012 population

- For Argentina, Brazil, Switzerland, Chile, China, Colombia, Cuba, Ecuador, Spain, France, Italy, Japan, Poland: Estimated from national mortality by modelling using incidence mortality ratios derived from recorded data in country-specific cancer registries

- For Armenia, Azerbaijan, Bahamas, Belize, Barbados, Brunei, Dominican Republic, Fiji, Georgia, Guadeloupe, Guatemala, French Guiana, Guyana, Honduras, Haiti, Jamaica, Kazakhstan, Kyrgyzstan, Mexico, Nicaragua, Panama, Peru, Paraguay, El Salvador, Suriname, Tajikistan, Turkmenistan, Trinidad & Tobago, Uzbekistan, Venezuela, Viet Nam, Vanuatu: Estimated from national mortality estimates using modelled survival

- For Australia, Austria, Bulgaria, Bahrain, Belarus, Canada, Costa Rica, Czech Republic, Germany, Denmark, Estonia, Finland, United Kingdom, Croatia, Ireland, Iceland, Israel, Jordan, Republic of Korea, Kuwait, Lithuania, Latvia, Malta, Martinique, Netherlands, Norway, New Zealand, Puerto Rico, French Polynesia, Reunion, Russian Federation, Saudi Arabia, Singapore, Slovakia, Slovenia, Sweden, USA, South Africa: Rates projected to 2012

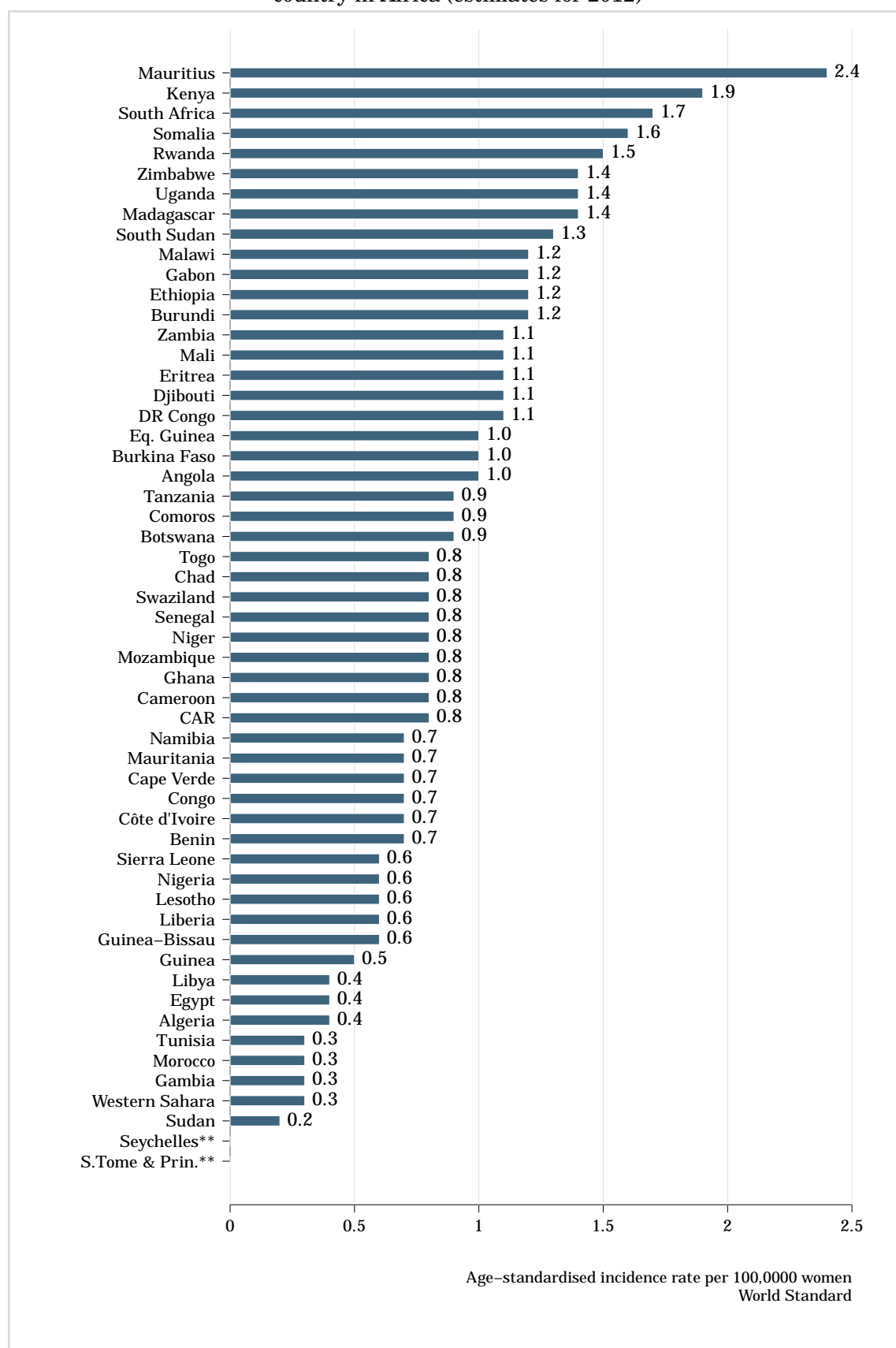
- For Burkina Faso, Bangladesh, Bolivia, Côte d'Ivoire, Gabon, Ghana, Iraq, Mozambique, Papua New Guinea, Palestine, Sudan, Togo: Age/sex specific rates for "all cancers" were partitioned using data on relative frequency of different cancers (by age and sex)

- For Cameroon, Congo, Ethiopia, Guinea, Libya, Mali, Malawi, Niger, Uganda, Yemen, Zambia: One cancer registry covering part of a country is used as representative of the country profile

- For Algeria, Egypt, Indonesia, India, Iran, Kenya, Morocco, Malaysia, Nigeria, Pakistan, Philippines, Thailand, Tunisia, Turkey, Tanzania, Zimbabwe: Estimated as the weighted average of the local rates

Data sources: de Martel C, Plummer M, Vignat J, Franceschi S. Worldwide burden of cancer attributable to HPV by site, country and HPV type. *Int J Cancer*. 2017

Figure 33: Age-standardised incidence rate of other anogenital cancer cases attributable to HPV by country in Africa (estimates for 2012)



** No rates are available.

Data accessed on 08 May 2017.

ASR: Age-standardized rate, rates per 100,000 per year.

Please refer to original source for methods.

(Continued on next page)

(Figure 33 – continued from previous page)

Other anogenital cancer cases (vulvar, vaginal, anal, and penile).

GLOBOCAN quality index for availability of incidence data:

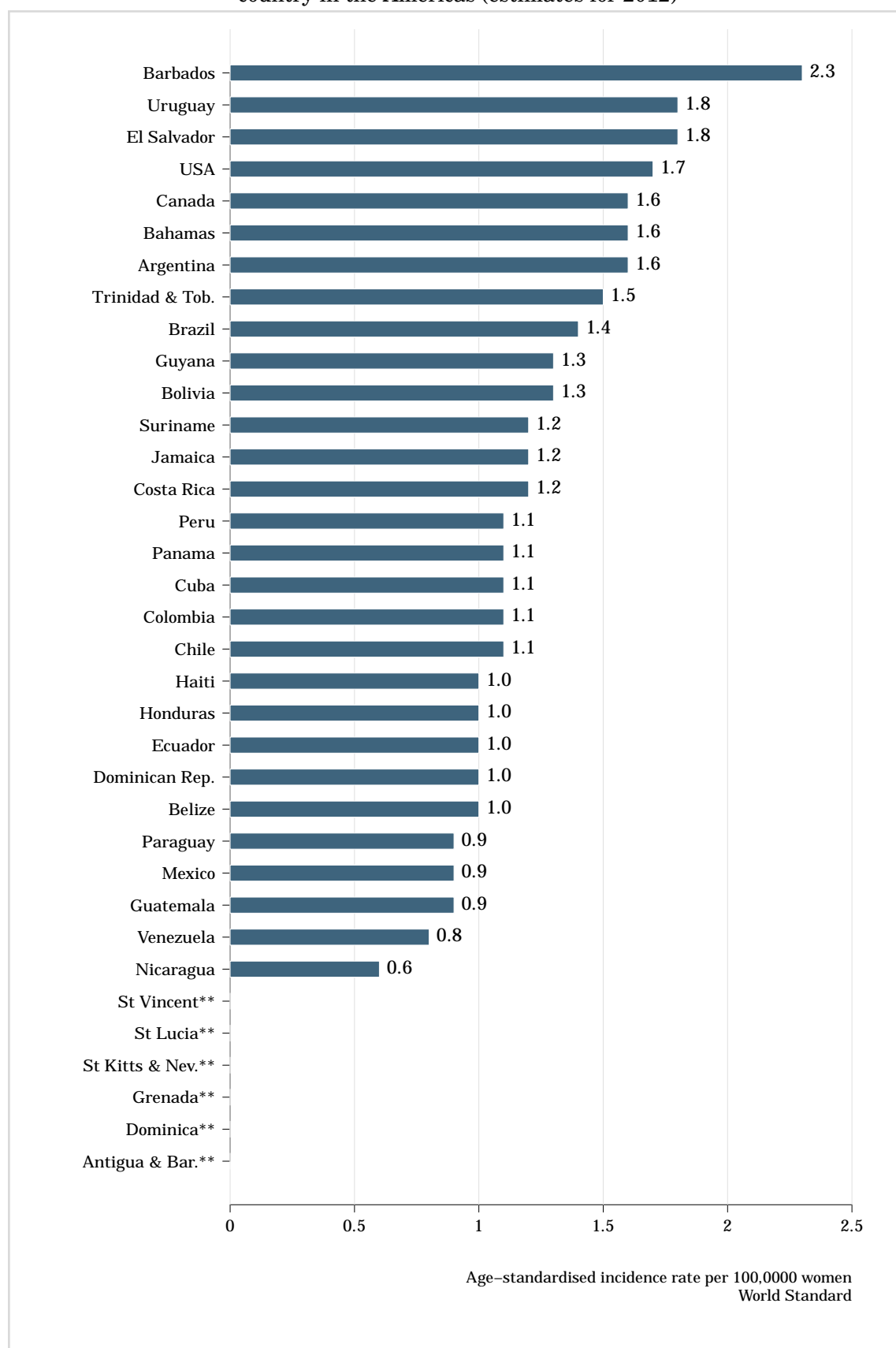
- For Sudan, Benin, Côte d'Ivoire, Ghana, Togo, Burkina Faso, Gabon, Rwanda: Frequency data.
- For Western Sahara, Guinea-Bissau, Liberia, Lesotho, Sierra Leone, Cape Verde, Mauritania, Central African Republic, Senegal, Chad, Comoros, Angola, Equatorial Guinea, DR Congo, Djibouti, Eritrea, Burundi, South Sudan, Madagascar, Somalia: No data.
- For Gambia, Namibia, Swaziland, Botswana, South Africa, Mauritius: National data (rates).
- For Morocco, Guinea, Nigeria, Congo, Cameroon, Mozambique, Niger, Tanzania, Mali, Zambia, Ethiopia, Kenya: Regional data (rates).
- For Tunisia, Algeria, Egypt, Libya, Malawi, Uganda, Zimbabwe: High quality regional (coverage lower than 10%).

GLOBOCAN quality index of methods for calculating incidence: Methods to estimate the sex- and age-specific incidence rates of cancer for a specific country:

- For Sudan, Côte d'Ivoire, Ghana, Mozambique, Togo, Burkina Faso, Gabon: Age/sex specific rates for "all cancers" were partitioned using data on relative frequency of different cancers (by age and sex)
- For Western Sahara, Guinea-Bissau, Liberia, Lesotho, Sierra Leone, Benin, Cape Verde, Mauritania, Central African Republic, Senegal, Chad, Comoros, Angola, Equatorial Guinea, DR Congo, Djibouti, Eritrea, Burundi, South Sudan, Madagascar, Rwanda, Somalia: The rates are those of neighbouring countries or registries in the same area
- For Gambia, Namibia, Swaziland, Botswana, Mauritius: Most recent rates applied to 2012 population
- For Morocco, Tunisia, Algeria, Egypt, Nigeria, Tanzania, Zimbabwe, Kenya: Estimated as the weighted average of the local rates
- For Libya, Guinea, Congo, Cameroon, Niger, Mali, Zambia, Ethiopia, Malawi, Uganda: One cancer registry covering part of a country is used as representative of the country profile
- For South Africa: Rates projected to 2012

Data sources: de Martel C, Plummer M, Vignat J, Franceschi S. Worldwide burden of cancer attributable to HPV by site, country and HPV type. Int J Cancer. 2017

Figure 34: Age-standardised incidence rate of other anogenital cancer cases attributable to HPV by country in the Americas (estimates for 2012)



** No rates are available.

Data accessed on 08 May 2017.

ASR: Age-standardized rate, rates per 100,000 per year.

Please refer to original source for methods.

(Continued on next page)

(Figure 34 – continued from previous page)

Other anogenital cancer cases (vulvar, vaginal, anal, and penile).

GLOBOCAN quality index for availability of incidence data:

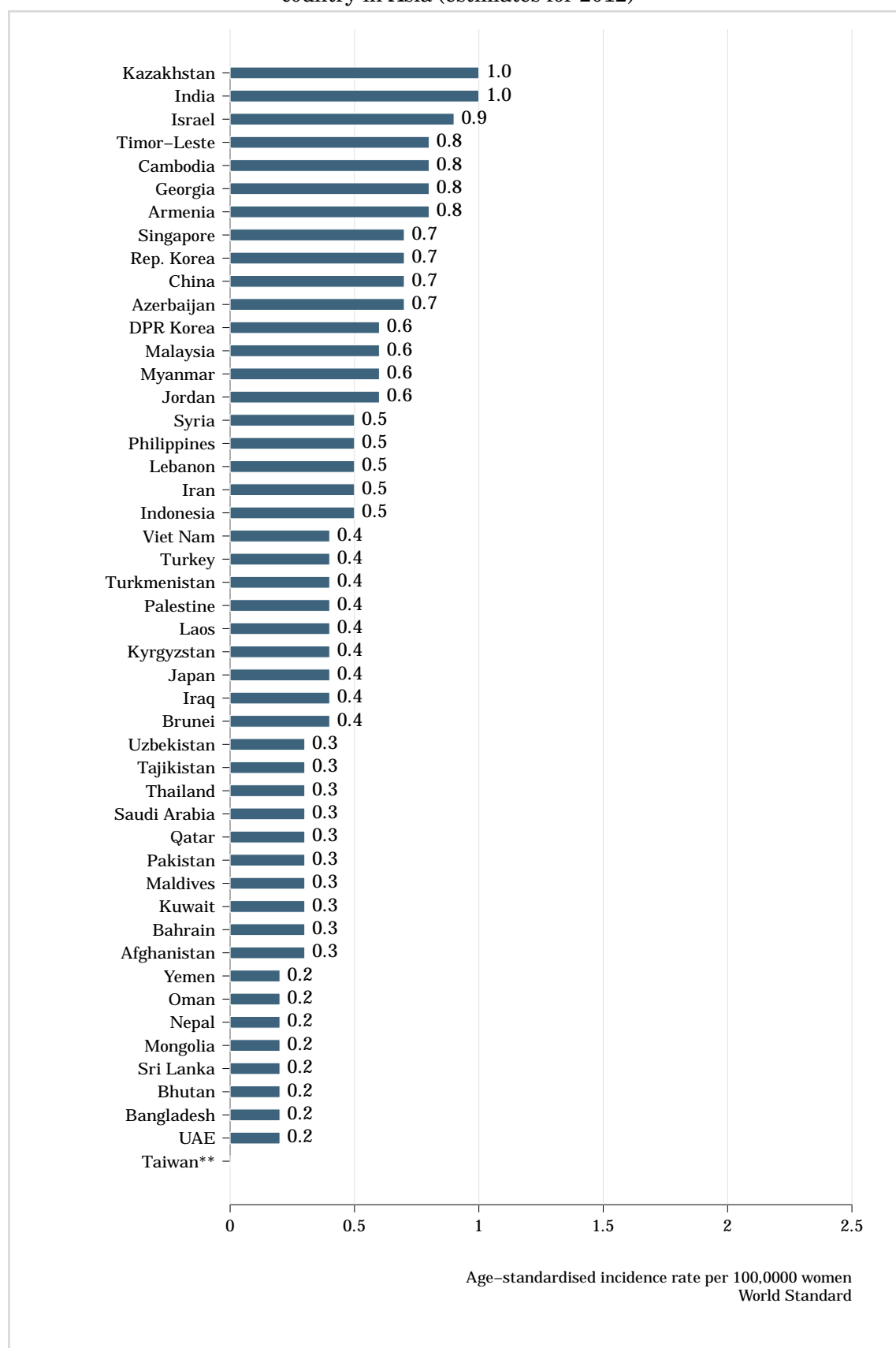
- For Nicaragua, Venezuela, Guatemala, Paraguay, Belize, Dominican Republic, Honduras, Haiti, Panama, Suriname, Bolivia, Guyana, Bahamas, El Salvador, Barbados: No data.
- For Mexico, Peru: Regional data (rates).
- For Ecuador, Chile, Colombia, Cuba, Jamaica: High quality regional (coverage lower than 10%).
- For Costa Rica, Canada, USA, Uruguay: High quality national data or high quality regional (coverage greater than 50%).
- For Brazil, Argentina: High quality regional (coverage between 10% and 50%).
- For Trinidad & Tobago: National data (rates).

GLOBOCAN quality index of methods for calculating incidence: Methods to estimate the sex- and age-specific incidence rates of cancer for a specific country:

- For Nicaragua, Venezuela, Guatemala, Mexico, Paraguay, Belize, Dominican Republic, Honduras, Haiti, Panama, Peru, Jamaica, Suriname, Guyana, Trinidad & Tobago, Bahamas, El Salvador, Barbados: Estimated from national mortality estimates using modelled survival
- For Ecuador, Chile, Colombia, Cuba, Brazil, Argentina: Estimated from national mortality by modelling using incidence mortality ratios derived from recorded data in country-specific cancer registries
- For Costa Rica, Canada, USA: Rates projected to 2012
- For Bolivia: Age/sex specific rates for "all cancers" were partitioned using data on relative frequency of different cancers (by age and sex)
- For Uruguay: Most recent rates applied to 2012 population

Data sources: de Martel C, Plummer M, Vignat J, Franceschi S. Worldwide burden of cancer attributable to HPV by site, country and HPV type. Int J Cancer. 2017

Figure 35: Age-standardised incidence rate of other anogenital cancer cases attributable to HPV by country in Asia (estimates for 2012)



** No rates are available.

Data accessed on 08 May 2017.

ASR: Age-standardized rate, rates per 100,000 per year.

Please refer to original source for methods.

(Continued on next page)

(Figure 35 – continued from previous page)

Other anogenital cancer cases (vulvar, vaginal, anal, and penile).

GLOBOCAN quality index for availability of incidence data:

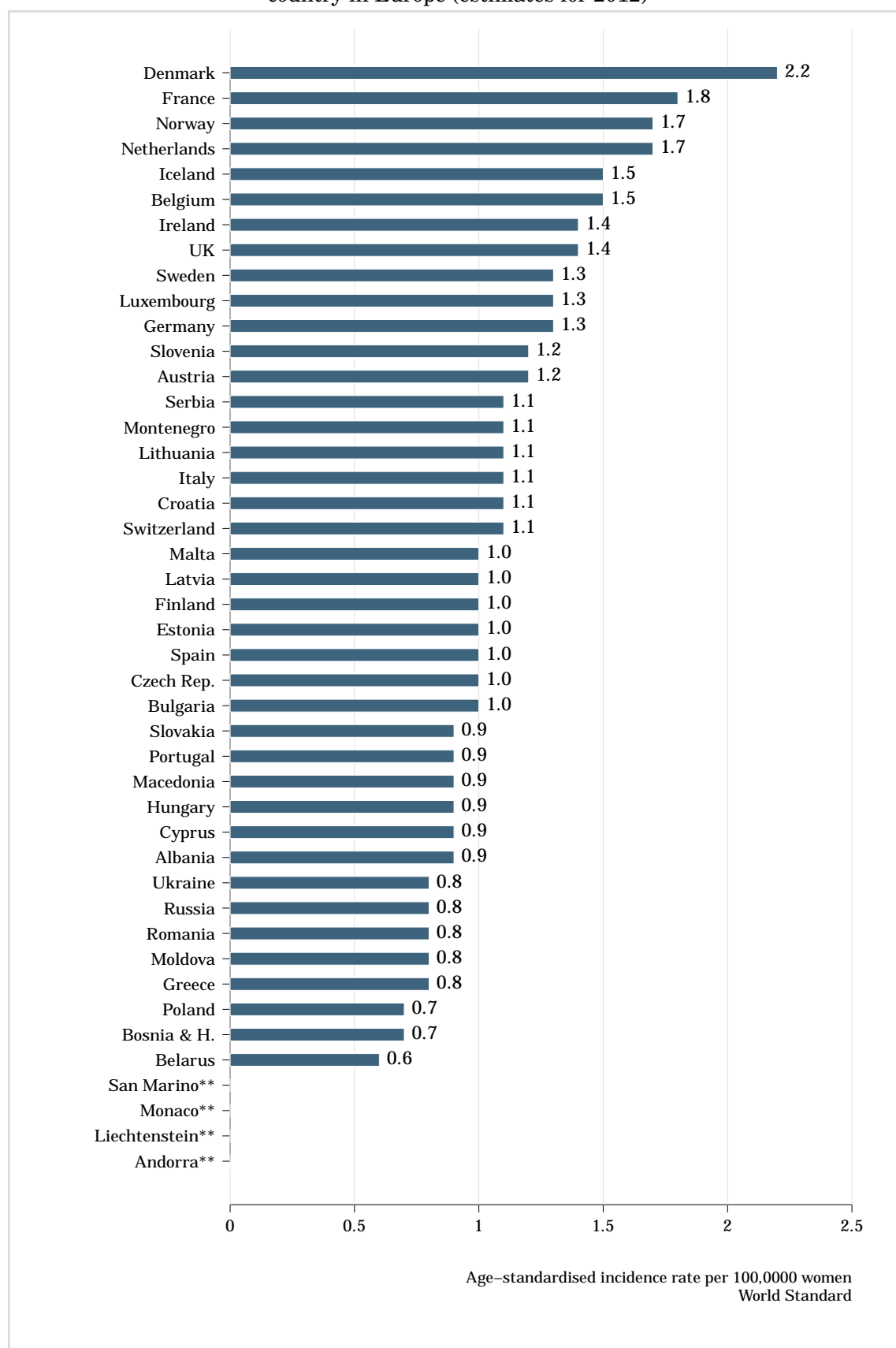
- For United Arab Emirates, Bhutan, Sri Lanka, Mongolia, Saudi Arabia, Lebanon, Jordan: National data (rates).
- For Bangladesh, Brunei, Iraq, Palestine, Indonesia: Frequency data.
- For Nepal, Afghanistan, Maldives, Tajikistan, Uzbekistan, Kyrgyzstan, Laos, Turkmenistan, Syria, Myanmar, DPR Korea, Azerbaijan, Armenia, Georgia, Cambodia, Timor-Leste, Kazakhstan: No data.
- For Oman, Bahrain, Kuwait, Qatar, Republic of Korea, Singapore, Israel: High quality national data or high quality regional (coverage greater than 50%).
- For Yemen, Pakistan, Viet Nam: Regional data (rates).
- For Thailand, Japan, Philippines: High quality regional (coverage between 10% and 50%).
- For Turkey, Iran, Malaysia, China, India: High quality regional (coverage lower than 10%).

GLOBOCAN quality index of methods for calculating incidence: Methods to estimate the sex- and age-specific incidence rates of cancer for a specific country:

- For United Arab Emirates, Bhutan, Sri Lanka, Mongolia, Oman, Qatar, Lebanon: Most recent rates applied to 2012 population
- For Bangladesh, Iraq, Palestine: Age/sex specific rates for "all cancers" were partitioned using data on relative frequency of different cancers (by age and sex)
- For Nepal, Afghanistan, Maldives, Laos, Syria, Myanmar, DPR Korea, Cambodia, Timor-Leste: The rates are those of neighbouring countries or registries in the same area
- For Yemen: One cancer registry covering part of a country is used as representative of the country profile
- For Bahrain, Kuwait, Saudi Arabia, Jordan, Republic of Korea, Singapore, Israel: Rates projected to 2012
- For Pakistan, Thailand, Turkey, Indonesia, Iran, Philippines, Malaysia, India: Estimated as the weighted average of the local rates
- For Tajikistan, Uzbekistan, Brunei, Kyrgyzstan, Turkmenistan, Viet Nam, Azerbaijan, Armenia, Georgia, Kazakhstan: Estimated from national mortality estimates using modelled survival
- For Japan, China: Estimated from national mortality by modelling using incidence mortality ratios derived from recorded data in country-specific cancer registries

Data sources: de Martel C, Plummer M, Vignat J, Franceschi S. Worldwide burden of cancer attributable to HPV by site, country and HPV type. *Int J Cancer*. 2017

Figure 36: Age-standardised incidence rate of other anogenital cancer cases attributable to HPV by country in Europe (estimates for 2012)



** No rates are available.

Data accessed on 08 May 2017.

ASR: Age-standardized rate, rates per 100,000 per year.

Please refer to original source for methods.

(Continued on next page)

(Figure 36 – continued from previous page)

Other anogenital cancer cases (vulvar, vaginal, anal, and penile).

GLOBOCAN quality index for availability of incidence data:

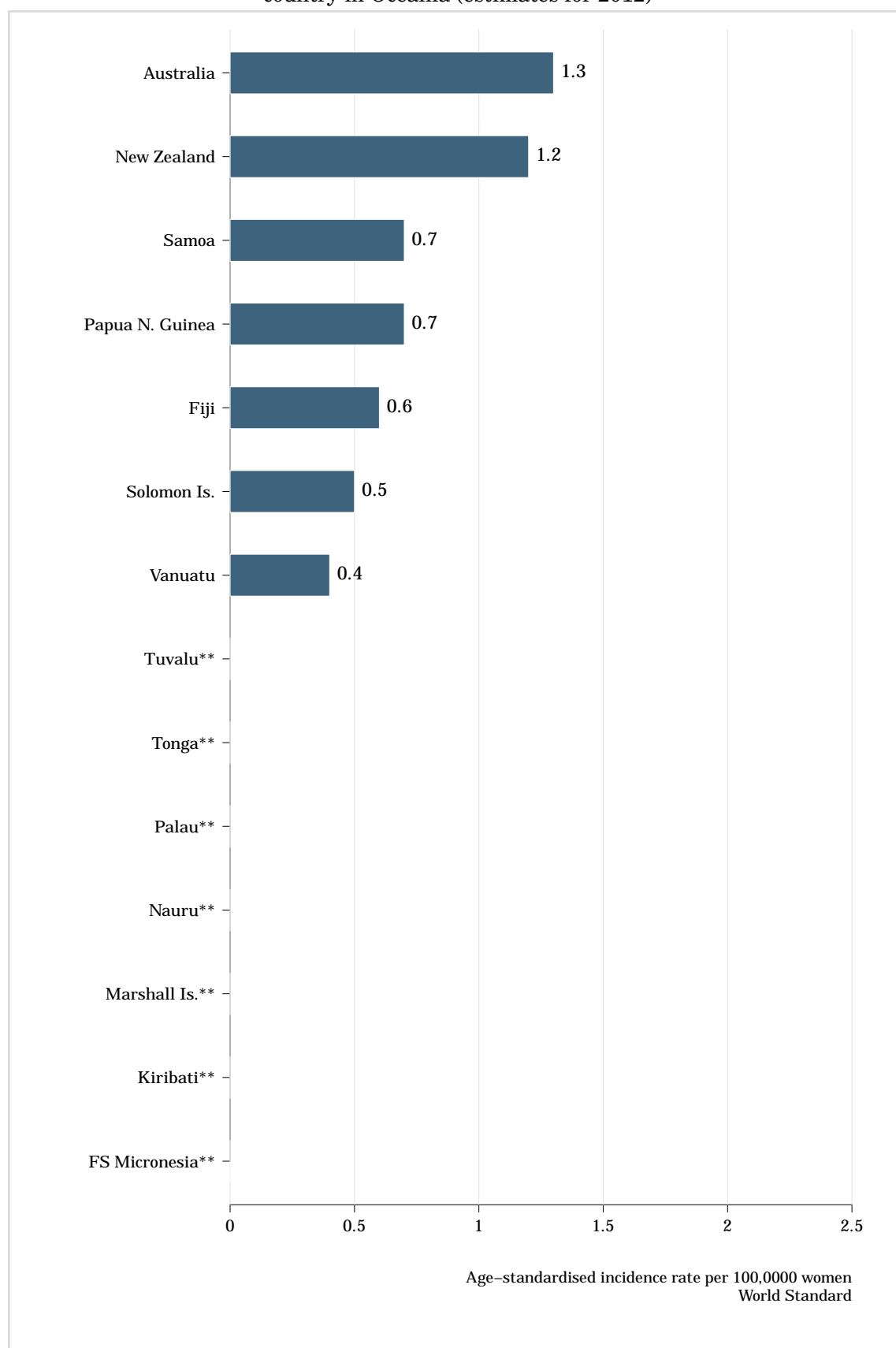
- For Belarus, Ukraine, Cyprus, Slovakia, Bulgaria, Czech Republic, Estonia, Finland, Latvia, Malta, Croatia, Lithuania, Austria, Slovenia, Sweden, United Kingdom, Ireland, Belgium, Iceland, Netherlands, Norway, Denmark: High quality national data or high quality regional (coverage greater than 50%).
- For Bosnia & Herzegovina, Russian Federation, Luxembourg: National data (rates).
- For Poland, Portugal: High quality regional (coverage lower than 10%).
- For Greece, Republic of Moldova, Albania, Hungary, Macedonia, Montenegro: No data.
- For Romania: Regional data (rates).
- For Spain, Switzerland, Italy, Serbia, Germany, France: High quality regional (coverage between 10% and 50%).

GLOBOCAN quality index of methods for calculating incidence: Methods to estimate the sex- and age-specific incidence rates of cancer for a specific country:

- For Belarus, Russian Federation, Slovakia, Bulgaria, Czech Republic, Estonia, Finland, Latvia, Malta, Croatia, Lithuania, Austria, Slovenia, Germany, Sweden, United Kingdom, Ireland, Iceland, Netherlands, Norway, Denmark: Rates projected to 2012
- For Bosnia & Herzegovina, Ukraine, Cyprus, Belgium: Most recent rates applied to 2012 population
- For Poland, Spain, Switzerland, Italy, France: Estimated from national mortality by modelling using incidence mortality ratios derived from recorded data in country-specific cancer registries
- For Greece, Republic of Moldova, Romania, Albania, Hungary, Macedonia, Portugal, Serbia, Luxembourg: Estimated from national mortality estimates by modelling using incidence mortality ratios derived from recorded data in local cancer registries in neighbouring countries
- For Montenegro: The rates are those of neighbouring countries or registries in the same area

Data sources: de Martel C, Plummer M, Vignat J, Franceschi S. Worldwide burden of cancer attributable to HPV by site, country and HPV type. Int J Cancer. 2017

Figure 37: Age-standardised incidence rate of other anogenital cancer cases attributable to HPV by country in Oceania (estimates for 2012)



** No rates are available.

Data accessed on 08 May 2017.

ASR: Age-standardized rate, rates per 100,000 per year.

Please refer to original source for methods.

(Continued on next page)

(Figure 37 – continued from previous page)

Other anogenital cancer cases (vulvar, vaginal, anal, and penile).

GLOBOCAN quality index for availability of incidence data:

- For Vanuatu, Fiji, Samoa: National data (rates).
- For Solomon Islands, Papua New Guinea: No data.
- For New Zealand, Australia: High quality national data or high quality regional (coverage greater than 50%).

GLOBOCAN quality index of methods for calculating incidence: Methods to estimate the sex- and age-specific incidence rates of cancer for a specific country:

- For Vanuatu, Fiji: Estimated from national mortality estimates using modelled survival
- For Solomon Islands: The rates are those of neighbouring countries or registries in the same area
- For Papua New Guinea: Age/sex specific rates for "all cancers" were partitioned using data on relative frequency of different cancers (by age and sex)
- For Samoa: Most recent rates applied to 2012 population
- For New Zealand, Australia: Rates projected to 2012

Data sources: de Martel C, Plummer M, Vignat J, Franceschi S. Worldwide burden of cancer attributable to HPV by site, country and HPV type. Int J Cancer. 2017

3.2.1 Anal cancer

Anal cancer is rare in the general population with an average worldwide incidence of 1 per 100,000, but is reported to be increasing in more developed regions. Globally, there are an estimated 27,000 new cases every year (*de Martel C et al. Lancet Oncol 2012;13(6):607-15*). Women have higher incidences of anal cancer than men. Incidence is particularly high among populations of men who have sex with men (MSM), women with history of cervical or vulvar cancer, and immunosuppressed populations, including those who are HIV-infected and patients with a history of organ transplantation. These cancers are predominantly squamous cell carcinoma, adenocarcinomas, or basaloid and cloacogenic carcinomas.

Table 7: Incidence of anal cancer by cancer registry and sex

Country / Registry	Period	Male			Female		
		N cases ^a	Crude rate ^b	ASR ^b	N cases ^a	Crude rate ^c	ASR ^c
Algeria ¹							
Setif	2003-2007	8	0.2	0.3	1	0.0	0.1
Argentina ¹							
Bahia Blanca	2003-2007	3	0.4	0.4	10	1.3	0.8
Cordoba	2004-2007	20	0.8	0.7	16	0.6	0.4
Mendoza	2003-2007	21	0.5	0.4	33	0.8	0.6
Tierra del Fuego	2003-2007	1	0.3	0.2	0	0.0	0.0
Australia ¹							
Australian Capital Territory	2003-2007	6	0.7	0.6	7	0.8	0.6
New South Wales	2003-2007	229	1.4	0.9	248	1.5	0.9
Northern Territory	2003-2007	7	1.3	1.1	10	2.0	2.2
Northern Territory (Indigenous)	2003-2007	3	2.0	3.6	5	3.2	4.5
Northern Territory (Non-Indigenous)	2003-2007	4	1.0	0.7	5	1.5	1.7
Queensland	2003-2007	137	1.4	0.9	193	1.9	1.3
South	2003-2007	41	1.1	0.7	46	1.2	0.7
Tasmania	2003-2007	19	1.6	1.0	27	2.2	1.2
Victoria	2003-2007	155	1.2	0.9	205	1.6	1.0
Western	2003-2007	45	0.9	0.6	72	1.4	1.0
Austria ¹							
National	2003-2007	196	1.0	0.6	378	1.8	0.9
Tyrol	2003-2007	16	0.9	0.6	38	2.1	1.3
Vorarlberg	2003-2007	4	0.4	0.3	13	1.4	0.8
Bahrain ¹							
National (Bahraini)	2003-2007	6	0.5	0.8	2	0.2	0.3
Belarus ¹							
National	2003-2007	55	0.2	0.2	109	0.4	0.2
Belgium ¹							
National	2004-2007	204	1.0	0.6	310	1.4	0.7
Brazil ¹							

(Continued on next page)

(Table 7 – continued from previous page)

Country / Registry	Period	Male			Female		
		N cases ^a	Crude rate ^b	ASR ^b	N cases ^a	Crude rate ^c	ASR ^c
Aracaju	2003-2006	9	1.0	1.4	11	1.0	1.2
Belo Horizonte	2003-2005	25	0.8	0.9	53	1.4	1.4
Cuiaba	2003-2006	10	0.7	0.8	13	0.8	1.2
Fortaleza	2003-2006	13	0.3	0.4	49	1.0	1.2
Goiania	2003-2007	12	0.4	0.6	33	1.1	1.2
Sao Paulo	2003-2007	235	0.9	1.0	387	1.4	1.3
Bulgaria ¹							
National	2003-2007	167	0.9	0.5	127	0.6	0.4
Canada ¹							
Alberta	2003-2007	60	0.7	0.5	135	1.6	1.2
British Columbia	2003-2007	150	1.4	1.0	215	2.0	1.2
Manitoba	2003-2007	28	1.0	0.7	51	1.7	1.1
National	2003-2007	1114	1.4	0.9	1492	1.8	1.1
New Brunswick	2003-2007	23	1.3	0.8	30	1.6	0.9
Newfoundland and Labrador	2003-2007	8	0.6	0.4	17	1.3	0.8
Northwest Territories	2003-2007	0	0.0	0.0	2	1.9	1.7
Nova Scotia	2003-2007	34	1.5	0.9	47	2.0	1.1
Ontario	2003-2007	585	1.9	1.3	693	2.2	1.4
Prince Edward Island	2003-2007	2	0.6	0.4	8	2.3	1.5
Quebec	2003-2007	196	1.0	0.7	257	1.3	0.8
Saskatchewan	2003-2007	27	1.1	0.7	37	1.5	0.8
Yukon	2003-2007	1	1.2	0.8	0	0.0	0.0
Chile ¹							
Bío Bío Province	2003-2007	3	0.3	0.3	2	0.2	0.1
Region of Antofagasta	2003-2007	4	0.3	0.4	14	1.1	1.0
Valdivia	2003-2007	5	0.5	0.5	7	0.8	0.7
China ¹							
Beijing City	2003-2007	35	0.2	0.1	25	0.1	0.1
Cixian County	2003-2007	4	0.3	0.3	2	0.1	0.2
Haining County	2003-2007	6	0.4	0.3	2	0.1	0.1
Harbin City, Nangang District	2003-2007	7	0.3	0.2	2	0.1	0.1
Hong Kong	2003-2007	108	0.7	0.4	88	0.5	0.3
Jiashan County	2003-2007	3	0.3	0.2	1	0.1	0.0
Jiaxing City	2005-2007	1	0.1	0.1	2	0.3	0.1
Macao	2003-2007	5	0.4	0.3	7	0.6	0.4
Qidong County	2003-2007	5	0.2	0.1	7	0.2	0.1
Shanghai City	2003-2007	70	0.4	0.2	67	0.4	0.2
Wuhan City	2003-2007	40	0.3	0.3	39	0.3	0.3
Yangcheng County	2003-2007	2	0.2	0.2	0	0.0	0.0
Yanting County	2003-2007	0	0.0	0.0	0	0.0	0.0
Zhongshan City	2004-2007	4	0.1	0.2	4	0.1	0.1
Colombia ¹							
Bucaramanga	2003-2007	6	0.2	0.3	35	1.3	1.4
Cali	2003-2007	29	0.6	0.7	101	1.9	1.9
Manizales	2003-2007	12	1.3	1.3	10	1.0	0.8
Pasto	2003-2007	2	0.2	0.3	8	0.8	0.8
Costa Rica ¹							
National	2003-2007	44	0.4	0.5	56	0.5	0.6

(Continued on next page)

(Table 7 – continued from previous page)

Country / Registry	Period	Male			Female		
		N cases ^a	Crude rate ^b	ASR ^b	N cases ^a	Crude rate ^c	ASR ^c
Croatia ¹							
National	2003-2007	41	0.4	0.3	73	0.6	0.3
Cuba ¹							
Villa Clara	2004-2007	13	0.8	0.6	20	1.2	0.8
Cyprus ¹							
National	2003-2007	8	0.4	0.3	14	0.7	0.5
Czech Rep. ¹							
National	2003-2007	192	0.8	0.5	348	1.3	0.7
Denmark ¹							
National	2003-2007	157	1.2	0.7	332	2.4	1.4
Ecuador ¹							
Cuenca	2003-2007	2	0.2	0.2	2	0.2	0.2
Quito	2003-2007	5	0.1	0.2	25	0.6	0.7
Egypt ¹							
Gharbiah	2003-2007	36	0.4	0.5	40	0.4	0.5
Estonia ¹							
National	2003-2007	17	0.5	0.4	48	1.3	0.6
Finland ¹							
National	2003-2007	65	0.5	0.3	115	0.9	0.4
France ¹							
Bas-Rhin	2003-2007	12	0.5	0.3	35	1.3	0.7
Calvados	2003-2007	19	1.2	0.8	40	2.3	1.2
Doubs	2003-2007	14	1.1	0.8	21	1.6	1.0
Haut-Rhin	2003-2007	16	0.9	0.6	36	1.9	0.9
Herauld	2003-2007	27	1.1	0.8	90	3.5	1.9
Isere	2003-2007	20	0.7	0.5	68	2.3	1.3
Loire Atlantique	2003-2007	32	1.1	0.7	78	2.5	1.5
Manche	2003-2007	11	0.9	0.5	25	2.0	0.7
Martinique	2003-2007	3	0.3	0.2	8	0.8	0.3
Somme	2003-2007	16	1.2	0.6	29	2.0	1.2
Tarn	2003-2007	9	1.0	0.4	19	2.0	0.8
Vendee	2003-2007	11	0.8	0.4	36	2.4	1.3
Gambia ²							
National	1997-1998	1	0.1	0.2	2	0.2	0.3
Germany ¹							
Brandenburg	2003-2007	66	1.0	0.6	144	2.2	1.0
Bremen	2003-2007	29	1.8	1.1	35	2.0	1.0
Free State Of Saxony	2003-2007	103	1.0	0.5	214	1.9	0.8
Hamburg	2003-2007	109	2.6	1.5	153	3.4	1.8
Mecklenburg-Western Pomerania	2003-2007	41	1.0	0.6	77	1.8	0.8
Munich	2003-2007	107	1.1	0.7	259	2.6	1.3
North Rhine-Westphalia	2003-2007	69	1.1	0.6	126	1.9	1.0
Saarland	2003-2007	33	1.3	0.7	50	1.8	0.9
Schleswig-Holstein	2003-2007	123	1.8	1.0	215	3.0	1.5
Iceland ¹							
National	2003-2007	6	0.8	0.6	10	1.4	0.8
India ¹							
Bangalore	2005-2007	33	0.3	0.5	23	0.2	0.3
Barshi, Paranda and Bhum	2003-2007	3	0.2	0.2	3	0.2	0.3
Bhopal	2004-2007	10	0.3	0.4	11	0.3	0.5

(Continued on next page)

(Table 7 – continued from previous page)

Country / Registry	Period	Male			Female		
		N cases ^a	Crude rate ^b	ASR ^b	N cases ^a	Crude rate ^c	ASR ^c
Chennai	2003-2007	69	0.6	0.7	49	0.4	0.5
Dindigul, Ambilikikai	2003-2007	14	0.3	0.3	9	0.2	0.2
Karunagappally	2003-2007	3	0.3	0.3	4	0.4	0.3
Mizoram	2003-2007	1	0.0	0.1	3	0.1	0.2
Mumbai	2003-2007	102	0.3	0.4	70	0.2	0.3
New Delhi	2003-2007	170	0.4	0.7	87	0.2	0.4
Poona	2003-2007	31	0.3	0.4	27	0.3	0.4
Sikkim State	2003-2007	3	0.2	0.4	3	0.2	0.4
Trivandrum	2005-2007	2	0.1	0.1	6	0.3	0.3
Iran ¹							
Golestan Province	2005-2007	10	0.4	0.6	5	0.2	0.4
Ireland ¹							
National	2003-2007	64	0.6	0.5	94	0.9	0.6
Israel ¹							
National	2003-2007	57	0.3	0.3	101	0.6	0.4
National (Jews)	2003-2007	56	0.4	0.3	99	0.7	0.5
National (Non-Jews)	2003-2007	1	0.0	0.0	2	0.1	0.1
Italy ¹							
Biella	2003-2007	9	2.0	0.8	15	3.1	1.1
Brescia	2003-2006	16	0.8	0.4	43	2.0	0.9
Catania and Messina	2003-2005	20	0.8	0.5	24	0.9	0.5
Catanzaro	2003-2007	7	1.2	0.5	9	1.5	0.7
Como	2003-2007	19	1.4	0.8	29	2.0	0.9
Ferrara	2003-2007	21	2.5	0.9	23	2.5	0.7
Florence and Prato	2003-2005	42	2.4	0.9	46	2.5	1.0
Friuli-Venezia Giulia	2003-2007	41	1.4	0.6	78	2.5	0.8
Genoa	2003-2006	44	2.7	1.3	72	3.9	1.4
Latina	2003-2007	20	1.6	0.7	37	2.8	1.3
Lecco	2003-2007	6	0.8	0.4	9	1.1	0.4
Lombardy, South	2003-2005	5	0.5	0.3	19	1.7	0.7
Mantua	2003-2005	7	1.2	0.5	5	0.8	0.3
Milan	2003-2006	22	0.9	0.5	58	2.1	1.0
Modena	2003-2007	18	1.1	0.4	30	1.8	0.8
Naples	2003-2007	6	0.4	0.3	9	0.6	0.4
Nuoro	2003-2007	4	0.7	0.4	7	1.1	0.4
Palermo	2003-2006	27	1.1	0.7	24	0.9	0.5
Parma	2003-2007	12	1.2	0.6	17	1.6	0.6
Ragusa	2003-2007	9	1.2	0.6	18	2.3	1.2
Reggio Emilia	2003-2007	9	0.7	0.4	22	1.8	0.7
Romagna	2003-2007	59	2.1	1.1	78	2.6	1.2
Salerno	2003-2007	33	1.2	0.7	24	0.9	0.5
Sassari	2003-2007	6	0.5	0.3	13	1.1	0.5
Sondrio	2003-2007	8	1.8	1.0	17	3.7	1.8
South Tyrol	2003-2006	11	1.2	0.7	31	3.2	1.5
Syracuse	2003-2007	10	1.0	0.6	4	0.4	0.1
Trapani	2003-2006	13	1.6	0.9	11	1.2	0.6
Trento	2003-2006	8	0.8	0.4	14	1.4	0.5
Turin	2003-2007	45	2.1	1.0	65	2.8	1.3
Umbria	2003-2007	26	1.2	0.7	40	1.8	0.8

(Continued on next page)

(Table 7 – continued from previous page)

Country / Registry	Period	Male			Female		
		N cases ^a	Crude rate ^b	ASR ^b	N cases ^a	Crude rate ^c	ASR ^c
Varese	2003-2007	31	1.5	0.8	41	1.9	0.8
Veneto	2003-2006	58	1.3	0.6	72	1.5	0.7
Jamaica ¹							
Kingston and St Andrew	2003-2007	6	0.4	0.4	16	0.9	1.0
Japan ¹							
Aichi Prefecture	2003-2007	18	0.5	0.3	13	0.4	0.2
Fukui Prefecture	2003-2007	12	0.6	0.2	12	0.6	0.2
Hiroshima	2003-2007	15	0.5	0.3	21	0.7	0.3
Miyagi Prefecture	2003-2007	39	0.7	0.3	38	0.6	0.2
Nagasaki Prefecture	2003-2007	18	0.5	0.2	23	0.6	0.2
Niigata Prefecture	2003-2007	41	0.7	0.3	45	0.7	0.2
Osaka Prefecture	2003-2007	186	0.9	0.4	141	0.6	0.2
Saga Prefecture	2003-2007	11	0.5	0.2	9	0.4	0.1
Kuwait ¹							
National	2003-2007	11	0.1	0.1	9	0.2	0.3
National (Kuwaitis)	2003-2007	4	0.2	0.3	6	0.2	0.4
National (Non-Kuwaitis)	2003-2007	7	0.1	0.1	3	0.1	0.1
Latvia ¹							
National	2004-2007	23	0.5	0.4	38	0.8	0.4
Libya ¹							
Benghazi	2003-2005	5	0.2	0.3	3	0.1	0.2
Lithuania ¹							
National	2003-2007	35	0.4	0.3	51	0.6	0.3
Malawi ¹							
Blantyre	2003-2007	3	0.1	0.2	4	0.2	0.5
Malaysia ¹							
Penang	2004-2007	6	0.2	0.3	6	0.2	0.2
Penang (Chinese)	2004-2007	2	0.2	0.2	2	0.2	0.1
Penang (Indian)	2004-2007	0	0.0	0.0	1	0.3	0.3
Penang (Malay)	2004-2007	4	0.3	0.6	3	0.2	0.4
Mali ²							
Bamako	1994-1996	4	0.3	0.6	6	0.5	1.1
Malta ¹							
National	2003-2007	3	0.3	0.1	8	0.8	0.5
Netherlands ¹							
Eindhoven	2003-2007	13	0.5	0.3	23	0.9	0.5
National	2003-2007	293	0.7	0.5	374	0.9	0.5
New Zealand ¹							
National	2003-2007	77	0.8	0.5	180	1.7	1.1
National (Maori)	2003-2007	8	0.5	0.9	15	0.9	1.1
National (Other)	2003-2007	69	0.9	0.5	164	2.0	1.2
National (Pacific Islander)	2003-2007	0	0.0	0.0	1	0.2	0.1
Norway ¹							
National	2003-2007	97	0.8	0.5	229	2.0	1.0
Oman ³							
Omani	1998-2001	11	0.3	0.7	1	0.0	0.1
Pakistan ³							
South Karachi	1998-2002	19	0.4	0.7	8	0.2	0.4
Peru ³							
Trujillo	1998-2002	4	0.3	0.5	13	0.8	1.2
Philippines ¹							

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(Table 7 – continued from previous page)

Country / Registry	Period	Male			Female		
		N cases ^a	Crude rate ^b	ASR ^b	N cases ^a	Crude rate ^c	ASR ^c
Manila	2003-2007	28	0.2	0.3	28	0.2	0.3
Rizal	2003-2007	17	0.1	0.2	19	0.1	0.2
Poland ¹							
Cracow	2003-2006	4	0.3	0.2	24	1.5	0.8
Kielce	2003-2007	9	0.3	0.2	15	0.5	0.2
Lower Silesia	2003-2007	55	0.8	0.5	101	1.3	0.7
Podkarpackie	2003-2007	22	0.4	0.3	35	0.7	0.3
Portugal ¹							
Azores	2003-2007	4	0.7	0.6	6	1.0	0.6
Qatar ¹							
National (Qatari)	2003-2007	1	0.2	0.5	0	0.0	0.0
Rep. Korea ¹							
Busan	2003-2007	29	0.3	0.3	31	0.3	0.2
Daegu	2003-2007	24	0.4	0.4	21	0.3	0.3
Daejeon	2003-2007	13	0.4	0.4	25	0.7	0.6
Gwangju	2003-2007	10	0.3	0.3	18	0.5	0.4
Incheon	2003-2007	15	0.2	0.3	23	0.4	0.3
Jeju	2004-2007	5	0.5	0.5	4	0.4	0.3
National	2003-2007	450	0.4	0.4	482	0.4	0.3
Seoul	2003-2007	106	0.4	0.4	91	0.4	0.3
Ulsan	2003-2007	9	0.3	0.4	5	0.2	0.2
Russia ¹							
Saint Petersburg	2003-2007	22	0.2	0.1	117	0.9	0.5
Saudi Arabia ¹							
Riyadh (Saudi)	2003-2007	9	0.1	0.2	14	0.1	0.3
Serbia ¹							
Central	2003-2007	90	0.7	0.4	86	0.6	0.3
Singapore ¹							
National	2003-2007	59	0.7	0.6	43	0.5	0.3
National (Chinese)	2003-2007	51	0.8	0.6	38	0.6	0.4
National (Indian)	2003-2007	1	0.1	0.1	2	0.3	0.2
National (Malay)	2003-2007	7	0.6	0.7	2	0.2	0.2
Slovakia ¹							
National	2003-2007	63	0.5	0.4	104	0.8	0.4
Slovenia ¹							
National	2003-2007	45	0.9	0.6	56	1.1	0.5
South Africa ¹							
PROMEC	2003-2007	9	0.4	0.7	3	0.1	0.1
Spain ¹							
Albacete	2003-2007	5	0.5	0.4	1	0.1	0.0
Asturias	2003-2007	29	1.1	0.7	19	0.7	0.3
Basque Country	2003-2007	43	0.8	0.5	40	0.7	0.3
Canary Islands	2003-2006	28	0.9	0.6	27	0.8	0.5
Ciudad Real	2004-2007	7	0.7	0.4	3	0.3	0.1
Cuenca	2003-2007	5	1.0	0.5	5	1.0	0.6
Girona	2003-2007	15	0.9	0.7	14	0.9	0.4
Granada	2003-2007	10	0.5	0.3	13	0.6	0.3
La Rioja	2003-2007	2	0.3	0.1	6	0.8	0.4
Mallorca	2003-2007	29	1.5	1.0	18	0.9	0.5
Murcia	2003-2007	29	0.8	0.6	15	0.5	0.2
Navarra	2003-2007	9	0.6	0.4	9	0.6	0.2

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(Table 7 – continued from previous page)

Country / Registry	Period	Male			Female		
		N cases ^a	Crude rate ^b	ASR ^b	N cases ^a	Crude rate ^c	ASR ^c
Tarragona	2003-2007	18	1.0	0.5	9	0.5	0.2
Sweden ¹							
National	2003-2007	198	0.9	0.5	459	2.0	1.0
Switzerland ¹							
Basel	2003-2007	11	1.0	0.6	21	1.9	0.9
Geneva	2003-2007	19	1.9	1.2	63	5.6	3.0
Graubunden and Glarus	2003-2007	4	0.7	0.5	10	1.7	1.0
Neuchatel	2003-2007	12	2.9	1.6	22	5.1	2.2
St Gall-Appenzell	2003-2007	11	0.8	0.6	22	1.6	0.9
Ticino	2003-2007	8	1.0	0.6	36	4.3	2.1
Valais	2003-2007	8	1.1	0.7	19	2.6	1.6
Vaud	2003-2007	24	1.5	0.9	76	4.5	2.3
Zurich	2003-2007	40	1.3	0.8	103	3.2	1.7
Thailand ¹							
Bangkok	2003-2007	28	0.2	0.2	40	0.2	0.2
Chiang Mai	2003-2007	6	0.2	0.1	16	0.4	0.3
Chonburi	2003-2007	2	0.1	0.1	3	0.1	0.1
Khon Kaen	2003-2007	7	0.2	0.2	6	0.1	0.1
Lampang	2003-2007	1	0.1	0.0	6	0.3	0.2
Songkhla	2004-2007	7	0.3	0.3	2	0.1	0.1
Tunisia ¹							
North	2003-2005	23	0.3	0.3	11	0.2	0.2
Turkey ¹							
Antalya	2003-2007	8	0.2	0.2	15	0.4	0.4
Edirne	2004-2007	3	0.4	0.4	1	0.1	0.1
Izmir	2003-2007	33	0.4	0.3	22	0.2	0.2
Trabzon	2005-2007	0	0.0	0.0	0	0.0	0.0
Uganda ¹							
Kyadondo county	2003-2007	5	0.1	0.3	7	0.1	0.5
UK ¹							
England	2003-2007	1491	1.2	0.7	2274	1.8	1.0
England, East of England Region	2003-2007	134	1.0	0.6	270	1.9	1.0
England, North Western	2003-2007	188	1.2	0.7	288	1.7	0.9
England, Northern and Yorkshire	2003-2007	229	1.4	0.8	335	2.0	1.1
England, Oxford Region	2003-2007	67	1.0	0.6	134	1.9	1.1
England, South and Western Regions	2003-2007	197	1.2	0.7	336	1.9	0.9
England, Thames	2003-2007	384	1.3	0.9	513	1.7	1.0
England, Trent	2005-2007	71	1.0	0.6	115	1.5	0.7
England, West Midlands	2003-2007	162	1.2	0.7	211	1.6	0.9
Northern Ireland	2003-2007	50	1.2	0.8	51	1.2	0.8
Scotland	2003-2007	136	1.1	0.7	254	1.9	1.0
Wales	2003-2007	98	1.4	0.7	151	2.0	1.1
Ukraine ¹							
National	2003-2007	438	0.4	0.3	640	0.5	0.3
Uruguay ¹							
National	2005-2007	62	1.3	0.9	73	1.4	0.8
USA ¹							
Alabama	2003-2007	137	1.2	0.9	238	2.0	1.3

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(Table 7 – continued from previous page)

Country / Registry	Period	Male			Female		
		N cases ^a	Crude rate ^b	ASR ^b	N cases ^a	Crude rate ^c	ASR ^c
Alabama (Black)	2003-2007	30	1.1	1.0	42	1.3	1.0
Alabama (White)	2003-2007	106	1.3	0.9	195	2.3	1.4
Alaska	2003-2007	25	1.4	1.3	40	2.5	2.0
Alaska (American Indian)	2003-2007	8	2.8	3.0	6	2.2	2.3
Arizona	2003-2007	155	1.0	0.8	241	1.6	1.1
Arizona (American Indian)	2003-2007	2	0.3	0.3	1	0.1	0.1
Arizona (Asian and Pacific Islander)	2003-2007	0	0.0	0.0	3	0.7	0.6
Arizona (Black)	2003-2007	12	1.9	2.0	6	1.0	1.0
Arizona (White)	2003-2007	139	1.1	0.7	227	1.7	1.1
Arkansas	2003-2007	92	1.4	0.9	160	2.3	1.4
Arkansas (Black)	2003-2007	12	1.1	1.2	10	0.9	0.7
Arkansas (White)	2003-2007	80	1.4	0.9	148	2.6	1.6
California	2003-2007	1184	1.3	1.1	1673	1.9	1.3
California (American Indian)	2003-2007	6	0.5	0.4	5	0.4	0.3
California (Asian and Pacific Islander)	2003-2007	48	0.4	0.3	66	0.5	0.4
California (Black)	2003-2007	87	1.4	1.2	105	1.6	1.3
California (White)	2003-2007	1028	1.5	1.1	1481	2.1	1.5
California, Los Angeles County	2003-2007	318	1.3	1.1	408	1.7	1.2
California, Los Angeles County (Asian and Pacific Islander)	2003-2007	20	0.6	0.5	26	0.7	0.4
California, Los Angeles County (Black)	2003-2007	34	1.5	1.3	45	1.7	1.3
California, Los Angeles County (Chinese)	2003-2007	5	0.5	0.5	15	1.5	0.9
California, Los Angeles County (Filipino)	2003-2007	4	0.6	0.5	1	0.1	0.1
California, Los Angeles County (Hispanic White)	2003-2007	61	0.6	0.7	82	0.8	0.8
California, Los Angeles County (Japanese)	2003-2007	3	1.1	0.6	7	2.1	0.8
California, Los Angeles County (Korean)	2003-2007	4	0.8	0.6	2	0.4	0.1
California, Los Angeles County (Non-Hispanic White)	2003-2007	201	2.7	1.6	252	3.4	1.7
California, Los Angeles County (White)	2003-2007	262	1.4	1.2	334	1.8	1.3
California: San Francisco	2003-2007	218	2.1	1.5	183	1.7	1.1
California: San Francisco (Asian and Pacific Islander)	2003-2007	12	0.5	0.4	12	0.5	0.3
California: San Francisco (Black)	2003-2007	23	2.4	1.8	25	2.3	1.6
California: San Francisco (Hispanic White)	2003-2007	14	0.7	0.9	18	1.0	1.0

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(Table 7 – continued from previous page)

Country / Registry	Period	Male			Female		
		N cases ^a	Crude rate ^b	ASR ^b	N cases ^a	Crude rate ^c	ASR ^c
California: San Francisco (Non-Hispanic White)	2003-2007	168	3.4	2.0	126	2.5	1.3
California: San Francisco (White)	2003-2007	182	2.6	1.8	144	2.1	1.2
Colorado	2003-2007	119	1.0	0.8	221	1.9	1.3
Colorado (Asian and Pacific Islander)	2003-2007	0	0.0	0.0	0	0.0	0.0
Colorado (Black)	2003-2007	5	0.9	0.9	4	0.8	0.7
Colorado (White)	2003-2007	111	1.0	0.8	214	2.0	1.4
Connecticut	2003-2007	114	1.3	0.9	174	1.9	1.2
Connecticut (Black)	2003-2007	12	1.4	1.4	16	1.7	1.2
Connecticut (White)	2003-2007	102	1.4	0.9	157	2.1	1.2
Delaware	2003-2007	28	1.4	0.9	54	2.5	1.8
Delaware (Black)	2003-2007	6	1.4	1.1	8	1.7	1.3
Delaware (White)	2003-2007	21	1.4	0.9	46	2.8	1.9
Florida	2003-2007	727	1.7	1.1	1227	2.7	1.6
Florida (Asian and Pacific Islander)	2003-2007	6	0.6	0.4	4	0.4	0.3
Florida (Black)	2003-2007	66	1.0	0.9	83	1.1	1.0
Florida (White)	2003-2007	646	1.8	1.1	1132	3.1	1.7
Georgia	2003-2007	273	1.2	1.0	382	1.6	1.2
Georgia (Asian and Pacific Islander)	2003-2007	0	0.0	0.0	1	0.2	0.2
Georgia (Black)	2003-2007	73	1.1	1.1	69	1.0	0.9
Georgia (White)	2003-2007	198	1.3	1.0	311	2.0	1.4
Georgia, Atlanta	2003-2007	117	1.4	1.2	128	1.5	1.2
Georgia, Atlanta (Black)	2003-2007	40	1.4	1.3	32	1.0	1.0
Georgia, Atlanta (White)	2003-2007	75	1.6	1.3	96	2.1	1.5
Hawaii	2003-2007	39	1.2	0.8	33	1.1	0.6
Hawaii (Chinese)	2003-2007	1	0.7	0.2	2	1.1	0.8
Hawaii (Filipino)	2003-2007	4	0.9	0.8	2	0.4	0.1
Hawaii (Hawaiian)	2003-2007	7	1.0	0.9	7	1.0	1.1
Hawaii (Japanese)	2003-2007	2	0.3	0.2	3	0.5	0.2
Hawaii (White)	2003-2007	22	2.6	1.6	17	2.4	1.3
Idaho	2003-2007	31	0.9	0.7	65	1.8	1.3
Illinois	2003-2007	421	1.4	1.0	579	1.8	1.2
Illinois (Asian and Pacific Islander)	2003-2007	4	0.3	0.3	3	0.2	0.2
Illinois (Black)	2003-2007	89	1.9	1.8	68	1.3	1.1
Illinois (White)	2003-2007	319	1.3	0.9	505	2.0	1.2
Indiana	2003-2007	177	1.1	0.8	376	2.4	1.5
Indiana (Black)	2003-2007	15	1.1	1.0	22	1.5	1.3
Indiana (White)	2003-2007	160	1.2	0.8	353	2.5	1.6
Iowa	2003-2007	75	1.0	0.7	165	2.2	1.4
Kentucky	2003-2007	135	1.3	1.0	268	2.5	1.6
Louisiana	2003-2004,2006-2007	110	1.3	1.0	161	1.8	1.1
Louisiana (Black)	2003-2004,2006-2007	31	1.1	1.1	37	1.2	1.0

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(Table 7 – continued from previous page)

Country / Registry	Period	Male			Female		
		N cases ^a	Crude rate ^b	ASR ^b	N cases ^a	Crude rate ^c	ASR ^c
Louisiana (White)	2003-2004,2006-2007	78	1.4	1.0	123	2.1	1.2
Louisiana, New Orleans	2003-2004,2006-2007	26	1.6	1.3	31	1.8	1.1
Louisiana, New Orleans (Black)	2003-2004,2006-2007	10	1.5	1.4	12	1.6	1.3
Louisiana, New Orleans (White)	2003-2004,2006-2007	16	1.8	1.3	19	2.0	1.1
Maine	2003-2007	59	1.8	1.3	86	2.6	1.4
Massachusetts	2003-2007	197	1.3	0.9	316	1.9	1.2
Massachusetts (Asian and Pacific Islander)	2003-2007	1	0.1	0.1	4	0.5	0.5
Massachusetts (Black)	2003-2007	9	0.8	0.9	13	1.1	0.9
Massachusetts (White)	2003-2007	186	1.4	0.9	294	2.0	1.2
Michigan	2003-2007	265	1.1	0.8	507	2.0	1.3
Michigan (Asian and Pacific Islander)	2003-2007	1	0.2	0.2	0	0.0	0.0
Michigan (Black)	2003-2007	57	1.6	1.5	64	1.6	1.4
Michigan (White)	2003-2007	201	1.0	0.7	437	2.1	1.3
Michigan, Detroit	2003-2007	114	1.2	0.8	202	1.9	1.3
Michigan, Detroit (Black)	2003-2007	45	1.9	1.6	48	1.7	1.4
Michigan, Detroit (White)	2003-2007	67	1.0	0.6	153	2.1	1.3
Mississippi	2003-2007	106	1.5	1.2	119	1.6	1.0
Missouri	2003-2007	202	1.4	1.0	367	2.5	1.6
Missouri (Black)	2003-2007	22	1.4	1.4	34	1.9	1.6
Missouri (White)	2003-2007	177	1.4	1.0	332	2.6	1.6
Montana	2003-2007	23	1.0	0.6	48	2.1	1.3
Montana (American Indian)	2003-2007	2	1.3	1.3	1	0.6	0.6
Nebraska	2003-2007	40	0.9	0.7	68	1.5	1.1
Nebraska (Black)	2003-2007	0	0.0	0.0	3	1.5	1.5
Nebraska (White)	2003-2007	36	0.9	0.7	64	1.6	1.0
New Hampshire	2003-2007	30	0.9	0.6	65	2.0	1.1
New Jersey	2003-2007	249	1.2	0.9	429	1.9	1.2
New Jersey (Black)	2003-2007	41	1.3	1.3	58	1.7	1.3
New Jersey (White)	2003-2007	202	1.2	0.8	366	2.2	1.2
New Mexico	2003-2007	51	1.1	0.8	91	1.9	1.3
New Mexico (Hispanic White)	2003-2007	7	0.3	0.3	21	1.0	0.9
New Mexico (Non-Hispanic White)	2003-2007	42	2.1	1.2	64	3.0	1.6
New Mexico (White)	2003-2007	49	1.2	0.8	85	2.1	1.3
New York State	2003-2007	745	1.6	1.1	996	2.0	1.2
New York State (Asian and Pacific Islander)	2003-2007	13	0.4	0.3	13	0.4	0.3
New York State (Black)	2003-2007	144	1.8	1.6	134	1.5	1.1
New York State (White)	2003-2007	569	1.6	1.1	832	2.3	1.3

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(Table 7 – continued from previous page)

Country / Registry	Period	Male			Female		
		N cases ^a	Crude rate ^b	ASR ^b	N cases ^a	Crude rate ^c	ASR ^c
North Carolina	2003-2007	253	1.2	0.9	463	2.1	1.3
North Carolina (American Indian)	2003-2007	3	1.1	1.0	2	0.7	0.6
North Carolina (Asian and Pacific Islander)	2003-2007	1	0.2	0.2	2	0.5	0.5
North Carolina (Black)	2003-2007	55	1.2	1.1	67	1.3	1.1
North Carolina (White)	2003-2007	192	1.2	0.8	389	2.4	1.4
North Dakota	2003-2007	6	0.4	0.3	18	1.1	0.6
NPCR (42 States)	2003-2007	8243	1.3	0.9	13207	2.0	1.3
NPCR (42 States) (American Indian)	2003-2007	53	0.7	0.7	62	0.9	0.8
NPCR (42 States) (Asian and Pacific Islander)	2003-2007	93	0.3	0.3	135	0.4	0.3
NPCR (42 States) (Black)	2003-2007	1125	1.3	1.3	1171	1.3	1.0
NPCR (42 States) (White)	2003-2007	6869	1.3	0.9	11726	2.2	1.4
Ohio	2003-2007	347	1.2	0.9	588	2.0	1.3
Ohio (Asian and Pacific Islander)	2003-2007	0	0.0	0.0	0	0.0	0.0
Ohio (Black)	2003-2007	48	1.4	1.3	45	1.2	1.0
Ohio (White)	2003-2007	295	1.2	0.8	533	2.1	1.3
Oklahoma	2003-2007	116	1.3	1.0	210	2.3	1.6
Oklahoma (American Indian)	2003-2007	7	0.9	0.9	25	3.1	2.9
Oklahoma (Black)	2003-2007	7	1.0	1.0	10	1.3	1.1
Oklahoma (White)	2003-2007	102	1.4	1.0	173	2.4	1.5
Oregon	2003-2007	140	1.6	1.1	237	2.6	1.6
Oregon (Asian and Pacific Islander)	2003-2007	1	0.3	0.2	0	0.0	0.0
Oregon (Black)	2003-2007	2	0.9	0.9	2	1.0	1.2
Oregon (White)	2003-2007	132	1.6	1.1	233	2.8	1.7
Pennsylvania	2003-2007	415	1.4	0.9	690	2.2	1.3
Pennsylvania (Asian and Pacific Islander)	2003-2007	4	0.6	0.7	4	0.5	0.5
Pennsylvania (Black)	2003-2007	55	1.7	1.7	66	1.8	1.4
Pennsylvania (White)	2003-2007	351	1.3	0.8	610	2.2	1.3
Puerto Rico	2003-2007	79	0.8	0.6	166	1.6	1.0
Rhode Island	2003-2007	36	1.4	1.0	46	1.7	1.1
Rhode Island (Black)	2003-2007	1	0.6	0.6	3	1.7	1.5
Rhode Island (White)	2003-2007	35	1.5	1.0	43	1.7	1.0
SEER (18 Registries)	2003-2007	2535	1.2	1.0	3912	1.9	1.3
SEER (18 Registries) (Asian and Pacific Islander)	2003-2007	72	0.4	0.3	95	0.5	0.3
SEER (18 Registries) (Black)	2003-2007	308	1.3	1.2	358	1.4	1.2
SEER (18 Registries) (Hispanic White)	2003-2007	182	0.4	0.6	310	0.8	0.9
SEER (18 Registries) (Non-Hispanic White)	2003-2007	1941	1.6	1.1	3109	2.5	1.5
SEER (18 Registries) (White)	2003-2007	2123	1.3	1.0	3419	2.1	1.4

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(Table 7 – continued from previous page)

Country / Registry	Period	Male			Female		
		N cases ^a	Crude rate ^b	ASR ^b	N cases ^a	Crude rate ^c	ASR ^c
SEER (9 Registries)	2003-2007	911	1.3	1.0	1304	1.8	1.2
SEER (9 Registries) (Black)	2003-2007	133	1.6	1.5	131	1.4	1.2
SEER (9 Registries) (White)	2003-2007	743	1.4	1.0	1125	2.1	1.3
South Carolina	2003-2007	131	1.3	0.9	213	1.9	1.2
South Carolina (Black)	2003-2007	44	1.5	1.4	36	1.1	0.8
South Carolina (White)	2003-2007	85	1.2	0.8	175	2.3	1.4
South Dakota	2003-2007	13	0.7	0.5	32	1.6	1.0
Tennessee	2003-2007	163	1.1	0.8	329	2.1	1.4
Tennessee (Black)	2003-2007	24	1.0	1.0	32	1.2	1.0
Tennessee (White)	2003-2007	138	1.2	0.8	296	2.4	1.5
Texas	2003-2007	603	1.1	0.9	827	1.4	1.1
Texas (Asian and Pacific Islander)	2003-2007	5	0.2	0.3	8	0.4	0.4
Texas (Black)	2003-2007	80	1.2	1.2	77	1.1	1.0
Texas (White)	2003-2007	512	1.1	0.9	738	1.5	1.1
Utah	2003-2007	35	0.6	0.5	59	0.9	0.8
Vermont	2003-2007	21	1.4	1.0	27	1.7	1.1
Virginia	2003-2007	204	1.1	0.8	354	1.8	1.2
Virginia (Asian and Pacific Islander)	2003-2007	2	0.2	0.2	4	0.4	0.4
Virginia (Black)	2003-2007	41	1.1	1.1	46	1.1	0.8
Virginia (White)	2003-2007	159	1.1	0.8	294	2.1	1.3
Washington State	2003-2007	192	1.2	0.9	371	2.4	1.5
Washington, Seattle	2003-2007	148	1.4	1.0	269	2.5	1.6
West Virginia	2003-2007	53	1.2	0.8	117	2.5	1.5
Wisconsin	2003-2007	128	0.9	0.6	248	1.8	1.1
Wisconsin (Black)	2003-2007	11	1.3	1.4	14	1.6	1.5
Wisconsin (White)	2003-2007	113	0.9	0.6	228	1.8	1.1
Wyoming	2003-2007	14	1.1	0.7	22	1.8	1.1
Viet Nam ²							
Hanoi	1993-1997	7	0.1	0.2	5	0.1	0.1
Ho Chi Minh City	1995-1998	32	0.4	0.6	36	0.4	0.4
Zimbabwe ¹							
Harare (African)	2003-2006	3	0.1	0.4	2	0.1	0.2

Data accessed on 05 May 2015.^a Accumulated number of cases during the period in the population covered by the corresponding registry.^b Rates per 100,000 men per year.^c Rates per 100,000 women per year.

Data sources:

¹ Forman D, Bray F, Brewster DH, Gombe Mbalawa C, Kohler B, Piñeros M, Steliarova-Foucher E, Swaminathan R and Ferlay J eds (2013). Cancer Incidence in Five Continents, Vol. X (electronic version) Lyon, IARC. <http://ci5.iarc.fr>² Parkin, D.M., Whelan, S.L., Ferlay, J., Teppo, L., and Thomas, D.B., eds (2002). Cancer Incidence in Five Continents, Vol. VIII. IARC Scientific Publications No. 155, Lyon, IARC.³ Curado, M. P., Edwards, B., Shin, H.R., Storm, H., Ferlay, J., Heanue, M. and Boyle, P., eds (2007). Cancer Incidence in Five Continents, Vol. IX. IARC Scientific Publications No. 160, Lyon, IARC.**NOTE**

For time trends in anal cancer incidence, please refer to individual country data.

3.2.2 Vulvar cancer

Cancer of the vulva is rare among women worldwide, with an estimated 27,000 new cases in 2008, representing 4% of all gynaecologic cancers (*de Martel C et al. Lancet Oncol 2012;13(6):607-15*). Worldwide, about 60% of all vulvar cancer cases occur in more developed countries. Vulvar cancer has two distinct histological patterns with two different risk factor profiles: (1) basaloid/warty types (2) keratinizing types. Basaloid/warty lesions are more common in young women, are very often associated with HPV DNA detection (75-100%), and have a similar risk factor profile as cervical cancer. Keratinizing vulvar carcinomas represent the majority of the vulvar lesions (>60%), they occur more often in older women and are more rarely associated with HPV (*IARC Monograph Vol 100B*)

Table 8: Incidence of vulvar cancer by cancer registry

Country name	Cancer registry	Period	Female		
			N cases ^a	Crude rate ^b	ASR ^b
Africa					
Algeria ¹	Setif	2003-2007	5	0.1	0.2
Egypt ¹	Gharbiah	2003-2007	49	0.5	0.8
Gambia ²	National	1997-1998	1	0.1	0.2
Libya ¹	Benghazi	2003-2005	5	0.2	0.4
Malawi ¹	Blantyre	2003-2007	16	0.7	1.0
Mali ²	Bamako	1994-1996	1	0.1	0.2
South Africa ¹	PROMEC	2003-2007	8	0.3	0.3
Tunisia ¹	North	2003-2005	41	0.6	0.6
Uganda ¹	Kyadondo county	2003-2007	12	0.2	0.6
Zimbabwe ¹	Harare (African)	2003-2006	14	0.5	1.1
Americas					
Argentina ¹	Bahia Blanca	2003-2007	6	0.8	0.3
	Cordoba	2004-2007	49	1.8	1.1
	Mendoza	2003-2007	69	1.6	1.2
	Tierra del Fuego	2003-2007	5	1.8	3.0
Brazil ¹	Aracaju	2003-2006	10	1.0	1.0
	Belo Horizonte	2003-2005	33	0.9	0.8
	Cuiaba	2003-2006	12	0.8	1.0
	Fortaleza	2003-2006	17	0.3	0.4
	Goiania	2003-2007	34	1.1	1.3
	Sao Paulo	2003-2007	510	1.8	1.6
Canada ¹	Alberta	2003-2007	189	2.3	1.5
	British Columbia	2003-2007	207	2.0	1.0
	Manitoba	2003-2007	84	2.8	1.8
	National	2003-2007	2044	2.5	1.4
	New Brunswick	2003-2007	55	2.9	1.7
	Newfoundland and Labrador	2003-2007	36	2.8	1.3
	Northwest Territories	2003-2007	1	1.0	1.2
	Nova Scotia	2003-2007	83	3.5	1.8
	Ontario	2003-2007	827	2.6	1.4
	Prince Edward Island	2003-2007	7	2.0	0.8
	Quebec	2003-2007	472	2.5	1.2
	Saskatchewan	2003-2007	83	3.3	1.6
	Yukon	2003-2007	0	0.0	0.0
Chile ¹	Bío Bío Province	2003-2007	4	0.4	0.3
	Region of Antofagasta	2003-2007	17	1.3	1.3
	Valdivia	2003-2007	9	1.0	0.6
Colombia ¹	Bucaramanga	2003-2007	20	0.7	0.7
	Cali	2003-2007	55	1.0	0.9
	Manizales	2003-2007	5	0.5	0.3
	Pasto	2003-2007	5	0.5	0.6
Costa Rica ¹	National	2003-2007	92	0.9	0.9
Cuba ¹	Villa Clara	2004-2007	29	1.8	1.0

(Continued on next page)

(Table 8 – continued from previous page)

Country name	Cancer registry	Period	Female		
			N cases ^a	Crude rate ^b	ASR ^b
Ecuador ¹	Cuenca	2003-2007	9	0.7	0.6
	Quito	2003-2007	28	0.7	0.8
Jamaica ¹	Kingston and St Andrew	2003-2007	8	0.5	0.4
Peru ³	Trujillo	1998-2002	21	1.3	2.0
Uruguay ¹	National	2005-2007	110	2.1	1.0
USA ¹	Alabama (Black)	2003-2007	52	1.6	1.3
	Alabama (White)	2003-2007	240	2.9	1.5
	Alabama	2003-2007	301	2.6	1.5
	Alaska	2003-2007	30	1.9	1.6
	Alaska (American Indian)	2003-2007	5	1.8	1.7
	Arizona (Asian and Pacific Islander)	2003-2007	1	0.2	0.3
	Arizona (American Indian)	2003-2007	6	0.8	0.8
	Arizona	2003-2007	287	1.9	1.2
	Arizona (Black)	2003-2007	3	0.5	0.5
	Arizona (White)	2003-2007	273	2.1	1.2
	Arkansas	2003-2007	215	3.0	1.9
	Arkansas (White)	2003-2007	187	3.2	1.9
	Arkansas (Black)	2003-2007	24	2.0	1.6
	California (American Indian)	2003-2007	4	0.3	0.2
	California (Asian and Pacific Islander)	2003-2007	90	0.7	0.5
	California (Black)	2003-2007	95	1.4	1.1
	California (White)	2003-2007	1508	2.2	1.3
	California	2003-2007	1735	1.9	1.2
	California, Los Angeles County	2003-2007	447	1.8	1.2
	California, Los Angeles County (Black)	2003-2007	45	1.7	1.2
	California, Los Angeles County (Chinese)	2003-2007	10	1.0	0.7
	California, Los Angeles County (Filipino)	2003-2007	6	0.7	0.4
	California, Los Angeles County (Hispanic White)	2003-2007	116	1.1	1.1
	California, Los Angeles County (Japanese)	2003-2007	2	0.6	0.3
	California, Los Angeles County (Korean)	2003-2007	6	1.1	0.6
	California, Los Angeles County (Non-Hispanic White)	2003-2007	251	3.3	1.5
	California, Los Angeles County (White)	2003-2007	367	2.0	1.3
	California, Los Angeles County (Asian and Pacific Islander)	2003-2007	27	0.8	0.4
	California: San Francisco (Asian and Pacific Islander)	2003-2007	26	1.0	0.6
	California: San Francisco (Hispanic White)	2003-2007	10	0.6	0.6
	California: San Francisco	2003-2007	209	2.0	1.1
	California: San Francisco (Black)	2003-2007	20	1.9	1.3
	California: San Francisco (Non-Hispanic White)	2003-2007	149	3.0	1.4
	California: San Francisco (White)	2003-2007	159	2.3	1.3
	Colorado	2003-2007	251	2.2	1.4
	Colorado (Asian and Pacific Islander)	2003-2007	2	0.5	0.5
	Colorado (Black)	2003-2007	5	1.0	0.9
	Colorado (White)	2003-2007	233	2.2	1.3
	Connecticut (Black)	2003-2007	17	1.8	1.4
	Connecticut	2003-2007	287	3.2	1.5
	Connecticut (White)	2003-2007	267	3.5	1.5
	Delaware (Black)	2003-2007	6	1.3	1.1
	Delaware (White)	2003-2007	49	3.0	1.6
	Delaware	2003-2007	56	2.6	1.5
	Florida	2003-2007	1297	2.9	1.5
	Florida (Asian and Pacific Islander)	2003-2007	1	0.1	0.1

(Continued on next page)

(Table 8 – continued from previous page)

Country name	Cancer registry	Period	Female		
			N cases ^a	Crude rate ^b	ASR ^b
	Florida (Black)	2003-2007	91	1.2	1.0
	Florida (White)	2003-2007	1190	3.3	1.6
	Georgia	2003-2007	530	2.3	1.6
	Georgia (Asian and Pacific Islander)	2003-2007	4	0.6	0.6
	Georgia (Black)	2003-2007	93	1.3	1.1
	Georgia (White)	2003-2007	425	2.8	1.7
	Georgia, Atlanta	2003-2007	150	1.8	1.4
	Georgia, Atlanta (Black)	2003-2007	44	1.3	1.3
	Georgia, Atlanta (White)	2003-2007	97	2.1	1.5
	Hawaii (Filipino)	2003-2007	5	1.0	0.7
	Hawaii (Hawaiian)	2003-2007	9	1.3	1.0
	Hawaii (Japanese)	2003-2007	22	3.4	0.9
	Hawaii (White)	2003-2007	24	3.3	2.1
	Hawaii (Chinese)	2003-2007	0	0.0	0.0
	Hawaii	2003-2007	65	2.1	1.1
	Idaho	2003-2007	87	2.4	1.4
	Illinois (Black)	2003-2007	83	1.6	1.3
	Illinois (White)	2003-2007	748	2.9	1.6
	Illinois (Asian and Pacific Islander)	2003-2007	4	0.3	0.2
	Illinois	2003-2007	857	2.7	1.5
	Indiana (Black)	2003-2007	24	1.6	1.4
	Indiana (White)	2003-2007	446	3.2	1.8
	Indiana	2003-2007	479	3.0	1.8
	Iowa	2003-2007	280	3.7	1.9
	Kentucky	2003-2007	384	3.6	2.2
	Louisiana	2003- 2004,2006- 2007	262	2.9	1.8
	Louisiana (White)	2003- 2004,2006- 2007	207	3.5	2.0
	Louisiana (Black)	2003- 2004,2006- 2007	52	1.7	1.4
	Louisiana, New Orleans	2003- 2004,2006- 2007	50	2.8	1.7
	Louisiana, New Orleans (Black)	2003- 2004,2006- 2007	13	1.7	1.4
	Louisiana, New Orleans (White)	2003- 2004,2006- 2007	37	3.9	2.0
	Maine	2003-2007	128	3.8	1.9
	Massachusetts	2003-2007	545	3.3	1.8
	Massachusetts (Asian and Pacific Islander)	2003-2007	3	0.4	0.5
	Massachusetts (Black)	2003-2007	14	1.2	1.0
	Massachusetts (White)	2003-2007	520	3.6	1.8
	Michigan	2003-2007	772	3.0	1.7
	Michigan (Asian and Pacific Islander)	2003-2007	2	0.3	0.4
	Michigan (Black)	2003-2007	68	1.7	1.5
	Michigan (White)	2003-2007	686	3.3	1.8
	Michigan, Detroit	2003-2007	307	3.0	1.7
	Michigan, Detroit (Black)	2003-2007	56	2.0	1.6
	Michigan, Detroit (White)	2003-2007	247	3.4	1.8
	Mississippi	2003-2007	211	2.8	1.8
	Missouri	2003-2007	485	3.3	1.9

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(Table 8 – continued from previous page)

Country name	Cancer registry	Period	Female		
			N cases ^a	Crude rate ^b	ASR ^b
	Missouri (Black)	2003-2007	36	2.0	1.7
	Missouri (White)	2003-2007	446	3.5	2.0
	Montana (American Indian)	2003-2007	2	1.3	1.1
	Montana	2003-2007	75	3.2	1.7
	Nebraska	2003-2007	126	2.8	1.5
	Nebraska (Black)	2003-2007	3	1.5	1.5
	Nebraska (White)	2003-2007	116	2.8	1.4
	New Hampshire	2003-2007	112	3.4	1.7
	New Jersey	2003-2007	595	2.7	1.4
	New Jersey (White)	2003-2007	523	3.1	1.5
	New Jersey (Black)	2003-2007	52	1.5	1.2
	New Mexico	2003-2007	90	1.9	1.2
	New Mexico (Hispanic White)	2003-2007	19	0.9	0.7
	New Mexico (Non-Hispanic White)	2003-2007	58	2.7	1.4
	New Mexico (White)	2003-2007	77	1.9	1.1
	New York State	2003-2007	1346	2.7	1.4
	New York State (Asian and Pacific Islander)	2003-2007	12	0.4	0.2
	New York State (Black)	2003-2007	148	1.6	1.2
	New York State (White)	2003-2007	1159	3.1	1.5
	North Carolina	2003-2007	551	2.5	1.5
	North Carolina (White)	2003-2007	461	2.8	1.6
	North Carolina (Asian and Pacific Islander)	2003-2007	2	0.5	0.4
	North Carolina (American Indian)	2003-2007	1	0.3	0.3
	North Carolina (Black)	2003-2007	83	1.6	1.2
	North Dakota	2003-2007	50	3.2	1.5
	NPCR (42 States)	2003-2007	17514	2.6	1.5
	NPCR (42 States) (American Indian)	2003-2007	78	1.1	1.0
	NPCR (42 States) (Asian and Pacific Islander)	2003-2007	151	0.5	0.4
	NPCR (42 States) (Black)	2003-2007	1374	1.5	1.2
	NPCR (42 States) (White)	2003-2007	15617	2.9	1.6
	Ohio	2003-2007	870	3.0	1.7
	Ohio (Asian and Pacific Islander)	2003-2007	0	0.0	0.0
	Ohio (Black)	2003-2007	47	1.3	1.0
	Ohio (White)	2003-2007	810	3.2	1.8
	Oklahoma	2003-2007	293	3.3	2.0
	Oklahoma (American Indian)	2003-2007	19	2.3	2.2
	Oklahoma (Black)	2003-2007	8	1.1	1.0
	Oklahoma (White)	2003-2007	265	3.6	2.1
	Oregon	2003-2007	255	2.8	1.6
	Oregon (Asian and Pacific Islander)	2003-2007	0	0.0	0.0
	Oregon (Black)	2003-2007	3	1.5	1.6
	Oregon (White)	2003-2007	238	2.8	1.6
	Pennsylvania (Black)	2003-2007	78	2.2	1.7
	Pennsylvania (Asian and Pacific Islander)	2003-2007	2	0.3	0.2
	Pennsylvania	2003-2007	1195	3.7	1.9
	Pennsylvania (White)	2003-2007	1097	4.0	1.9
	Puerto Rico	2003-2007	200	2.0	1.0
	Rhode Island	2003-2007	119	4.3	2.5
	Rhode Island (White)	2003-2007	108	4.4	2.3
	Rhode Island (Black)	2003-2007	4	2.2	2.0
	SEER (18 Registries) (Asian and Pacific Islander)	2003-2007	155	0.8	0.5
	SEER (18 Registries) (Black)	2003-2007	394	1.5	1.3

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(Table 8 – continued from previous page)

Country name	Cancer registry	Period	Female		
			N cases ^a	Crude rate ^b	ASR ^b
	SEER (18 Registries) (Hispanic White)	2003-2007	370	1.0	1.0
	SEER (18 Registries) (White)	2003-2007	4264	2.7	1.5
	SEER (18 Registries)	2003-2007	4909	2.4	1.4
	SEER (18 Registries) (Non-Hispanic White)	2003-2007	3894	3.2	1.6
	SEER (9 Registries) (White)	2003-2007	1499	2.8	1.5
	SEER (9 Registries)	2003-2007	1757	2.5	1.5
	SEER (9 Registries) (Black)	2003-2007	145	1.6	1.4
	South Carolina (Black)	2003-2007	42	1.3	0.9
	South Carolina	2003-2007	306	2.8	1.7
	South Carolina (White)	2003-2007	259	3.5	1.9
	South Dakota	2003-2007	66	3.4	1.9
	Tennessee (Black)	2003-2007	33	1.2	1.0
	Tennessee (White)	2003-2007	378	3.0	1.7
	Tennessee	2003-2007	415	2.7	1.6
	Texas (White)	2003-2007	987	2.1	1.4
	Texas (Asian and Pacific Islander)	2003-2007	6	0.3	0.2
	Texas (Black)	2003-2007	111	1.6	1.3
	Texas	2003-2007	1130	2.0	1.4
	Utah	2003-2007	82	1.3	1.0
	Vermont	2003-2007	49	3.1	1.7
	Virginia	2003-2007	451	2.3	1.4
	Virginia (Black)	2003-2007	56	1.4	1.0
	Virginia (White)	2003-2007	380	2.7	1.5
	Virginia (Asian and Pacific Islander)	2003-2007	4	0.4	0.4
	Washington State	2003-2007	388	2.5	1.5
	Washington, Seattle	2003-2007	287	2.7	1.6
	West Virginia	2003-2007	167	3.6	1.9
	Wisconsin (Black)	2003-2007	12	1.3	1.4
	Wisconsin	2003-2007	380	2.7	1.4
	Wisconsin (White)	2003-2007	358	2.8	1.3
	Wyoming	2003-2007	27	2.1	1.3
Asia					
Bahrain ¹	National (Bahraini)	2003-2007	0	0.0	0.0
China ¹	Beijing City	2003-2007	121	0.7	0.4
	Cixian County	2003-2007	5	0.3	0.4
	Haining County	2003-2007	6	0.4	0.3
	Harbin City, Nangang District	2003-2007	10	0.4	0.3
	Hong Kong	2003-2007	147	0.8	0.5
	Jiashan County	2003-2007	4	0.4	0.2
	Jiaxing City	2005-2007	6	0.8	0.5
	Macao	2003-2007	3	0.2	0.2
	Qidong County	2003-2007	3	0.1	0.0
	Shanghai City	2003-2007	98	0.6	0.3
	Wuhan City	2003-2007	27	0.2	0.2
	Yangcheng County	2003-2007	1	0.1	0.1
	Yanting County	2003-2007	5	0.3	0.3
	Zhongshan City	2004-2007	13	0.5	0.4
India ¹	Bangalore	2005-2007	43	0.4	0.7
	Barshi, Paranda and Bhum	2003-2007	2	0.2	0.1
	Bhopal	2004-2007	5	0.2	0.3
	Chennai	2003-2007	51	0.5	0.5
	Dindigul, Ambilikikai	2003-2007	20	0.4	0.5
	Karunagappally	2003-2007	3	0.3	0.2
	Mizoram	2003-2007	13	0.5	0.8

(Continued on next page)

(Table 8 – continued from previous page)

Country name	Cancer registry	Period	Female		
			N cases ^a	Crude rate ^b	ASR ^b
	Mumbai	2003-2007	65	0.2	0.3
	New Delhi	2003-2007	104	0.3	0.5
	Poona	2003-2007	25	0.3	0.3
	Sikkim State	2003-2007	2	0.2	0.3
	Trivandrum	2005-2007	4	0.2	0.2
Iran ¹	Golestan Province	2005-2007	1	0.0	0.1
Israel ¹	National	2003-2007	229	1.4	0.9
	National (Non-Jews)	2003-2007	16	0.5	0.8
	National (Jews)	2003-2007	213	1.6	0.9
Japan ¹	Aichi Prefecture	2003-2007	18	0.5	0.2
	Fukui Prefecture	2003-2007	22	1.0	0.4
	Hiroshima	2003-2007	26	0.9	0.3
	Miyagi Prefecture	2003-2007	41	0.7	0.2
	Nagasaki Prefecture	2003-2007	46	1.2	0.3
	Niigata Prefecture	2003-2007	50	0.8	0.3
	Osaka Prefecture	2003-2007	164	0.7	0.3
	Saga Prefecture	2003-2007	20	0.9	0.3
Kuwait ¹	National	2003-2007	10	0.2	0.3
	National (Non-Kuwaitis)	2003-2007	4	0.1	0.3
	National (Kuwaitis)	2003-2007	6	0.2	0.4
Malaysia ¹	Penang (Malay)	2004-2007	3	0.2	0.3
	Penang (Indian)	2004-2007	2	0.7	0.9
	Penang	2004-2007	10	0.4	0.4
	Penang (Chinese)	2004-2007	5	0.4	0.3
Oman ³	Omani	1998-2001	3	0.1	0.2
Pakistan ³	South Karachi	1998-2002	3	0.1	0.1
Philippines ¹	Manila	2003-2007	42	0.3	0.5
	Rizal	2003-2007	41	0.2	0.4
Qatar ¹	National (Qatari)	2003-2007	0	0.0	0.0
Rep. Korea ¹	Busan	2003-2007	24	0.3	0.2
	Daegu	2003-2007	17	0.3	0.2
	Daejeon	2003-2007	4	0.1	0.1
	Gwangju	2003-2007	14	0.4	0.3
	Incheon	2003-2007	18	0.3	0.2
	Jeju	2004-2007	2	0.2	0.1
	National	2003-2007	426	0.4	0.3
	Seoul	2003-2007	101	0.4	0.3
	Ulsan	2003-2007	8	0.3	0.3
Saudi Arabia ¹	Riyadh (Saudi)	2003-2007	5	0.1	0.1
Singapore ¹	National (Indian)	2003-2007	2	0.3	0.3
	National (Chinese)	2003-2007	62	0.9	0.6
	National	2003-2007	69	0.8	0.6
	National (Malay)	2003-2007	4	0.3	0.3
Thailand ¹	Bangkok	2003-2007	34	0.2	0.2
	Chiang Mai	2003-2007	39	1.0	0.8
	Chonburi	2003-2007	15	0.5	0.4
	Khon Kaen	2003-2007	17	0.4	0.3
	Lampang	2003-2007	21	1.1	0.8
	Songkhla	2004-2007	9	0.3	0.3
Turkey ¹	Antalya	2003-2007	15	0.4	0.4
	Edirne	2004-2007	4	0.5	0.2
	Izmir	2003-2007	66	0.7	0.6
	Trabzon	2005-2007	4	0.4	0.2
Viet Nam ²	Hanoi	1993-1997	53	0.9	1.0

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(Table 8 – continued from previous page)

Country name	Cancer registry	Period	Female		
			N cases ^a	Crude rate ^b	ASR ^b
	Ho Chi Minh City	1995-1998	35	0.4	0.4
Europe					
Austria ¹	National	2003-2007	660	3.1	1.5
	Tyrol	2003-2007	44	2.5	1.5
	Vorarlberg	2003-2007	27	3.0	1.5
Belarus ¹	National	2003-2007	755	2.9	1.3
Belgium ¹	National	2004-2007	710	3.3	1.5
Bulgaria ¹	National	2003-2007	619	3.1	1.3
Croatia ¹	National	2003-2007	346	3.0	1.2
Cyprus ¹	National	2003-2007	39	2.0	1.1
Czech Rep. ¹	National	2003-2007	1000	3.8	1.8
Denmark ¹	National	2003-2007	471	3.4	1.7
Estonia ¹	National	2003-2007	132	3.6	1.4
Finland ¹	National	2003-2007	376	2.8	1.2
France ¹	Bas-Rhin	2003-2007	84	3.1	1.3
	Calvados	2003-2007	26	1.5	0.7
	Doubs	2003-2007	46	3.5	1.5
	Haut-Rhin	2003-2007	51	2.7	1.3
	Herauld	2003-2007	42	1.6	0.5
	Isere	2003-2007	44	1.5	0.7
	Loire Atlantique	2003-2007	51	1.6	0.7
	Manche	2003-2007	21	1.7	0.8
	Martinique	2003-2007	3	0.3	0.2
	Somme	2003-2007	29	2.0	0.9
	Tarn	2003-2007	20	2.1	0.8
	Vendee	2003-2007	22	1.5	0.9
Germany ¹	Brandenburg	2003-2007	301	4.7	1.9
	Bremen	2003-2007	90	5.3	2.0
	Free State Of Saxony	2003-2007	603	5.5	1.8
	Hamburg	2003-2007	257	5.8	2.5
	Mecklenburg-Western Pomerania	2003-2007	199	4.6	1.7
	Munich	2003-2007	420	4.2	1.7
	North Rhine-Westphalia	2003-2007	326	4.9	2.1
	Saarland	2003-2007	255	9.4	4.1
	Schleswig-Holstein	2003-2007	585	8.1	3.6
Iceland ¹	National	2003-2007	11	1.5	0.9
Ireland ¹	National	2003-2007	217	2.1	1.3
Italy ¹	Biella	2003-2007	27	5.5	1.7
	Brescia	2003-2006	50	2.3	0.9
	Catania and Messina	2003-2005	72	2.7	1.1
	Catanzaro	2003-2007	22	3.6	1.6
	Como	2003-2007	56	3.9	1.2
	Ferrara	2003-2007	42	4.6	1.5
	Florence and Prato	2003-2005	72	3.9	1.1
	Friuli-Venezia Giulia	2003-2007	131	4.2	1.1
	Genoa	2003-2006	101	5.4	1.7
	Latina	2003-2007	44	3.3	1.4
	Lecco	2003-2007	21	2.6	0.9
	Lombardy, South	2003-2005	42	3.8	1.3
	Mantua	2003-2005	27	4.5	1.3
	Milan	2003-2006	73	2.7	0.7
	Modena	2003-2007	77	4.5	1.3
	Naples	2003-2007	41	2.9	1.8
	Nuoro	2003-2007	8	1.3	0.6

(Continued on next page)

(Table 8 – continued from previous page)

Country name	Cancer registry	Period	Female		
			N cases ^a	Crude rate ^b	ASR ^b
	Palermo	2003-2006	78	3.0	1.4
	Parma	2003-2007	30	2.8	0.8
	Ragusa	2003-2007	21	2.7	1.2
	Reggio Emilia	2003-2007	49	3.9	1.3
	Romagna	2003-2007	117	4.0	1.1
	Salerno	2003-2007	77	2.8	1.2
	Sassari	2003-2007	19	1.6	0.8
	Sondrio	2003-2007	19	4.2	1.3
	South Tyrol	2003-2006	35	3.6	1.6
	Syracuse	2003-2007	22	2.2	1.0
	Trapani	2003-2006	38	4.3	1.5
	Trento	2003-2006	41	4.0	1.5
	Turin	2003-2007	84	3.6	1.0
	Umbria	2003-2007	105	4.7	1.4
	Varese	2003-2007	67	3.1	1.0
	Veneto	2003-2006	174	3.7	1.3
Latvia ¹	National	2004-2007	162	3.3	1.4
Lithuania ¹	National	2003-2007	274	3.0	1.3
Malta ¹	National	2003-2007	36	3.5	1.6
Netherlands ¹	Eindhoven	2003-2007	84	3.3	1.7
	National	2003-2007	1416	3.4	1.7
Norway ¹	National	2003-2007	451	3.9	1.9
Poland ¹	Cracow	2003-2006	33	2.0	0.9
	Kielce	2003-2007	70	2.1	0.8
	Lower Silesia	2003-2007	196	2.6	1.3
	Podkarpackie	2003-2007	106	2.0	1.0
Portugal ¹	Azores	2003-2007	8	1.3	0.7
Russia ¹	Saint Petersburg	2003-2007	354	2.8	1.1
Serbia ¹	Central	2003-2007	459	3.3	1.6
Slovakia ¹	National	2003-2007	350	2.5	1.3
Slovenia ¹	National	2003-2007	247	4.8	2.1
Spain ¹	Albacete	2003-2007	29	3.0	1.0
	Asturias	2003-2007	101	3.6	1.2
	Basque Country	2003-2007	160	3.0	1.2
	Canary Islands	2003-2006	62	1.9	1.0
	Ciudad Real	2004-2007	24	2.4	1.0
	Cuenca	2003-2007	17	3.3	1.2
	Girona	2003-2007	43	2.7	1.1
	Granada	2003-2007	50	2.3	1.0
	La Rioja	2003-2007	22	3.0	0.8
	Mallorca	2003-2007	68	3.5	1.5
	Murcia	2003-2007	66	2.0	1.0
	Navarra	2003-2007	47	3.2	1.0
	Tarragona	2003-2007	56	3.3	1.2
	National	2003-2007	803	3.5	1.4
	National	2003-2007	803	3.5	1.4
Switzerland ¹	Basel	2003-2007	40	3.5	1.2
	Geneva	2003-2007	31	2.8	1.3
	Graubunden and Glarus	2003-2007	20	3.5	1.6
	Neuchatel	2003-2007	12	2.8	1.6
	St Gall-Appenzell	2003-2007	34	2.5	1.1
	Ticino	2003-2007	24	2.9	0.8
	Valais	2003-2007	16	2.2	0.7
	Vaud	2003-2007	56	3.3	1.4
	Zurich	2003-2007	102	3.2	1.4

(Continued on next page)

(Table 8 – continued from previous page)

Country name	Cancer registry	Period	Female		
			N cases ^a	Crude rate ^b	ASR ^b
UK ¹	England	2003-2007	4408	3.4	1.6
	England, East of England Region	2003-2007	440	3.1	1.4
	England, North Western	2003-2007	580	3.5	1.7
	England, Northern and Yorkshire	2003-2007	649	3.8	1.8
	England, Oxford Region	2003-2007	210	3.0	1.6
	England, South and Western Regions	2003-2007	731	4.2	1.7
	England, Thames	2003-2007	759	2.5	1.3
	England, Trent	2005-2007	322	4.3	1.9
	England, West Midlands	2003-2007	523	3.8	1.8
	Northern Ireland	2003-2007	122	2.8	1.5
	Scotland	2003-2007	493	3.7	1.9
	Wales	2003-2007	342	4.5	2.0
Ukraine ¹	National	2003-2007	3345	2.6	1.1
Oceania					
Australia ¹	Australian Capital Territory	2003-2007	16	1.9	1.3
	New South Wales	2003-2007	445	2.6	1.4
	Northern Territory (Indigenous)	2003-2007	7	4.4	4.6
	Northern Territory	2003-2007	15	3.0	3.0
	Northern Territory (Non-Indigenous)	2003-2007	8	2.4	2.5
	Queensland	2003-2007	208	2.1	1.2
	South	2003-2007	107	2.7	1.2
	Tasmania	2003-2007	36	2.9	1.4
	Victoria	2003-2007	333	2.6	1.4
	Western	2003-2007	120	2.4	1.4
New Zealand ¹	National (Other)	2003-2007	219	2.6	1.3
	National (Pacific Islander)	2003-2007	3	0.5	0.6
	National (Maori)	2003-2007	23	1.4	1.7
	National	2003-2007	245	2.3	1.4

Data accessed on 05 May 2015.^aAccumulated number of cases during the period in the population covered by the corresponding registry.^bRates per 100,000 women per year.

Data sources:

¹Forman D, Bray F, Brewster DH, Gombe Mbalawa C, Kohler B, Piñeros M, Steliarova-Foucher E, Swaminathan R and Ferlay J eds (2013). Cancer Incidence in Five Continents, Vol. X (electronic version) Lyon, IARC. <http://ci5.iarc.fr>²Parkin, D.M., Whelan, S.L., Ferlay, J., Teppo, L., and Thomas, D.B., eds (2002). Cancer Incidence in Five Continents, Vol. VIII. IARC Scientific Publications No. 155, Lyon, IARC.³Curado. M. P., Edwards, B., Shin. H.R., Storm. H., Ferlay. J., Heanue. M. and Boyle. P., eds (2007). Cancer Incidence in Five Continents, Vol. IX. IARC Scientific Publications No. 160, Lyon, IARC.**NOTE**

For time trends in vulvar cancer incidence, please refer to individual country data.

3.2.3 Vaginal cancer

Cancer of the vagina is a rare cancer, with an estimated 13,000 new cases in 2008, representing 2% of all gynaecologic cancers (*de Martel C et al. Lancet Oncol 2012;13(6):607-15*). Although unreported and similar to cervical cancer, the majority of vaginal cancer cases (68%) occur in less developed countries. Most vaginal cancers are squamous cell carcinoma (90%) generally attributable to HPV, followed by clear cell adenocarcinomas and melanoma. Metastatic cervical cancer can be misclassified as cancer of the vagina. Invasive vaginal cancer is diagnosed primarily in old women (≥ 65 years) and the diagnosis is rare in women under 45 years whereas the peak incidence of carcinoma in situ is observed between ages 55 and 70 (*Vaccine 2008, Vol. 26, Suppl 10*)

Table 9: Incidence of vaginal cancer by cancer registry

Country name	Cancer registry	Period	Female		
			N cases ^a	Crude rate ^b	ASR ^b
Africa					
Algeria ¹	Setif	2003-2007	3	0.1	0.1
Egypt ¹	Gharbiah	2003-2007	15	0.2	0.2
Gambia ²	National	1997-1998	2	0.2	0.2
Libya ¹	Benghazi	2003-2005	3	0.1	0.2
Malawi ¹	Blantyre	2003-2007	16	0.7	1.4
Mali ²	Bamako	1994-1996	1	0.1	0.1
South Africa ¹	PROMEC	2003-2007	8	0.3	0.3
Tunisia ¹	North	2003-2005	20	0.3	0.3
Uganda ¹	Kyadondo county	2003-2007	9	0.2	0.6
Zimbabwe ¹	Harare (African)	2003-2006	4	0.1	0.2
Americas					
Argentina ¹	Bahia Blanca	2003-2007	11	1.5	1.0
	Cordoba	2004-2007	14	0.5	0.4
	Mendoza	2003-2007	24	0.6	0.5
	Tierra del Fuego	2003-2007	1	0.4	0.4
Brazil ¹	Aracaju	2003-2006	6	0.6	0.9
	Belo Horizonte	2003-2005	24	0.6	0.6
	Cuiaba	2003-2006	7	0.4	0.6
	Fortaleza	2003-2006	22	0.4	0.5
	Goiania	2003-2007	22	0.7	0.8
	Sao Paulo	2003-2007	348	1.2	1.1
Canada ¹	Alberta	2003-2007	53	0.6	0.4
	British Columbia	2003-2007	84	0.8	0.4
	Manitoba	2003-2007	20	0.7	0.4
	National	2003-2007	621	0.8	0.4
	New Brunswick	2003-2007	21	1.1	0.5
	Newfoundland and Labrador	2003-2007	7	0.5	0.3
	Northwest Territories	2003-2007	1	1.0	1.7
	Nova Scotia	2003-2007	33	1.4	0.7
	Ontario	2003-2007	251	0.8	0.5
	Prince Edward Island	2003-2007	3	0.9	0.5
	Quebec	2003-2007	135	0.7	0.3
	Saskatchewan	2003-2007	13	0.5	0.3
	Yukon	2003-2007	0	0.0	0.0
Chile ¹	Bío Bío Province	2003-2007	9	1.0	0.8
	Region of Antofagasta	2003-2007	7	0.5	0.6
	Valdivia	2003-2007	2	0.2	0.2
Colombia ¹	Bucaramanga	2003-2007	20	0.7	0.8
	Cali	2003-2007	31	0.6	0.6
	Manizales	2003-2007	5	0.5	0.5
	Pasto	2003-2007	0	0.0	0.0
Costa Rica ¹	National	2003-2007	25	0.2	0.2
Cuba ¹	Villa Clara	2004-2007	4	0.2	0.1

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(Table 9 – continued from previous page)

Country name	Cancer registry	Period	Female		
			N cases ^a	Crude rate ^b	ASR ^b
Ecuador ¹	Cuenca	2003-2007	5	0.4	0.4
	Quito	2003-2007	15	0.4	0.5
Jamaica ¹	Kingston and St Andrew	2003-2007	3	0.2	0.1
Peru ³	Trujillo	1998-2002	2	0.1	0.2
Uruguay ¹	National	2005-2007	39	0.8	0.4
USA ¹	Alabama (Black)	2003-2007	25	0.8	0.6
	Alabama (White)	2003-2007	67	0.8	0.4
	Alabama	2003-2007	94	0.8	0.5
	Alaska	2003-2007	12	0.7	0.6
	Alaska (American Indian)	2003-2007	2	0.7	0.6
	Arizona (Asian and Pacific Islander)	2003-2007	1	0.2	0.3
	Arizona (American Indian)	2003-2007	1	0.1	0.2
	Arizona	2003-2007	81	0.5	0.3
	Arizona (Black)	2003-2007	0	0.0	0.0
	Arizona (White)	2003-2007	77	0.6	0.3
	Arkansas	2003-2007	64	0.9	0.5
	Arkansas (White)	2003-2007	52	0.9	0.5
	Arkansas (Black)	2003-2007	12	1.0	0.8
	California (American Indian)	2003-2007	1	0.1	0.1
	California (Asian and Pacific Islander)	2003-2007	47	0.4	0.3
	California (Black)	2003-2007	52	0.8	0.6
	California (White)	2003-2007	476	0.7	0.4
	California	2003-2007	593	0.7	0.4
	California, Los Angeles County	2003-2007	177	0.7	0.5
	California, Los Angeles County (Black)	2003-2007	18	0.7	0.6
	California, Los Angeles County (Chinese)	2003-2007	6	0.6	0.4
	California, Los Angeles County (Filipino)	2003-2007	4	0.5	0.3
	California, Los Angeles County (Hispanic White)	2003-2007	64	0.6	0.6
	California, Los Angeles County (Japanese)	2003-2007	1	0.3	0.1
	California, Los Angeles County (Korean)	2003-2007	3	0.5	0.3
	California, Los Angeles County (Non-Hispanic White)	2003-2007	75	1.0	0.5
	California, Los Angeles County (White)	2003-2007	139	0.8	0.5
	California, Los Angeles County (Asian and Pacific Islander)	2003-2007	18	0.5	0.3
	California: San Francisco (Asian and Pacific Islander)	2003-2007	14	0.6	0.4
	California: San Francisco (Hispanic White)	2003-2007	10	0.6	0.6
	California: San Francisco	2003-2007	71	0.7	0.4
	California: San Francisco (Black)	2003-2007	12	1.1	0.8
	California: San Francisco (Non-Hispanic White)	2003-2007	35	0.7	0.4
	California: San Francisco (White)	2003-2007	45	0.7	0.4
	Colorado	2003-2007	71	0.6	0.4
	Colorado (Asian and Pacific Islander)	2003-2007	5	1.4	1.1
	Colorado (Black)	2003-2007	4	0.8	0.8
	Colorado (White)	2003-2007	62	0.6	0.4
	Connecticut (Black)	2003-2007	9	0.9	0.8
	Connecticut	2003-2007	80	0.9	0.4
	Connecticut (White)	2003-2007	69	0.9	0.4
	Delaware (Black)	2003-2007	5	1.1	0.8
	Delaware (White)	2003-2007	10	0.6	0.4
	Delaware	2003-2007	15	0.7	0.4
	Florida	2003-2007	363	0.8	0.4
	Florida (Asian and Pacific Islander)	2003-2007	5	0.4	0.3

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(Table 9 – continued from previous page)

Country name	Cancer registry	Period	Female		
			N cases ^a	Crude rate ^b	ASR ^b
	Florida (Black)	2003-2007	62	0.8	0.7
	Florida (White)	2003-2007	290	0.8	0.4
	Georgia	2003-2007	203	0.9	0.6
	Georgia (Asian and Pacific Islander)	2003-2007	2	0.3	0.3
	Georgia (Black)	2003-2007	69	1.0	0.9
	Georgia (White)	2003-2007	132	0.9	0.5
	Georgia, Atlanta	2003-2007	63	0.8	0.6
	Georgia, Atlanta (Black)	2003-2007	31	0.9	1.1
	Georgia, Atlanta (White)	2003-2007	31	0.7	0.4
	Hawaii (Filipino)	2003-2007	2	0.4	0.3
	Hawaii (Hawaiian)	2003-2007	4	0.6	0.6
	Hawaii (Japanese)	2003-2007	3	0.5	0.1
	Hawaii (White)	2003-2007	8	1.1	0.5
	Hawaii (Chinese)	2003-2007	1	0.6	0.1
	Hawaii	2003-2007	22	0.7	0.4
	Idaho	2003-2007	28	0.8	0.5
	Illinois (Black)	2003-2007	59	1.1	0.8
	Illinois (White)	2003-2007	182	0.7	0.4
	Illinois (Asian and Pacific Islander)	2003-2007	7	0.5	0.4
	Illinois	2003-2007	252	0.8	0.5
	Indiana (Black)	2003-2007	13	0.9	0.7
	Indiana (White)	2003-2007	112	0.8	0.4
	Indiana	2003-2007	126	0.8	0.5
	Iowa	2003-2007	65	0.9	0.4
	Kentucky	2003-2007	105	1.0	0.6
	Louisiana	2003- 2004,2006- 2007	82	0.9	0.6
	Louisiana (White)	2003- 2004,2006- 2007	59	1.0	0.6
	Louisiana (Black)	2003- 2004,2006- 2007	23	0.8	0.6
	Louisiana, New Orleans	2003- 2004,2006- 2007	17	1.0	0.6
	Louisiana, New Orleans (Black)	2003- 2004,2006- 2007	3	0.4	0.3
	Louisiana, New Orleans (White)	2003- 2004,2006- 2007	14	1.5	0.9
	Maine	2003-2007	32	1.0	0.5
	Massachusetts	2003-2007	123	0.7	0.4
	Massachusetts (Asian and Pacific Islander)	2003-2007	2	0.2	0.3
	Massachusetts (Black)	2003-2007	16	1.3	1.3
	Massachusetts (White)	2003-2007	103	0.7	0.4
	Michigan	2003-2007	224	0.9	0.5
	Michigan (Asian and Pacific Islander)	2003-2007	1	0.2	0.2
	Michigan (Black)	2003-2007	30	0.8	0.6
	Michigan (White)	2003-2007	186	0.9	0.5
	Michigan, Detroit	2003-2007	94	0.9	0.5
	Michigan, Detroit (Black)	2003-2007	28	1.0	0.8
	Michigan, Detroit (White)	2003-2007	66	0.9	0.5
	Mississippi	2003-2007	68	0.9	0.6
	Missouri	2003-2007	112	0.8	0.4

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(Table 9 – continued from previous page)

Country name	Cancer registry	Period	Female		
			N cases ^a	Crude rate ^b	ASR ^b
	Missouri (Black)	2003-2007	16	0.9	0.7
	Missouri (White)	2003-2007	95	0.7	0.4
	Montana (American Indian)	2003-2007	2	1.3	1.4
	Montana	2003-2007	17	0.7	0.3
	Nebraska	2003-2007	29	0.7	0.4
	Nebraska (Black)	2003-2007	2	1.0	1.0
	Nebraska (White)	2003-2007	26	0.6	0.3
	New Hampshire	2003-2007	17	0.5	0.3
	New Jersey	2003-2007	191	0.9	0.5
	New Jersey (White)	2003-2007	143	0.8	0.4
	New Jersey (Black)	2003-2007	35	1.0	0.9
	New Mexico	2003-2007	36	0.7	0.4
	New Mexico (Hispanic White)	2003-2007	14	0.7	0.6
	New Mexico (Non-Hispanic White)	2003-2007	20	0.9	0.4
	New Mexico (White)	2003-2007	34	0.8	0.5
	New York State	2003-2007	403	0.8	0.5
	New York State (Asian and Pacific Islander)	2003-2007	10	0.3	0.2
	New York State (Black)	2003-2007	99	1.1	0.8
	New York State (White)	2003-2007	286	0.8	0.4
	North Carolina	2003-2007	173	0.8	0.5
	North Carolina (White)	2003-2007	129	0.8	0.4
	North Carolina (Asian and Pacific Islander)	2003-2007	1	0.2	0.1
	North Carolina (American Indian)	2003-2007	1	0.3	0.4
	North Carolina (Black)	2003-2007	42	0.8	0.6
	North Dakota	2003-2007	8	0.5	0.2
	NPCR (42 States)	2003-2007	5057	0.8	0.4
	NPCR (42 States) (American Indian)	2003-2007	25	0.3	0.3
	NPCR (42 States) (Asian and Pacific Islander)	2003-2007	116	0.4	0.3
	NPCR (42 States) (Black)	2003-2007	808	0.9	0.7
	NPCR (42 States) (White)	2003-2007	4035	0.7	0.4
	Ohio	2003-2007	224	0.8	0.4
	Ohio (Asian and Pacific Islander)	2003-2007	3	0.7	0.7
	Ohio (Black)	2003-2007	29	0.8	0.5
	Ohio (White)	2003-2007	189	0.8	0.4
	Oklahoma	2003-2007	76	0.8	0.5
	Oklahoma (American Indian)	2003-2007	8	1.0	0.8
	Oklahoma (Black)	2003-2007	4	0.5	0.4
	Oklahoma (White)	2003-2007	64	0.9	0.5
	Oregon	2003-2007	58	0.6	0.4
	Oregon (Asian and Pacific Islander)	2003-2007	1	0.3	0.2
	Oregon (Black)	2003-2007	2	1.0	1.1
	Oregon (White)	2003-2007	54	0.6	0.4
	Pennsylvania (Black)	2003-2007	34	1.0	0.7
	Pennsylvania (Asian and Pacific Islander)	2003-2007	1	0.1	0.1
	Pennsylvania	2003-2007	277	0.9	0.4
	Pennsylvania (White)	2003-2007	237	0.9	0.4
	Puerto Rico	2003-2007	110	1.1	0.7
	Rhode Island	2003-2007	16	0.6	0.3
	Rhode Island (White)	2003-2007	15	0.6	0.3
	Rhode Island (Black)	2003-2007	0	0.0	0.0
	SEER (18 Registries) (Asian and Pacific Islander)	2003-2007	87	0.5	0.3
	SEER (18 Registries) (Black)	2003-2007	227	0.9	0.8

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(Table 9 – continued from previous page)

Country name	Cancer registry	Period	Female		
			N cases ^a	Crude rate ^b	ASR ^b
	SEER (18 Registries) (Hispanic White)	2003-2007	175	0.5	0.5
	SEER (18 Registries) (White)	2003-2007	1243	0.8	0.5
	SEER (18 Registries)	2003-2007	1578	0.8	0.5
	SEER (18 Registries) (Non-Hispanic White)	2003-2007	1068	0.9	0.4
	SEER (9 Registries) (White)	2003-2007	410	0.8	0.4
	SEER (9 Registries)	2003-2007	536	0.8	0.5
	SEER (9 Registries) (Black)	2003-2007	85	0.9	0.8
	South Carolina (Black)	2003-2007	24	0.7	0.5
	South Carolina	2003-2007	100	0.9	0.5
	South Carolina (White)	2003-2007	74	1.0	0.5
	South Dakota	2003-2007	13	0.7	0.3
	Tennessee (Black)	2003-2007	21	0.8	0.7
	Tennessee (White)	2003-2007	110	0.9	0.5
	Tennessee	2003-2007	136	0.9	0.5
	Texas (White)	2003-2007	315	0.7	0.4
	Texas (Asian and Pacific Islander)	2003-2007	6	0.3	0.3
	Texas (Black)	2003-2007	65	0.9	0.7
	Texas	2003-2007	391	0.7	0.5
	Utah	2003-2007	23	0.4	0.3
	Vermont	2003-2007	17	1.1	0.7
	Virginia	2003-2007	139	0.7	0.4
	Virginia (Black)	2003-2007	40	1.0	0.7
	Virginia (White)	2003-2007	91	0.6	0.4
	Virginia (Asian and Pacific Islander)	2003-2007	5	0.5	0.5
	Washington State	2003-2007	118	0.7	0.4
	Washington, Seattle	2003-2007	82	0.8	0.5
	West Virginia	2003-2007	47	1.0	0.5
	Wisconsin (Black)	2003-2007	7	0.8	0.7
	Wisconsin	2003-2007	81	0.6	0.3
	Wisconsin (White)	2003-2007	73	0.6	0.3
	Wyoming	2003-2007	11	0.9	0.7
Asia					
Bahrain ¹	National (Bahraini)	2003-2007	0	0.0	0.0
China ¹	Beijing City	2003-2007	41	0.2	0.2
	Cixian County	2003-2007	2	0.1	0.1
	Haining County	2003-2007	2	0.1	0.1
	Harbin City, Nangang District	2003-2007	10	0.4	0.3
	Hong Kong	2003-2007	97	0.5	0.3
	Jiashan County	2003-2007	0	0.0	0.0
	Jiaxing City	2005-2007	1	0.1	0.1
	Macao	2003-2007	6	0.5	0.4
	Qidong County	2003-2007	2	0.1	0.1
	Shanghai City	2003-2007	39	0.3	0.1
	Wuhan City	2003-2007	29	0.3	0.2
	Yangcheng County	2003-2007	3	0.3	0.3
	Yanting County	2003-2007	1	0.1	0.1
	Zhongshan City	2004-2007	9	0.3	0.3
India ¹	Bangalore	2005-2007	54	0.6	0.8
	Barshi, Paranda and Bhum	2003-2007	6	0.5	0.5
	Bhopal	2004-2007	7	0.2	0.4
	Chennai	2003-2007	79	0.7	0.8
	Dindigul, Ambilikikai	2003-2007	39	0.8	0.8
	Karunagappally	2003-2007	2	0.2	0.2
	Mizoram	2003-2007	4	0.2	0.3

(Continued on next page)

(Table 9 – continued from previous page)

Country name	Cancer registry	Period	Female		
			N cases ^a	Crude rate ^b	ASR ^b
	Mumbai	2003-2007	160	0.6	0.7
	New Delhi	2003-2007	97	0.3	0.4
	Poona	2003-2007	44	0.4	0.6
	Sikkim State	2003-2007	4	0.3	0.6
	Trivandrum	2005-2007	8	0.5	0.4
Iran ¹	Golestan Province	2005-2007	3	0.1	0.2
Israel ¹	National	2003-2007	71	0.4	0.3
	National (Non-Jews)	2003-2007	1	0.0	0.0
	National (Jews)	2003-2007	70	0.5	0.3
Japan ¹	Aichi Prefecture	2003-2007	15	0.4	0.3
	Fukui Prefecture	2003-2007	8	0.4	0.2
	Hiroshima	2003-2007	11	0.4	0.2
	Miyagi Prefecture	2003-2007	23	0.4	0.1
	Nagasaki Prefecture	2003-2007	12	0.3	0.1
	Niigata Prefecture	2003-2007	21	0.3	0.2
	Osaka Prefecture	2003-2007	75	0.3	0.1
	Saga Prefecture	2003-2007	15	0.7	0.2
Kuwait ¹	National	2003-2007	1	0.0	0.1
	National (Non-Kuwaitis)	2003-2007	0	0.0	0.0
	National (Kuwaitis)	2003-2007	1	0.0	0.1
Malaysia ¹	Penang (Malay)	2004-2007	3	0.2	0.3
	Penang (Indian)	2004-2007	2	0.7	0.8
	Penang	2004-2007	9	0.3	0.3
	Penang (Chinese)	2004-2007	4	0.3	0.2
Oman ³	Omani	1998-2001	6	0.2	0.3
Pakistan ³	South Karachi	1998-2002	6	0.2	0.3
Philippines ¹	Manila	2003-2007	33	0.2	0.3
	Rizal	2003-2007	31	0.2	0.3
Qatar ¹	National (Qatari)	2003-2007	0	0.0	0.0
Rep. Korea ¹	Busan	2003-2007	15	0.2	0.1
	Daegu	2003-2007	24	0.4	0.3
	Daejeon	2003-2007	5	0.1	0.1
	Gwangju	2003-2007	8	0.2	0.2
	Incheon	2003-2007	12	0.2	0.2
	Jeju	2004-2007	3	0.3	0.2
	National	2003-2007	295	0.2	0.2
	Seoul	2003-2007	67	0.3	0.2
	Ulsan	2003-2007	10	0.4	0.4
Saudi Arabia ¹	Riyadh (Saudi)	2003-2007	6	0.1	0.1
Singapore ¹	National (Indian)	2003-2007	2	0.3	0.3
	National (Chinese)	2003-2007	31	0.5	0.4
	National	2003-2007	38	0.4	0.3
	National (Malay)	2003-2007	4	0.3	0.3
Thailand ¹	Bangkok	2003-2007	47	0.3	0.3
	Chiang Mai	2003-2007	13	0.3	0.3
	Chonburi	2003-2007	5	0.2	0.2
	Khon Kaen	2003-2007	7	0.2	0.1
	Lampang	2003-2007	3	0.2	0.1
	Songkhla	2004-2007	3	0.1	0.1
Turkey ¹	Antalya	2003-2007	6	0.2	0.2
	Edirne	2004-2007	1	0.1	0.1
	Izmir	2003-2007	16	0.2	0.1
	Trabzon	2005-2007	2	0.2	0.1
Viet Nam ²	Hanoi	1993-1997	8	0.1	0.2

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(Table 9 – continued from previous page)

Country name	Cancer registry	Period	Female		
			N cases ^a	Crude rate ^b	ASR ^b
	Ho Chi Minh City	1995-1998	16	0.2	0.2
Europe					
Austria ¹	National	2003-2007	239	1.1	0.5
	Tyrol	2003-2007	19	1.1	0.4
	Vorarlberg	2003-2007	13	1.4	0.8
Belarus ¹	National	2003-2007	168	0.6	0.4
Belgium ¹	National	2004-2007	197	0.9	0.4
Bulgaria ¹	National	2003-2007	139	0.7	0.3
Croatia ¹	National	2003-2007	76	0.7	0.3
Cyprus ¹	National	2003-2007	3	0.2	0.1
Czech Rep. ¹	National	2003-2007	247	0.9	0.5
Denmark ¹	National	2003-2007	122	0.9	0.4
Estonia ¹	National	2003-2007	29	0.8	0.4
Finland ¹	National	2003-2007	97	0.7	0.3
France ¹	Bas-Rhin	2003-2007	15	0.5	0.3
	Calvados	2003-2007	12	0.7	0.4
	Doubs	2003-2007	5	0.4	0.2
	Haut-Rhin	2003-2007	14	0.7	0.3
	Herauld	2003-2007	15	0.6	0.3
	Isere	2003-2007	14	0.5	0.2
	Loire Atlantique	2003-2007	22	0.7	0.3
	Manche	2003-2007	3	0.2	0.1
	Martinique	2003-2007	10	0.9	0.5
	Somme	2003-2007	12	0.8	0.3
	Tarn	2003-2007	5	0.5	0.2
	Vendee	2003-2007	12	0.8	0.3
Germany ¹	Brandenburg	2003-2007	62	1.0	0.4
	Bremen	2003-2007	18	1.1	0.3
	Free State Of Saxony	2003-2007	131	1.2	0.4
	Hamburg	2003-2007	63	1.4	0.6
	Mecklenburg-Western Pomerania	2003-2007	45	1.0	0.4
	Munich	2003-2007	97	1.0	0.4
	North Rhine-Westphalia	2003-2007	61	0.9	0.4
	Saarland	2003-2007	32	1.2	0.5
	Schleswig-Holstein	2003-2007	71	1.0	0.4
Iceland ¹	National	2003-2007	2	0.3	0.1
Ireland ¹	National	2003-2007	59	0.6	0.4
Italy ¹	Biella	2003-2007	3	0.6	0.1
	Brescia	2003-2006	8	0.4	0.1
	Catania and Messina	2003-2005	16	0.6	0.3
	Catanzaro	2003-2007	8	1.3	0.5
	Como	2003-2007	14	1.0	0.5
	Ferrara	2003-2007	11	1.2	0.2
	Florence and Prato	2003-2005	12	0.6	0.1
	Friuli-Venezia Giulia	2003-2007	26	0.8	0.3
	Genoa	2003-2006	18	1.0	0.2
	Latina	2003-2007	4	0.3	0.1
	Lecco	2003-2007	6	0.7	0.2
	Lombardy, South	2003-2005	13	1.2	0.4
	Mantua	2003-2005	6	1.0	0.4
	Milan	2003-2006	23	0.8	0.3
	Modena	2003-2007	9	0.5	0.3
	Naples	2003-2007	6	0.4	0.3
	Nuoro	2003-2007	2	0.3	0.1

(Continued on next page)

(Table 9 – continued from previous page)

Country name	Cancer registry	Period	Female		
			N cases ^a	Crude rate ^b	ASR ^b
	Palermo	2003-2006	17	0.7	0.3
	Parma	2003-2007	7	0.7	0.3
	Ragusa	2003-2007	6	0.8	0.4
	Reggio Emilia	2003-2007	10	0.8	0.3
	Romagna	2003-2007	25	0.8	0.3
	Salerno	2003-2007	17	0.6	0.3
	Sassari	2003-2007	7	0.6	0.3
	Sondrio	2003-2007	1	0.2	0.2
	South Tyrol	2003-2006	6	0.6	0.3
	Syracuse	2003-2007	7	0.7	0.4
	Trapani	2003-2006	4	0.4	0.3
	Trento	2003-2006	11	1.1	0.5
	Turin	2003-2007	20	0.9	0.3
	Umbria	2003-2007	25	1.1	0.4
	Varese	2003-2007	15	0.7	0.3
	Veneto	2003-2006	34	0.7	0.2
Latvia ¹	National	2004-2007	31	0.6	0.3
Lithuania ¹	National	2003-2007	53	0.6	0.3
Malta ¹	National	2003-2007	5	0.5	0.2
Netherlands ¹	Eindhoven	2003-2007	14	0.5	0.3
	National	2003-2007	247	0.6	0.3
Norway ¹	National	2003-2007	77	0.7	0.3
Poland ¹	Cracow	2003-2006	7	0.4	0.2
	Kielce	2003-2007	6	0.2	0.1
	Lower Silesia	2003-2007	54	0.7	0.4
	Podkarpackie	2003-2007	29	0.5	0.3
Portugal ¹	Azores	2003-2007	5	0.8	0.4
Russia ¹	Saint Petersburg	2003-2007	80	0.6	0.3
Serbia ¹	Central	2003-2007	112	0.8	0.4
Slovakia ¹	National	2003-2007	94	0.7	0.4
Slovenia ¹	National	2003-2007	46	0.9	0.4
Spain ¹	Albacete	2003-2007	3	0.3	0.2
	Asturias	2003-2007	32	1.1	0.5
	Basque Country	2003-2007	34	0.6	0.3
	Canary Islands	2003-2006	11	0.3	0.2
	Ciudad Real	2004-2007	2	0.2	0.1
	Cuenca	2003-2007	0	0.0	0.0
	Girona	2003-2007	4	0.2	0.1
	Granada	2003-2007	11	0.5	0.2
	La Rioja	2003-2007	2	0.3	0.1
	Mallorca	2003-2007	8	0.4	0.3
	Murcia	2003-2007	14	0.4	0.2
	Navarra	2003-2007	3	0.2	0.0
	Tarragona	2003-2007	5	0.3	0.2
	National	2003-2007	205	0.9	0.3
	Sweden ¹				
Switzerland ¹	Basel	2003-2007	11	1.0	0.4
	Geneva	2003-2007	5	0.4	0.2
	Graubunden and Glarus	2003-2007	5	0.9	0.4
	Neuchatel	2003-2007	4	0.9	0.2
	St Gall-Appenzell	2003-2007	13	1.0	0.5
	Ticino	2003-2007	5	0.6	0.2
	Valais	2003-2007	1	0.1	0.1
	Vaud	2003-2007	13	0.8	0.3
	Zurich	2003-2007	25	0.8	0.4

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(Table 9 – continued from previous page)

Country name	Cancer registry	Period	Female		
			N cases ^a	Crude rate ^b	ASR ^b
UK ¹	England	2003-2007	1001	0.8	0.4
	England, East of England Region	2003-2007	79	0.6	0.3
	England, North Western	2003-2007	138	0.8	0.5
	England, Northern and Yorkshire	2003-2007	151	0.9	0.4
	England, Oxford Region	2003-2007	53	0.8	0.4
	England, South and Western Regions	2003-2007	163	0.9	0.4
	England, Thames	2003-2007	195	0.7	0.4
	England, Trent	2005-2007	79	1.0	0.5
	England, West Midlands	2003-2007	102	0.8	0.4
	Northern Ireland	2003-2007	21	0.5	0.3
	Scotland	2003-2007	104	0.8	0.4
	Wales	2003-2007	70	0.9	0.4
Ukraine ¹	National	2003-2007	765	0.6	0.3
Oceania					
Australia ¹	Australian Capital Territory	2003-2007	6	0.7	0.5
	New South Wales	2003-2007	130	0.8	0.4
	Northern Territory (Indigenous)	2003-2007	1	0.6	1.0
	Northern Territory	2003-2007	3	0.6	0.6
	Northern Territory (Non-Indigenous)	2003-2007	2	0.6	0.6
	Queensland	2003-2007	62	0.6	0.4
	South	2003-2007	32	0.8	0.4
	Tasmania	2003-2007	6	0.5	0.2
	Victoria	2003-2007	62	0.5	0.3
	Western	2003-2007	53	1.1	0.7
New Zealand ¹	National (Other)	2003-2007	50	0.6	0.3
	National (Pacific Islander)	2003-2007	2	0.3	0.4
	National (Maori)	2003-2007	8	0.5	0.7
	National	2003-2007	60	0.6	0.4

Data accessed on 05 May 2015.Please refer to original source (available at <http://ci5.iarc.fr/Ci5i-ix/ci5i-ix.htm>)^a Accumulated number of cases during the period in the population covered by the corresponding registry.^b Rates per 100,000 women per year.**Data sources:**¹ Forman D, Bray F, Brewster DH, Gombe Mbalawa C, Kohler B, Piñeros M, Steliarova-Foucher E, Swaminathan R and Ferlay J eds (2013). Cancer Incidence in Five Continents, Vol. X (electronic version) Lyon, IARC. <http://ci5.iarc.fr>² Parkin, D.M., Whelan, S.L., Ferlay, J., Teppo, L., and Thomas, D.B., eds (2002). Cancer Incidence in Five Continents, Vol. VIII. IARC Scientific Publications No. 155, Lyon, IARC.³ Curado. M. P., Edwards, B., Shin. H.R., Storm. H., Ferlay. J., Heanue. M. and Boyle. P., eds (2007). Cancer Incidence in Five Continents, Vol. IX. IARC Scientific Publications No. 160, Lyon, IARC.**NOTE**

For time trends in vaginal cancer incidence, please refer to individual country data.

3.2.4 Penile cancer

The annual burden of penile cancer has been estimated to be 22,000 cases worldwide with incidence rates strongly correlating with those of cervical cancer (*de Martel C et al. Lancet Oncol 2012;13(6):607-15*). Penile cancer is rare and most commonly affects men aged 50-70 years. Incidence rates are higher in less developed countries than in more developed countries, accounting for up to 10% of male cancers in some parts of Africa, South America and Asia. Precursor cancerous penile lesions (PeIN) are rare. Cancers of the penis are primarily of squamous cell carcinomas (SCC) (95%) and the most common penile SCC histologic sub-types are keratinising (49%), mixed warty-basaloid (17%), verrucous (8%) warty (6%), and basaloid (4%). HPV is most commonly detected in basaloid and warty tumours but is less common in keratinising and verrucous tumours. Approximately 60-100% of PeIN lesions are HPV DNA positive.

Table 10: Incidence of penile cancer by cancer registry

Country name	Cancer registry	Period	Male		
			N cases ^a	Crude rate ^b	ASR ^b
Africa					
Algeria ¹	Setif	2003-2007	0	0.0	0.0
Egypt ¹	Gharbiah	2003-2007	3	0.0	0.1
Gambia ²	National	1997-1998	5	0.5	0.9
Libya ¹	Benghazi	2003-2005	0	0.0	0.0
Malawi ¹	Blantyre	2003-2007	33	1.4	2.6
Mali ²	Bamako	1994-1996	0	0.0	0.0
Mozambique ³	Lourenco Marques	1956-1960	5	1.9	2.7
Nigeria ⁴	Ibadan	1960-1969	2	0.1	0.2
Senegal ⁵	Dakar	1969-1974	5	0.2	0.4
South Africa ¹	PROMEC	2003-2007	11	0.5	0.8
Tunisia ¹	North	2003-2005	8	0.1	0.1
Uganda ¹	Kyadondo county	2003-2007	30	0.7	2.2
Zimbabwe ¹	Harare (African)	2003-2006	14	0.5	1.1
Americas					
Argentina ¹	Bahia Blanca	2003-2007	11	1.6	1.2
	Cordoba	2004-2007	33	1.3	1.2
	Mendoza	2003-2007	58	1.5	1.4
	Tierra del Fuego	2003-2007	2	0.7	1.2
Brazil ¹	Aracaju	2003-2006	17	1.8	2.5
	Belo Horizonte	2003-2005	24	0.7	0.9
	Cuiaba	2003-2006	20	1.3	2.1
	Fortaleza	2003-2006	51	1.2	1.7
	Goiania	2003-2007	65	2.3	3.3
	Sao Paulo	2003-2007	403	1.6	1.7
Canada ¹	Alberta	2003-2007	77	0.9	0.7
	British Columbia	2003-2007	57	0.5	0.3
	Manitoba	2003-2007	31	1.1	0.6
	National	2003-2007	662	0.8	0.5
	New Brunswick	2003-2007	32	1.7	1.0
	Newfoundland and Labrador	2003-2007	18	1.4	0.9
	Northwest Territories	2003-2007	0	0.0	0.0
	Nova Scotia	2003-2007	30	1.3	0.8
	Ontario	2003-2007	233	0.8	0.5
	Prince Edward Island	2003-2007	3	0.9	0.5
	Quebec	2003-2007	147	0.8	0.5
	Saskatchewan	2003-2007	34	1.4	0.9
	Yukon	2003-2007	0	0.0	0.0
Chile ¹	Bío Bío Province	2003-2007	8	0.8	0.8
	Region of Antofagasta	2003-2007	19	1.3	1.6
	Valdivia	2003-2007	10	1.1	0.9

(Continued on next page)

(Table 10 – continued from previous page)

Country name	Cancer registry	Period	Male		
			N cases ^a	Crude rate ^b	ASR ^b
Colombia ¹	Bucaramanga	2003-2007	31	1.3	1.4
	Cali	2003-2007	54	1.1	1.2
	Manizales	2003-2007	20	2.2	2.2
	Pasto	2003-2007	11	1.2	1.4
Costa Rica ¹	National	2003-2007	110	1.0	1.2
Cuba ¹	Villa Clara	2004-2007	41	2.5	1.6
Ecuador ¹	Cuenca	2003-2007	1	0.1	0.1
	Quito	2003-2007	18	0.5	0.6
Jamaica ¹	Kingston and St Andrew	2003-2007	18	1.2	1.1
Paraguay ⁶	Asuncion Region	1988-1989	46	2.6	4.2
Peru ⁷	Trujillo	1998-2002	15	1.1	1.8
Uruguay ¹	National	2005-2007	96	2.0	1.5
USA ¹	Alabama	2003-2007	90	0.8	0.6
	Alabama (Black)	2003-2007	20	0.7	0.7
	Alabama (White)	2003-2007	69	0.9	0.5
	Alaska	2003-2007	13	0.7	0.7
	Alaska (American Indian)	2003-2007	2	0.7	0.8
	Arizona	2003-2007	106	0.7	0.5
	Arizona (Asian and Pacific Islander)	2003-2007	1	0.3	0.3
	Arizona (Black)	2003-2007	4	0.6	0.9
	Arizona (White)	2003-2007	95	0.7	0.5
	Arizona (American Indian)	2003-2007	6	0.8	0.8
	Arkansas	2003-2007	65	1.0	0.7
	Arkansas (White)	2003-2007	61	1.1	0.7
	Arkansas (Black)	2003-2007	4	0.4	0.4
	California	2003-2007	561	0.6	0.5
	California (American Indian)	2003-2007	3	0.2	0.3
	California (Asian and Pacific Islander)	2003-2007	31	0.3	0.2
	California (Black)	2003-2007	35	0.6	0.6
	California (White)	2003-2007	477	0.7	0.5
	California, Los Angeles County	2003-2007	149	0.6	0.5
	California, Los Angeles County (Chinese)	2003-2007	3	0.3	0.2
	California, Los Angeles County (Filipino)	2003-2007	1	0.1	0.1
	California, Los Angeles County (Hispanic White)	2003-2007	70	0.6	0.8
	California, Los Angeles County (Non-Hispanic White)	2003-2007	54	0.7	0.4
	California, Los Angeles County (White)	2003-2007	124	0.7	0.6
	California, Los Angeles County (Asian and Pacific Islander)	2003-2007	7	0.2	0.1
	California, Los Angeles County (Black)	2003-2007	14	0.6	0.5
	California, Los Angeles County (Japanese)	2003-2007	0	0.0	0.0
	California, Los Angeles County (Korean)	2003-2007	2	0.4	0.3
	California: San Francisco	2003-2007	48	0.5	0.3
	California: San Francisco (Asian and Pacific Islander)	2003-2007	6	0.3	0.2
	California: San Francisco (Black)	2003-2007	7	0.7	0.6
	California: San Francisco (Non-Hispanic White)	2003-2007	24	0.5	0.3
	California: San Francisco (White)	2003-2007	35	0.5	0.3
	California: San Francisco (Hispanic White)	2003-2007	11	0.6	0.7
	Colorado	2003-2007	62	0.5	0.4
	Colorado (Asian and Pacific Islander)	2003-2007	1	0.3	0.3
	Colorado (Black)	2003-2007	4	0.7	0.9
	Colorado (White)	2003-2007	57	0.5	0.4
	Connecticut	2003-2007	66	0.8	0.5

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(Table 10 – continued from previous page)

Country name	Cancer registry	Period	Male		
			N cases ^a	Crude rate ^b	ASR ^b
	Connecticut (Black)	2003-2007	2	0.2	0.2
	Connecticut (White)	2003-2007	61	0.8	0.5
	Delaware	2003-2007	7	0.3	0.2
	Delaware (Black)	2003-2007	3	0.7	0.5
	Delaware (White)	2003-2007	3	0.2	0.1
	Florida	2003-2007	405	0.9	0.5
	Florida (Asian and Pacific Islander)	2003-2007	0	0.0	0.0
	Florida (White)	2003-2007	336	1.0	0.5
	Florida (Black)	2003-2007	60	0.9	1.0
	Georgia	2003-2007	120	0.5	0.5
	Georgia (Black)	2003-2007	28	0.4	0.5
	Georgia (White)	2003-2007	90	0.6	0.4
	Georgia (Asian and Pacific Islander)	2003-2007	0	0.0	0.0
	Georgia, Atlanta	2003-2007	27	0.3	0.3
	Georgia, Atlanta (Black)	2003-2007	11	0.4	0.6
	Georgia, Atlanta (White)	2003-2007	15	0.3	0.3
	Hawaii	2003-2007	19	0.6	0.3
	Hawaii (Chinese)	2003-2007	1	0.7	0.3
	Hawaii (Filipino)	2003-2007	3	0.7	0.4
	Hawaii (Japanese)	2003-2007	2	0.3	0.2
	Hawaii (White)	2003-2007	9	1.1	0.5
	Hawaii (Hawaiian)	2003-2007	4	0.6	0.6
	Idaho	2003-2007	22	0.6	0.4
	Illinois (Black)	2003-2007	32	0.7	0.7
	Illinois (White)	2003-2007	182	0.7	0.5
	Illinois (Asian and Pacific Islander)	2003-2007	3	0.2	0.2
	Illinois	2003-2007	223	0.7	0.5
	Indiana	2003-2007	123	0.8	0.6
	Indiana (Black)	2003-2007	5	0.4	0.4
	Indiana (White)	2003-2007	118	0.9	0.6
	Iowa	2003-2007	76	1.0	0.6
	Kentucky	2003-2007	119	1.2	0.8
	Louisiana (White)	2003- 2004,2006- 2007	53	0.9	0.6
	Louisiana	2003- 2004,2006- 2007	76	0.9	0.7
	Louisiana (Black)	2003- 2004,2006- 2007	23	0.9	0.8
	Louisiana, New Orleans (White)	2003- 2004,2006- 2007	6	0.7	0.3
	Louisiana, New Orleans	2003- 2004,2006- 2007	12	0.7	0.5
	Louisiana, New Orleans (Black)	2003- 2004,2006- 2007	6	0.9	0.9
	Maine	2003-2007	40	1.3	0.8
	Massachusetts	2003-2007	153	1.0	0.6
	Massachusetts (Black)	2003-2007	4	0.4	0.5
	Massachusetts (White)	2003-2007	140	1.0	0.6
	Massachusetts (Asian and Pacific Islander)	2003-2007	5	0.7	0.8
	Michigan	2003-2007	177	0.7	0.5
	Michigan (White)	2003-2007	149	0.7	0.4

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(Table 10 – continued from previous page)

Country name	Cancer registry	Period	Male		
			N cases ^a	Crude rate ^b	ASR ^b
	Michigan (Black)	2003-2007	21	0.6	0.5
	Michigan (Asian and Pacific Islander)	2003-2007	2	0.3	0.5
	Michigan, Detroit	2003-2007	72	0.7	0.5
	Michigan, Detroit (Black)	2003-2007	18	0.8	0.6
	Michigan, Detroit (White)	2003-2007	52	0.7	0.4
	Mississippi	2003-2007	61	0.9	0.6
	Missouri (Black)	2003-2007	5	0.3	0.3
	Missouri (White)	2003-2007	108	0.9	0.5
	Missouri	2003-2007	115	0.8	0.5
	Montana	2003-2007	18	0.8	0.5
	Montana (American Indian)	2003-2007	3	1.9	2.2
	Nebraska	2003-2007	33	0.8	0.5
	Nebraska (Black)	2003-2007	0	0.0	0.0
	Nebraska (White)	2003-2007	32	0.8	0.5
	New Hampshire	2003-2007	21	0.7	0.4
	New Jersey	2003-2007	157	0.7	0.5
	New Jersey (White)	2003-2007	138	0.8	0.5
	New Jersey (Black)	2003-2007	11	0.4	0.3
	New Mexico	2003-2007	30	0.6	0.4
	New Mexico (Non-Hispanic White)	2003-2007	9	0.4	0.2
	New Mexico (White)	2003-2007	25	0.6	0.4
	New Mexico (Hispanic White)	2003-2007	16	0.8	0.8
	New York State	2003-2007	392	0.8	0.6
	New York State (White)	2003-2007	299	0.8	0.5
	New York State (Asian and Pacific Islander)	2003-2007	12	0.4	0.3
	New York State (Black)	2003-2007	68	0.8	0.8
	North Carolina	2003-2007	150	0.7	0.5
	North Carolina (American Indian)	2003-2007	0	0.0	0.0
	North Carolina (Asian and Pacific Islander)	2003-2007	0	0.0	0.0
	North Carolina (Black)	2003-2007	31	0.7	0.7
	North Carolina (White)	2003-2007	118	0.7	0.5
	North Dakota	2003-2007	11	0.7	0.3
	NPCR (42 States)	2003-2007	4858	0.7	0.5
	NPCR (42 States) (White)	2003-2007	4139	0.8	0.5
	NPCR (42 States) (American Indian)	2003-2007	38	0.5	0.6
	NPCR (42 States) (Asian and Pacific Islander)	2003-2007	67	0.2	0.2
	NPCR (42 States) (Black)	2003-2007	524	0.6	0.6
	Ohio	2003-2007	195	0.7	0.5
	Ohio (White)	2003-2007	178	0.7	0.5
	Ohio (Asian and Pacific Islander)	2003-2007	0	0.0	0.0
	Ohio (Black)	2003-2007	15	0.4	0.5
	Oklahoma	2003-2007	83	0.9	0.7
	Oklahoma (American Indian)	2003-2007	10	1.3	1.3
	Oklahoma (White)	2003-2007	69	1.0	0.6
	Oklahoma (Black)	2003-2007	3	0.4	0.5
	Oregon (Asian and Pacific Islander)	2003-2007	1	0.3	0.3
	Oregon (Black)	2003-2007	0	0.0	0.0
	Oregon	2003-2007	62	0.7	0.4
	Oregon (White)	2003-2007	57	0.7	0.4
	Pennsylvania	2003-2007	233	0.8	0.4
	Pennsylvania (Asian and Pacific Islander)	2003-2007	1	0.1	0.2
	Pennsylvania (White)	2003-2007	210	0.8	0.4
	Pennsylvania (Black)	2003-2007	19	0.6	0.5

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(Table 10 – continued from previous page)

Country name	Cancer registry	Period	Male		
			N cases ^a	Crude rate ^b	ASR ^b
	Puerto Rico	2003-2007	237	2.5	1.8
	Rhode Island	2003-2007	31	1.2	0.8
	Rhode Island (Black)	2003-2007	1	0.6	1.0
	Rhode Island (White)	2003-2007	28	1.2	0.7
	SEER (18 Registries)	2003-2007	1377	0.7	0.5
	SEER (18 Registries) (Asian and Pacific Islander)	2003-2007	58	0.3	0.3
	SEER (18 Registries) (Black)	2003-2007	124	0.5	0.5
	SEER (18 Registries) (Hispanic White)	2003-2007	264	0.6	0.9
	SEER (18 Registries) (Non-Hispanic White)	2003-2007	902	0.8	0.4
	SEER (18 Registries) (White)	2003-2007	1166	0.7	0.5
	SEER (9 Registries)	2003-2007	417	0.6	0.4
	SEER (9 Registries) (Black)	2003-2007	41	0.5	0.5
	SEER (9 Registries) (White)	2003-2007	344	0.7	0.4
	South Carolina	2003-2007	80	0.8	0.5
	South Carolina (White)	2003-2007	55	0.8	0.5
	South Carolina (Black)	2003-2007	23	0.8	0.7
	South Dakota	2003-2007	22	1.1	0.6
	Tennessee	2003-2007	97	0.7	0.5
	Tennessee (Black)	2003-2007	11	0.5	0.5
	Tennessee (White)	2003-2007	86	0.7	0.5
	Texas (Asian and Pacific Islander)	2003-2007	2	0.1	0.1
	Texas (Black)	2003-2007	37	0.6	0.6
	Texas (White)	2003-2007	384	0.8	0.6
	Texas	2003-2007	435	0.8	0.6
	Utah	2003-2007	23	0.4	0.3
	Vermont	2003-2007	8	0.5	0.3
	Virginia	2003-2007	129	0.7	0.5
	Virginia (Black)	2003-2007	28	0.8	0.6
	Virginia (White)	2003-2007	97	0.7	0.5
	Virginia (Asian and Pacific Islander)	2003-2007	2	0.2	0.3
	Washington State	2003-2007	82	0.5	0.3
	Washington, Seattle	2003-2007	56	0.5	0.4
	West Virginia	2003-2007	53	1.2	0.7
	Wisconsin	2003-2007	104	0.8	0.5
	Wisconsin (Black)	2003-2007	3	0.4	0.4
	Wisconsin (White)	2003-2007	97	0.8	0.5
	Wyoming	2003-2007	11	0.9	0.6
Asia					
Bahrain ¹	National (Bahraini)	2003-2007	0	0.0	0.0
China ¹	Beijing City	2003-2007	95	0.5	0.3
	Cixian County	2003-2007	10	0.6	0.8
	Haining County	2003-2007	5	0.3	0.2
	Harbin City, Nangang District	2003-2007	17	0.7	0.6
	Hong Kong	2003-2007	72	0.4	0.3
	Jiashan County	2003-2007	5	0.5	0.3
	Jiaxing City	2005-2007	5	0.7	0.4
	Macao	2003-2007	4	0.3	0.3
	Qidong County	2003-2007	11	0.4	0.3
	Shanghai City	2003-2007	107	0.7	0.3
	Wuhan City	2003-2007	40	0.3	0.3
	Yangcheng County	2003-2007	8	0.8	1.0
	Yanting County	2003-2007	6	0.4	0.4
	Zhongshan City	2004-2007	27	1.0	1.0

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(Table 10 – continued from previous page)

Country name	Cancer registry	Period	Male		
			N cases ^a	Crude rate ^b	ASR ^b
India ¹	Bangalore	2005-2007	101	0.9	1.3
	Barshi, Paranda and Bhum	2003-2007	25	1.8	2.2
	Bhopal	2004-2007	12	0.3	0.6
	Chennai	2003-2007	179	1.6	1.8
	Dindigul, Ambilikkai	2003-2007	72	1.4	1.5
	Karunagappally	2003-2007	13	1.3	1.2
	Mizoram	2003-2007	26	1.0	1.7
	Mumbai	2003-2007	239	0.7	0.9
	New Delhi	2003-2007	246	0.6	0.9
	Poona	2003-2007	71	0.7	1.0
	Sikkim State	2003-2007	10	0.7	1.0
	Trivandrum	2005-2007	12	0.7	0.7
Iran ¹	Golestan Province	2005-2007	0	0.0	0.0
Israel ¹	National	2003-2007	17	0.1	0.1
	National (Jews)	2003-2007	14	0.1	0.1
	National (Non-Jews)	2003-2007	3	0.1	0.2
Japan ¹	Aichi Prefecture	2003-2007	8	0.2	0.1
	Fukui Prefecture	2003-2007	9	0.5	0.2
	Hiroshima	2003-2007	21	0.8	0.3
	Miyagi Prefecture	2003-2007	31	0.5	0.2
	Nagasaki Prefecture	2003-2007	28	0.8	0.4
	Niigata Prefecture	2003-2007	30	0.5	0.2
	Osaka Prefecture	2003-2007	83	0.4	0.2
	Saga Prefecture	2003-2007	21	1.0	0.4
Kuwait ¹	National (Non-Kuwaitis)	2003-2007	1	0.0	0.1
	National	2003-2007	1	0.0	0.1
	National (Kuwaitis)	2003-2007	0	0.0	0.0
Kyrgyzstan ⁶	National	1986-1987	7	0.2	0.3
Malaysia ¹	Penang (Malay)	2004-2007	1	0.1	0.2
	Penang (Chinese)	2004-2007	6	0.5	0.5
	Penang	2004-2007	9	0.3	0.5
	Penang (Indian)	2004-2007	2	0.7	1.3
Oman ⁷	Omani	1998-2001	0	0.0	0.0
Pakistan ⁷	South Karachi	1998-2002	1	0.0	0.0
Philippines ¹	Manila	2003-2007	37	0.3	0.5
	Rizal	2003-2007	32	0.2	0.4
Qatar ¹	National (Qatari)	2003-2007	0	0.0	0.0
Rep. Korea ¹	Busan	2003-2007	24	0.3	0.3
	Daegu	2003-2007	11	0.2	0.2
	Daejeon	2003-2007	5	0.1	0.1
	Gwangju	2003-2007	6	0.2	0.2
	Incheon	2003-2007	9	0.1	0.2
	Jeju	2004-2007	3	0.3	0.3
	National	2003-2007	282	0.2	0.2
	Seoul	2003-2007	44	0.2	0.2
	Ulsan	2003-2007	8	0.3	0.4
Saudi Arabia ¹	Riyadh (Saudi)	2003-2007	2	0.0	0.1
Singapore ¹	National	2003-2007	52	0.6	0.5
	National (Indian)	2003-2007	3	0.4	0.3
	National (Malay)	2003-2007	2	0.2	0.2
	National (Chinese)	2003-2007	43	0.7	0.5
Thailand ¹	Bangkok	2003-2007	64	0.4	0.5
	Chiang Mai	2003-2007	70	1.9	1.5
	Chonburi	2003-2007	32	1.1	1.3

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(Table 10 – continued from previous page)

Country name	Cancer registry	Period	Male		
			N cases ^a	Crude rate ^b	ASR ^b
Turkey ¹	Khon Kaen	2003-2007	72	1.6	1.6
	Lampang	2003-2007	26	1.3	1.1
	Songkhla	2004-2007	48	1.8	1.8
	Antalya	2003-2007	1	0.0	0.0
	Edirne	2004-2007	0	0.0	0.0
	Izmir	2003-2007	8	0.1	0.1
	Trabzon	2005-2007	0	0.0	0.0
Viet Nam ²	Hanoi	1993-1997	95	1.7	2.3
	Ho Chi Minh City	1995-1998	85	0.9	1.4
Europe					
Austria ¹	National	2003-2007	249	1.2	0.8
	Tyrol	2003-2007	14	0.8	0.6
	Vorarlberg	2003-2007	5	0.6	0.4
Belarus ¹	National	2003-2007	250	1.1	0.8
Belgium ¹	National	2004-2007	286	1.4	0.8
Bulgaria ¹	National	2003-2007	228	1.2	0.7
Croatia ¹	National	2003-2007	114	1.1	0.7
Cyprus ¹	National	2003-2007	28	1.5	1.1
Czech Rep. ¹	National	2003-2007	403	1.6	1.0
Denmark ¹	National	2003-2007	234	1.7	1.0
Estonia ¹	National	2003-2007	44	1.4	1.0
Finland ¹	National	2003-2007	119	0.9	0.6
France ¹	Bas-Rhin	2003-2007	42	1.6	1.0
	Calvados	2003-2007	22	1.4	0.7
	Doubs	2003-2007	18	1.4	0.9
	Haut-Rhin	2003-2007	22	1.2	0.7
	Herault	2003-2007	37	1.6	0.8
	Isere	2003-2007	22	0.8	0.4
	Loire Atlantique	2003-2007	19	0.6	0.4
	Manche	2003-2007	19	1.6	0.9
	Martinique	2003-2007	14	1.5	0.9
	Somme	2003-2007	19	1.4	1.0
	Tarn	2003-2007	17	1.9	0.7
	Vendee	2003-2007	10	0.7	0.4
Germany ¹	Brandenburg	2003-2007	126	2.0	1.1
	Bremen	2003-2007	23	1.4	0.7
	Free State Of Saxony	2003-2007	177	1.7	0.8
	Hamburg	2003-2007	61	1.4	0.8
	Mecklenburg-Western Pomerania	2003-2007	93	2.2	1.2
	Munich	2003-2007	116	1.2	0.7
	North Rhine-Westphalia	2003-2007	94	1.5	0.8
	Saarland	2003-2007	46	1.8	0.9
	Schleswig-Holstein	2003-2007	134	1.9	1.0
Hungary ⁶	County Szabolcs-Szatmar	1983-1987	12	0.8	0.7
	County Vas	1983-1987	4	0.6	0.4
Iceland ¹	National	2003-2007	11	1.5	0.9
Ireland ¹	National	2003-2007	111	1.1	0.8
Italy ¹	Biella	2003-2007	11	2.5	1.0
	Brescia	2003-2006	18	0.9	0.5
	Catania and Messina	2003-2005	56	2.2	1.2
	Catanzaro	2003-2007	9	1.6	0.9
	Como	2003-2007	9	0.7	0.3
	Ferrara	2003-2007	20	2.4	1.0
	Florence and Prato	2003-2005	28	1.6	0.7

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(Table 10 – continued from previous page)

Country name	Cancer registry	Period	Male		
			N cases ^a	Crude rate ^b	ASR ^b
	Friuli-Venezia Giulia	2003-2007	51	1.7	0.8
	Genoa	2003-2006	23	1.4	0.5
	Latina	2003-2007	30	2.3	1.3
	Lecco	2003-2007	8	1.0	0.6
	Lombardy, South	2003-2005	13	1.2	0.5
	Mantua	2003-2005	12	2.1	1.1
	Milan	2003-2006	21	0.9	0.4
	Modena	2003-2007	20	1.2	0.6
	Naples	2003-2007	18	1.3	1.0
	Nuoro	2003-2007	9	1.5	1.0
	Palermo	2003-2006	38	1.6	1.0
	Parma	2003-2007	11	1.1	0.6
	Ragusa	2003-2007	10	1.3	0.8
	Reggio Emilia	2003-2007	9	0.7	0.4
	Romagna	2003-2007	44	1.6	0.7
	Salerno	2003-2007	53	2.0	1.0
	Sassari	2003-2007	9	0.8	0.5
	Sondrio	2003-2007	5	1.1	0.6
	South Tyrol	2003-2006	10	1.1	0.6
	Syracuse	2003-2007	12	1.2	0.8
	Trapani	2003-2006	17	2.0	1.1
	Trento	2003-2006	15	1.5	0.8
	Turin	2003-2007	25	1.2	0.5
	Umbria	2003-2007	52	2.5	1.1
	Varese	2003-2007	18	0.9	0.4
	Veneto	2003-2006	54	1.2	0.6
Latvia ¹	National	2004-2007	64	1.5	1.0
Lithuania ¹	National	2003-2007	108	1.4	1.0
Malta ¹	National	2003-2007	15	1.5	0.9
Netherlands ¹	Eindhoven	2003-2007	23	0.9	0.6
	National	2003-2007	560	1.4	0.8
Norway ¹	National	2003-2007	197	1.7	1.0
Poland ¹	Cracow	2003-2006	21	1.5	0.9
	Kielce	2003-2007	39	1.2	0.8
	Lower Silesia	2003-2007	61	0.9	0.7
	Podkarpackie	2003-2007	48	0.9	0.7
Portugal ¹	Azores	2003-2007	7	1.2	0.9
Romania ⁶	County Cluj	1983-1987	17	0.9	0.8
Russia ¹	Saint Petersburg	2003-2007	73	0.7	0.5
Serbia ¹	Central	2003-2007	175	1.3	0.8
Slovakia ¹	National	2003-2007	147	1.1	0.9
Slovenia ¹	National	2003-2007	52	1.1	0.7
Spain ¹	Albacete	2003-2007	20	2.1	1.1
	Asturias	2003-2007	53	2.1	1.0
	Basque Country	2003-2007	101	2.0	0.9
	Canary Islands	2003-2006	51	1.6	1.1
	Ciudad Real	2004-2007	21	2.1	1.2
	Cuenca	2003-2007	20	3.9	1.9
	Girona	2003-2007	24	1.5	0.8
	Granada	2003-2007	42	2.0	1.2
	La Rioja	2003-2007	11	1.5	0.6
	Mallorca	2003-2007	35	1.8	1.1
	Murcia	2003-2007	68	2.0	1.3
	Navarra	2003-2007	23	1.6	0.8

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(Table 10 – continued from previous page)

Country name	Cancer registry	Period	Male		
			N cases ^a	Crude rate ^b	ASR ^b
	Tarragona	2003-2007	44	2.5	1.4
Sweden ¹	National	2003-2007	412	1.8	1.0
Switzerland ¹	Basel	2003-2007	12	1.1	0.5
	Geneva	2003-2007	19	1.9	1.1
	Graubunden and Glarus	2003-2007	10	1.8	0.9
	Neuchatel	2003-2007	9	2.2	1.4
	St Gall-Appenzell	2003-2007	18	1.4	0.8
	Ticino	2003-2007	13	1.7	0.8
	Valais	2003-2007	6	0.8	0.6
	Vaud	2003-2007	24	1.5	0.9
	Zurich	2003-2007	36	1.2	0.6
UK ¹	England	2003-2007	1870	1.5	0.9
	England, East of England Region	2003-2007	193	1.4	0.8
	England, North Western	2003-2007	276	1.7	1.1
	England, Northern and Yorkshire	2003-2007	261	1.6	1.0
	England, Oxford Region	2003-2007	91	1.3	0.9
	England, South and Western Regions	2003-2007	291	1.7	1.0
	England, Thames	2003-2007	320	1.1	0.7
	England, Trent	2005-2007	128	1.7	1.0
	England, West Midlands	2003-2007	229	1.7	1.0
	Northern Ireland	2003-2007	78	1.8	1.3
	Scotland	2003-2007	212	1.7	1.0
	Wales	2003-2007	135	1.9	1.1
Ukraine ¹	National	2003-2007	980	0.9	0.6
Oceania					
Australia ¹	Australian Capital Territory	2003-2007	1	0.1	0.1
	New South Wales	2003-2007	139	0.8	0.5
	Northern Territory	2003-2007	1	0.2	0.1
	Northern Territory (Non-Indigenous)	2003-2007	1	0.3	0.2
	Northern Territory (Indigenous)	2003-2007	0	0.0	0.0
	Queensland	2003-2007	68	0.7	0.5
	South	2003-2007	30	0.8	0.4
	Tasmania	2003-2007	7	0.6	0.3
	Victoria	2003-2007	87	0.7	0.4
	Western	2003-2007	39	0.8	0.6
New Zealand ¹	National (Maori)	2003-2007	0	0.0	0.0
	National	2003-2007	59	0.6	0.4
	National (Other)	2003-2007	57	0.7	0.4
	National (Pacific Islander)	2003-2007	2	0.3	0.5

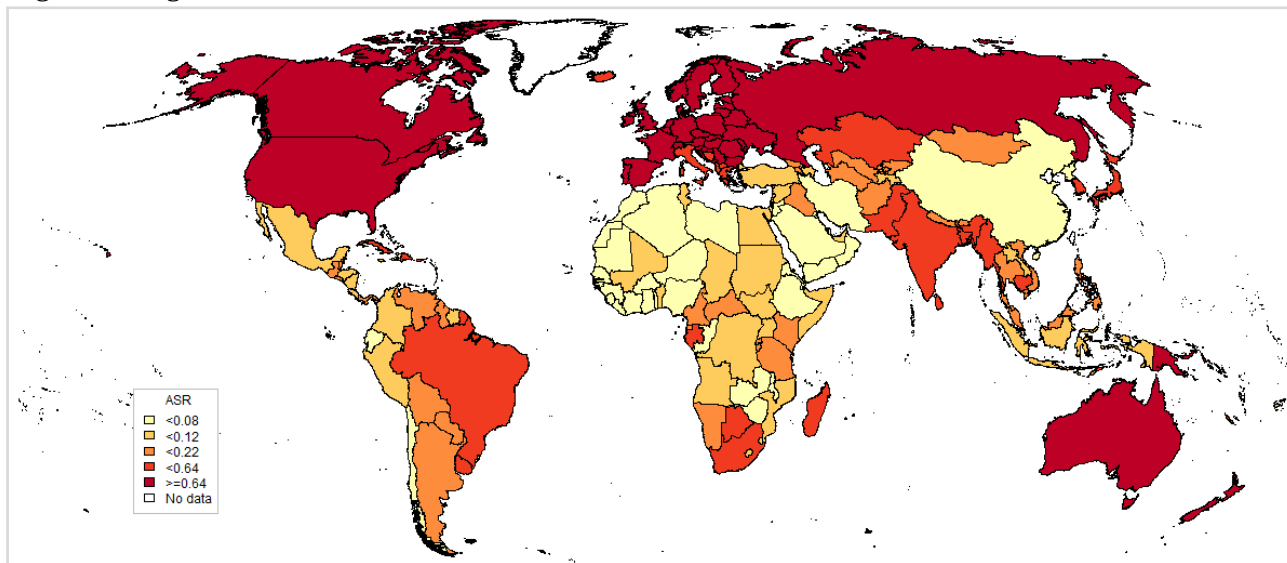
Data accessed on 05 May 2015.Please refer to original source (available at <http://ci5.iarc.fr/Ci5i-ix/ci5i-ix.htm>)^a Accumulated number of cases during the period in the population covered by the corresponding registry.^b Rates per 100,000 men per year.**Data sources:**¹ Forman D, Bray F, Brewster DH, Gombe Mbalawa C, Kohler B, Piñeros M, Steliarova-Foucher E, Swaminathan R and Ferlay J eds (2013). Cancer Incidence in Five Continents, Vol. X (electronic version) Lyon, IARC. <http://ci5.iarc.fr>² Parkin, D.M., Whelan, S.L., Ferlay, J., Teppo, L., and Thomas, D.B., eds (2002). Cancer Incidence in Five Continents, Vol. VIII. IARC Scientific Publications No. 155, Lyon, IARC.³ Doll, R., Payne, P., Waterhouse, J.A.H., eds (1966). Cancer Incidence in Five Continents, Vol. I. Union Internationale Contre le Cancer, Geneva.⁴ Waterhouse, J., Muir, C.S., Correa, P., Powell, J., eds (1976). Cancer Incidence in Five Continents, Vol. III. IARC Scientific Publications No. 15, Lyon, IARC.⁵ Waterhouse, J., Muir, C.S., Shanmugaratnam, K., Powell, J., eds (1982). Cancer Incidence in Five Continents, Vol. IV. IARC Scientific Publications No. 42, Lyon, IARC.⁶ Parkin, D.M., Muir, C.S., Whelan, S.L., Gao, Y.-T., Ferlay, J., Powell, J., eds (1992). Cancer Incidence in Five Continents, Vol. VI. IARC Scientific Publications No. 120, Lyon, IARC.⁷ Curado, M. P., Edwards, B., Shin, H.R., Storm, H., Ferlay, J., Heanue, M. and Boyle, P., eds (2007). Cancer Incidence in Five Continents, Vol. IX. IARC Scientific Publications No. 160, Lyon, IARC.**NOTE**

For time trends in penile cancer incidence, please refer to individual country data.

3.3 Head and neck cancers

The majority of head and neck cancers are associated with high tobacco and alcohol consumption. However, increasing trends in the incidence at specific sites suggest that other etiological factors are involved, and infection by certain high-risk types of HPV (i.e. HPV16) have been reported to be associated with head and neck cancers, in particular with oropharyngeal cancer. Current evidence suggests that HPV16 is associated with tonsil cancer (including Waldeyer ring cancer), base of tongue cancer and other oropharyngeal cancer sites. Associations with other head and neck cancer sites such as oral cancer are neither strong nor consistent when compared to molecular-epidemiological data on HPV and oropharyngeal cancer. Association with laryngeal cancer is still unclear (IARC Monograph Vol 100B).

Figure 38: Age-standardised incidence rates of head and neck cancer in the World (estimates for 2012)



Data accessed on 08 May 2017.

ASR: Age-standardized rate, rates per 100,000 per year.

Please refer to original source for methods.

Head and neck cancer cases (oropharynx, oral cavity and larynx).

GLOBOCAN quality index for availability of incidence data:

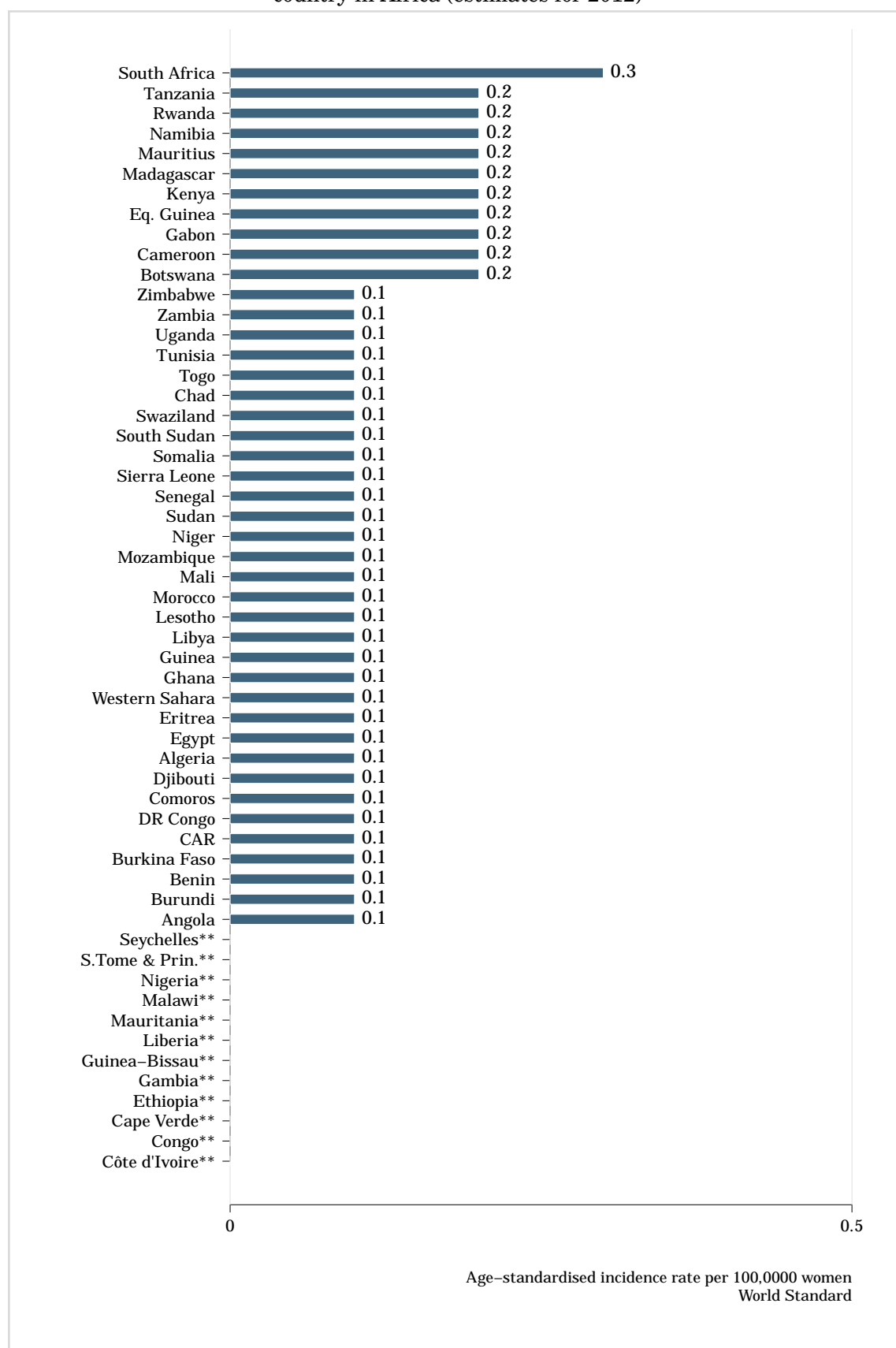
- For Afghanistan, Angola, Albania, Armenia, Azerbaijan, Burundi, Bahamas, Belize, Bolivia, Barbados, Central African Republic, DR Congo, Comoros, Cape Verde, Djibouti, Dominican Republic, Eritrea, Western Sahara, Georgia, Guadeloupe, Guinea-Bissau, Equatorial Guinea, Greece, Guatemala, French Guiana, Guyana, Honduras, Haiti, Hungary, Kazakhstan, Kyrgyzstan, Cambodia, Laos, Liberia, Lesotho, Republic of Moldova, Madagascar, Maldives, Macedonia, Myanmar, Montenegro, Mauritania, Nicaragua, Nepal, Panama, Papua New Guinea, DPR Korea, Paraguay, Senegal, Solomon Islands, Sierra Leone, El Salvador, Somalia, South Sudan, Suriname, Syria, Chad, Tajikistan, Turkmenistan, Timor-Leste, Uzbekistan, Venezuela: No data.
- For United Arab Emirates, Bosnia & Herzegovina, Bhutan, Botswana, Fiji, Gambia, Guam, Jordan, Lebanon, Sri Lanka, Luxembourg, Mongolia, Mauritius, Namibia, New Caledonia, French Polynesia, Reunion, Russian Federation, Saudi Arabia, Swaziland, Trinidad & Tobago, Vanuatu, Samoa, South Africa: National data (rates).
- For Argentina, Brazil, Switzerland, Germany, Spain, France, Italy, Japan, Philippines, Serbia, Thailand: High quality regional (coverage between 10% and 50%).
- For Australia, Austria, Belgium, Bulgaria, Bahrain, Belarus, Canada, Costa Rica, Cyprus, Czech Republic, Denmark, Estonia, Finland, United Kingdom, Croatia, Ireland, Iceland, Israel, Republic of Korea, Kuwait, Lithuania, Latvia, Malta, Martinique, Netherlands, Norway, New Zealand, Oman, Puerto Rico, Qatar, Singapore, Slovakia, Slovenia, Sweden, Ukraine, Uruguay, USA: High quality national data or high quality regional (coverage greater than 50%).
- For Benin, Burkina Faso, Bangladesh, Brunei, Côte d'Ivoire, Gabon, Ghana, Indonesia, Iraq, Palestine, Rwanda, Sudan, Togo: Frequency data.
- For Chile, China, Colombia, Cuba, Algeria, Ecuador, Egypt, India, Iran, Jamaica, Libya, Malawi, Malaysia, Poland, Portugal, Tunisia, Turkey, Uganda, Zimbabwe: High quality regional (coverage lower than 10%).
- For Cameroon, Congo, Ethiopia, Guinea, Kenya, Morocco, Mexico, Mali, Mozambique, Niger, Nigeria, Pakistan, Peru, Romania, Tanzania, Viet Nam, Yemen, Zambia: Regional data (rates).

GLOBOCAN quality index of methods for calculating incidence: Methods to estimate the sex- and age-specific incidence rates of cancer for a specific country:

- For Afghanistan, Angola, Burundi, Benin, Central African Republic, DR Congo, Comoros, Cape Verde, Djibouti, Eritrea, Western Sahara, Guinea-Bissau, Equatorial Guinea, Cambodia, Laos, Liberia, Lesotho, Madagascar, Maldives, Myanmar, Montenegro, Mauritania, Nepal, DPR Korea, Rwanda, Senegal, Solomon Islands, Sierra Leone, Somalia, South Sudan, Syria, Chad, Timor-Leste: The rates are those of neighbouring countries or registries in the same area.
- For Albania, Greece, Hungary, Luxembourg, Republic of Moldova, Macedonia, Portugal, Romania, Serbia: Estimated from national mortality estimates by modelling using incidence mortality ratios derived from recorded data in local cancer registries in neighbouring countries.
- For United Arab Emirates, Belgium, Bosnia & Herzegovina, Bhutan, Botswana, Cyprus, Gambia, Guam, Lebanon, Sri Lanka, Mongolia, Mauritius, Namibia, New Caledonia, Oman, Qatar, Swaziland, Ukraine, Uruguay, Samoa: Most recent rates applied to 2012 population.
- For Argentina, Brazil, Switzerland, Chile, China, Colombia, Cuba, Ecuador, Spain, France, Italy, Japan, Poland: Estimated from national mortality by modelling using incidence mortality ratios derived from recorded data in country-specific cancer registries.
- For Armenia, Azerbaijan, Bahamas, Belize, Barbados, Brunei, Dominican Republic, Fiji, Georgia, Guadeloupe, Guatemala, French Guiana, Guyana, Honduras, Haiti, Jamaica, Kazakhstan, Kyrgyzstan, Mexico, Nicaragua, Panama, Peru, Paraguay, El Salvador, Suriname, Tajikistan, Turkmenistan, Trinidad & Tobago, Uzbekistan, Venezuela, Viet Nam, Vanuatu: Estimated from national mortality estimates using modelled survival.
- For Australia, Austria, Bulgaria, Bahrain, Belarus, Canada, Costa Rica, Czech Republic, Germany, Denmark, Estonia, Finland, United Kingdom, Croatia, Ireland, Iceland, Israel, Jordan, Republic of Korea, Kuwait, Lithuania, Latvia, Malta, Martinique, Netherlands, Norway, New Zealand, Puerto Rico, French Polynesia, Reunion, Russian Federation, Saudi Arabia, Singapore, Slovakia, Slovenia, Sweden, USA, South Africa: Rates projected to 2012.
- For Burkina Faso, Bangladesh, Bolivia, Côte d'Ivoire, Gabon, Ghana, Iraq, Mozambique, Papua New Guinea, Palestine, Sudan, Togo: Age/sex specific rates for "all cancers" were partitioned using data on relative frequency of different cancers (by age and sex).
- For Cameroon, Congo, Ethiopia, Guinea, Libya, Mali, Malawi, Niger, Uganda, Yemen, Zambia: One cancer registry covering part of a country is used as representative of the country profile.
- For Algeria, Egypt, Indonesia, India, Iran, Kenya, Morocco, Malaysia, Nigeria, Pakistan, Philippines, Thailand, Tunisia, Turkey, Tanzania, Zimbabwe: Estimated as the weighted average of the local rates.

Data sources: de Martel C, Plummer M, Vignat J, Franceschi S. Worldwide burden of cancer attributable to HPV by site, country and HPV type. *Int J Cancer*. 2017

Figure 39: Age-standardised incidence rate of head and neck cancer cases attributable to HPV by country in Africa (estimates for 2012)



** No rates are available.

Data accessed on 08 May 2017.

ASR: Age-standardized rate, rates per 100,000 per year.

Please refer to original source for methods.

(Continued on next page)

(Figure 43 – continued from previous page)

Head and neck cancer cases (oropharynx, oral cavity and larynx).

GLOBOCAN quality index for availability of incidence data:

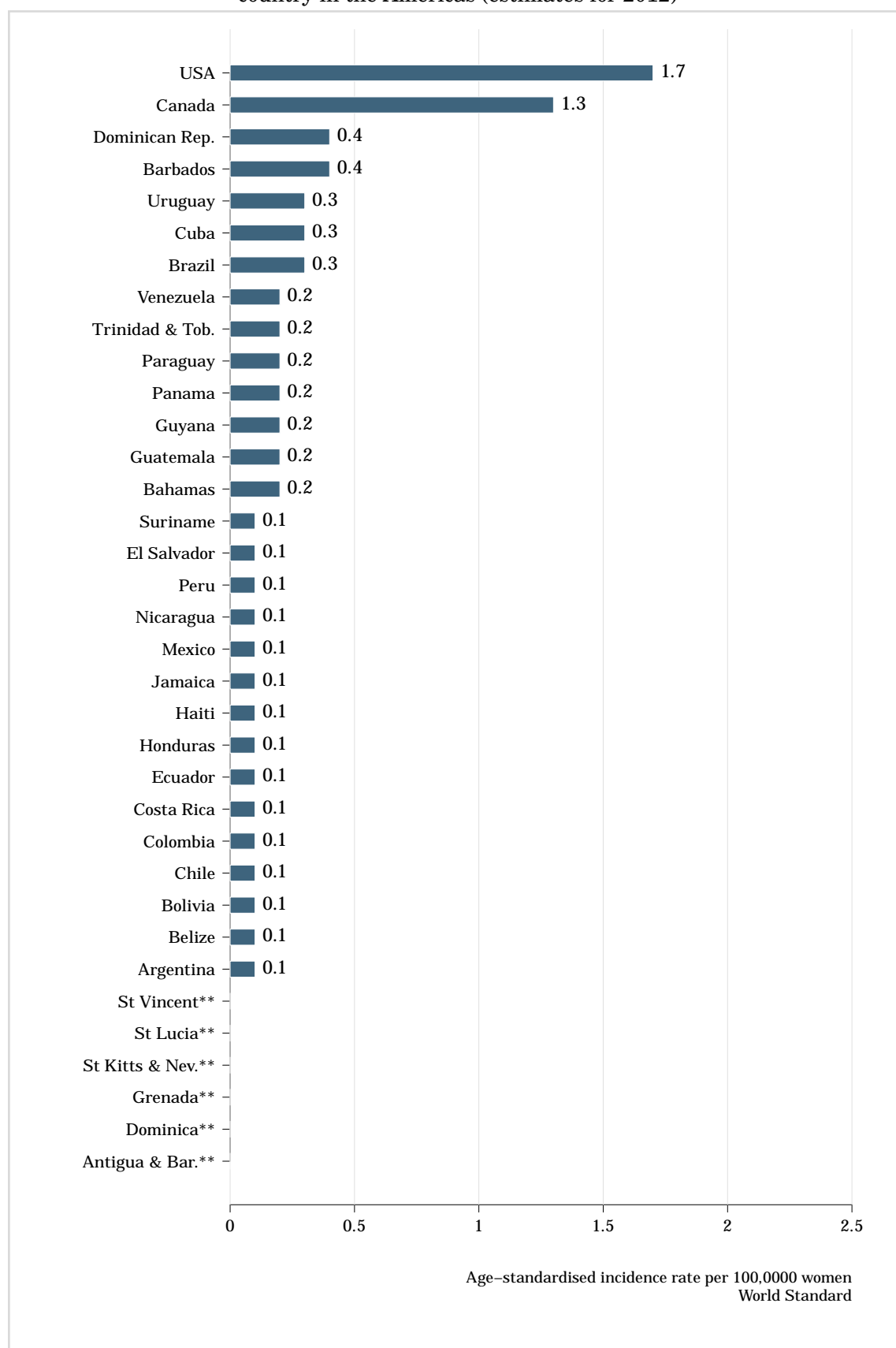
- For Côte d'Ivoire, Benin, Burkina Faso, Ghana, Sudan, Togo, Gabon, Rwanda: Frequency data.
- For Congo, Ethiopia, Nigeria, Guinea, Morocco, Mali, Mozambique, Niger, Zambia, Cameroon, Kenya, Tanzania: Regional data (rates).
- For Cape Verde, Guinea-Bissau, Liberia, Mauritania, Angola, Burundi, Central African Republic, DR Congo, Comoros, Djibouti, Eritrea, Western Sahara, Lesotho, Senegal, Sierra Leone, Somalia, South Sudan, Chad, Equatorial Guinea, Madagascar: No data.
- For Gambia, Swaziland, Botswana, Mauritius, Namibia, South Africa: National data (rates).
- For Malawi, Algeria, Egypt, Libya, Tunisia, Uganda, Zimbabwe: High quality regional (coverage lower than 10%).

GLOBOCAN quality index of methods for calculating incidence: Methods to estimate the sex- and age-specific incidence rates of cancer for a specific country:

- For Côte d'Ivoire, Burkina Faso, Ghana, Mozambique, Sudan, Togo, Gabon: Age/sex specific rates for "all cancers" were partitioned using data on relative frequency of different cancers (by age and sex)
- For Congo, Ethiopia, Malawi, Guinea, Libya, Mali, Niger, Uganda, Zambia, Cameroon: One cancer registry covering part of a country is used as representative of the country profile
- For Cape Verde, Guinea-Bissau, Liberia, Mauritania, Angola, Burundi, Benin, Central African Republic, DR Congo, Comoros, Djibouti, Eritrea, Western Sahara, Lesotho, Senegal, Sierra Leone, Somalia, South Sudan, Chad, Equatorial Guinea, Madagascar, Rwanda: The rates are those of neighbouring countries or registries in the same area
- For Gambia, Swaziland, Botswana, Mauritius, Namibia: Most recent rates applied to 2012 population
- For Nigeria, Algeria, Egypt, Morocco, Tunisia, Zimbabwe, Kenya, Tanzania: Estimated as the weighted average of the local rates
- For South Africa: Rates projected to 2012

Data sources: de Martel C, Plummer M, Vignat J, Franceschi S. Worldwide burden of cancer attributable to HPV by site, country and HPV type. Int J Cancer. 2017

Figure 40: Age-standardised incidence rate of head and neck cancer cases attributable to HPV by country in the Americas (estimates for 2012)



** No rates are available.

Data accessed on 08 May 2017.

ASR: Age-standardized rate, rates per 100,000 per year.

Please refer to original source for methods.

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(Figure 43 – continued from previous page)

Head and neck cancer cases (oropharynx, oral cavity and larynx).

GLOBOCAN quality index for availability of incidence data:

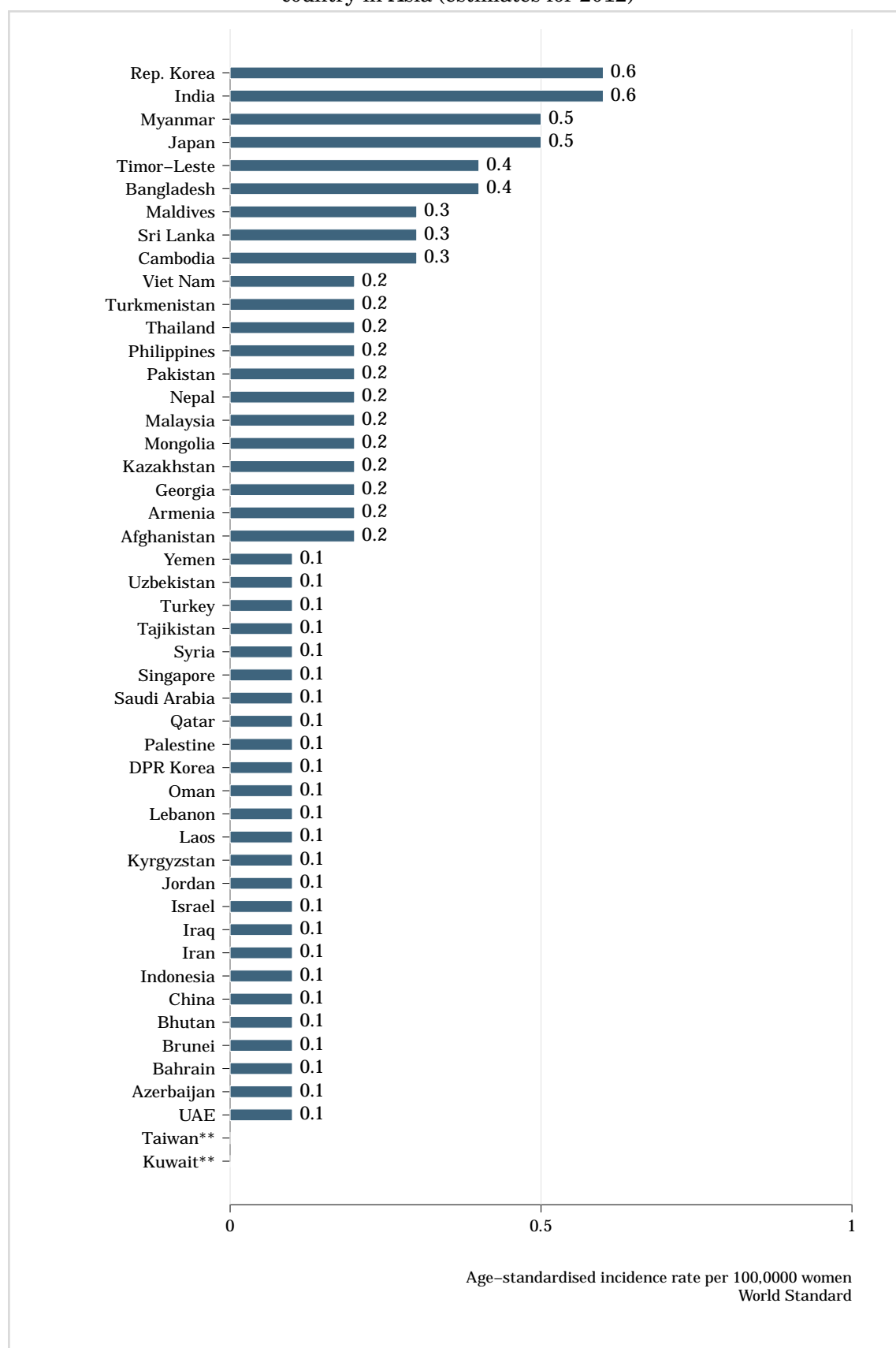
- For Argentina, Brazil: High quality regional (coverage between 10% and 50%).
- For Belize, Bolivia, Honduras, Haiti, Nicaragua, El Salvador, Suriname, Bahamas, Guatemala, Guyana, Panama, Paraguay, Venezuela, Barbados, Dominican Republic: No data.
- For Chile, Colombia, Ecuador, Jamaica, Cuba: High quality regional (coverage lower than 10%).
- For Costa Rica, Uruguay, Canada, USA: High quality national data or high quality regional (coverage greater than 50%).
- For Mexico, Peru: Regional data (rates).
- For Trinidad & Tobago: National data (rates).

GLOBOCAN quality index of methods for calculating incidence: Methods to estimate the sex- and age-specific incidence rates of cancer for a specific country:

- For Argentina, Chile, Colombia, Ecuador, Brazil, Cuba: Estimated from national mortality by modelling using incidence mortality ratios derived from recorded data in country-specific cancer registries
- For Belize, Honduras, Haiti, Jamaica, Mexico, Nicaragua, Peru, El Salvador, Suriname, Bahamas, Guatemala, Guyana, Panama, Paraguay, Trinidad & Tobago, Venezuela, Barbados, Dominican Republic: Estimated from national mortality estimates using modelled survival
- For Bolivia: Age/sex specific rates for "all cancers" were partitioned using data on relative frequency of different cancers (by age and sex)
- For Costa Rica, Canada, USA: Rates projected to 2012
- For Uruguay: Most recent rates applied to 2012 population

Data sources: de Martel C, Plummer M, Vignat J, Franceschi S. Worldwide burden of cancer attributable to HPV by site, country and HPV type. Int J Cancer. 2017

Figure 41: Age-standardised incidence rate of head and neck cancer cases attributable to HPV by country in Asia (estimates for 2012)



** No rates are available.

Data accessed on 08 May 2017.

ASR: Age-standardized rate, rates per 100,000 per year.

Please refer to original source for methods.

(Continued on next page)

(Figure 43 – continued from previous page)

Head and neck cancer cases (oropharynx, oral cavity and larynx).

GLOBOCAN quality index for availability of incidence data:

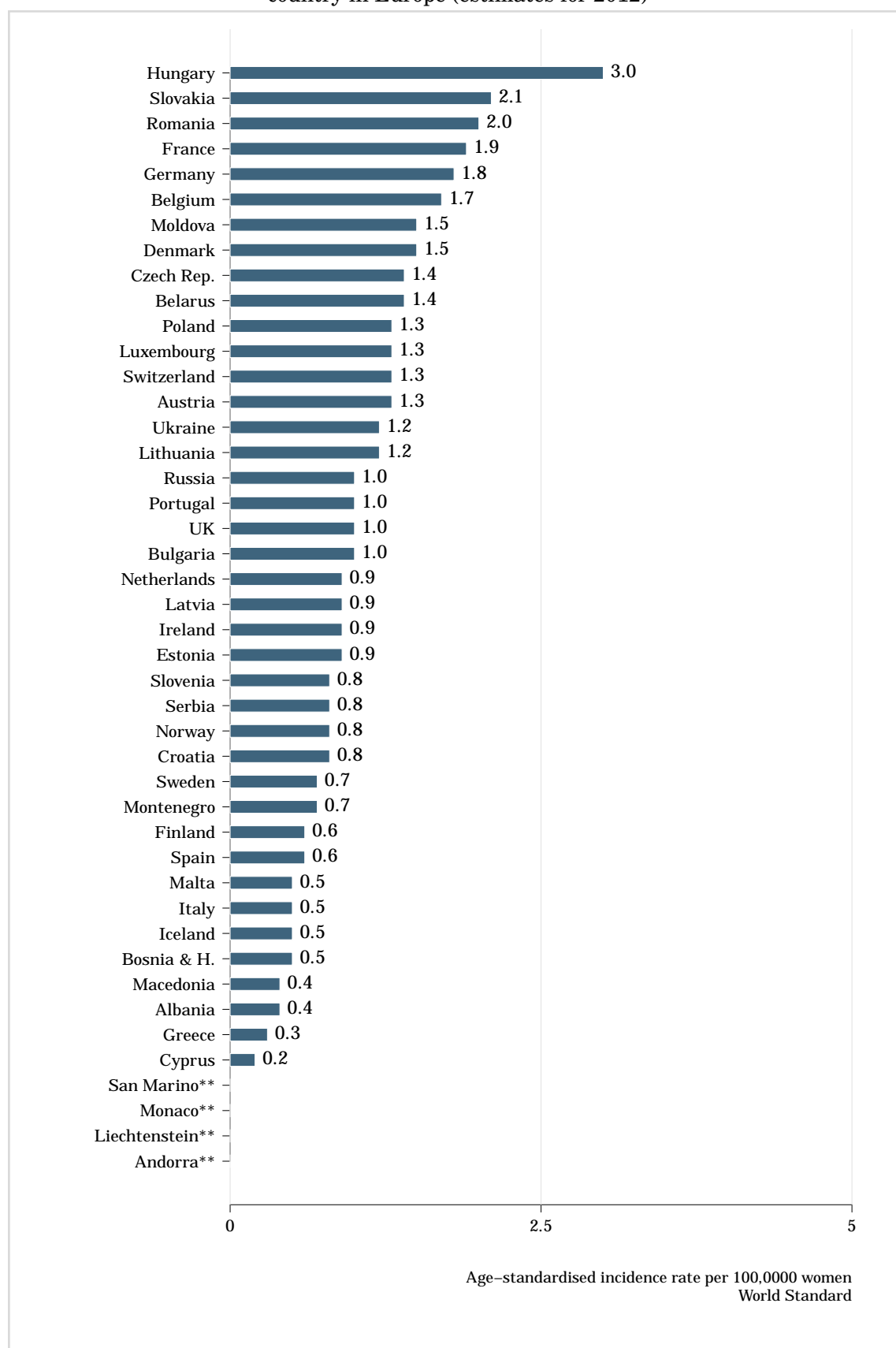
- For Kuwait, Bahrain, Israel, Oman, Qatar, Singapore, Republic of Korea: High quality national data or high quality regional (coverage greater than 50%).
- For United Arab Emirates, Bhutan, Jordan, Lebanon, Saudi Arabia, Mongolia, Sri Lanka: National data (rates).
- For Azerbaijan, Kyrgyzstan, Laos, DPR Korea, Syria, Tajikistan, Uzbekistan, Afghanistan, Armenia, Georgia, Kazakhstan, Nepal, Turkmenistan, Cambodia, Maldives, Timor-Leste, Myanmar: No data.
- For Brunei, Indonesia, Iraq, Palestine, Bangladesh: Frequency data.
- For China, Iran, Turkey, Malaysia, India: High quality regional (coverage lower than 10%).
- For Yemen, Pakistan, Viet Nam: Regional data (rates).
- For Philippines, Thailand, Japan: High quality regional (coverage between 10% and 50%).

GLOBOCAN quality index of methods for calculating incidence: Methods to estimate the sex- and age-specific incidence rates of cancer for a specific country:

- For Kuwait, Bahrain, Israel, Jordan, Saudi Arabia, Singapore, Republic of Korea: Rates projected to 2012
- For United Arab Emirates, Bhutan, Lebanon, Oman, Qatar, Mongolia, Sri Lanka: Most recent rates applied to 2012 population
- For Azerbaijan, Brunei, Kyrgyzstan, Tajikistan, Uzbekistan, Armenia, Georgia, Kazakhstan, Turkmenistan, Viet Nam: Estimated from national mortality estimates using modelled survival
- For China, Japan: Estimated from national mortality by modelling using incidence mortality ratios derived from recorded data in country-specific cancer registries
- For Indonesia, Iran, Turkey, Malaysia, Pakistan, Philippines, Thailand, India: Estimated as the weighted average of the local rates
- For Iraq, Palestine, Bangladesh: Age/sex specific rates for "all cancers" were partitioned using data on relative frequency of different cancers (by age and sex)
- For Laos, DPR Korea, Syria, Afghanistan, Nepal, Cambodia, Maldives, Timor-Leste, Myanmar: The rates are those of neighbouring countries or registries in the same area
- For Yemen: One cancer registry covering part of a country is used as representative of the country profile

Data sources: de Martel C, Plummer M, Vignat J, Franceschi S. Worldwide burden of cancer attributable to HPV by site, country and HPV type. Int J Cancer. 2017

Figure 42: Age-standardised incidence rate of head and neck cancer cases attributable to HPV by country in Europe (estimates for 2012)



** No rates are available.

Data accessed on 08 May 2017.

ASR: Age-standardized rate, rates per 100,000 per year.

Please refer to original source for methods.

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(Figure 43 – continued from previous page)

Head and neck cancer cases (oropharynx, oral cavity and larynx).

GLOBOCAN quality index for availability of incidence data:

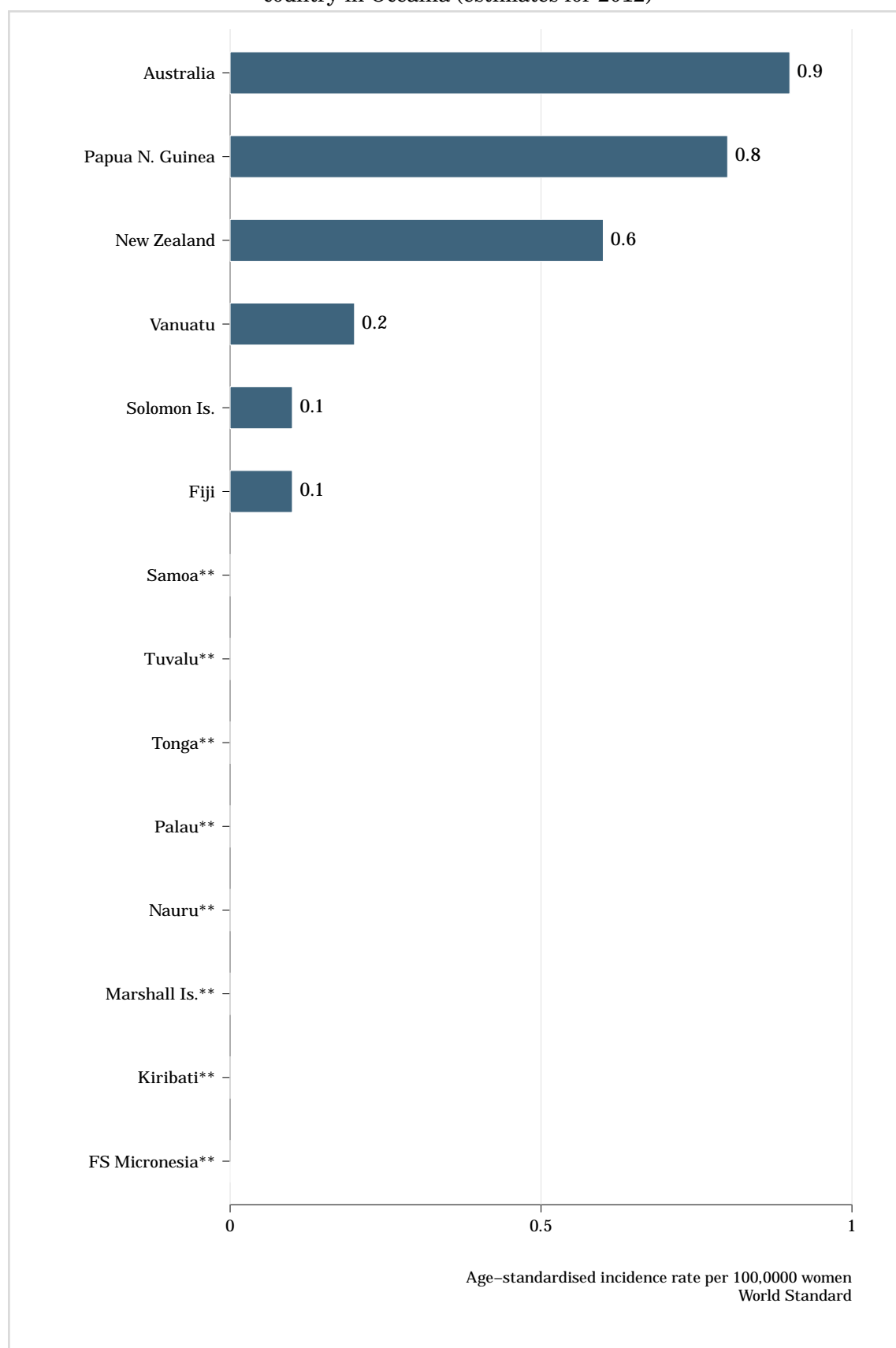
- For Cyprus, Iceland, Malta, Finland, Sweden, Croatia, Norway, Slovenia, Estonia, Ireland, Latvia, Netherlands, Bulgaria, United Kingdom, Lithuania, Ukraine, Austria, Belarus, Czech Republic, Denmark, Belgium, Slovakia: High quality national data or high quality regional (coverage greater than 50%).
- For Greece, Albania, Macedonia, Montenegro, Republic of Moldova, Hungary: No data.
- For Bosnia & Herzegovina, Russian Federation, Luxembourg: National data (rates).
- For Italy, Spain, Serbia, Switzerland, Germany, France: High quality regional (coverage between 10% and 50%).
- For Portugal, Poland: High quality regional (coverage lower than 10%).
- For Romania: Regional data (rates).

GLOBOCAN quality index of methods for calculating incidence: Methods to estimate the sex- and age-specific incidence rates of cancer for a specific country:

- For Cyprus, Bosnia & Herzegovina, Ukraine, Belgium: Most recent rates applied to 2012 population
- For Greece, Albania, Macedonia, Serbia, Portugal, Luxembourg, Republic of Moldova, Romania, Hungary: Estimated from national mortality estimates by modelling using incidence mortality ratios derived from recorded data in local cancer registries in neighbouring countries
- For Iceland, Malta, Finland, Sweden, Croatia, Norway, Slovenia, Estonia, Ireland, Latvia, Netherlands, Bulgaria, United Kingdom, Russian Federation, Lithuania, Austria, Belarus, Czech Republic, Denmark, Germany, Slovakia: Rates projected to 2012
- For Italy, Spain, Switzerland, Poland, France: Estimated from national mortality by modelling using incidence mortality ratios derived from recorded data in country-specific cancer registries
- For Montenegro: The rates are those of neighbouring countries or registries in the same area

Data sources: de Martel C, Plummer M, Vignat J, Franceschi S. Worldwide burden of cancer attributable to HPV by site, country and HPV type. Int J Cancer. 2017

Figure 43: Age-standardised incidence rate of head and neck cancer cases attributable to HPV by country in Oceania (estimates for 2012)



** No rates are available.

Data accessed on 08 May 2017.

ASR: Age-standardized rate, rates per 100,000 per year.

Please refer to original source for methods.

(Continued on next page)

(Figure 43 – continued from previous page)

Head and neck cancer cases (oropharynx, oral cavity and larynx).

GLOBOCAN quality index for availability of incidence data:

- For Samoa, Fiji, Vanuatu: National data (rates).
- For Solomon Islands, Papua New Guinea: No data.
- For New Zealand, Australia: High quality national data or high quality regional (coverage greater than 50%).

GLOBOCAN quality index of methods for calculating incidence: Methods to estimate the sex- and age-specific incidence rates of cancer for a specific country:

- For Samoa: Most recent rates applied to 2012 population
- For Fiji, Vanuatu: Estimated from national mortality estimates using modelled survival
- For Solomon Islands: The rates are those of neighbouring countries or registries in the same area
- For New Zealand, Australia: Rates projected to 2012
- For Papua New Guinea: Age/sex specific rates for "all cancers" were partitioned using data on relative frequency of different cancers (by age and sex)

Data sources: de Martel C, Plummer M, Vignat J, Franceschi S. Worldwide burden of cancer attributable to HPV by site, country and HPV type. Int J Cancer. 2017

3.3.1 Pharyngeal cancer (excluding nasopharynx)

Table 11: Cancer incidence of pharynx (excluding nasopharynx) by sex, in the World and its regions.
Includes ICD-10 codes: C09-10, C12-14 (estimates for 2012).

Area	MALE				FEMALE			
	N cases	Crude ^a rate	ASR ^a	Cum risk ^b (%) ages 0-74	N cases	Crude ^a rate	ASR ^a	Cum risk ^b (%) ages 0-74
World	115131	3.2	3.2	0.4	27256	0.8	0.7	0.1
Less developed regions	70731	2.4	2.8	0.3	18059	0.6	0.7	0.1
More developed regions	44400	7.3	4.7	0.6	9197	1.4	0.8	0.1
Africa	3369	0.6	1.1	0.1	1928	0.4	0.6	0.1
Eastern Africa	906	0.5	1.0	0.1	567	0.3	0.6	0.1
Middle Africa	585	0.9	1.7	0.2	208	0.3	0.6	0.1
Northern Africa	621	0.6	0.8	0.1	611	0.6	0.7	0.1
Southern Africa	784	2.7	3.9	0.5	392	1.3	1.5	0.2
Western Africa	473	0.3	0.6	0.1	150	0.1	0.1	0.0
Americas	17637	3.7	3.3	0.4	4471	0.9	0.7	0.1
Caribbean	815	3.9	3.6	0.4	227	1.1	0.9	0.1
Central America	694	0.9	1.0	0.1	218	0.3	0.3	0.0
Northern America	10493	6.1	4.2	0.5	2756	1.6	1.0	0.1
South America	5635	2.8	3.0	0.3	1270	0.6	0.5	0.1
Asia	65016	3.0	3.1	0.4	14997	0.7	0.7	0.1
Central Asia	717	2.3	3.2	0.4	321	1.0	1.1	0.1
Eastern Asia	13441	1.6	1.3	0.1	1884	0.2	0.2	0.0
Southern Asia	43190	4.8	6.3	0.8	10454	1.2	1.5	0.2
South-Eastern Asia	6933	2.3	2.6	0.3	1965	0.6	0.7	0.1
Western Asia	735	0.6	0.8	0.1	373	0.3	0.4	0.0
Europe	28394	7.9	5.2	0.6	5700	1.5	0.9	0.1
Eastern Europe	10187	7.4	5.3	0.6	1401	0.9	0.5	0.1
Northern Europe	2594	5.3	3.4	0.4	844	1.7	1.0	0.1
Southern Europe	4137	5.3	3.4	0.4	731	0.9	0.5	0.1
Western Europe	11476	12.3	7.5	0.9	2724	2.8	1.6	0.2
Oceania	715	3.8	3.0	0.4	160	0.8	0.6	0.1
Australia & New Zealand	633	4.6	3.2	0.4	146	1.1	0.7	0.1
Melanesia	71	1.5	3.4	0.6	14	0.3	0.4	0.0
Micronesia	0	0.0	0.0	0.0	0	0.0	0.0	0.0
Polynesia	11	3.2	3.8	0.5	0	0.0	0.0	0.0

Data accessed on 15 Nov 2015.

^a Male: Rates per 100,000 men per year. Female: Rates per 100,000 women per year.^b Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

Data sources:

Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Table 12: Cancer mortality of pharynx (excluding nasopharynx) by sex, in the World and its regions.
Includes ICD-10 codes: C09-10, C12-14 (estimates for 2012).

Area	MALE				FEMALE			
	N cases	Crude ^a rate	ASR ^a	Cum risk ^b (%) ages 0-74	N cases	Crude ^a rate	ASR ^a	Cum risk ^b (%) ages 0-74
World	77585	2.2	2.2	0.3	18505	0.5	0.5	0.1

(Continued on next page)

(Table 12 – continued from previous page)

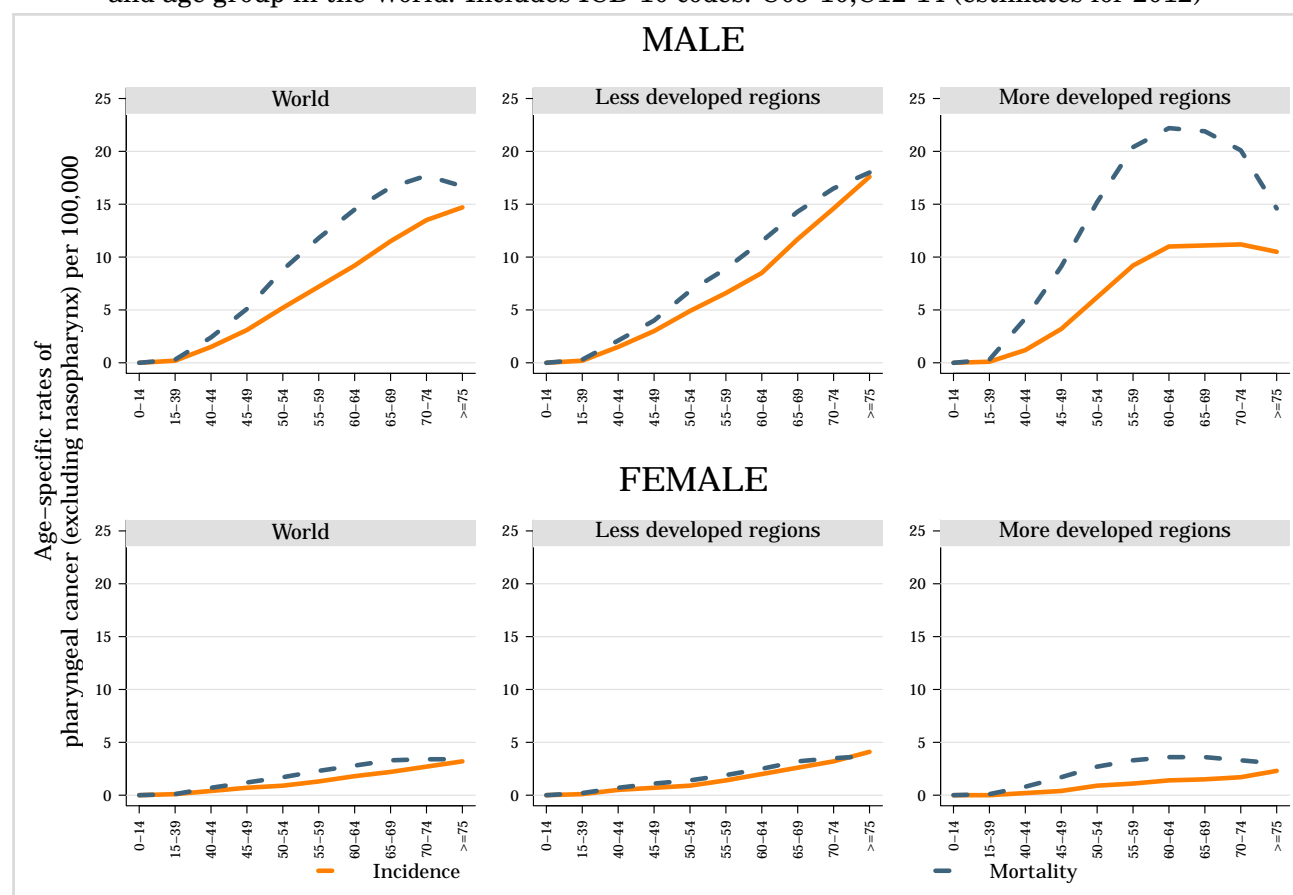
Area	MALE				FEMALE			
	N cases	Crude ^a rate	ASR ^a	Cum risk ^b (%) ages 0-74	N cases	Crude ^a rate	ASR ^a	Cum risk ^b (%) ages 0-74
Less developed regions	56165	1.9	2.2	0.3	14440	0.5	0.5	0.1
More developed regions	21420	3.5	2.2	0.3	4065	0.6	0.3	0.0
Africa	2631	0.5	0.9	0.1	1459	0.3	0.4	0.1
Eastern Africa	786	0.4	0.9	0.1	496	0.3	0.5	0.1
Middle Africa	518	0.8	1.6	0.2	191	0.3	0.6	0.1
Northern Africa	483	0.5	0.6	0.1	494	0.5	0.6	0.1
Southern Africa	426	1.5	2.2	0.3	145	0.5	0.6	0.1
Western Africa	418	0.3	0.5	0.1	133	0.1	0.1	0.0
Americas	8381	1.8	1.5	0.2	2173	0.5	0.3	0.0
Caribbean	568	2.7	2.4	0.3	159	0.7	0.6	0.1
Central America	482	0.6	0.7	0.1	153	0.2	0.2	0.0
Northern America	3145	1.8	1.2	0.1	970	0.5	0.3	0.0
South America	4186	2.1	2.2	0.3	891	0.4	0.4	0.0
Asia	51005	2.3	2.4	0.3	12126	0.6	0.5	0.1
Central Asia	516	1.7	2.4	0.3	231	0.7	0.8	0.1
Eastern Asia	7867	1.0	0.7	0.1	1352	0.2	0.1	0.0
Southern Asia	36667	4.1	5.4	0.6	8710	1.0	1.2	0.1
South-Eastern Asia	5414	1.8	2.1	0.2	1545	0.5	0.5	0.1
Western Asia	541	0.4	0.6	0.1	288	0.2	0.3	0.0
Europe	15245	4.3	2.7	0.3	2662	0.7	0.4	0.0
Eastern Europe	7277	5.3	3.8	0.5	885	0.6	0.3	0.0
Northern Europe	1118	2.3	1.4	0.2	352	0.7	0.3	0.0
Southern Europe	2342	3.0	1.8	0.2	430	0.5	0.3	0.0
Western Europe	4508	4.9	2.7	0.3	995	1.0	0.5	0.1
Oceania	323	1.7	1.3	0.2	85	0.5	0.3	0.0
Australia & New Zealand	261	1.9	1.2	0.1	70	0.5	0.3	0.0
Melanesia	56	1.2	2.8	0.5	14	0.3	0.4	0.0
Micronesia	0	0.0	0.0	0.0	0	0.0	0.0	0.0
Polynesia	6	1.7	2.0	0.2	1	0.3	0.3	0.0

Data accessed on 15 Nov 2015.^a Male: Rates per 100,000 men per year. Female: Rates per 100,000 women per year.^b Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

Data sources:

Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Figure 44: Comparison of cancer incidence and mortality of pharynx (excluding nasopharynx) by sex and age group in the World. Includes ICD-10 codes: C09-10,C12-14 (estimates for 2012)



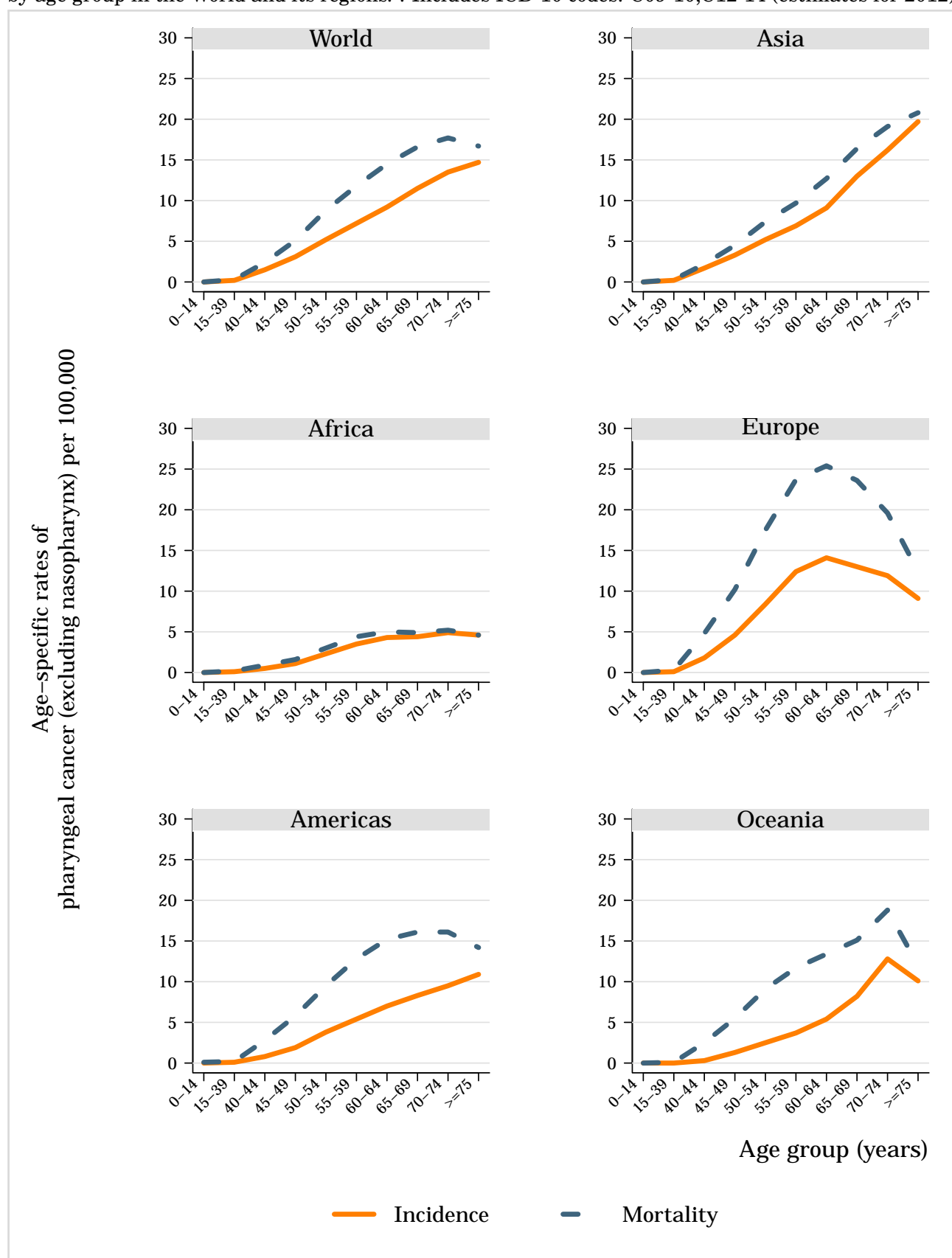
Data accessed on 15 Nov 2015.

Male: Rates per 100,000 men per year. Female: Rates per 100,000 women per year.

Data sources:

Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

Figure 45: Comparison of cancer incidence and mortality of pharynx (excluding nasopharynx) in males by age group in the World and its regions. . Includes ICD-10 codes: C09-10,C12-14 (estimates for 2012)



Data accessed on 15 Nov 2015.

Male: Rates per 100,000 men per year. Female: Rates per 100,000 women per year.

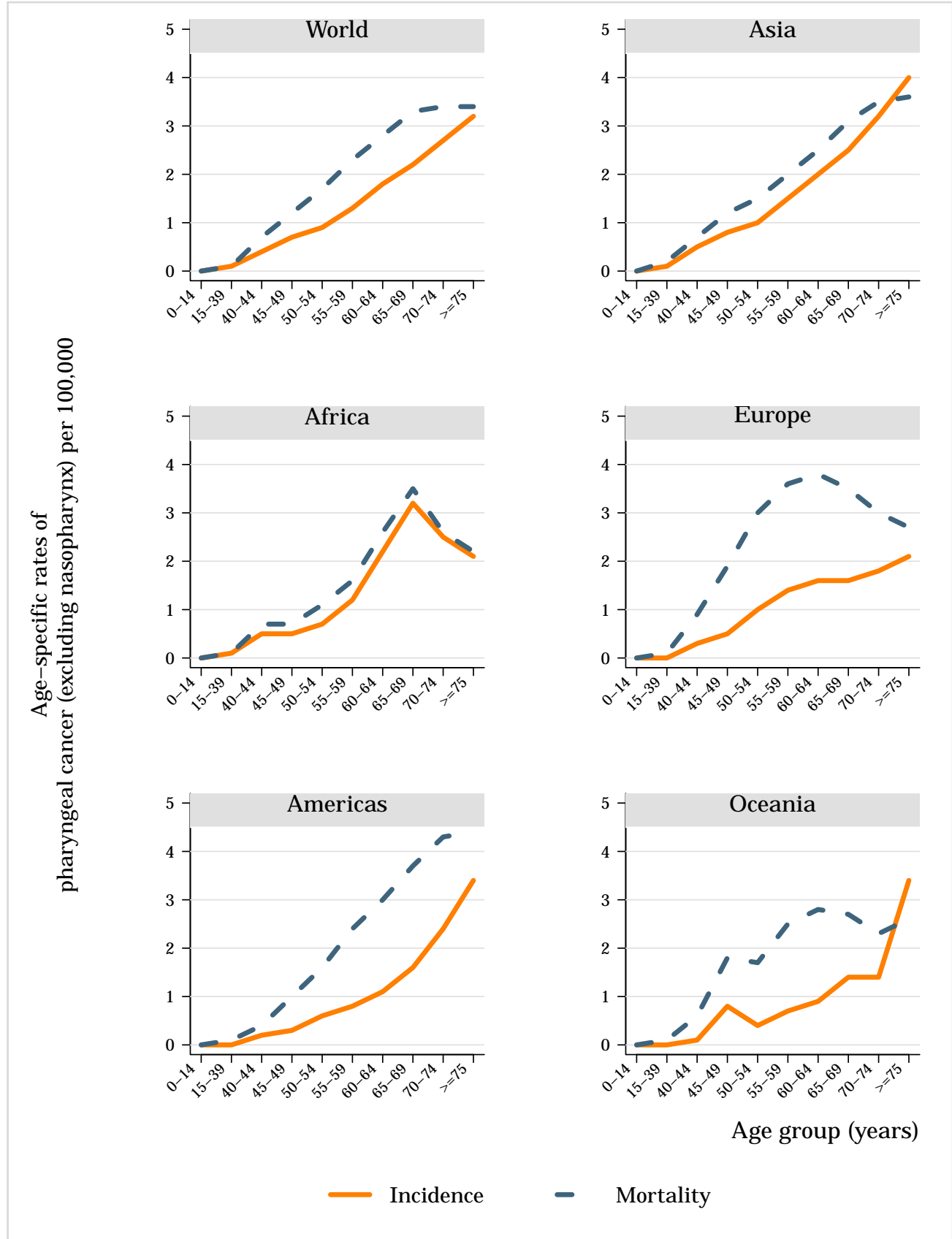
Data sources:

Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

(Continued on next page)

(Figure 45 – continued from previous page)

Figure 46: Comparison of cancer incidence and mortality of pharynx (excluding nasopharynx) in females by age group in the World and its regions. . Includes ICD-10 codes: C09-10,C12-14 (estimates for 2012)



Data accessed on 15 Nov 2015.

Male: Rates per 100,000 men per year. Female: Rates per 100,000 women per year.

Data sources:

Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>.

4 HPV related statistics

HPV 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. HPV is also responsible for other diseases such as recurrent juvenile respiratory papillomatosis and genital warts, both mainly caused by HPV types 6 and 11 (Lacey CJ, Vaccine 2006; 24(S3):35). For this section, 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 with caution and used only as a guide to assess the burden of HPV infection in the population. (Vaccine 2006, Vol. 24, Suppl 3; Vaccine 2008, Vol. 26, Suppl 10; Vaccine 2012, Vol. 30, Suppl 5; IARC Monographs 2007, Vol. 90).

4.1 HPV burden in women with normal cervical cytology, cervical precancerous 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).

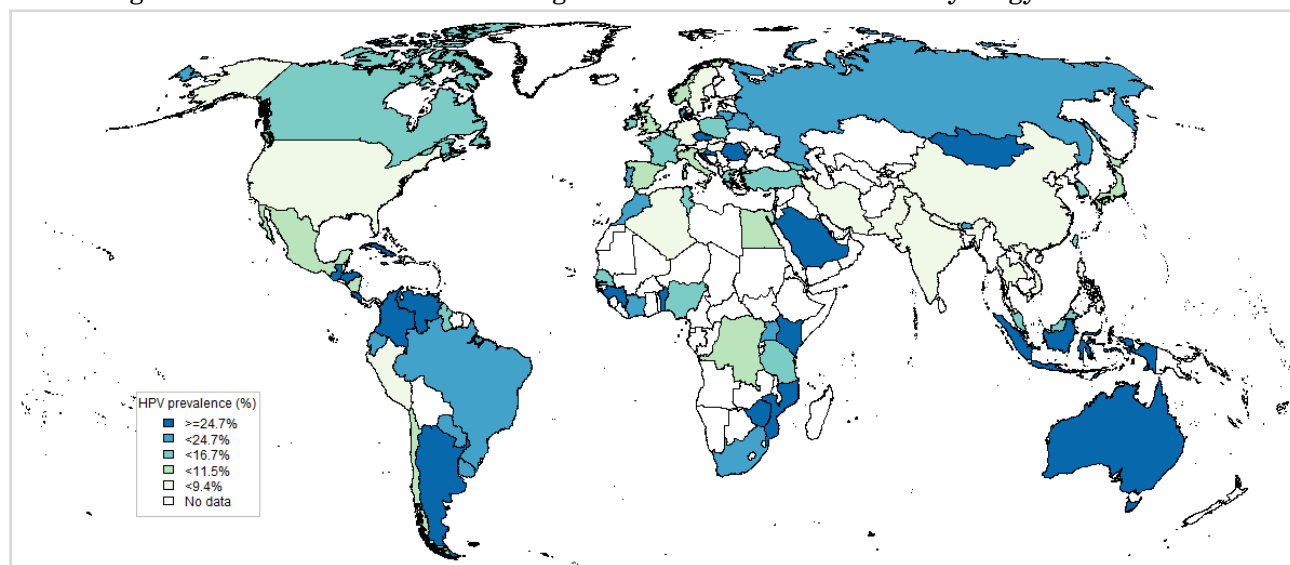
The prevalence of HPV increases with severity of the lesion. HPV causes virtually 100% of cases of cervical cancer, and an underestimation of HPV prevalence in cervical cancer is most likely due to the limitations of study methodologies. Worldwide, HPV-16 and 18, the two vaccine-preventable types, contribute to over 70% of all cervical cancer cases, between 41%-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).

Methods: Prevalence and type distribution of human papillomavirus in cervical carcinoma, low-grade cervical lesions, high-grade cervical lesions and normal cytology: systematic review and meta-analysis

A systematic review of the literature was conducted regarding the worldwide HPV-prevalence and type distribution for cervical carcinoma, low-grade cervical lesions, high-grade cervical lesions and normal cytology from 1990 to 'data as of' indicated in each section. The search terms for the review were 'HPV' AND cerv* using Pubmed. There were no limits in publication language. References cited in selected articles were also investigated. Inclusion criteria were: HPV DNA detection by means of PCR or HC2, a minimum of 20 cases for cervical carcinoma, 20 cases for low-grade cervical lesions, 20 cases for high-grade cervical lesions and 100 cases for normal cytology and a detailed description of HPV DNA detection and genotyping techniques used. The number of cases tested and HPV positive extracted for each study were pooled to estimate the prevalence of HPV DNA and the HPV type distribution globally and by geographical region. Binomial 95% confidence intervals were calculated for each HPV prevalence. For more details refer to the methods document.

4.1.1 HPV prevalence in women with normal cervical cytology

Figure 47: Prevalence of HPV among women with normal cervical cytology in the World

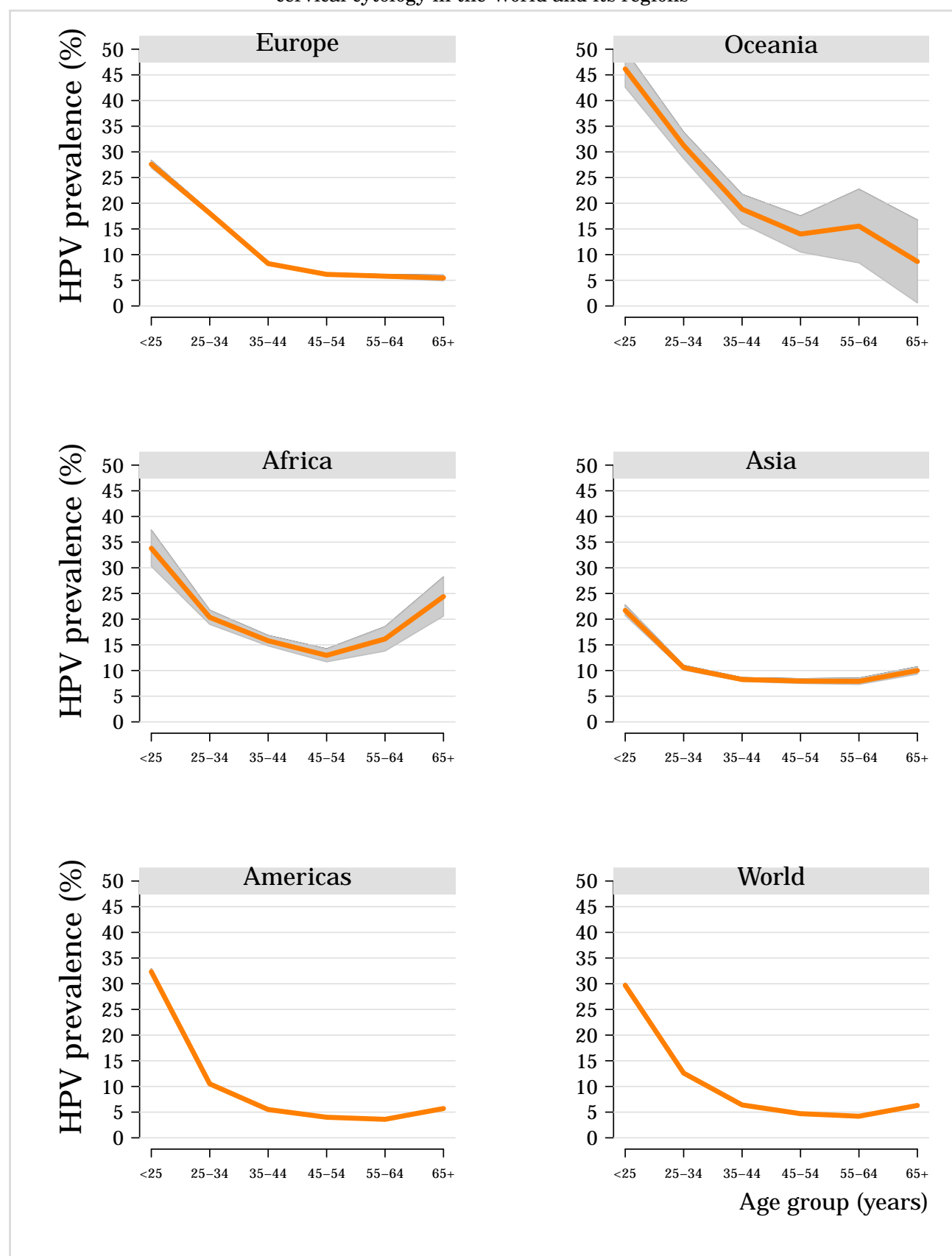


Data updated on 15 Dec 2016 (data as of 30 Jun 2015).

The samples for HPV testing come from cervical specimens (fresh / fixed biopsies or exfoliated cells).

Data sources: See references in Section 9.

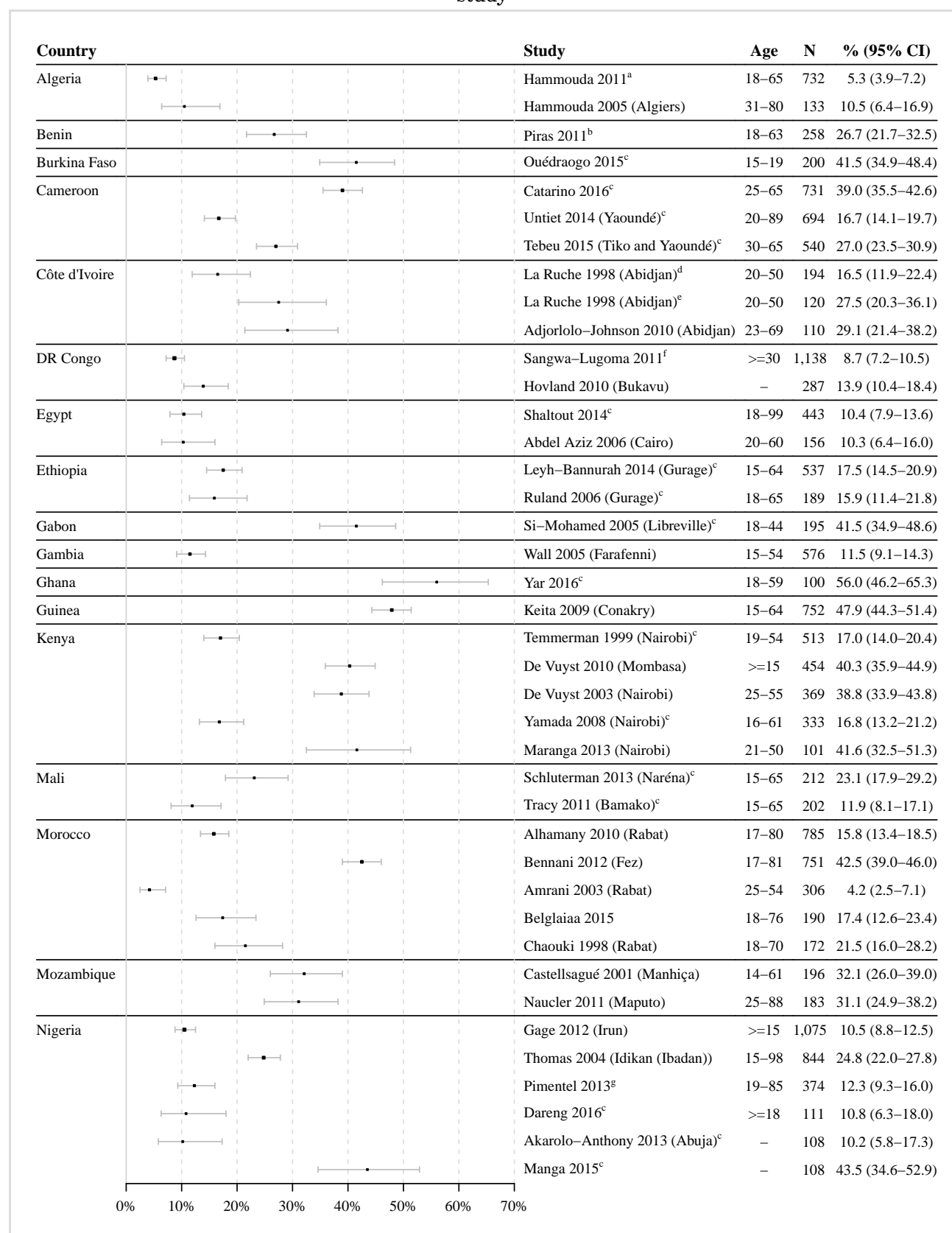
Figure 48: Crude age-specific HPV prevalence (%) and 95% confidence interval in women with normal cervical cytology in the World and its regions



Data updated on 15 Dec 2016 (data as of 30 Jun 2015).

Data sources: See references in Section 9.

Figure 49: Prevalence of HPV among women with normal cervical cytology in Africa by country and study



(Continued on next page)

Data updated on 15 Dec 2016 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

^aZeralda (Algiers)

(Continued on next page)

(Figure 49 – continued from previous page)

^b Abomey, Atakora, Cotonou, Djougou, Lagune, Lokossa, Parakou, Porto-Novo and Tangueta

^c Women from the general population, including some with cytological cervical abnormalities

^d HIV negative women (controls of women with HSIL)

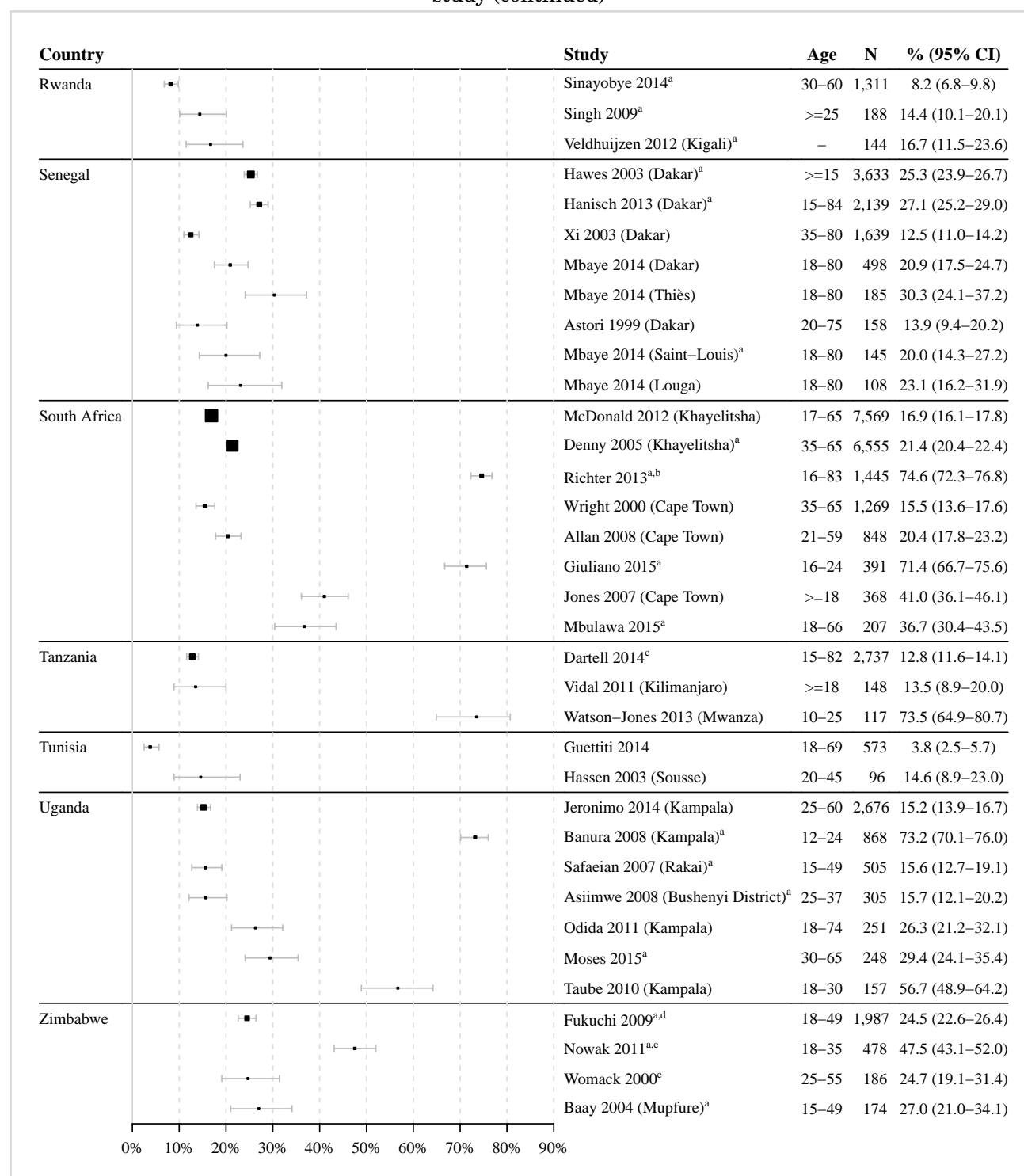
^e HIV negative women (controls of women with LSIL)

^f Mbuku, Kinshasa

^g Okene, Abuja and Katari

Data sources: See references in Section 9.

Figure 50: Prevalence of HPV among women with normal cervical cytology in Africa by country and study (continued)



Data updated on 15 Dec 2016 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

^a Women from the general population, including some with cytological cervical abnormalities

^b Tshwane District, Gauteng province

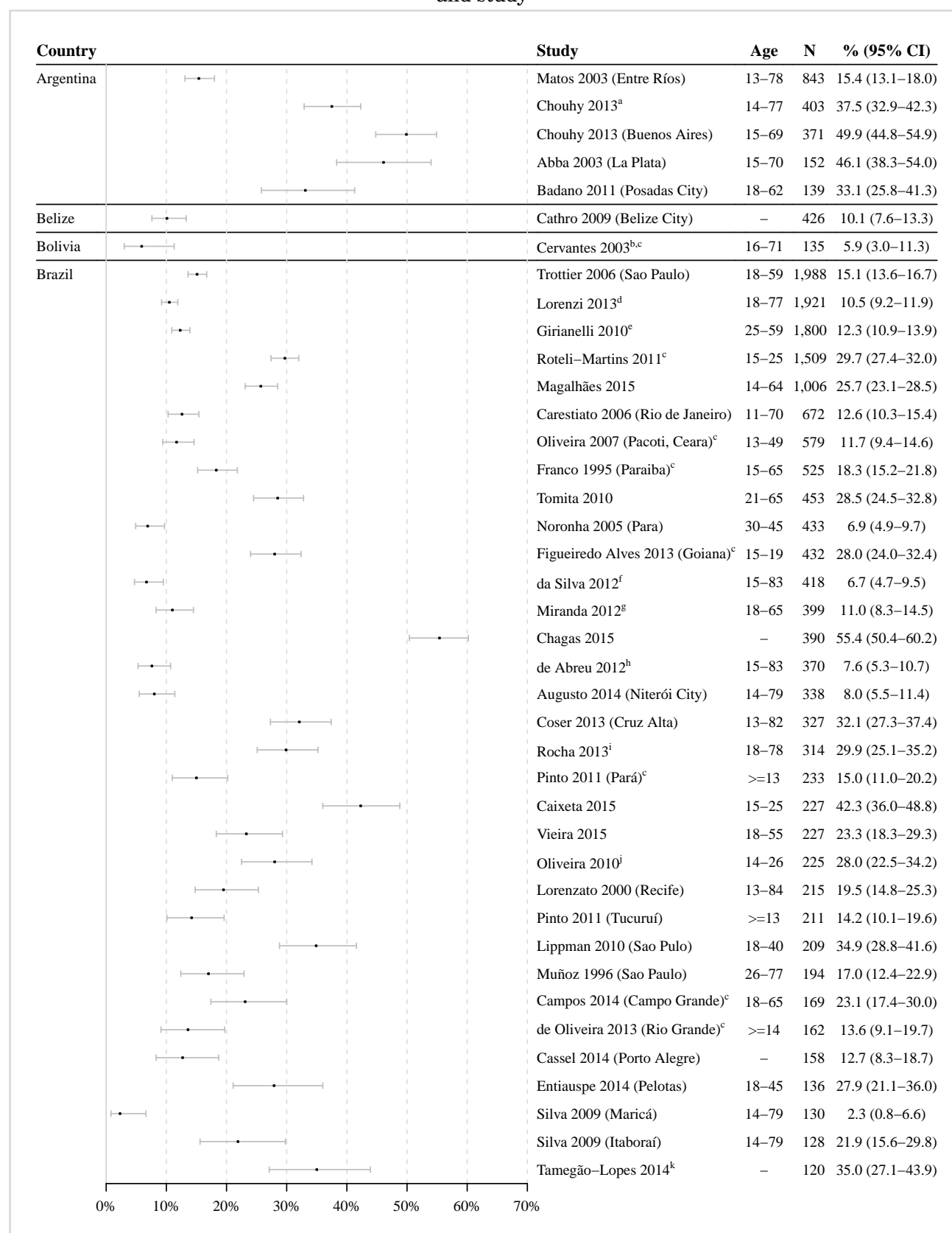
^c Dar es Salaam, Pwani, Mwanza

^d Chitungwiza, Epworth (Harare)

^e Chitungwiza and Harare

Data sources: See references in Section 9.

Figure 51: Prevalence of HPV among women with normal cervical cytology in the Americas by country and study



(Continued on next page)

Data updated on 15 Dec 2016 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

^aGranadero Baigorria City (Santa Fe Province)

(Continued on next page)

(Figure 51 – continued from previous page)

^b Amazonian lowland

^c Women from the general population, including some with cytological cervical abnormalities

^d Barretos (Sao Paulo)

^e Duque de Caxias and Nova Iguaçu (State of Rio de Janeiro)

^f Paçandú (Paraná)

^g Ouro Preto city (Minas Gerais)

^h Maringá, Paçandú and União da Vitória (Paraná State)

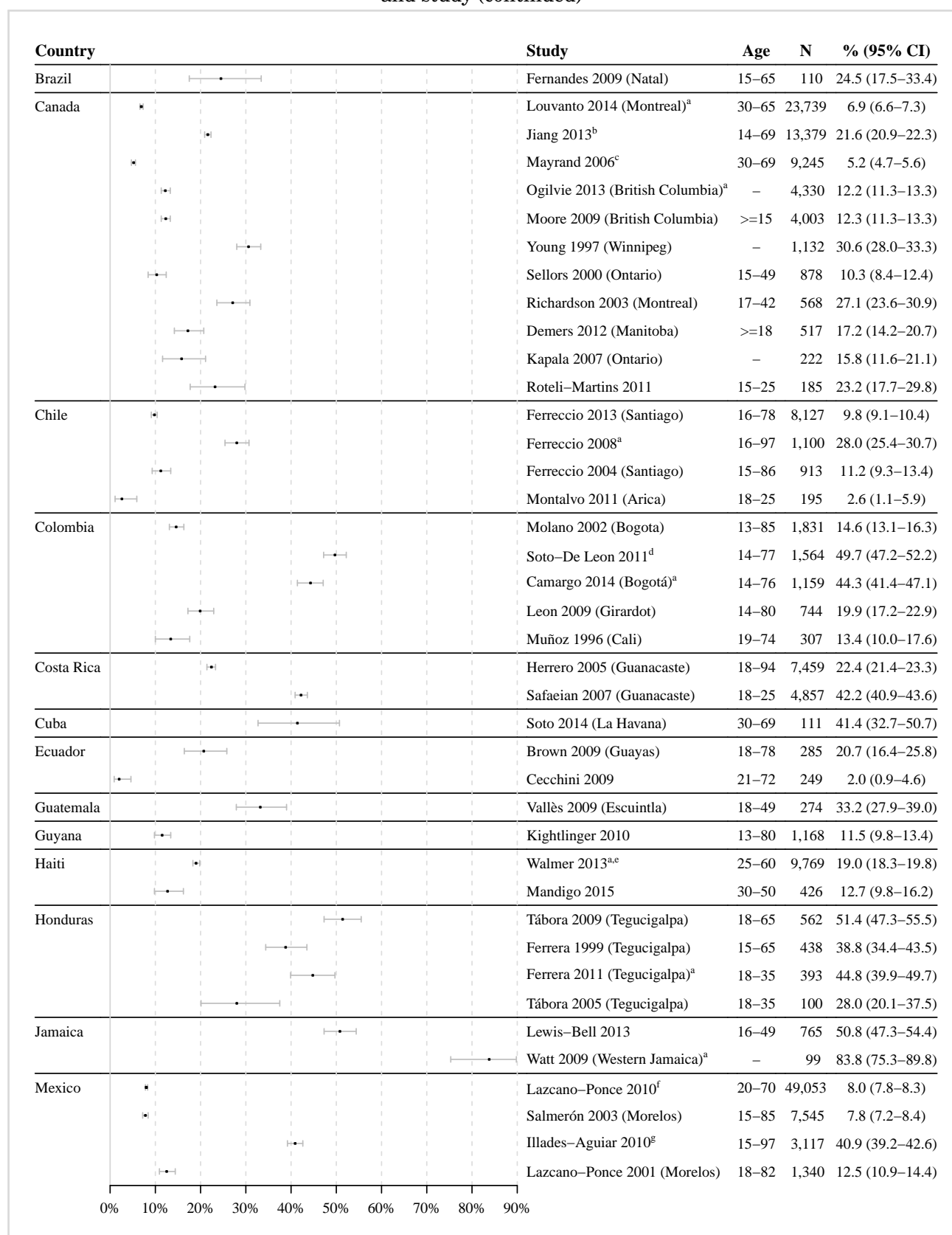
ⁱ Coari (Amazonas State)

^j Niterói City (Rio de Janeiro)

^k Juruti (Pará)

Data sources: See references in Section 9.

Figure 52: Prevalence of HPV among women with normal cervical cytology in the Americas by country and study (continued)



(Continued on next page)

Data updated on 15 Dec 2016 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

^a Women from the general population, including some with cytological cervical abnormalities

(Continued on next page)

(Figure 52 – continued from previous page)

^b Northwest Territories, Nunavut, Labrador, Yukon.

^c Montreal and Newfoundland

^d Bogotá, Leticia, Chaparral, Giradot and Tumaco

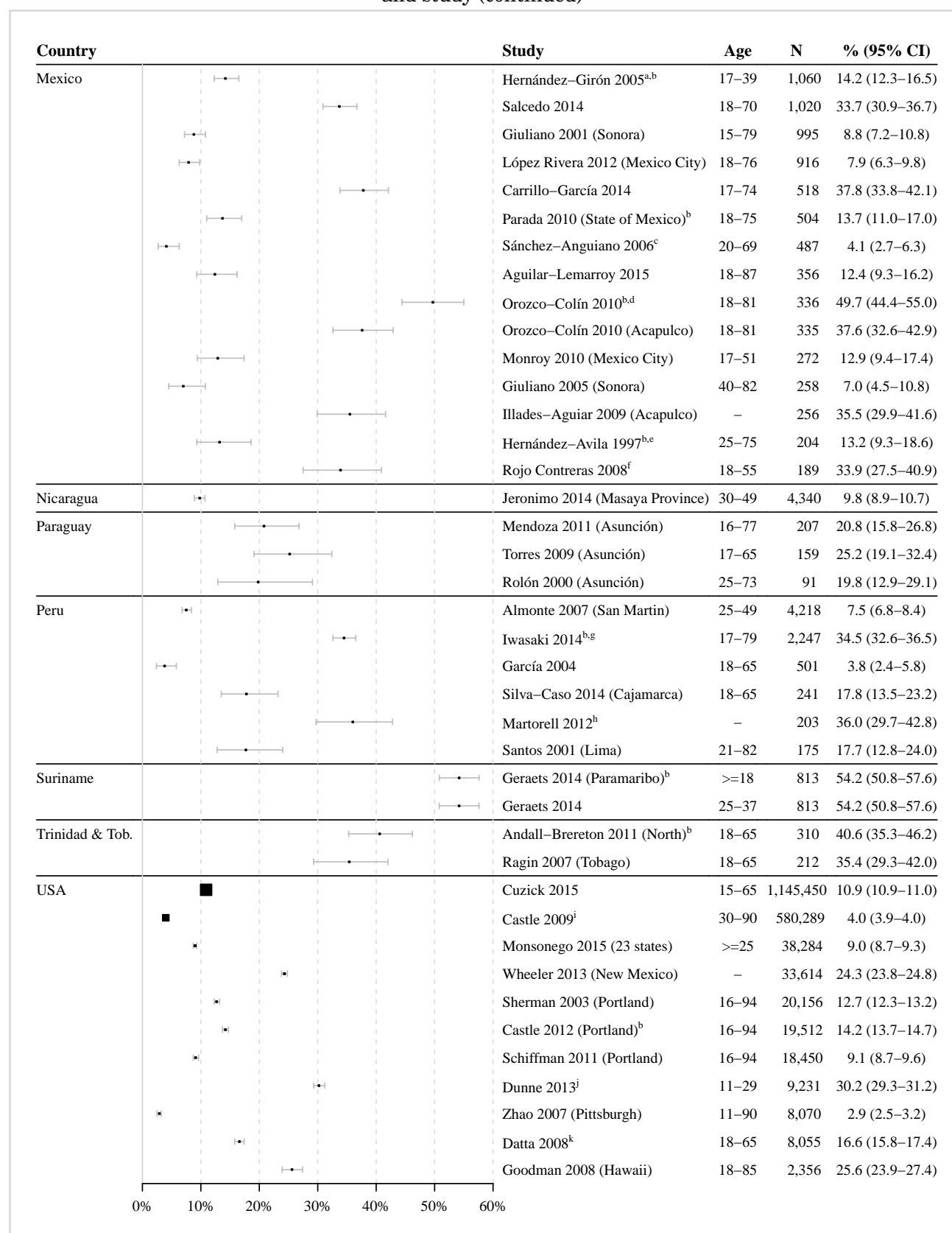
^e Port-au-Prince, Leogane

^f Northern and Southern Mexico City, State of Mexico, Guerrero, Michoacán, Morelos, Jalisco, Nuevo León, Oaxaca, Querétaro, Veracruz and Yucatán

^g Acapulco, Chilpancingo and Iguala (State of Guerrero)

Data sources: See references in Section 9.

Figure 53: Prevalence of HPV among women with normal cervical cytology in the Americas by country and study (continued)



(Continued on next page)

Data updated on 15 Dec 2016 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

^a Cuernavaca

(Continued on next page)

(Figure 53 – continued from previous page)

^b Women from the general population, including some with cytological cervical abnormalities

^c Durango City

^d Lázaro Cárdenas

^e Mexico City

^f Guadalajara

^g Iquitos, Cajamarca, Piura, Chiclayo, Lima, Arequipa, Cuzco and Juliana

^h Iquitos and Loreto

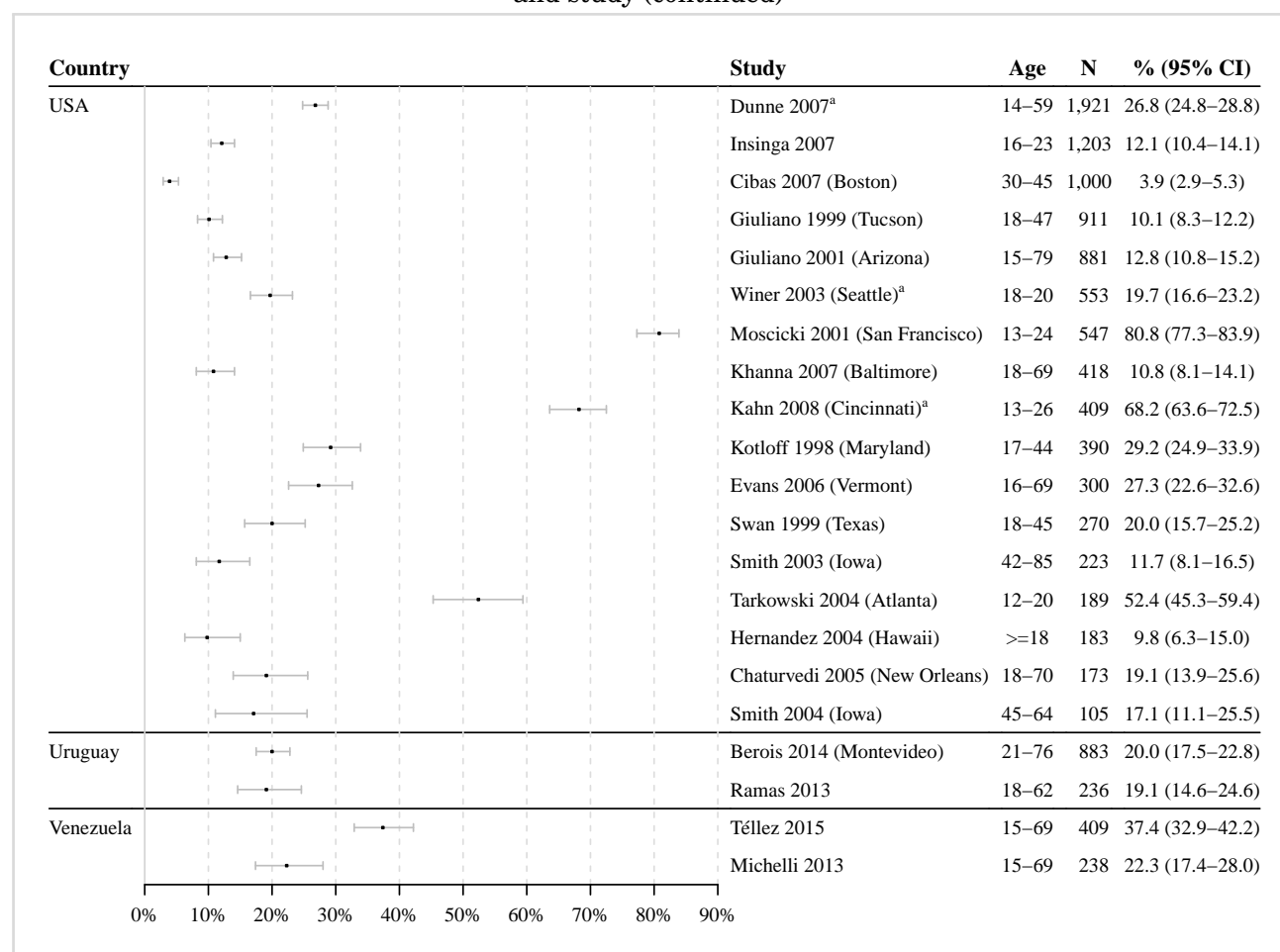
ⁱ Northern California

^j San Francisco Bay, Sacramento, Central Valley, Northwest Oregon and Southwest Washington Areas

^k Boston, Baltimore, New Orleans, Denver, Seattle, Los Angeles

Data sources: See references in Section 9.

Figure 54: Prevalence of HPV among women with normal cervical cytology in the Americas by country and study (continued)



Data updated on 15 Dec 2016 (data as of 30 Jun 2015).

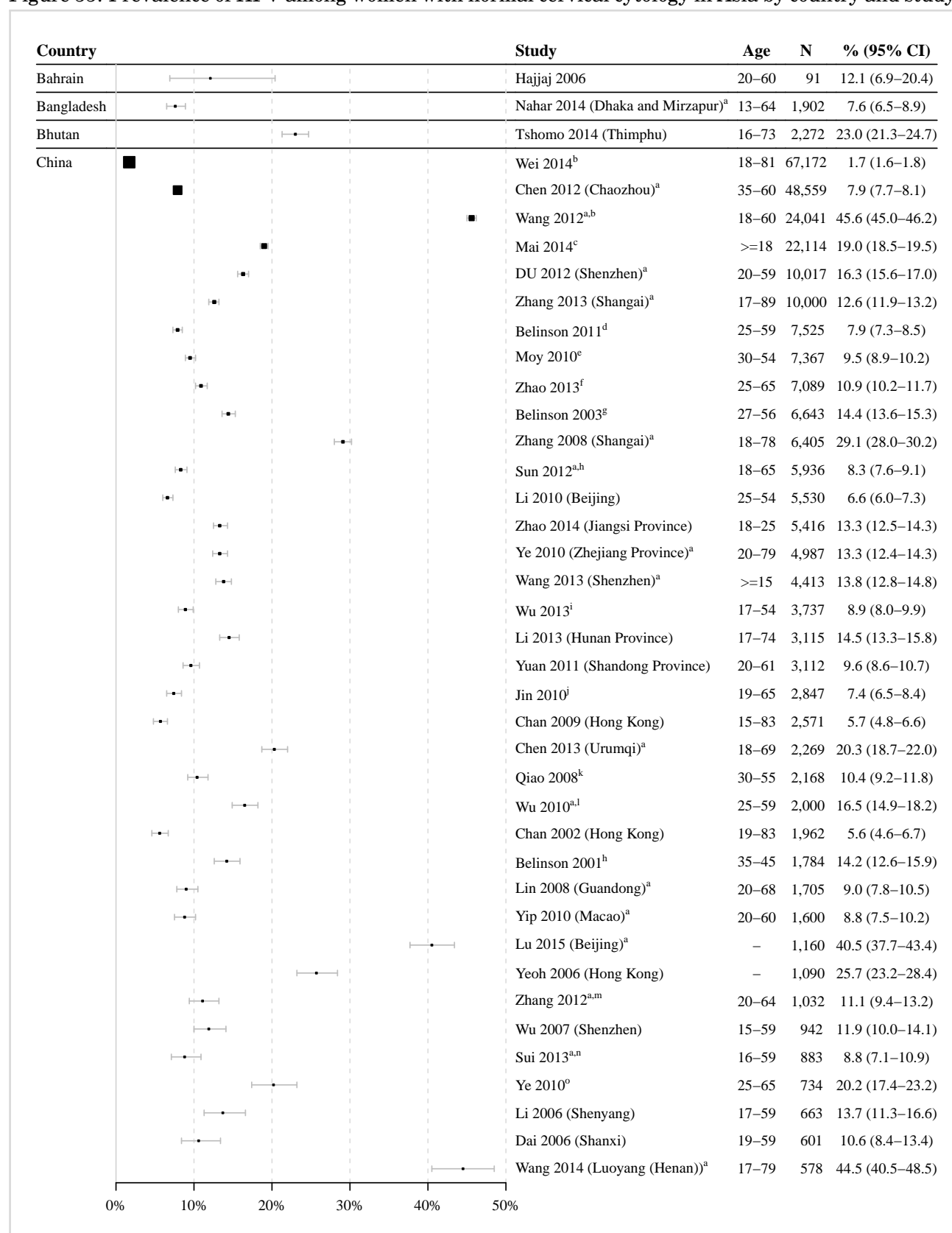
95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

^a Women from the general population, including some with cytological cervical abnormalities

Data sources: See references in Section 9.

Figure 55: Prevalence of HPV among women with normal cervical cytology in Asia by country and study



(Continued on next page)

Data updated on 15 Dec 2016 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

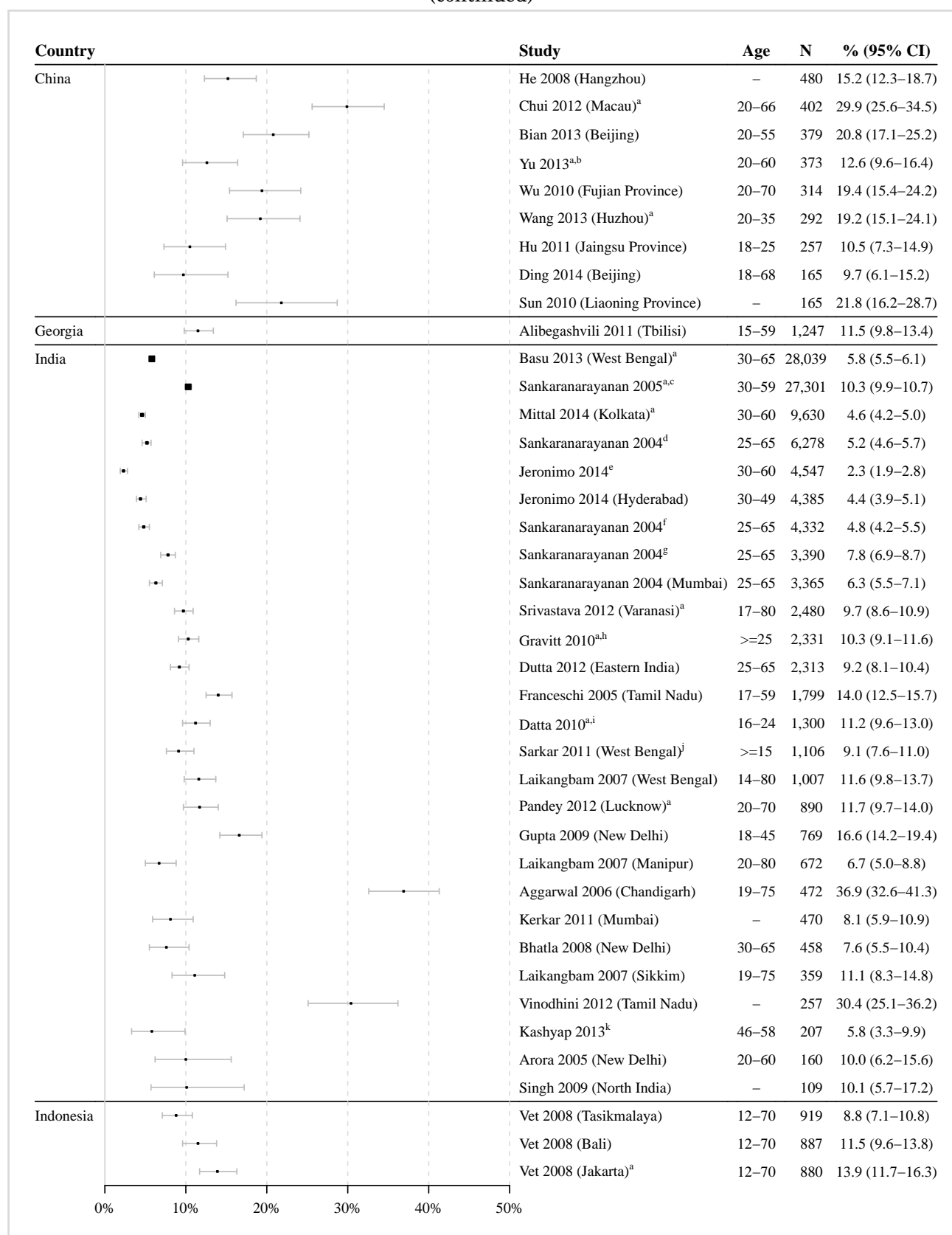
^a Women from the general population, including some with cytological cervical abnormalities^b Shenyang (Liaoning Province)^c Shantou City (Guandong Province)

(Continued on next page)

(Figure 55 – continued from previous page)

- ^d Guangdong Province
 - ^e Shanxi, Jiangxi and Gansu Provinces
 - ^f Yangcheng, Xinmi and Tonggu
 - ^g Yangcheng and Xiangyuan (Shanxi)
 - ^h Qujing (Yunnan Province)
 - ⁱ Beijing, Shanghai, Shanxi, Henan, Xinjiang
 - ^j Tibetan Autonomous Region
 - ^k Wuxiang and Xiangyuan (Shanxi Province)
 - ^l Shenzhen (Guangdong Province)
 - ^m Wufeng County (Hubei Province)
 - ⁿ Uyghur (Yutian County, Xingjian Province)
 - ^o Lishui County (Zhejiang Province)
- Data sources: See references in Section 9.

Figure 56: Prevalence of HPV among women with normal cervical cytology in Asia by country and study (continued)



(Continued on next page)

Data updated on 15 Dec 2016 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

^a Women from the general population, including some with cytological cervical abnormalities

(Continued on next page)

(Figure 56 – continued from previous page)

^b Shiquan County (Shaanxi Province)

^c Osnamabad

^d Kolkata (2)

^e Rural Uttar Pradesh

^f Trivandrum

^g Kolkata (1)

^h Medchal Mandal (Andhra Pradesh)

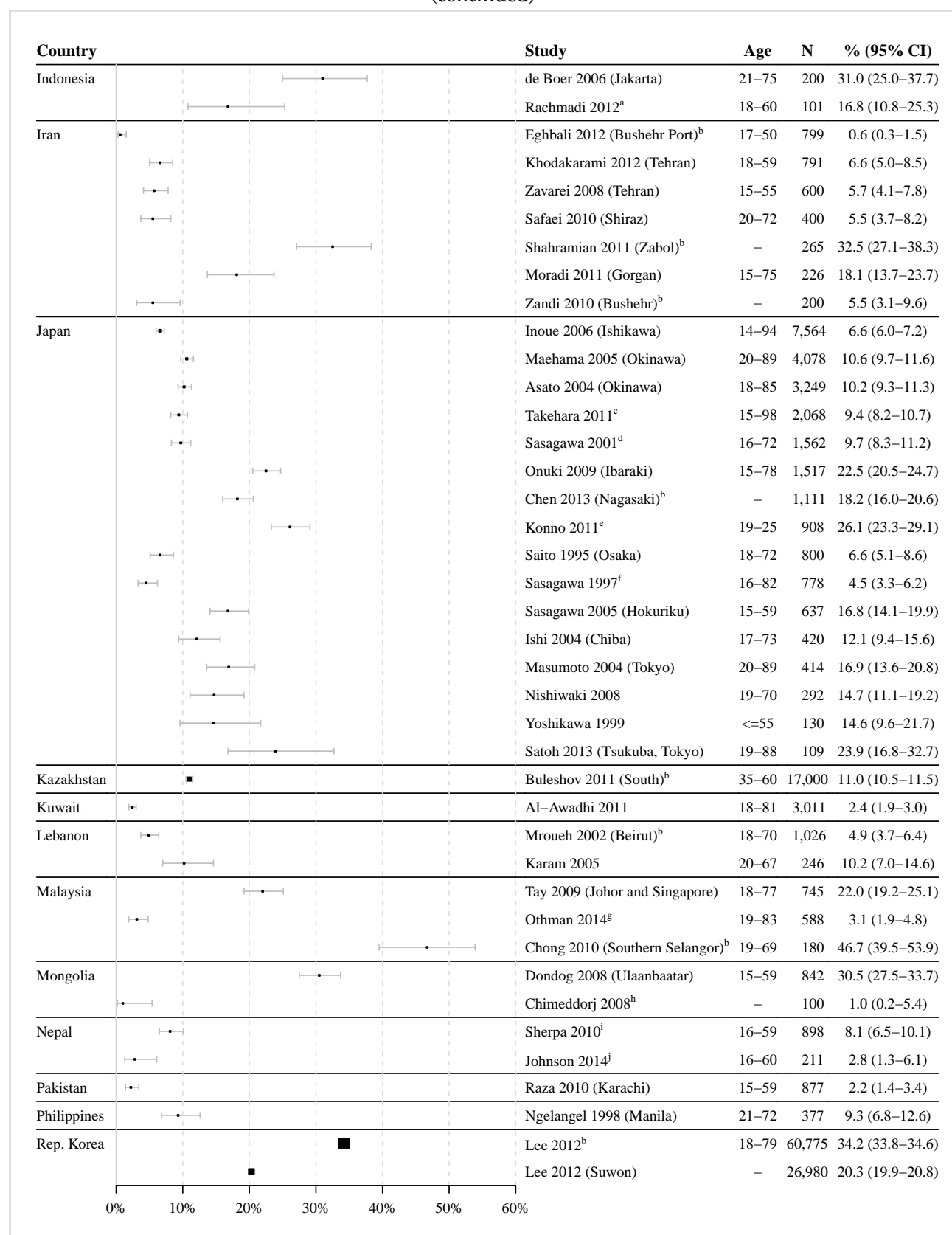
ⁱ Govindpuri (New Delhi)

^j Few HPV types tested: 16, 18 only

^k Few HPV types tested: 16 only

Data sources: See references in Section 9.

Figure 57: Prevalence of HPV among women with normal cervical cytology in Asia by country and study (continued)



(Continued on next page)

Data updated on 15 Dec 2016 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

^aJakarta, Tasikmalaya and Bali

(Continued on next page)

(Figure 57 – continued from previous page)

^b Women from the general population, including some with cytological cervical abnormalities

^c Few HPV types tested: 16, 18, 52, 58 only

^d Hokuriku (Fukui, Ishikawa and Toyama)

^e Aomori, Tokyo, Fukui, Osaka, Hiroshima, Miyazaki and Kagoshima

^f Ishikawa and Toyama

^g North-Eastern region or West Malaysia

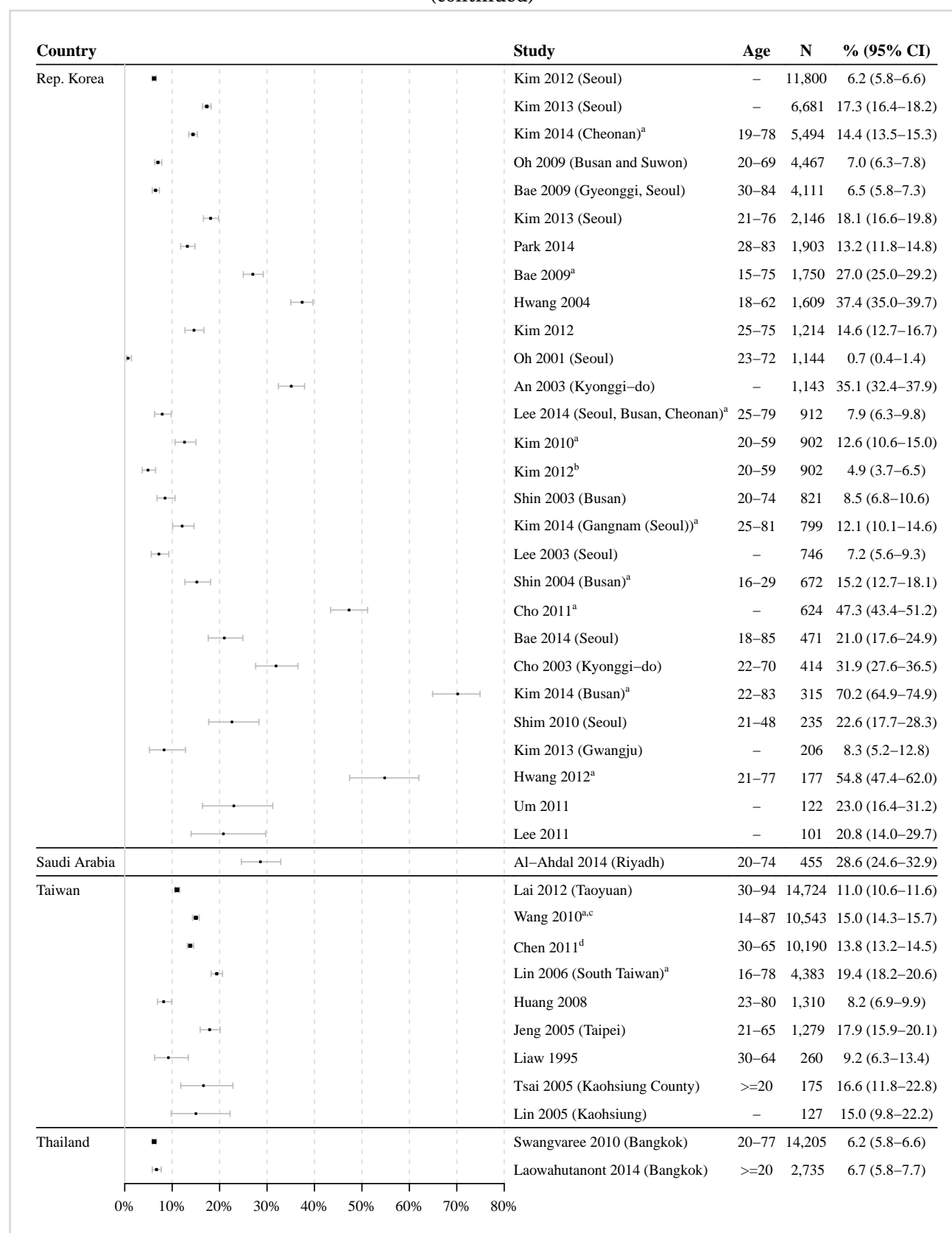
^h Few HPV types tested: 16 only

ⁱ Bharatpur (Chitawan Province)

^j Sanphebagar Village (Achham District)

Data sources: See references in Section 9.

Figure 58: Prevalence of HPV among women with normal cervical cytology in Asia by country and study (continued)



(Continued on next page)

Data updated on 15 Dec 2016 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

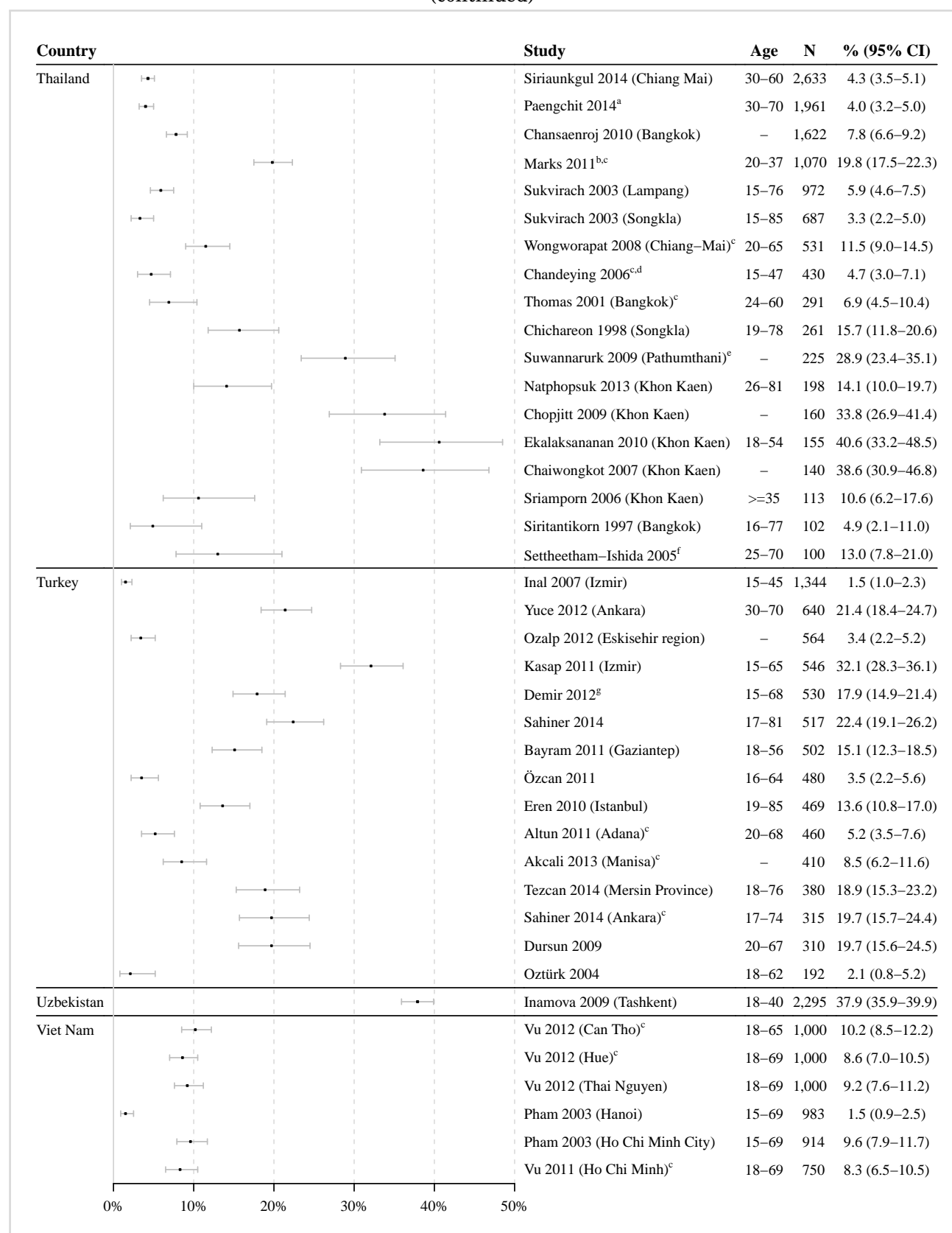
^a Women from the general population, including some with cytological cervical abnormalities

(Continued on next page)

^b Few HPV types tested: 6, 11, 42, 43, 44 only
^c Taipei, Taoyuan, Chungli, Hsinchu, Keelung)
^d Sanchi, Chutung, Potzu, Kaoshu, Makung, Paihsa and Huhsi
Data sources: See references in Section 9.

(Figure 58 – continued from previous page)

Figure 59: Prevalence of HPV among women with normal cervical cytology in Asia by country and study (continued)



(Continued on next page)

Data updated on 15 Dec 2016 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

^aLampang Province

(Continued on next page)

(Figure 59 – continued from previous page)

^b Chiang Mai, Khon Kaen, Bangkok, Songkla and Hat Yai

^c Women from the general population, including some with cytological cervical abnormalities

^d Hat Yai (South Thailand)

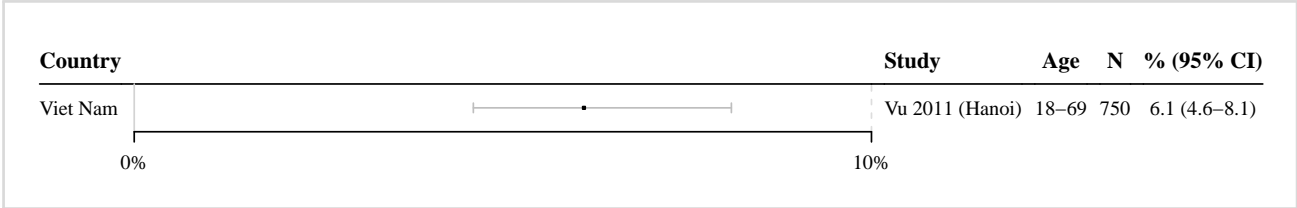
^e Few HPV types tested: 16, 18, 31, 33 only

^f Khon Kaen

^g Istanbul, Ankara, Antalya, Nigde and Elazig

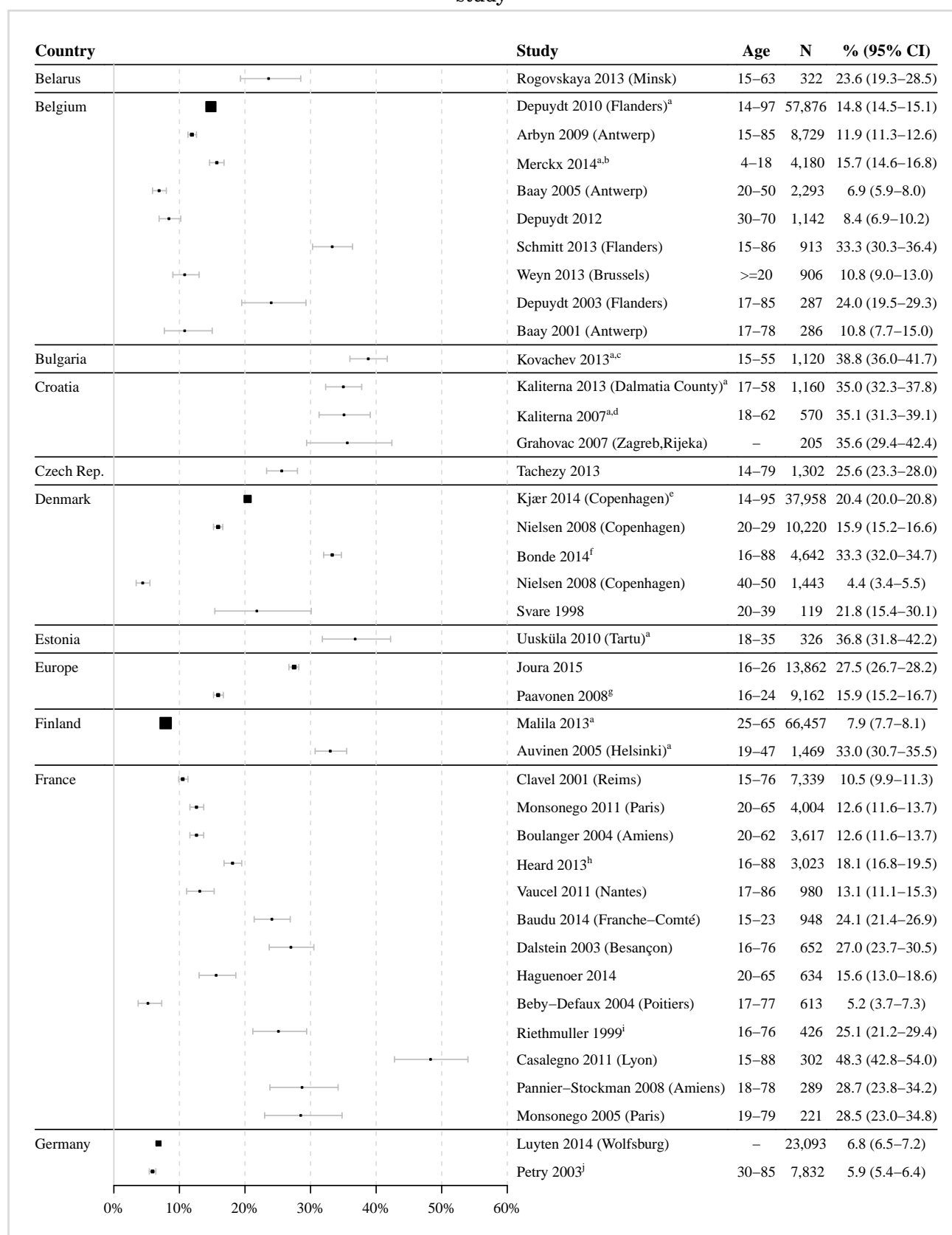
Data sources: See references in Section 9.

Figure 60: Prevalence of HPV among women with normal cervical cytology in Asia by country and study
(continued)



Data updated on 15 Dec 2016 (data as of 30 Jun 2015).
95% CI: 95% Confidence Interval; N: number of women tested;
The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.
Data sources: See references in Section 9.

Figure 61: Prevalence of HPV among women with normal cervical cytology in Europe by country and study



(Continued on next page)

Data updated on 15 Dec 2016 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

^a Women from the general population, including some with cytological cervical abnormalities

(Continued on next page)

(Figure 61 – continued from previous page)

^b Flanders and Brussels

^c Sofia, Plovdiv, Varna, Burgas, Pleven and Vidin

^d Split and Dalmatian County

^e HPV prevalence for high-risk HPV types

^f Copenhagen and Frederiksberg

^g Czech Republic, Denmark, England, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Spain, and Sweden

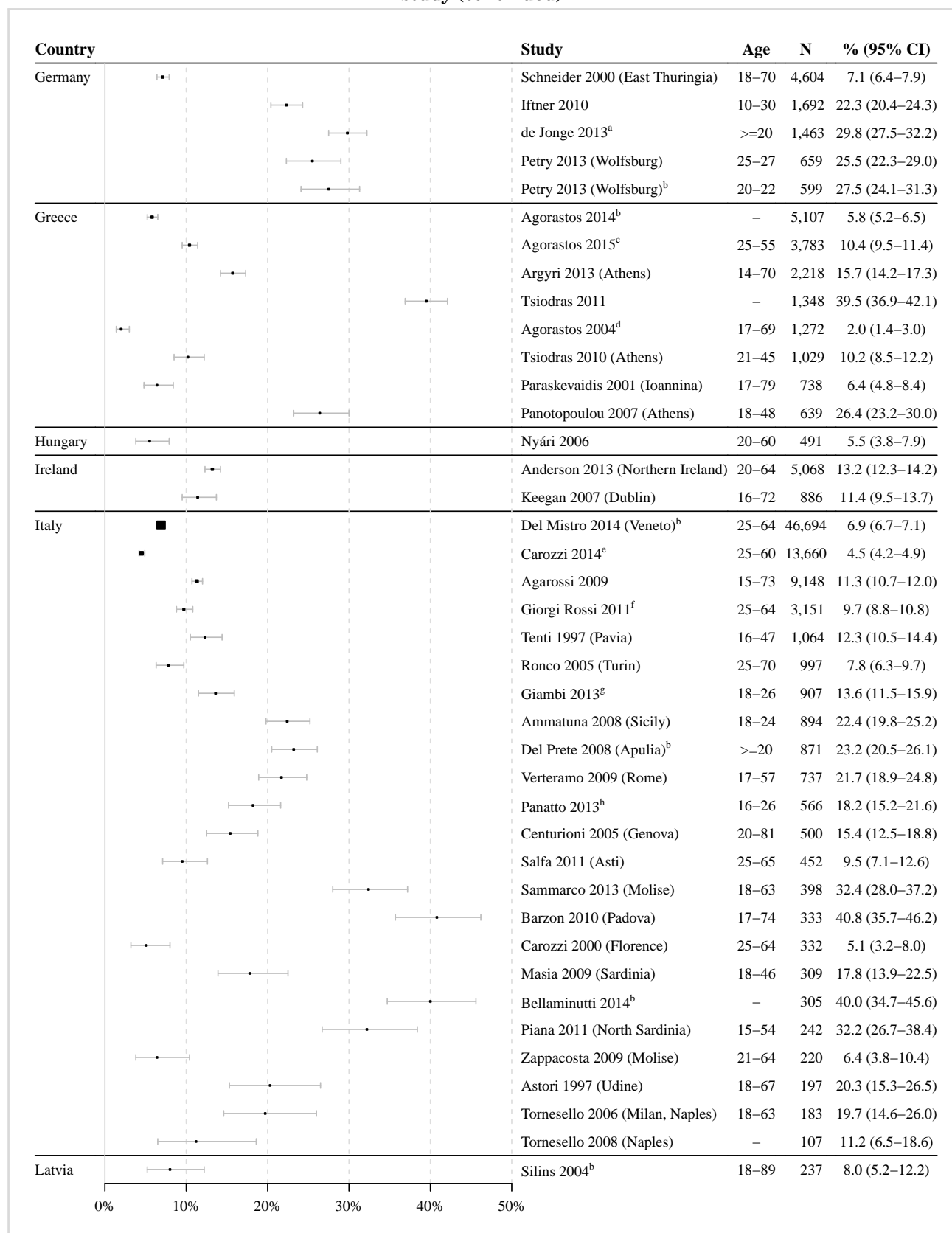
^h Alsace, Auvergne, Centre - Pays de Loire, Ile-de-France and Vaucluse

ⁱ Besançon, Belfort

^j Hannover and Tuebingen

Data sources: See references in Section 9.

Figure 62: Prevalence of HPV among women with normal cervical cytology in Europe by country and study (continued)



(Continued on next page)

Data updated on 15 Dec 2016 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

^aNordrhein-Westfalen, Niedersachsen, Schleswig-Holstein, Bremen and Hamburg

(Continued on next page)

(Figure 62 – continued from previous page)

^b Women from the general population, including some with cytological cervical abnormalities

^c Athens, Thessaloniki, Larissa, Patras and Alexandroupolis

^d Thessaloniki, Themi, Mihaniona, Corfu, Veria and Serres

^e Turin, Padua, Trento and Florence

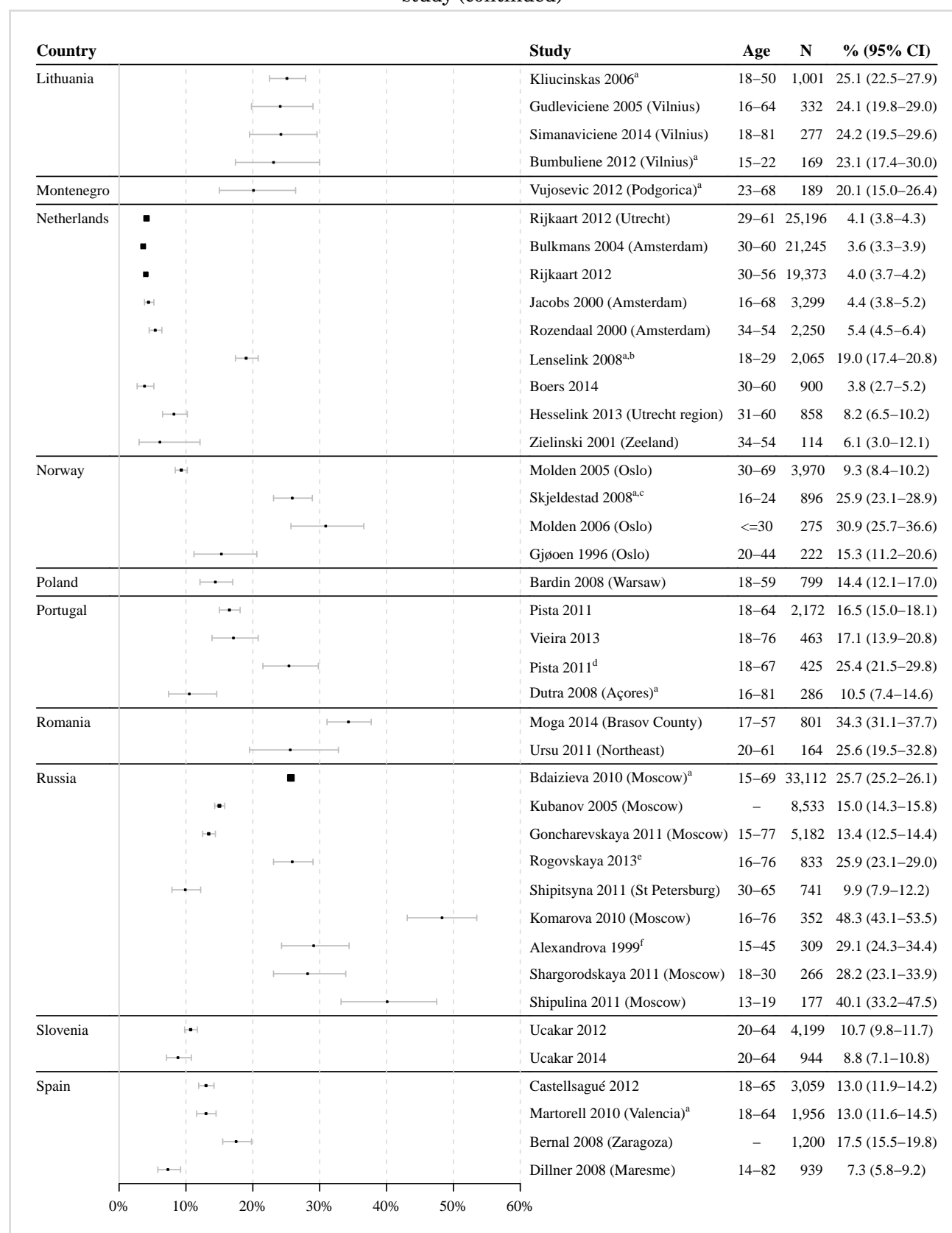
^f Abruzzo, Campania, Lazio, Sardinia and Sicily

^g Abruzzo, Campania, Lazio, Tuscany, Emilia-Romagna and Piedmont

^h Turin, Milan and Genoa

Data sources: See references in Section 9.

Figure 63: Prevalence of HPV among women with normal cervical cytology in Europe by country and study (continued)



(Continued on next page)

Data updated on 15 Dec 2016 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

^a Women from the general population, including some with cytological cervical abnormalities

(Continued on next page)

^b Arnhem, Nijmegen, and Den Bosch

^c Oslo, Trondheim, and Levanger

^d Lisbon area and southern region

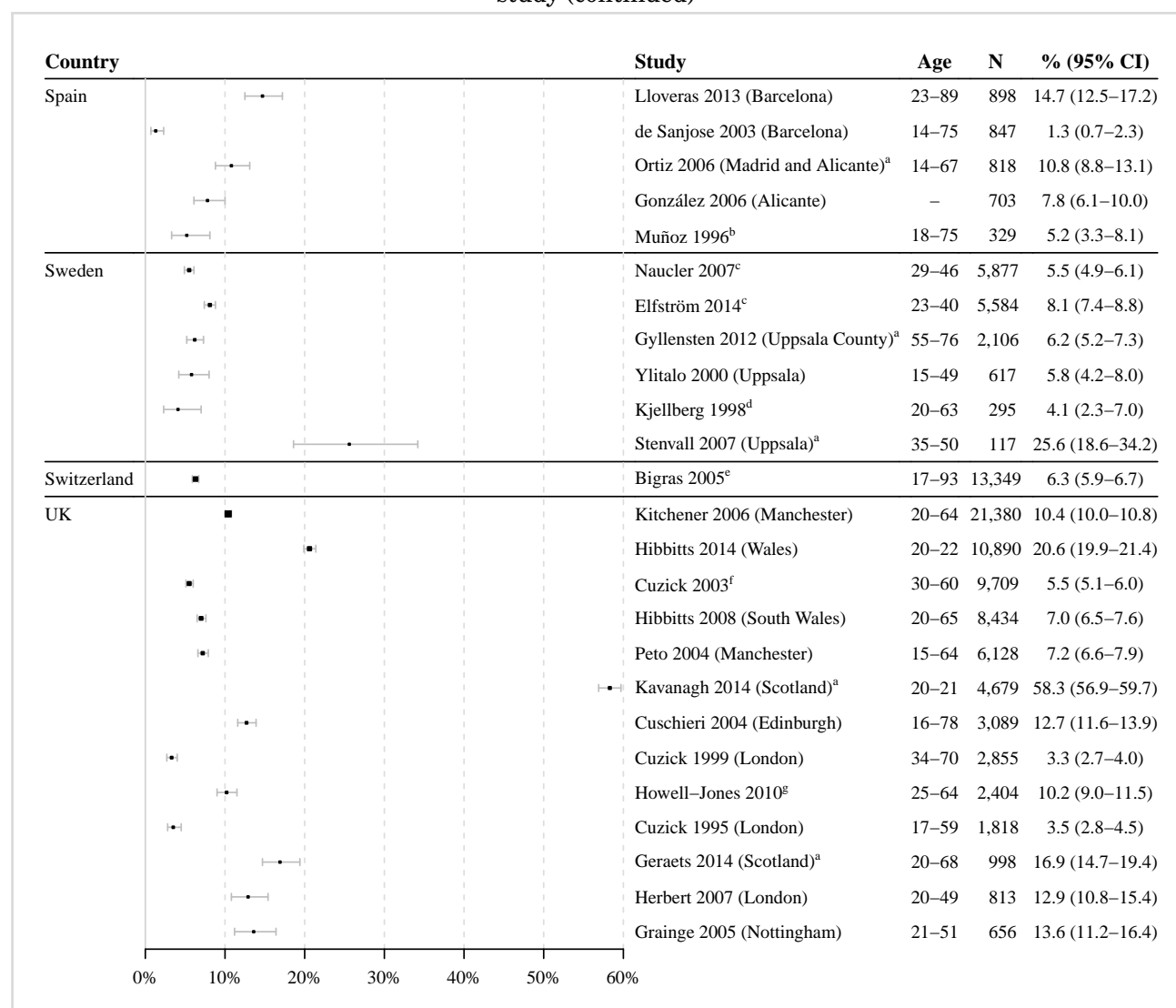
^e Moscow and Novgorod

^f St. Petersburg

Data sources: See references in Section 9.

(Figure 63 – continued from previous page)

Figure 64: Prevalence of HPV among women with normal cervical cytology in Europe by country and study (continued)



Data updated on 15 Dec 2016 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

^a Women from the general population, including some with cytological cervical abnormalities

^b Alava, Girona, Guipuzcoa, Murcia, Navarra, Salamanca, Sevilla, Vizcaya, Zaragoza

^c Gothenburg, Malmö, Uppsala, Umeå, and Stockholm

^d Västerbotten County

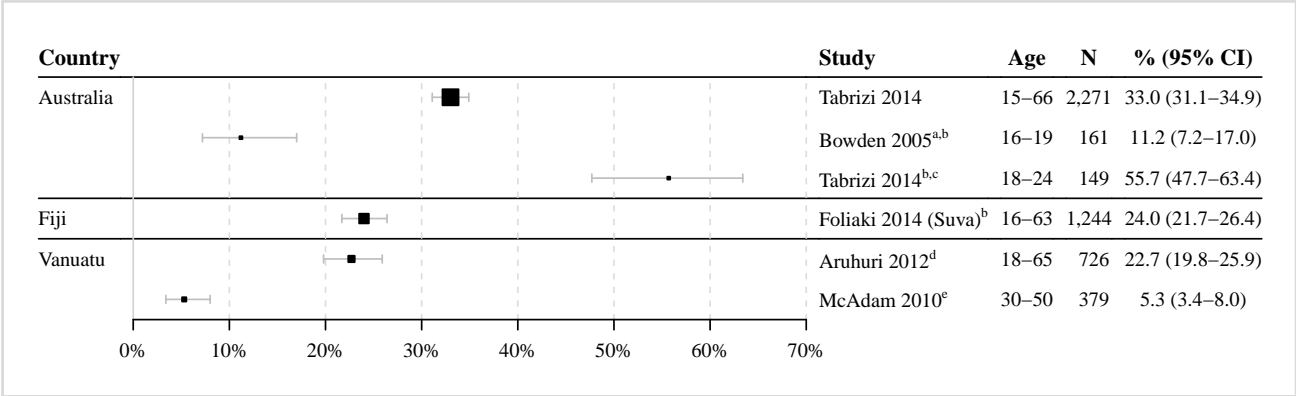
^e Geneva, Vaud, Neuchâtel, Fribourg, Valais and Tessin

^f Birmingham, Edinburgh, London, Manchester and Mansfield

^g Gateshead, Birmingham, London, Gloucestershire and Norfolk

Data sources: See references in Section 9.

Figure 65: Prevalence of HPV among women with normal cervical cytology in Oceania by country and study



Data updated on 15 Dec 2016 (data as of 30 Jun 2015).
95% CI: 95% Confidence Interval; N: number of women tested;
The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.
^a Australian Capital Territory
^b Women from the general population, including some with cytological cervical abnormalities
^c Sydney, Melbourne, Perth
^d Santo Urban (Espiritu Santo Island) and Porto Vila (Efate Island)
^e Port Vila (Efate Island)
Data sources: See references in Section 9.

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

Table 13: Prevalence of HPV 16/18 in women with normal cervical cytology, precancerous cervical lesions and invasive cervical cancer by World region and sub-regions

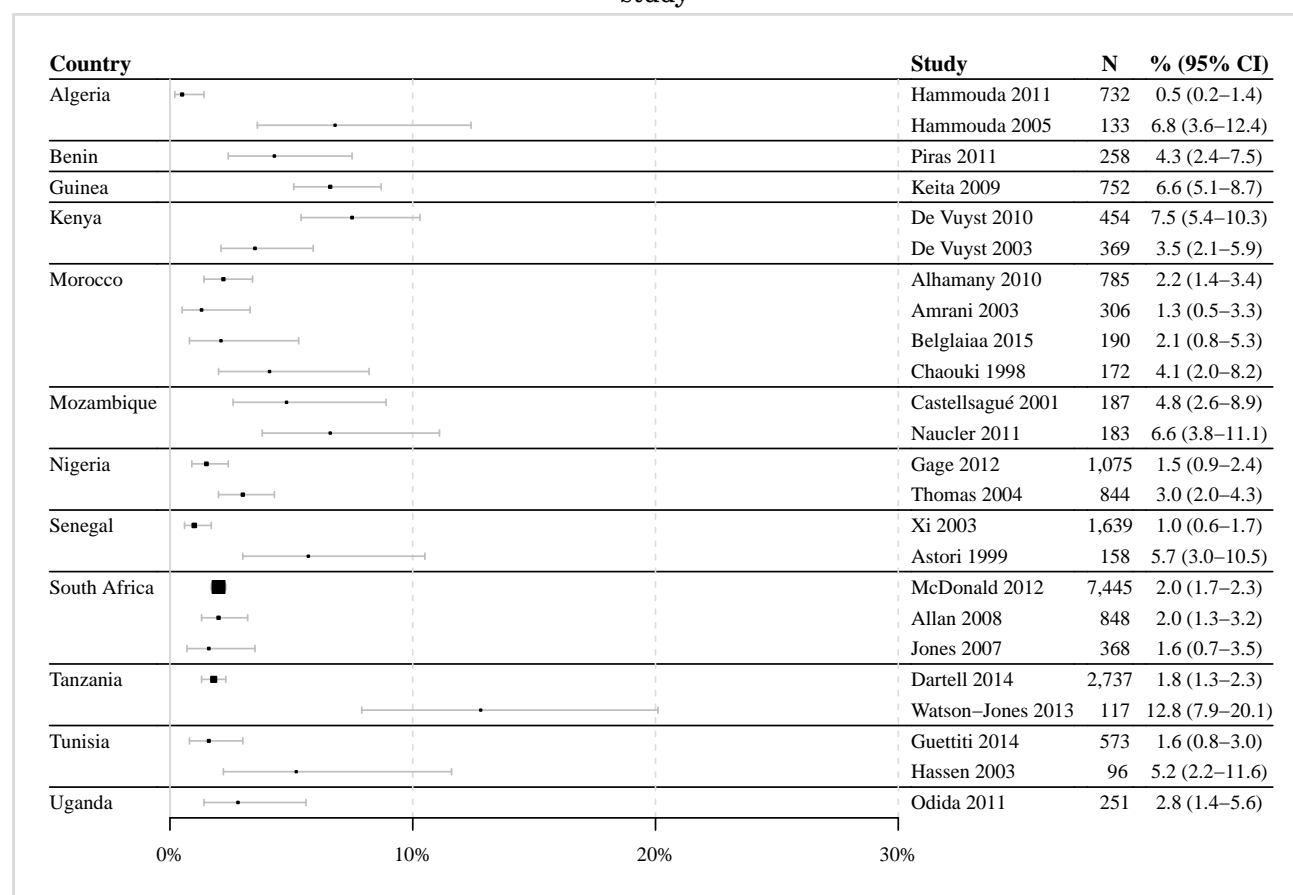
Country /Region	Normal cytology		Low-grade lesions		High-grade lesions		Cervical cancer	
	No. tested	HPV Prev (95% CI)	No. tested	HPV Prev (95% CI)	No. tested	HPV Prev (95% CI)	No. tested	HPV Prev (95% CI)
World	514,928	4.1 (4.0-4.2)	38,191	25.8 (25.4-26.2)	50,202	51.9 (51.5-52.3)	58,796	69.4 (69.0-69.8)
Less developed regions	177,536	4.4 (4.3-4.5)	9,696	25.1 (24.2-26.0)	13,447	46.7 (45.9-47.5)	25,123	69.5 (68.9-70.1)
More developed regions	334,356	3.9 (3.8-4.0)	28,495	25.9 (25.4-26.4)	33,652	54.1 (53.6-54.6)	25,105	71.8 (71.2-72.4)
Africa	20,672	3.7 (3.5-4.0)	465	24.9 (21.2-29.1)	399	38.6 (34.0-43.5)	3,814	67.2 (65.7-68.7)
Eastern Africa	4,298	4.8 (4.2-5.5)	150	30.0 (23.2-37.8)	138	45.7 (37.6-54.0)	1,329	67.9 (65.3-70.3)
Middle Africa	-	-	24	12.5 (4.3-31.0)	-	-	-	-
Northern Africa	2,987	2.7 (2.2-3.4)	24	20.8 (9.2-40.5)	-	-	653	78.9 (75.6-81.8)
Southern Africa	8,661	3.2 (2.8-3.6)	57	21.1 (12.5-33.3)	98	33.7 (25.1-43.5)	791	62.5 (59.0-65.8)
Western Africa	4,726	4.3 (3.8-4.9)	210	24.3 (19.0-30.5)	163	35.6 (28.6-43.2)	926	55.6 (52.4-58.8)
Americas	110,268	5.4 (5.3-5.5)	9,893	26.7 (25.8-27.6)	13,590	56.9 (56.1-57.7)	10,022	68.2 (67.3-69.1)
Caribbean	323	15.8 (12.2-20.2)	263	7.6 (5.0-11.5)	285	32.6 (27.5-38.3)	133	60.2 (51.7-68.1)
Central America	18,421	4.7 (4.4-5.0)	1,424	15.0 (13.3-17.0)	559	40.8 (36.8-44.9)	2,897	63.1 (61.3-64.8)
Northern America	77,952	4.4 (4.3-4.5)	6,015	27.1 (26.0-28.2)	10,230	58.6 (57.6-59.6)	3,707	71.4 (69.9-72.8)
South America	13,771	12.1 (11.6-12.7)	2,191	35.6 (33.6-37.6)	2,516	56.3 (54.4-58.2)	6,239	62.6 (61.4-63.8)
Asia	145,664	3.4 (3.3-3.5)	7,959	21.2 (20.3-22.1)	13,444	42.1 (41.3-42.9)	20,766	68.9 (68.3-69.5)
Central Asia	-	-	-	-	-	-	-	-
Eastern Asia	116,022	3.2 (3.1-3.3)	6,981	20.3 (19.4-21.3)	10,551	41.0 (40.1-41.9)	15,236	65.0 (64.2-65.8)
South-Eastern Asia	8,755	3.0 (2.7-3.4)	474	27.4 (23.6-31.6)	1,044	33.4 (30.6-36.3)	3,350	70.4 (68.8-71.9)
Southern Asia	14,520	4.4 (4.1-4.7)	225	30.2 (24.6-36.5)	287	63.4 (57.7-68.8)	2,757	80.3 (78.8-81.7)
Western Asia	6,367	2.3 (2.0-2.7)	279	24.0 (19.4-29.4)	1,562	52.3 (49.8-54.8)	929	72.4 (69.5-75.2)
Europe	232,291	3.8 (3.7-3.9)	19,401	27.1 (26.5-27.7)	21,140	54.5 (53.8-55.2)	18,406	74.0 (73.4-74.6)
Eastern Europe	7,818	9.7 (9.1-10.4)	1,058	31.8 (29.0-34.6)	661	60.5 (56.7-64.2)	1,677	84.7 (82.9-86.3)
Northern Europe	119,652	4.5 (4.4-4.6)	4,949	30.6 (29.3-31.9)	8,448	54.9 (53.8-56.0)	5,921	77.0 (75.9-78.1)
Southern Europe	50,059	3.2 (3.0-3.4)	10,519	25.4 (24.6-26.2)	5,866	53.2 (51.9-54.5)	4,037	68.0 (66.5-69.4)
Western Europe	57,216	2.6 (2.5-2.7)	2,875	25.2 (23.7-26.8)	3,062	59.4 (57.7-61.1)	3,028	78.7 (77.2-80.1)
Oceania	2,997	8.3 (7.4-9.4)	473	27.1 (23.3-31.2)	1,629	59.1 (56.7-61.5)	855	76.6 (73.7-79.3)
Australia & New Zealand	2,271	8.5 (7.4-9.7)	473	27.1 (23.3-31.2)	1,517	58.4 (55.9-60.9)	785	76.1 (72.9-78.9)
Melanesia	726	7.7 (6.0-9.9)	-	-	112	68.8 (59.7-76.6)	70	82.9 (72.4-89.9)
Micronesia	-	-	-	-	-	-	-	-
Polynesia	-	-	-	-	-	-	-	-

Data updated on 19 May 2017 (data as of 30 Jun 2015 / 30 Jun 2015).

95% CI: 95% Confidence Interval; High-grade lesions: CIN-2, CIN-3, CIS or HSIL; Low-grade lesions: LSIL or CIN-1;

Data sources: See references in Section 9.

Figure 66: Prevalence of HPV 16 among women with normal cervical cytology in Africa by country and study



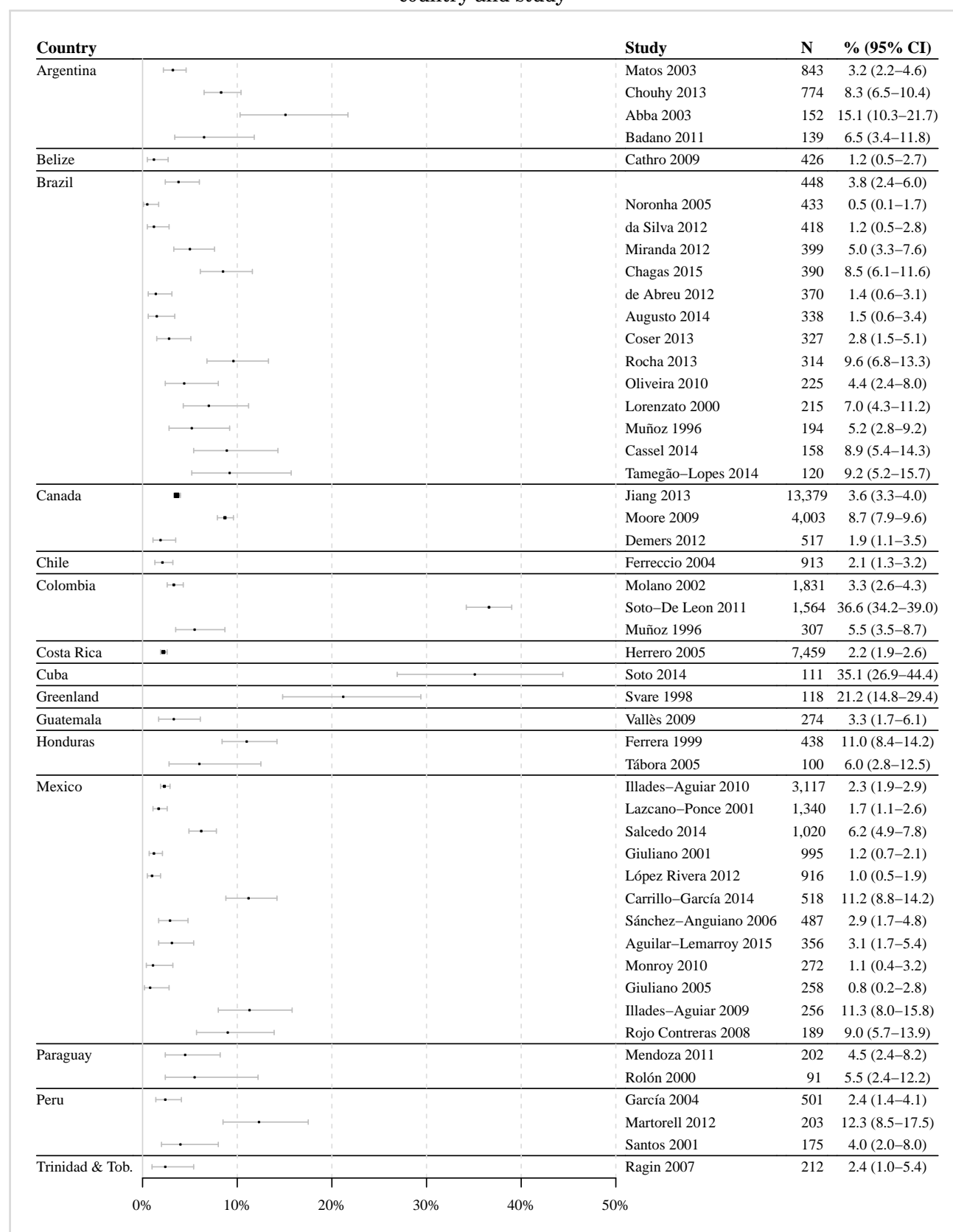
Data updated on 15 Dec 2016 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

Data sources: See references in Section 9.

Figure 67: Prevalence of HPV 16 among women with normal cervical cytology in the Americas by country and study



(Continued on next page)

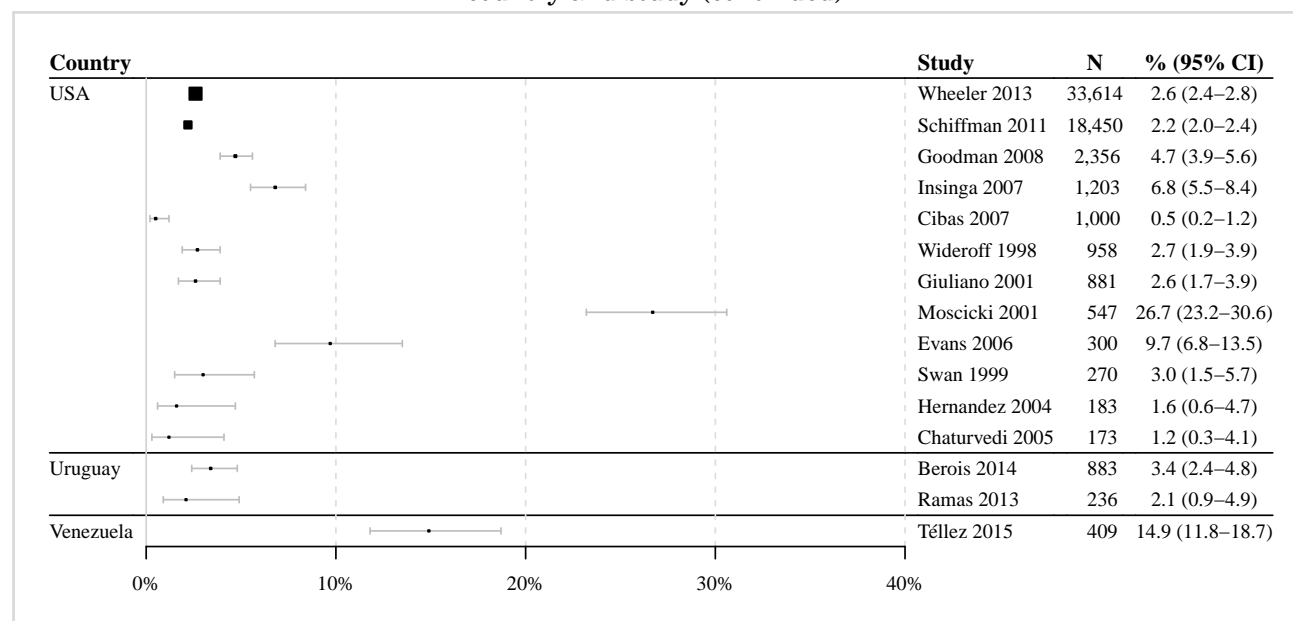
Data updated on 15 Dec 2016 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

Data sources: See references in Section 9.

Figure 68: Prevalence of HPV 16 among women with normal cervical cytology in the Americas by country and study (continued)



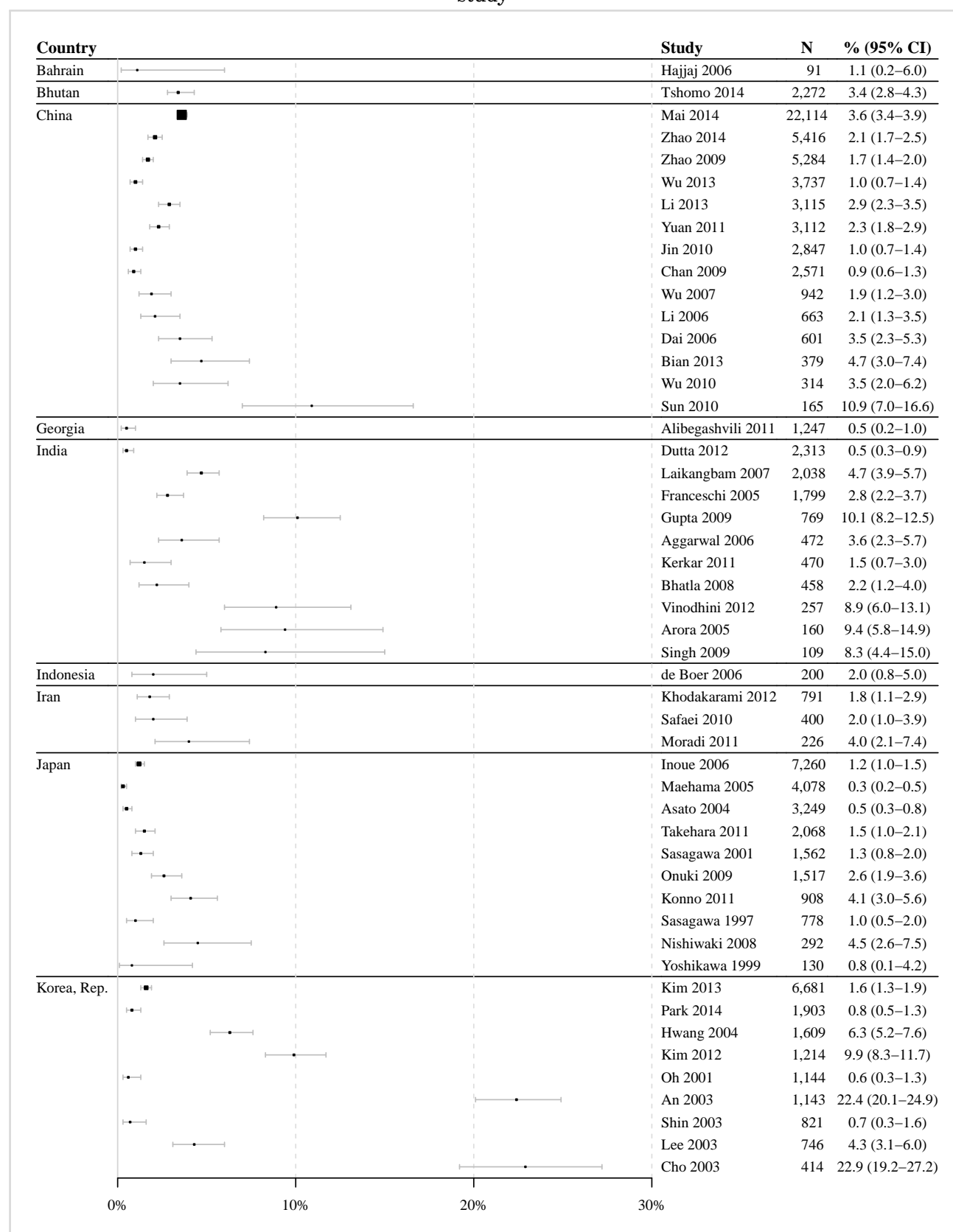
Data updated on 15 Dec 2016 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

Data sources: See references in Section 9.

Figure 69: Prevalence of HPV 16 among women with normal cervical cytology in Asia by country and study



(Continued on next page)

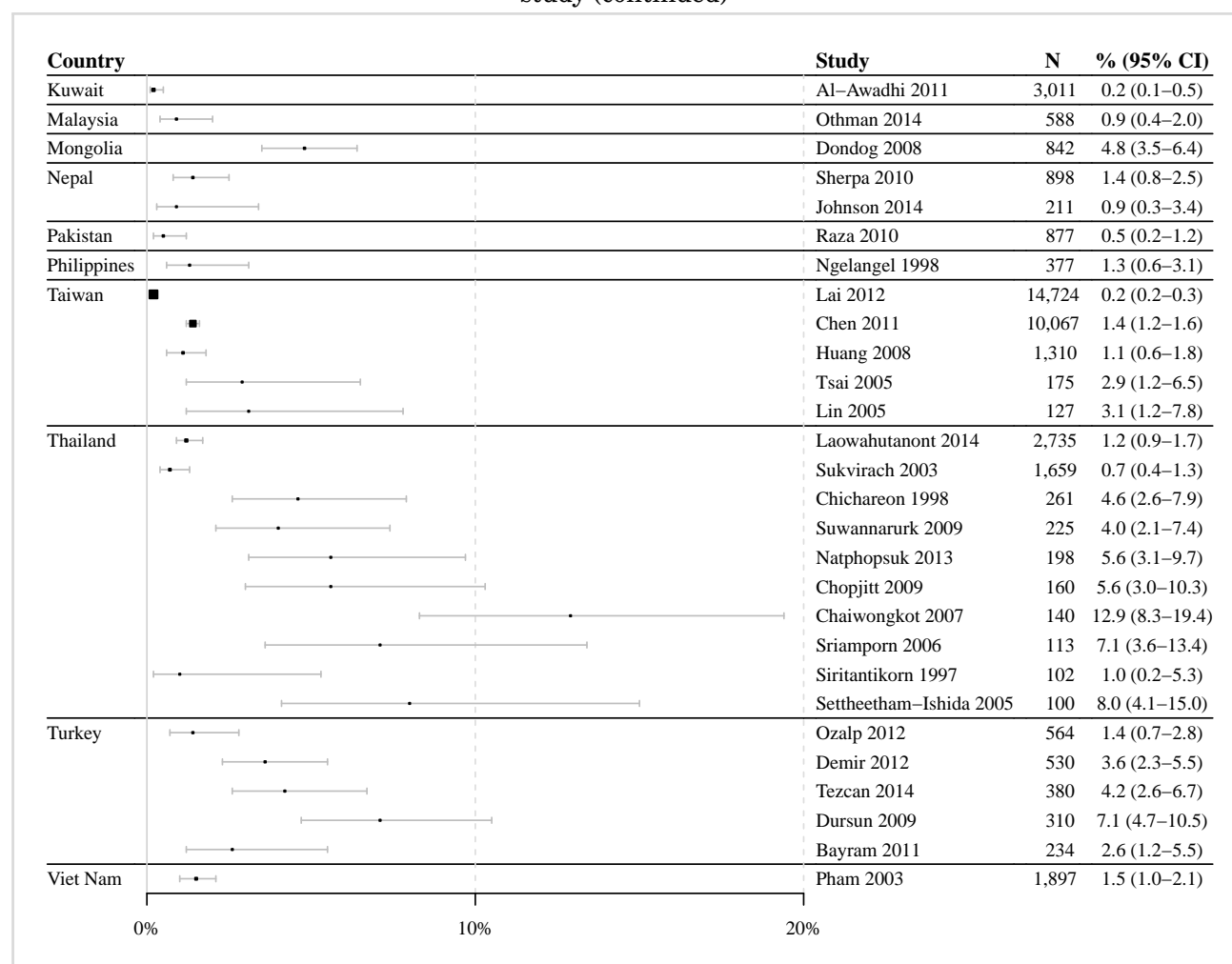
Data updated on 15 Dec 2016 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

Data sources: See references in Section 9.

Figure 70: Prevalence of HPV 16 among women with normal cervical cytology in Asia by country and study (continued)



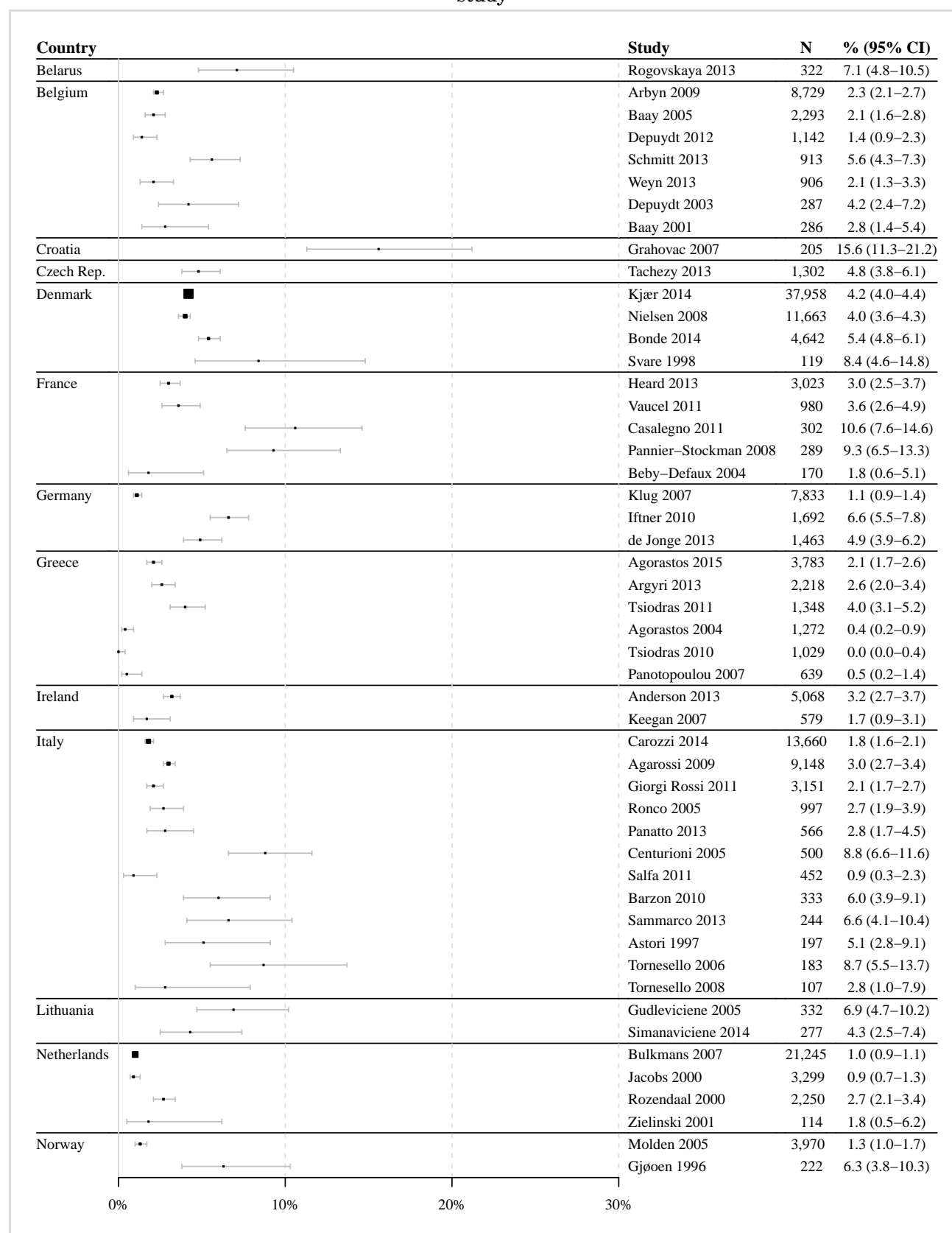
Data updated on 15 Dec 2016 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

Data sources: See references in Section 9.

Figure 71: Prevalence of HPV 16 among women with normal cervical cytology in Europe by country and study



(Continued on next page)

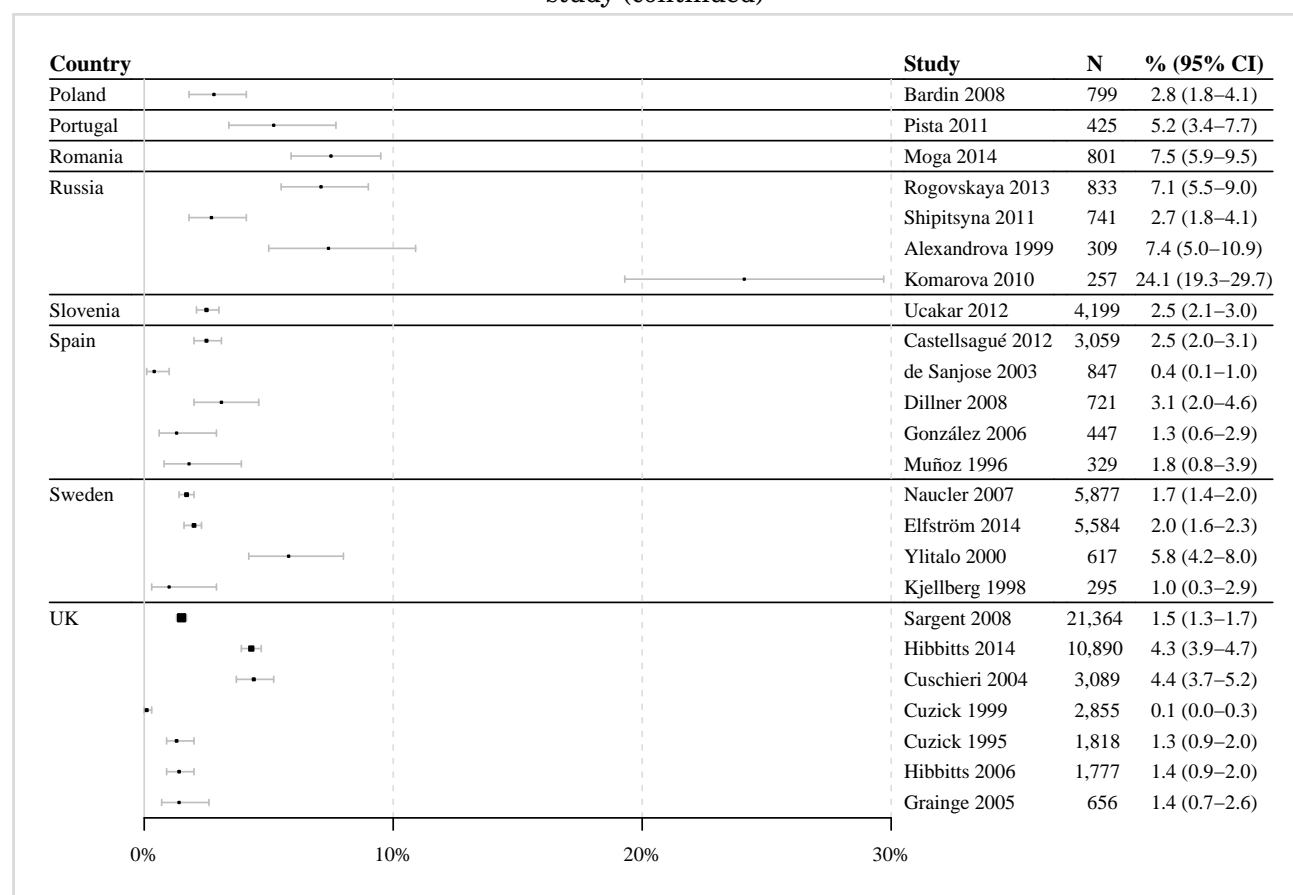
Data updated on 15 Dec 2016 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

Data sources: See references in Section 9.

Figure 72: Prevalence of HPV 16 among women with normal cervical cytology in Europe by country and study (continued)



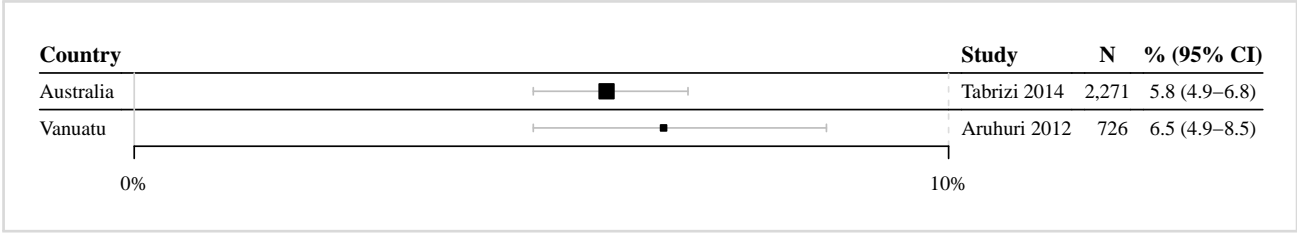
Data updated on 15 Dec 2016 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

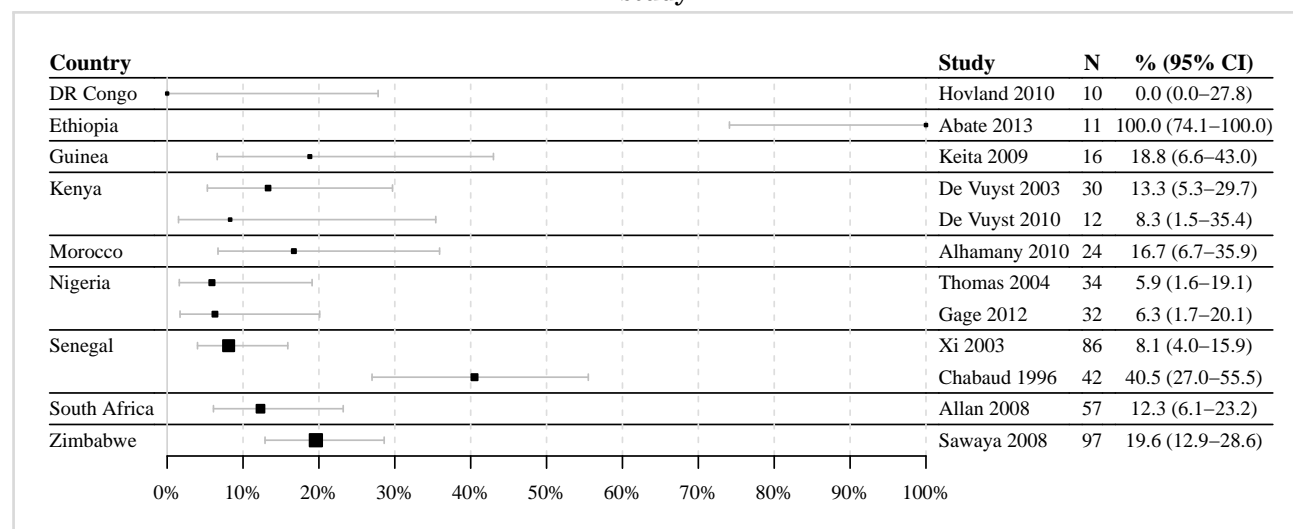
Data sources: See references in Section 9.

Figure 73: Prevalence of HPV 16 among women with normal cervical cytology in Oceania by country and study



Data updated on 15 Dec 2016 (data as of 30 Jun 2015).
95% CI: 95% Confidence Interval; N: number of women tested;
The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.
Data sources: See references in Section 9.

Figure 74: Prevalence of HPV 16 among women with low-grade cervical lesions in Africa by country and study



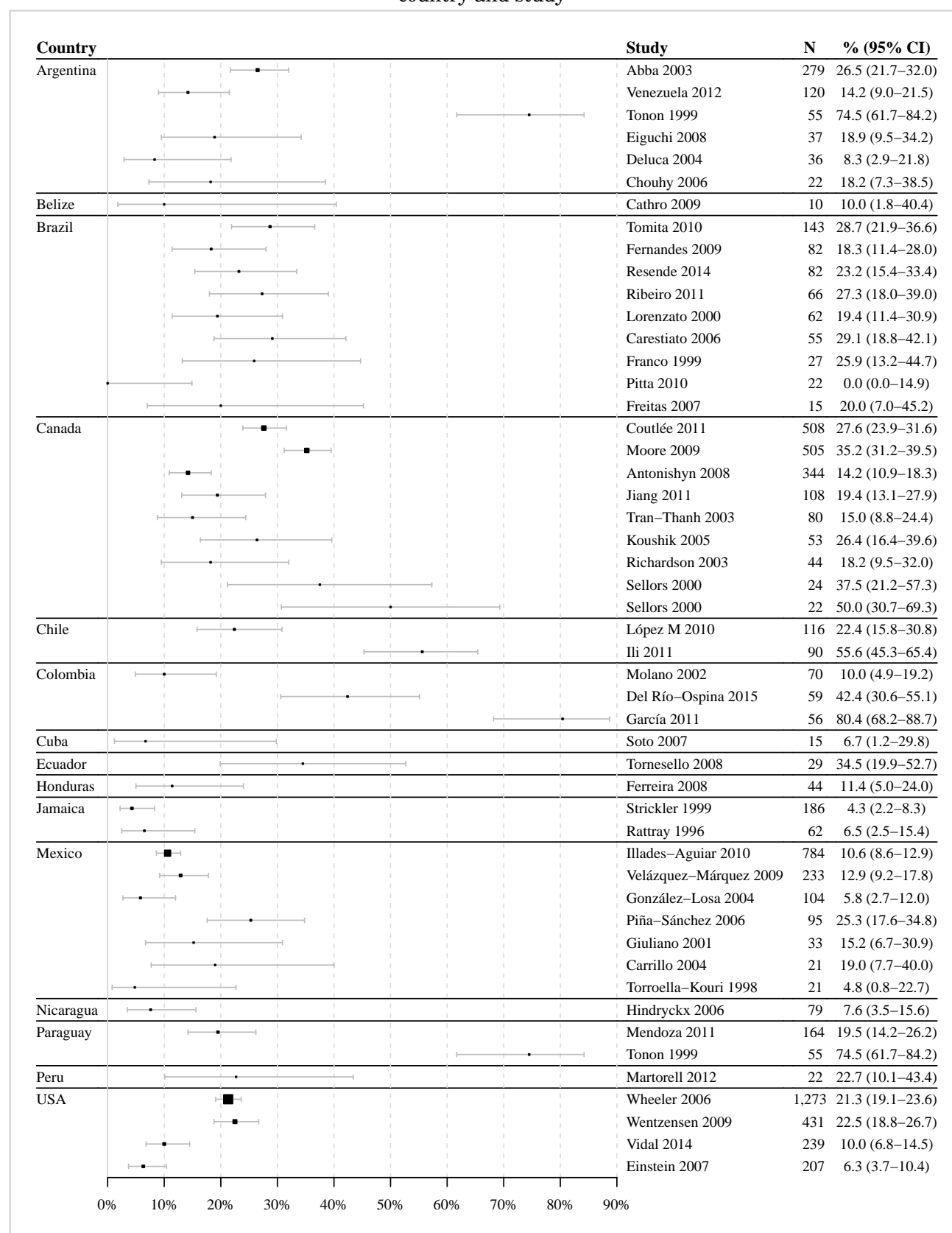
Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; Low-grade lesions: LSIL or CIN-1; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

Data sources: See references in Section 9.

Figure 75: Prevalence of HPV 16 among women with low-grade cervical lesions in the Americas by country and study



(Continued on next page)

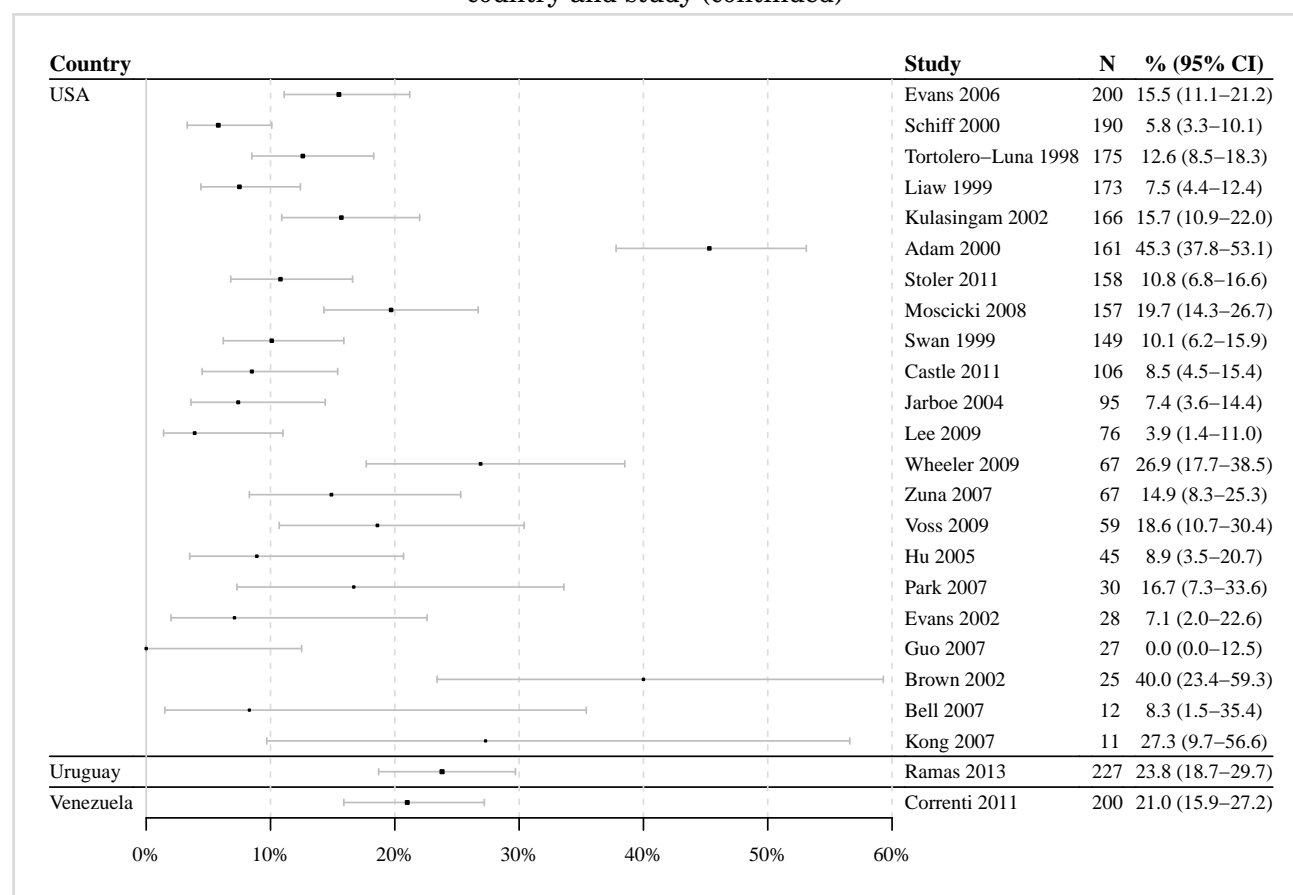
Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; Low-grade lesions: LSIL or CIN-1; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

Data sources: See references in Section 9.

Figure 76: Prevalence of HPV 16 among women with low-grade cervical lesions in the Americas by country and study (continued)



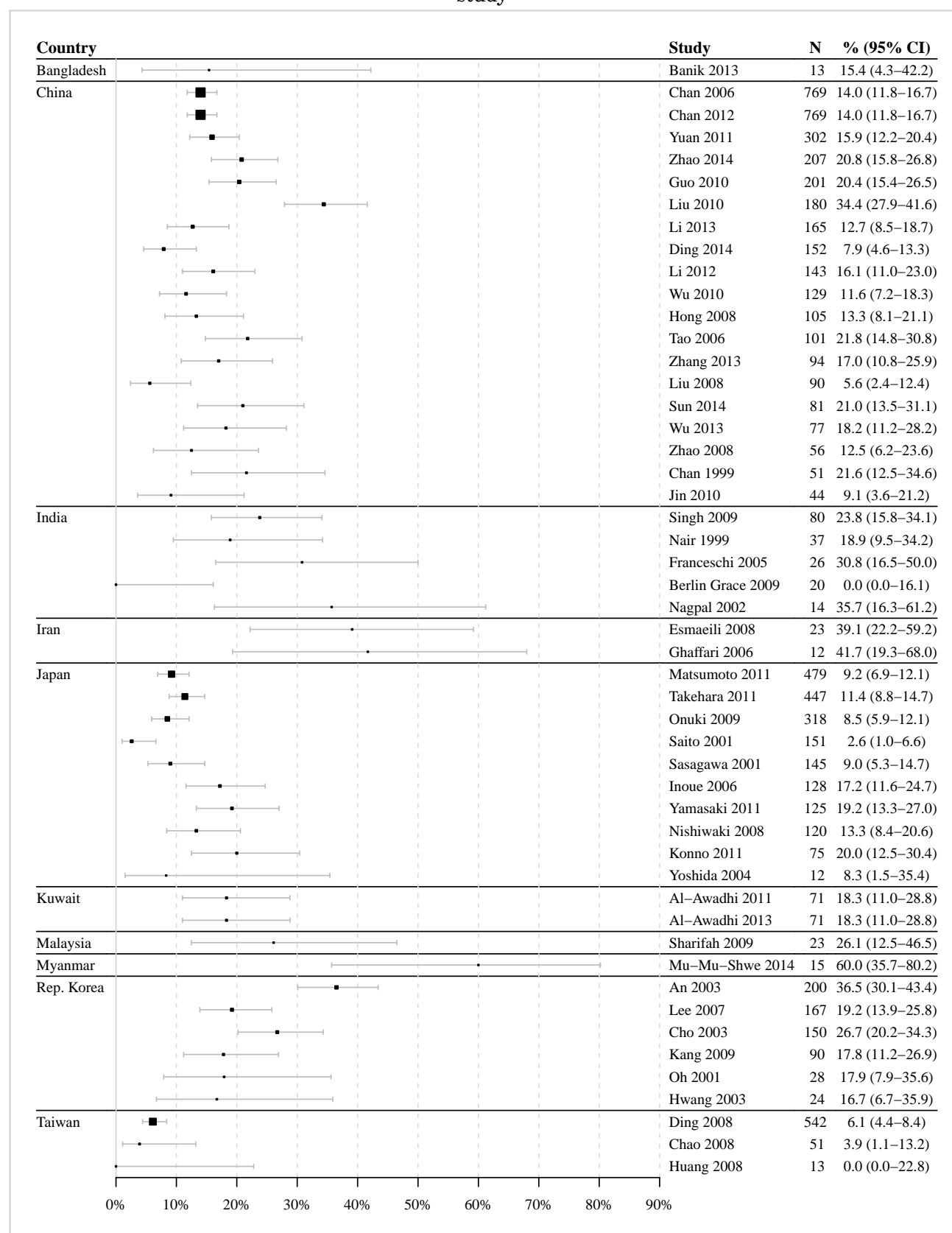
Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; Low-grade lesions: LSIL or CIN-1; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

Data sources: See references in Section 9.

Figure 77: Prevalence of HPV 16 among women with low-grade cervical lesions in Asia by country and study



(Continued on next page)

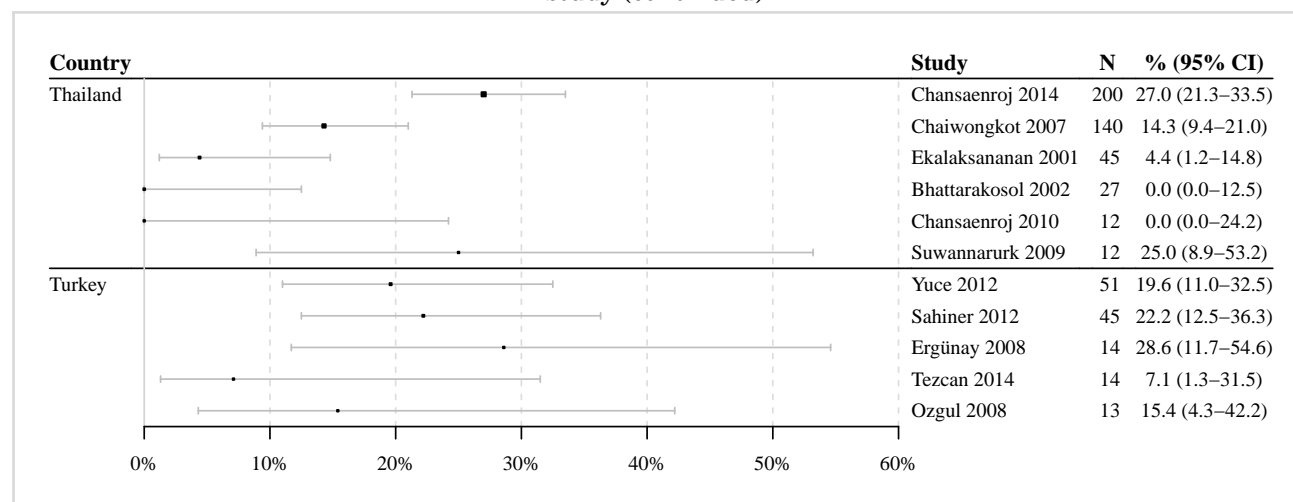
Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; Low-grade lesions: LSIL or CIN-1; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

Data sources: See references in Section 9.

Figure 78: Prevalence of HPV 16 among women with low-grade cervical lesions in Asia by country and study (continued)



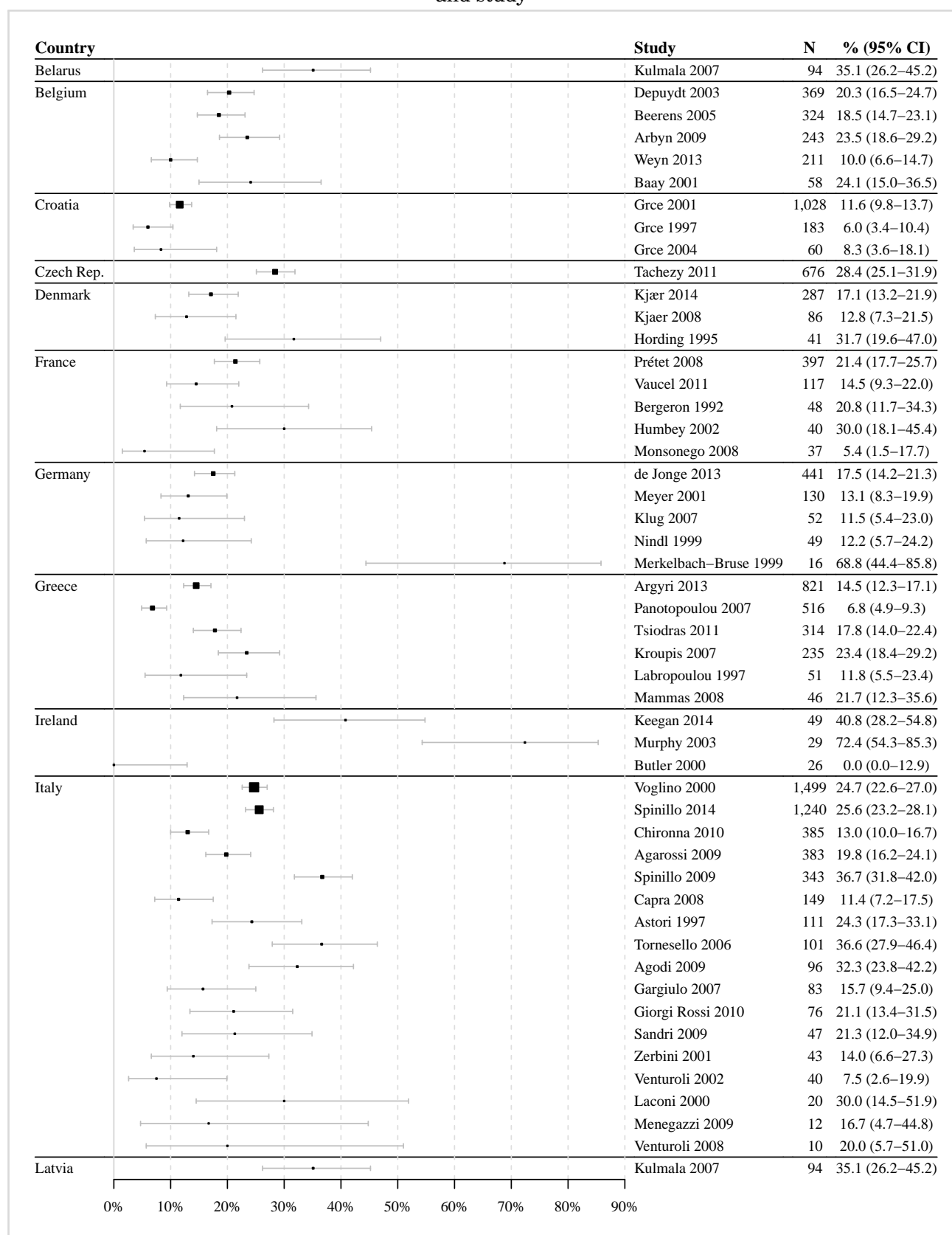
Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; Low-grade lesions: LSIL or CIN-1; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

Data sources: See references in Section 9.

Figure 79: Prevalence of HPV 16 among women with low-grade cervical lesions in Europe by country and study



(Continued on next page)

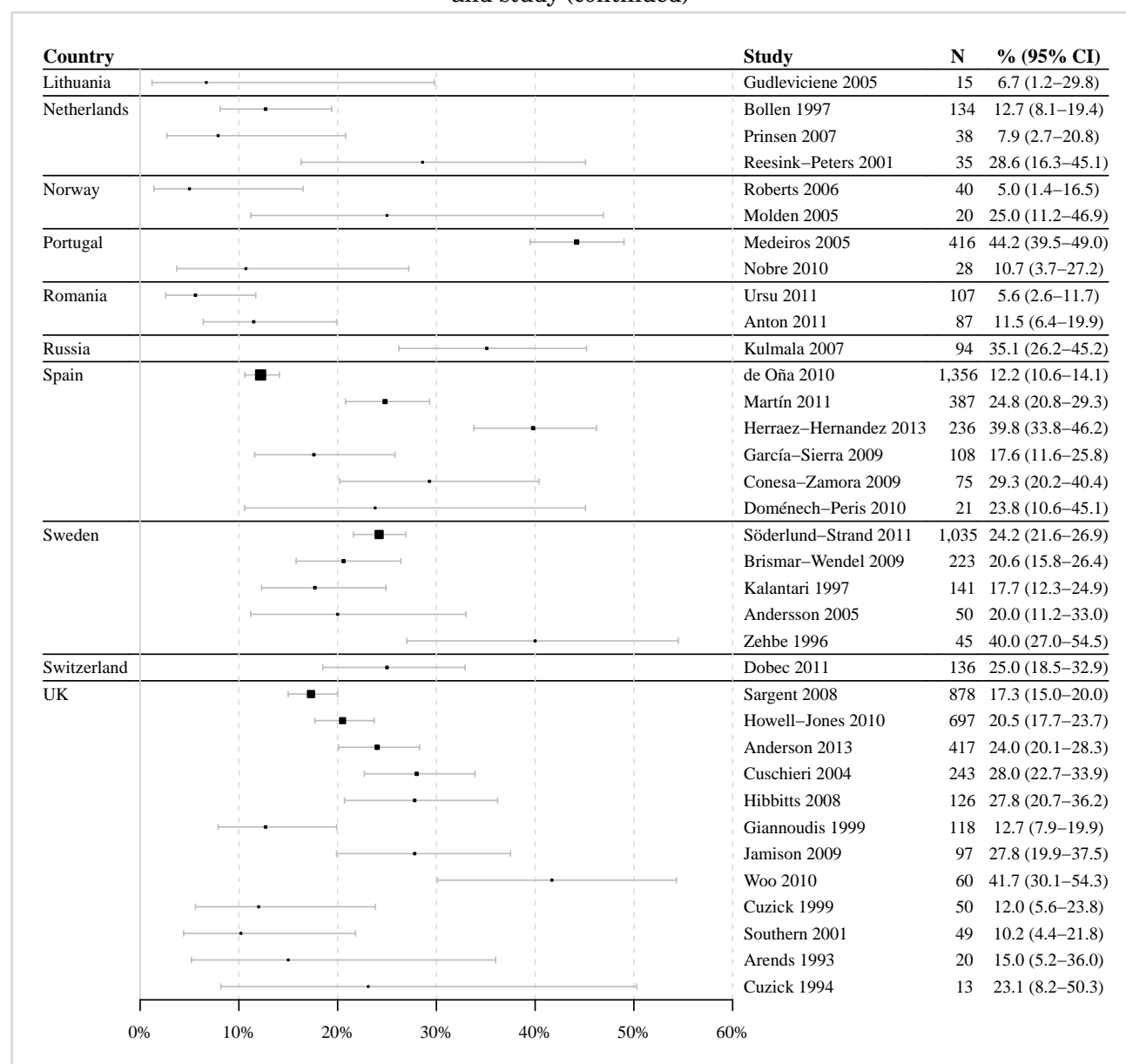
Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; Low-grade lesions: LSIL or CIN-1; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

Data sources: See references in Section 9.

Figure 80: Prevalence of HPV 16 among women with low-grade cervical lesions in Europe by country and study (continued)



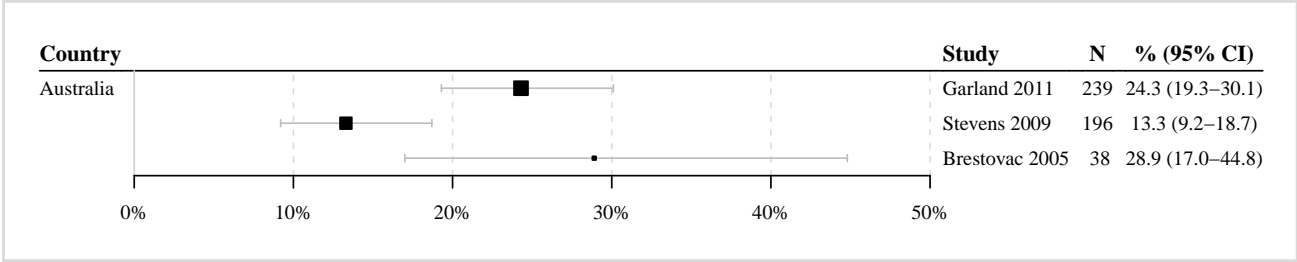
Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; Low-grade lesions: LSIL or CIN-1; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

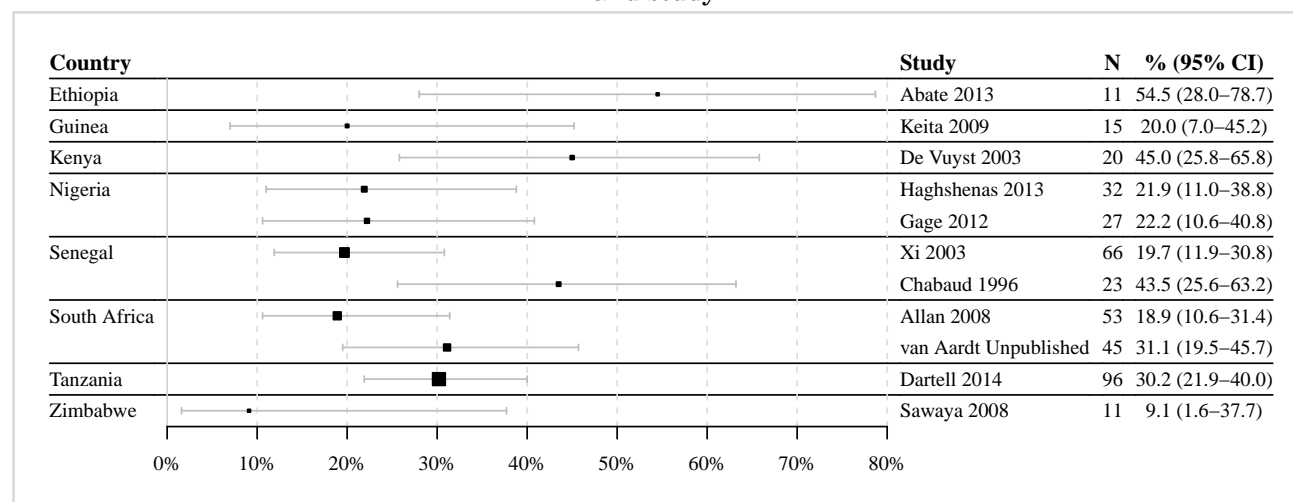
Data sources: See references in Section 9.

Figure 81: Prevalence of HPV 16 among women with low-grade cervical lesions in Oceania by country and study



Data updated on 28 Jun 2017 (data as of 30 Jun 2015).
95% CI: 95% Confidence Interval; Low-grade lesions: LSIL or CIN-1; N: number of women tested;
The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.
Data sources: See references in Section 9.

Figure 82: Prevalence of HPV 16 among women with high-grade cervical lesions in Africa by country and study



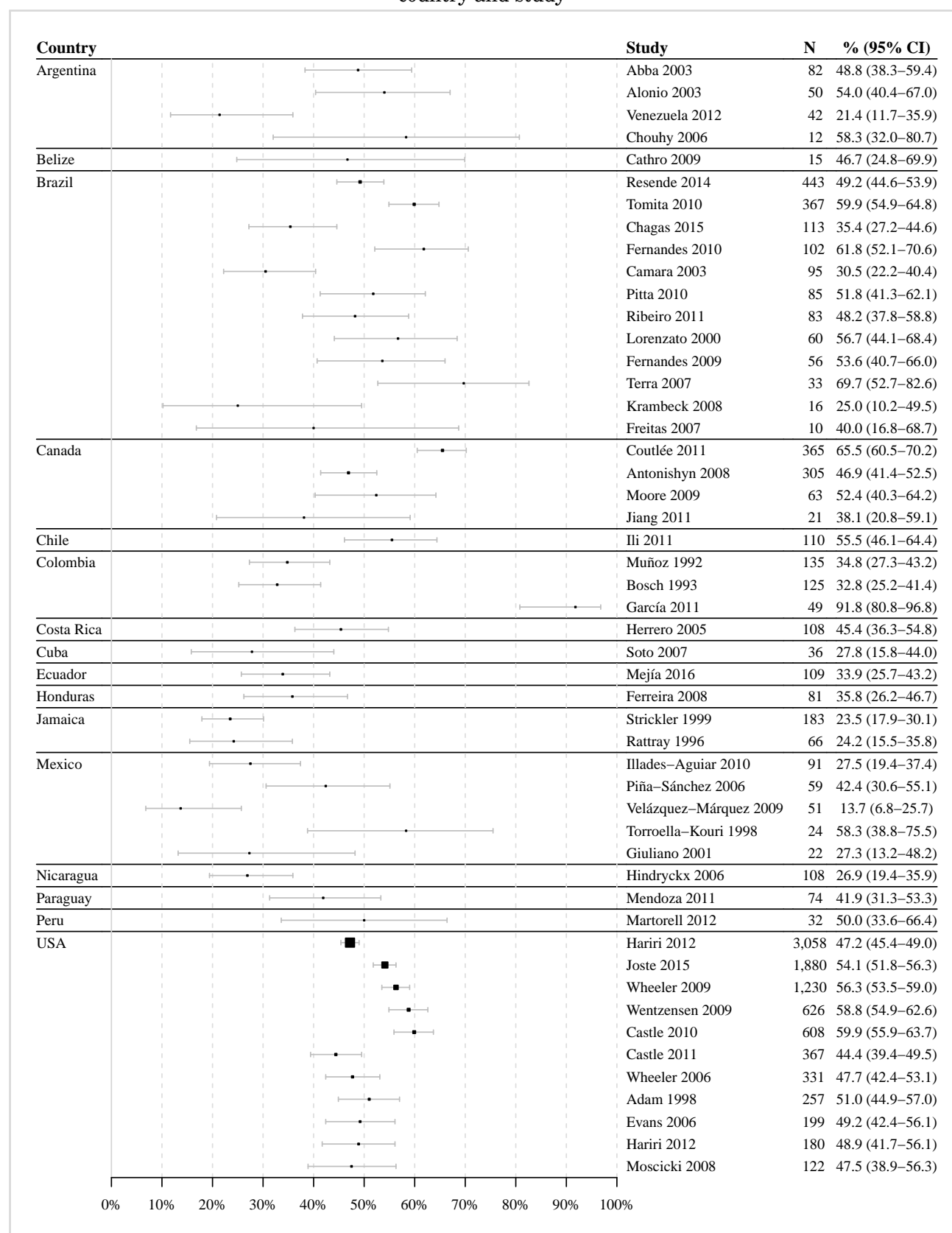
Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; High-grade lesions: CIN-2, CIN-3, CIS or HSIL; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

Data sources: See references in Section 9.

Figure 83: Prevalence of HPV 16 among women with high-grade cervical lesions in the Americas by country and study



(Continued on next page)

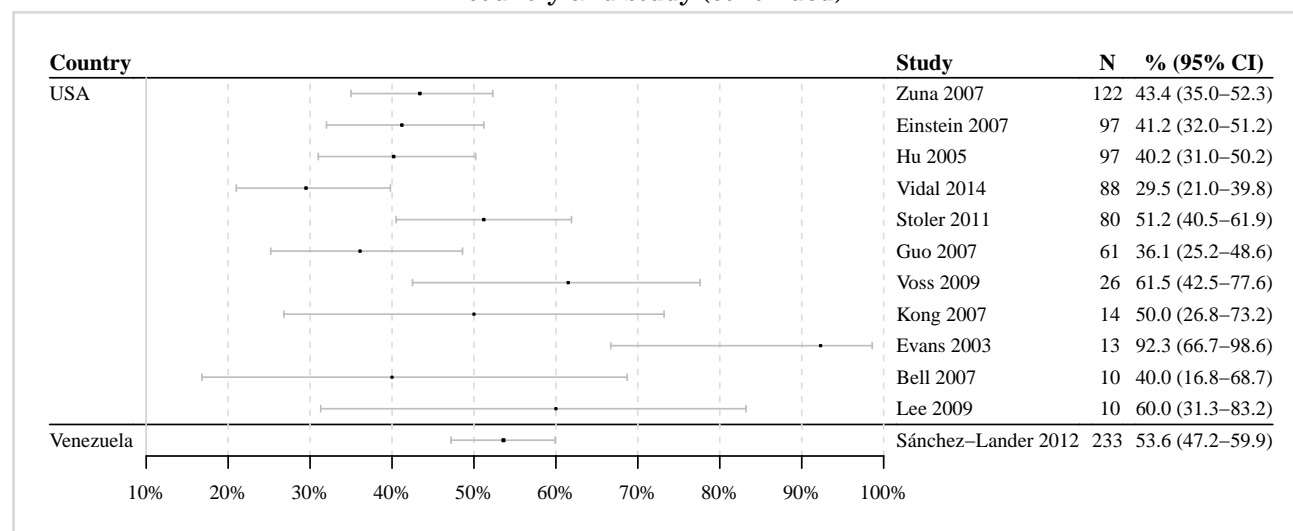
Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; High-grade lesions: CIN-2, CIN-3, CIS or HSIL; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

Data sources: See references in Section 9.

Figure 84: Prevalence of HPV 16 among women with high-grade cervical lesions in the Americas by country and study (continued)



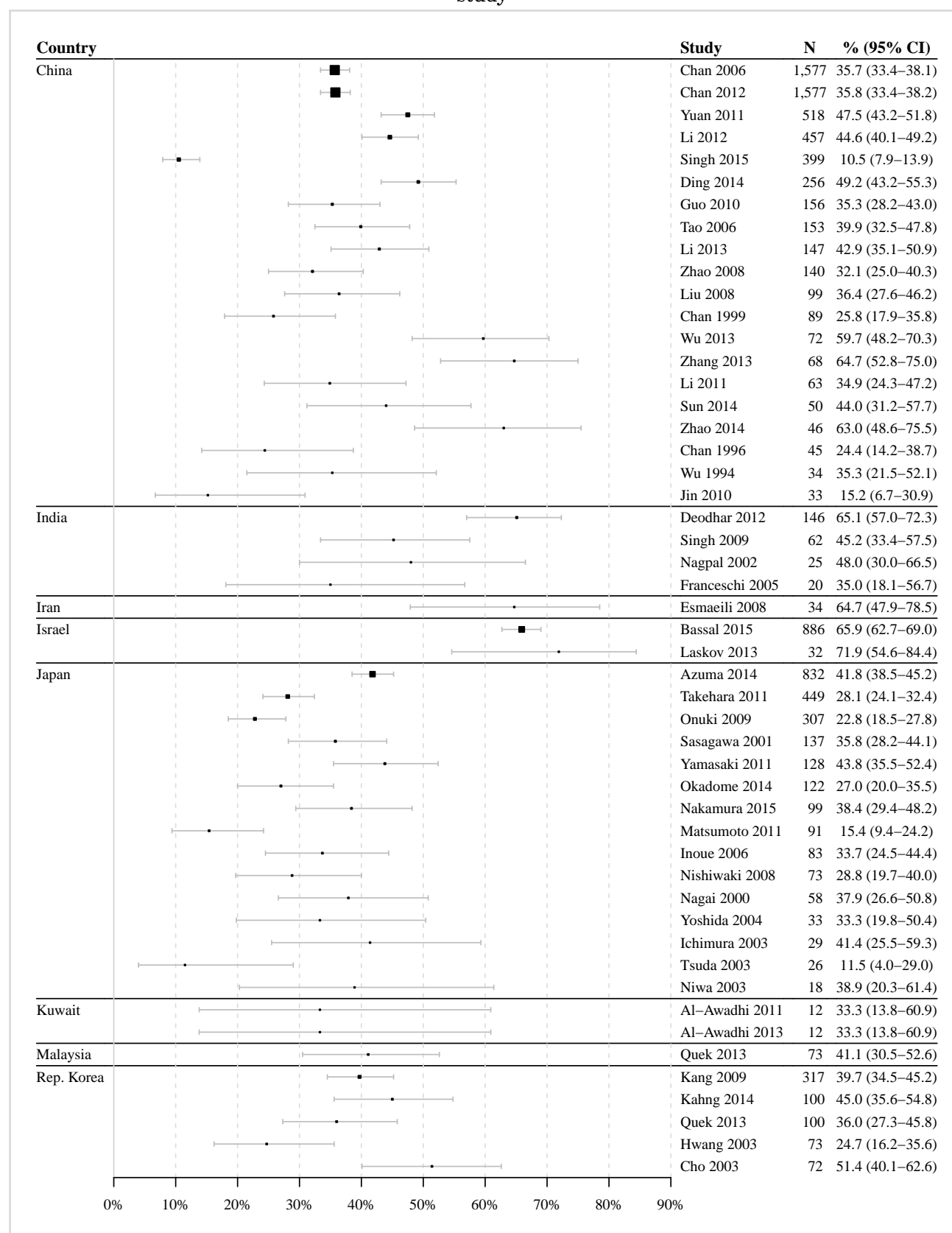
Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; High-grade lesions: CIN-2, CIN-3, CIS or HSIL; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

Data sources: See references in Section 9.

Figure 85: Prevalence of HPV 16 among women with high-grade cervical lesions in Asia by country and study



(Continued on next page)

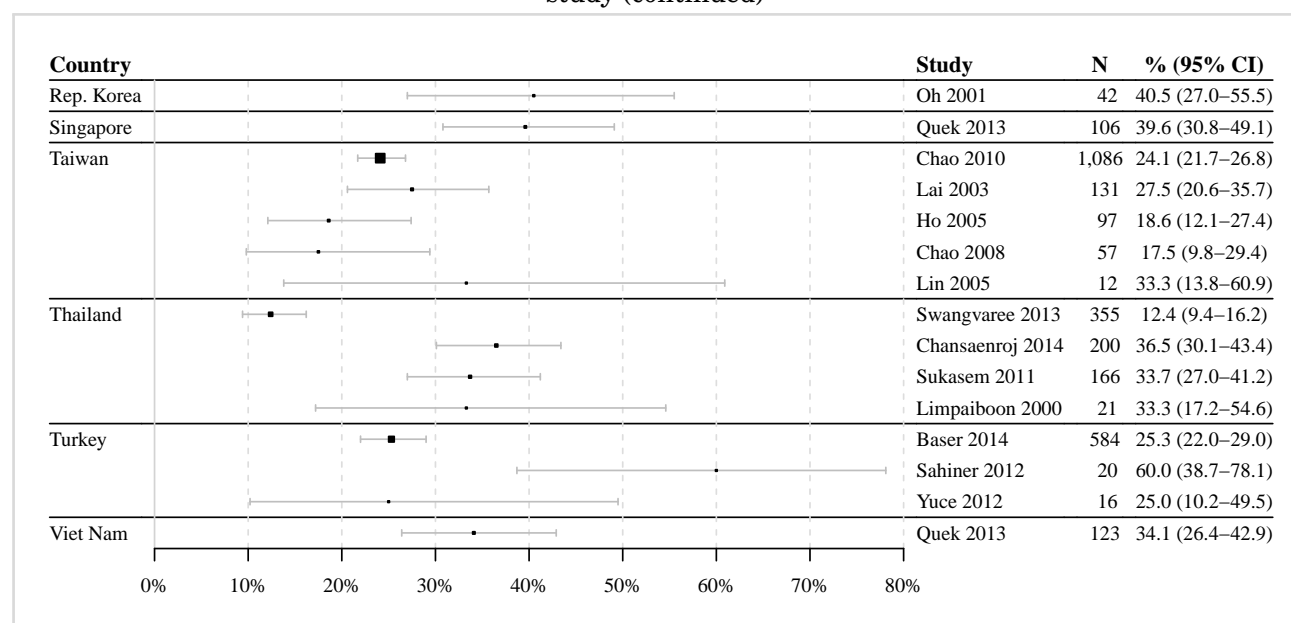
Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; High-grade lesions: CIN-2, CIN-3, CIS or HSIL; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

Data sources: See references in Section 9.

Figure 86: Prevalence of HPV 16 among women with high-grade cervical lesions in Asia by country and study (continued)



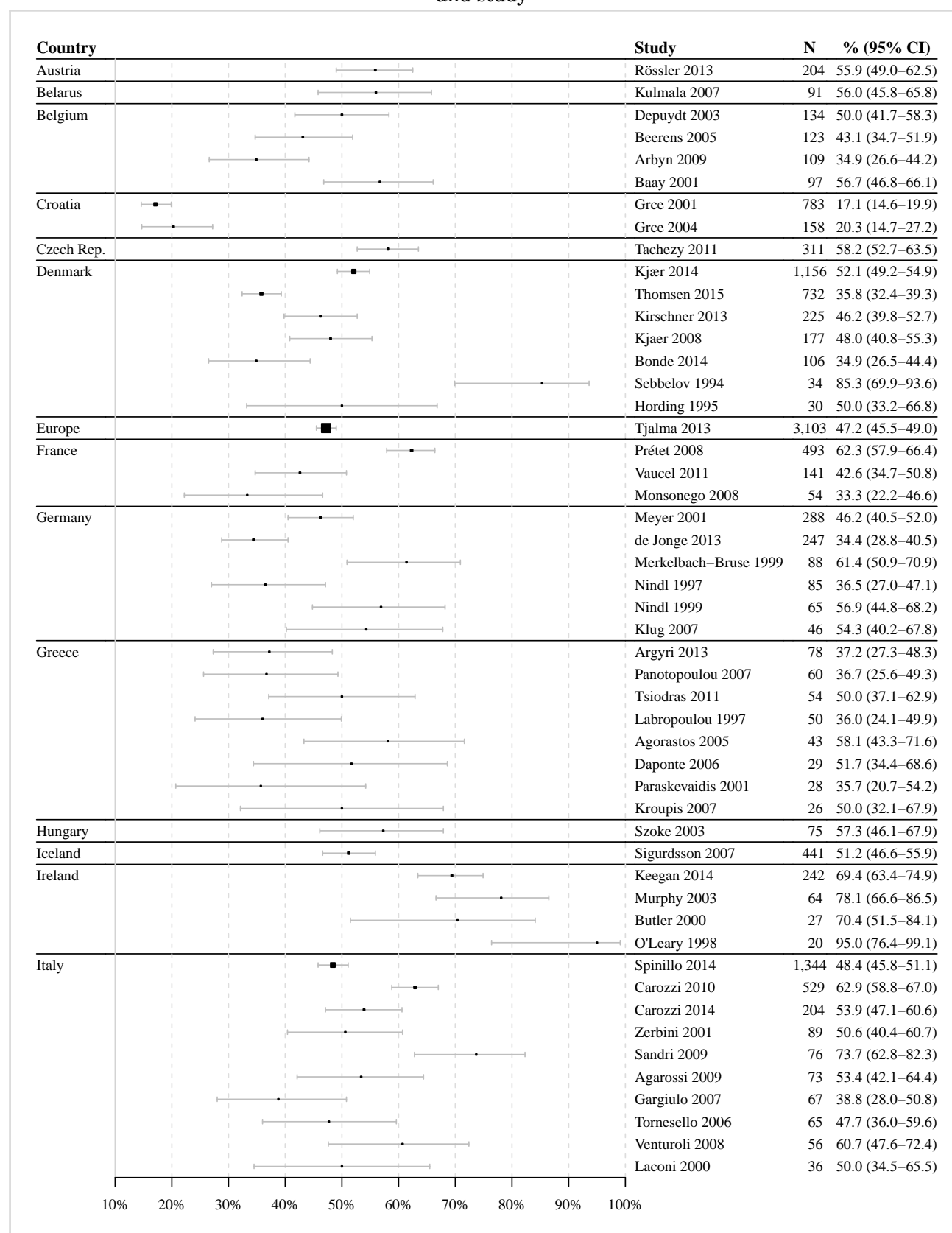
Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; High-grade lesions: CIN-2, CIN-3, CIS or HSIL; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

Data sources: See references in Section 9.

Figure 87: Prevalence of HPV 16 among women with high-grade cervical lesions in Europe by country and study



(Continued on next page)

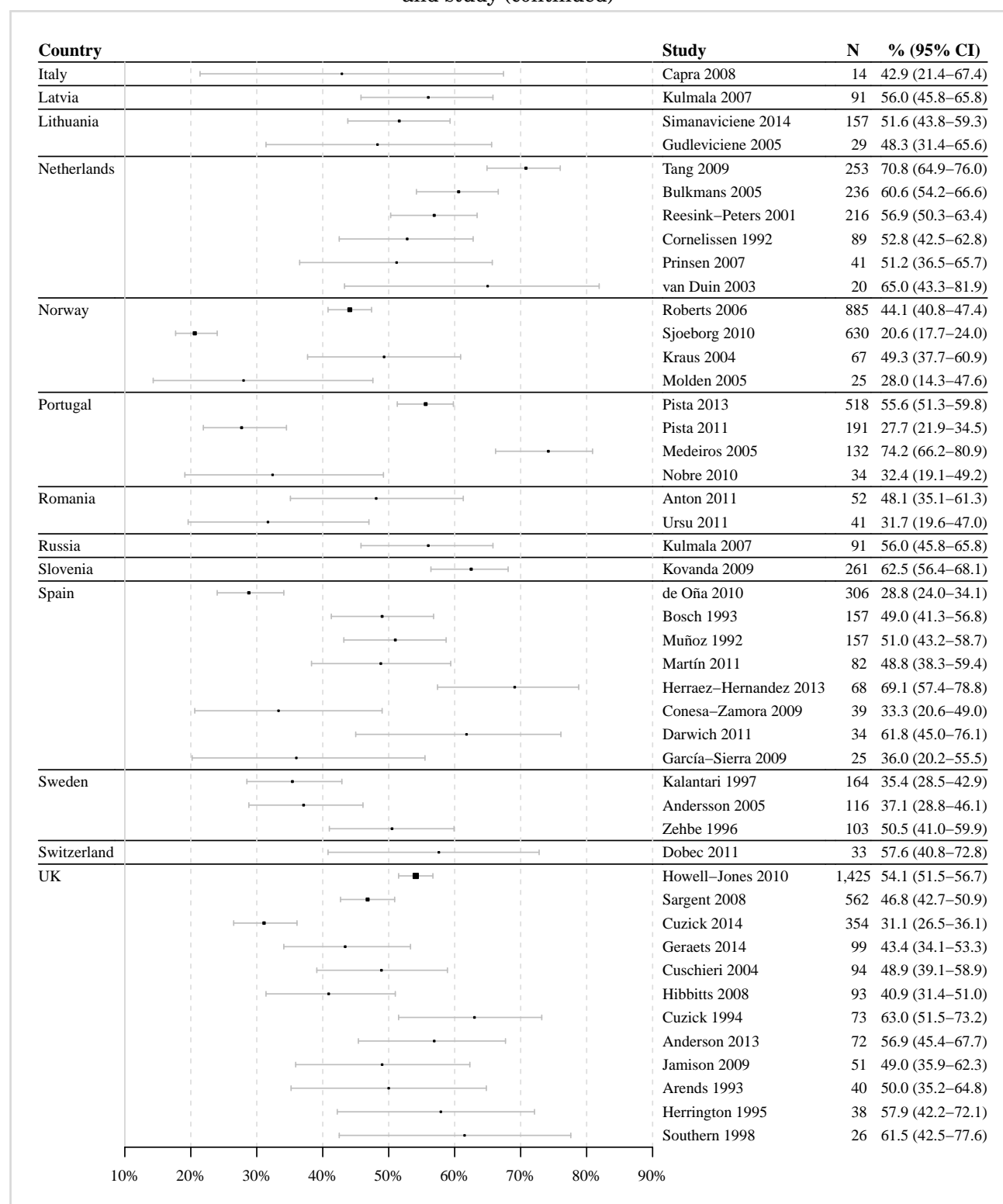
Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; High-grade lesions: CIN-2, CIN-3, CIS or HSIL; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

Data sources: See references in Section 9.

Figure 88: Prevalence of HPV 16 among women with high-grade cervical lesions in Europe by country and study (continued)



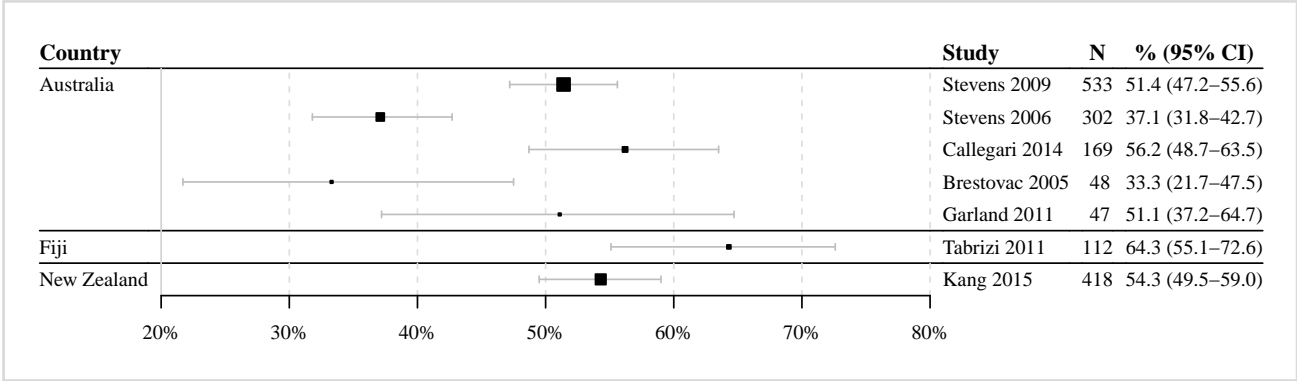
Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; High-grade lesions: CIN-2, CIN-3, CIS or HSIL; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

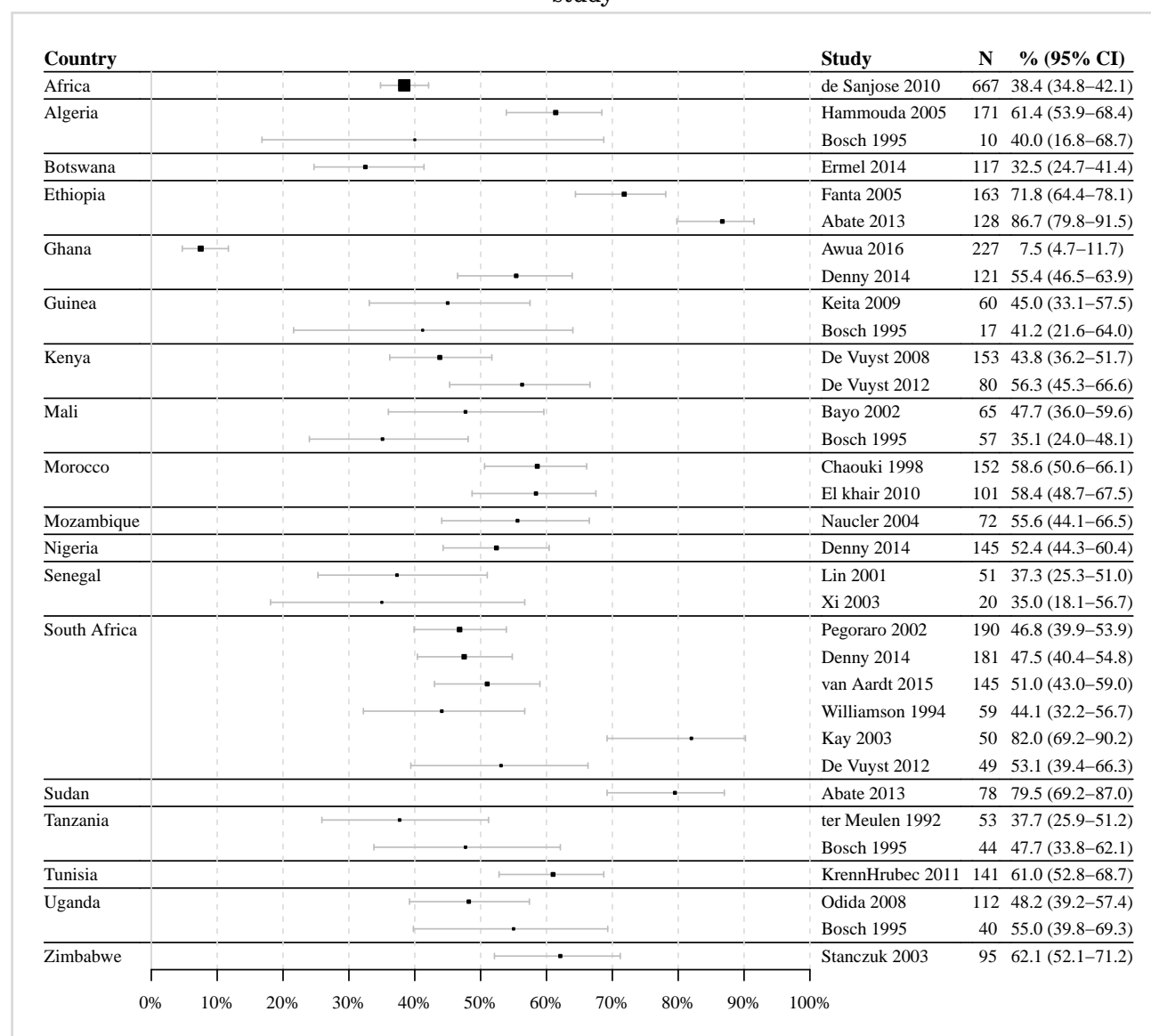
Data sources: See references in Section 9.

Figure 89: Prevalence of HPV 16 among women with high-grade cervical lesions in Oceania by country and study



Data updated on 28 Jun 2017 (data as of 30 Jun 2015).
95% CI: 95% Confidence Interval; High-grade lesions: CIN-2, CIN-3, CIS or HSIL; N: number of women tested;
The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.
Data sources: See references in Section 9.

Figure 90: Prevalence of HPV 16 among women with invasive cervical cancer in Africa by country and study



Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

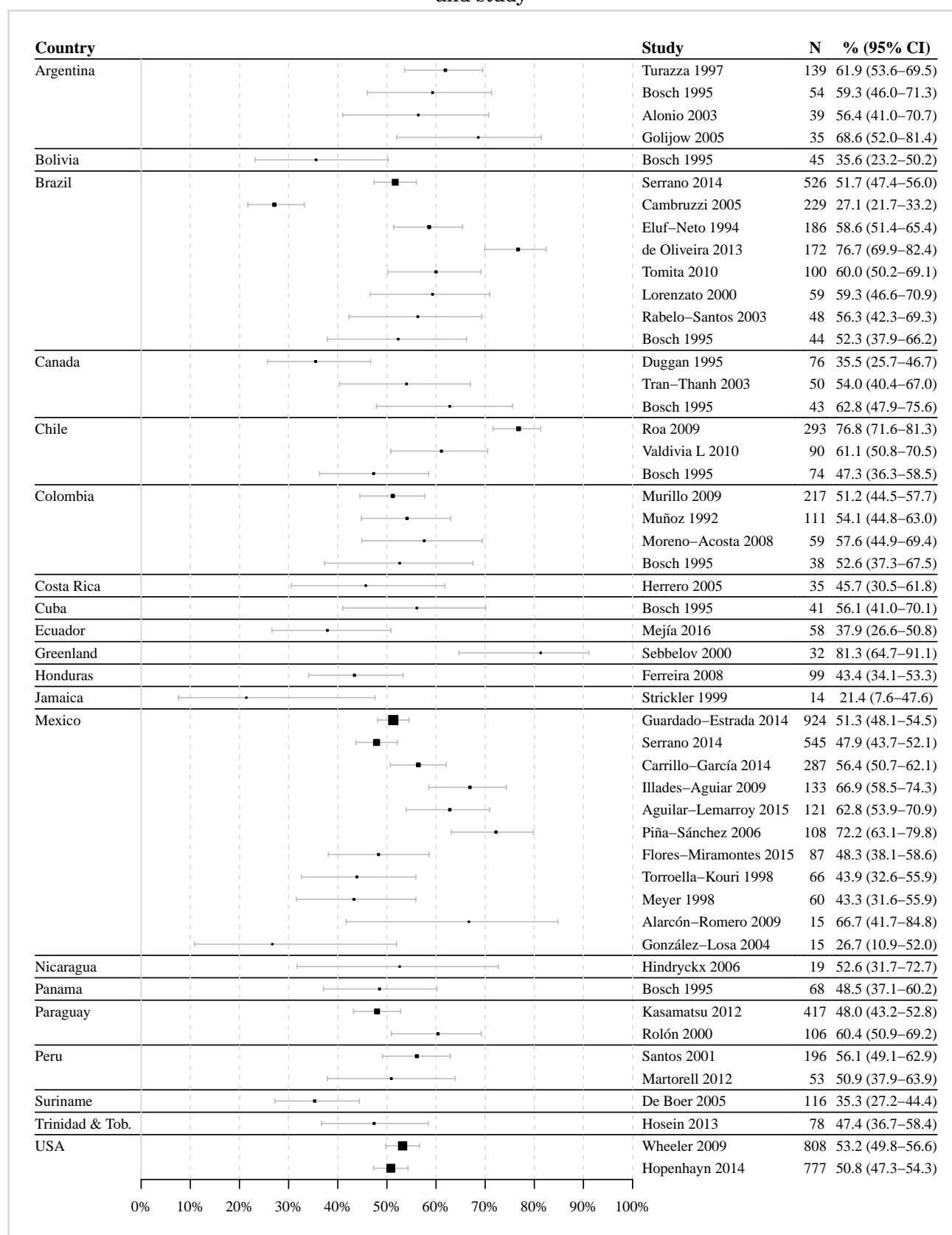
95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

^a Includes cases from Algeria, Mozambique, Nigeria, and Uganda

Data sources: See references in Section 9.

Figure 91: Prevalence of HPV 16 among women with invasive cervical cancer in the Americas by country and study



(Continued on next page)

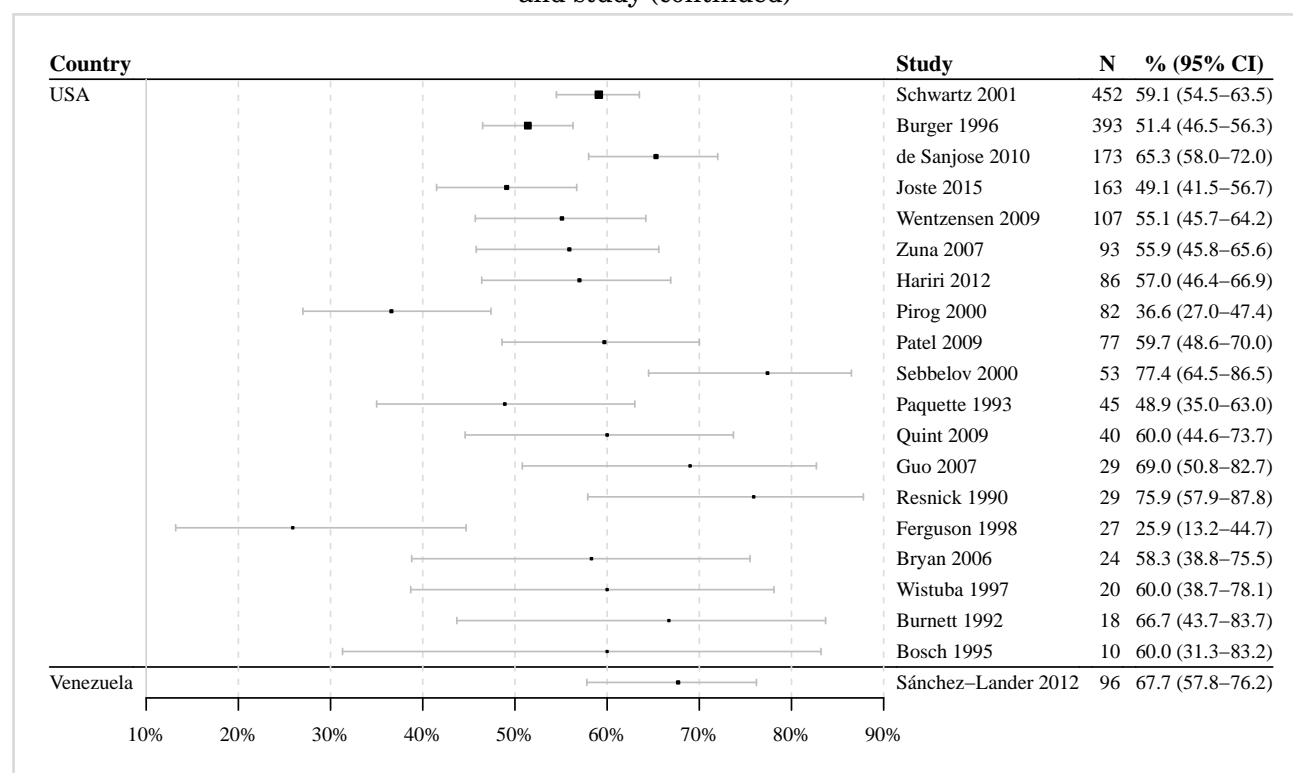
Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

Data sources: See references in Section 9.

Figure 92: Prevalence of HPV 16 among women with invasive cervical cancer in the Americas by country and study (continued)



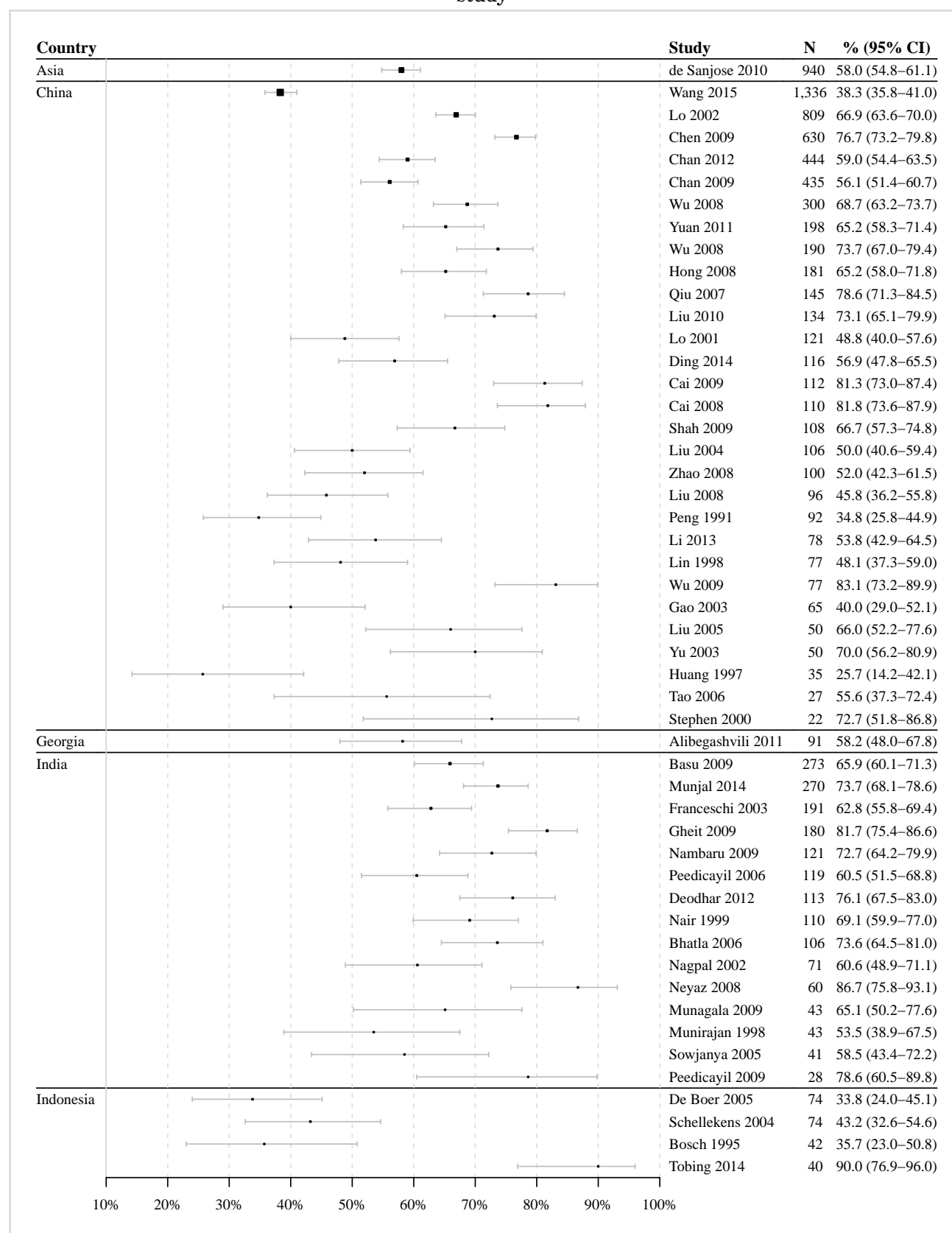
Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

Data sources: See references in Section 9.

Figure 93: Prevalence of HPV 16 among women with invasive cervical cancer in Asia by country and study



(Continued on next page)

Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

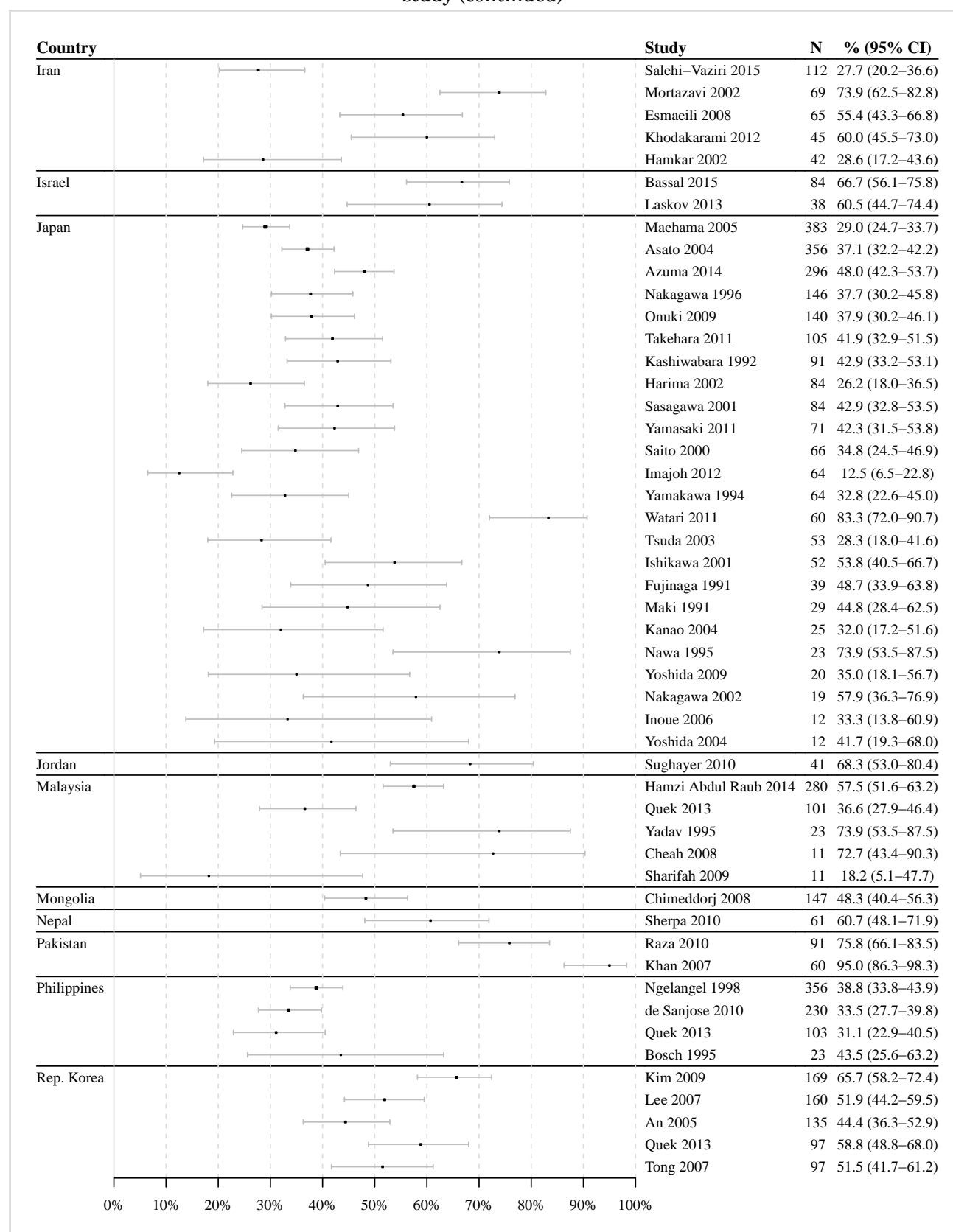
95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

^a Includes cases from Bangladesh, India, Israel, Kuwait, Lebanon and Turkey

Data sources: See references in Section 9.

Figure 94: Prevalence of HPV 16 among women with invasive cervical cancer in Asia by country and study (continued)



(Continued on next page)

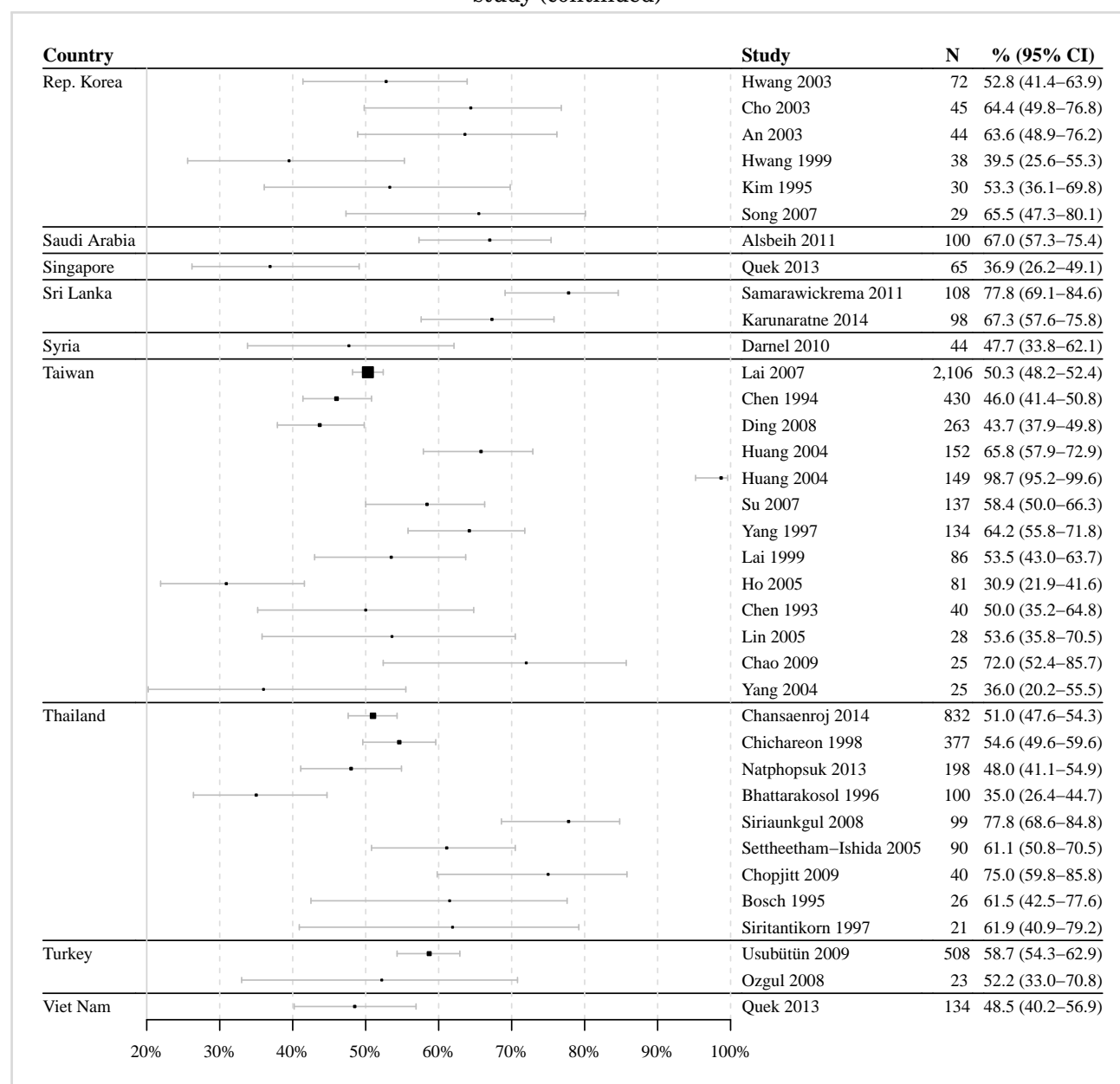
Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

Data sources: See references in Section 9.

Figure 95: Prevalence of HPV 16 among women with invasive cervical cancer in Asia by country and study (continued)



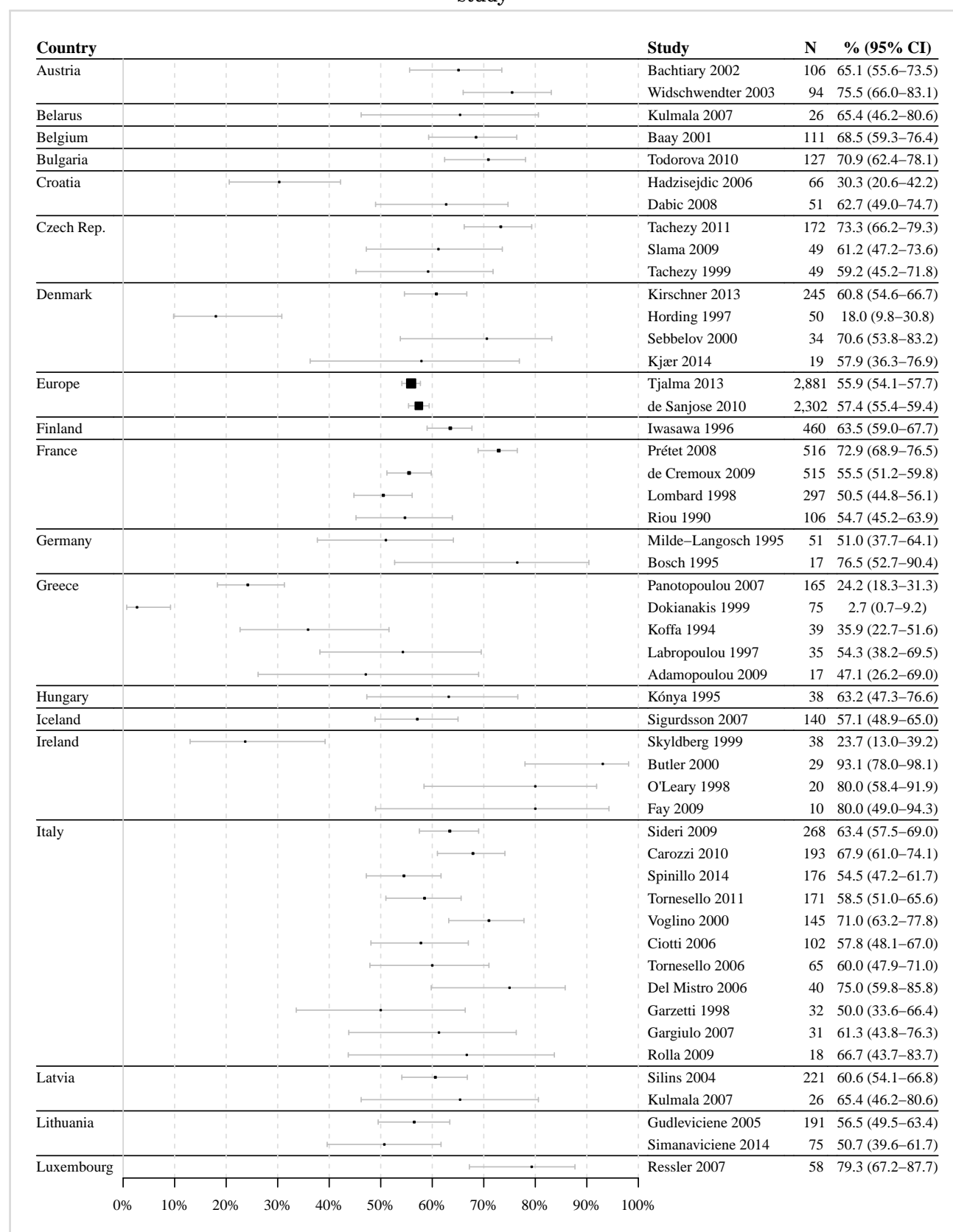
Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

Data sources: See references in Section 9.

Figure 96: Prevalence of HPV 16 among women with invasive cervical cancer in Europe by country and study



(Continued on next page)

Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

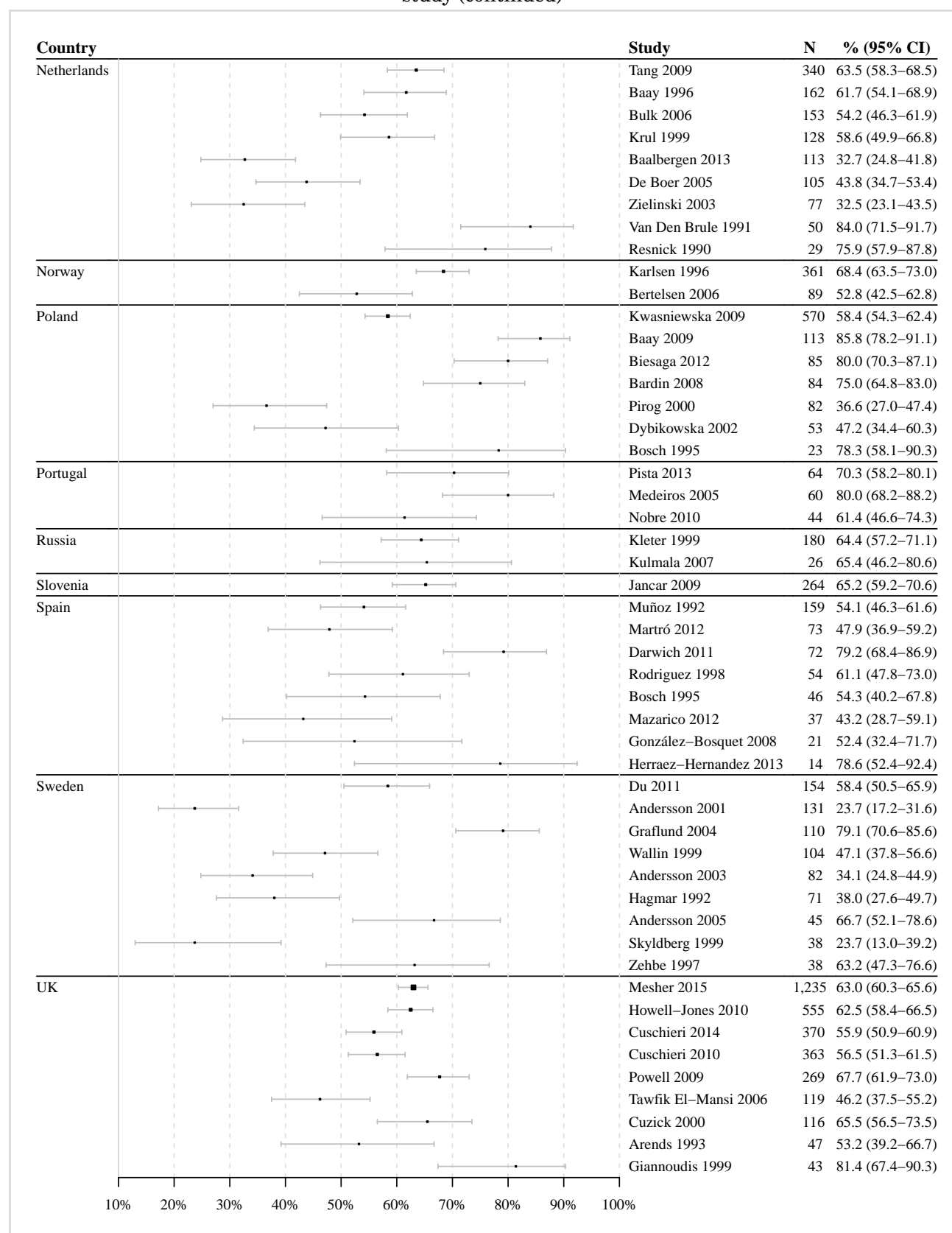
95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

^aIncludes cases from Bosnia-Herzegovina, Croatia, Czech Republic, France, Greece, Italy, Netherlands, Poland, Portugal, and Spain

Data sources: See references in Section 9.

Figure 97: Prevalence of HPV 16 among women with invasive cervical cancer in Europe by country and study (continued)



(Continued on next page)

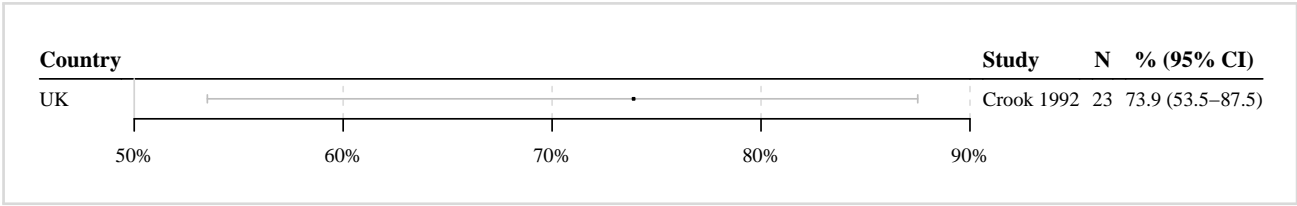
Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

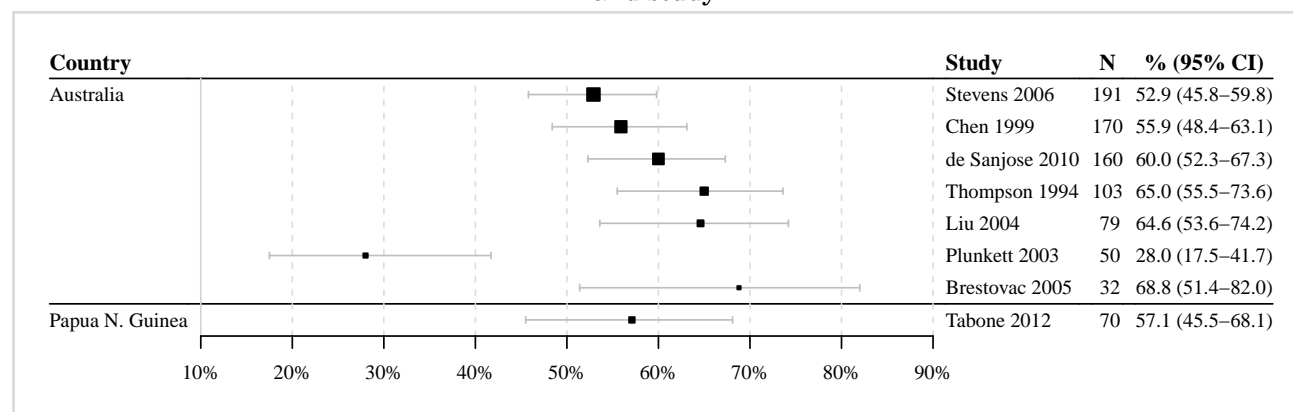
Data sources: See references in Section 9.

Figure 98: Prevalence of HPV 16 among women with invasive cervical cancer in Europe by country and study (continued)



Data updated on 28 Jun 2017 (data as of 30 Jun 2015).
95% CI: 95% Confidence Interval; N: number of women tested;
The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.
Data sources: See references in Section 9.

Figure 99: Prevalence of HPV 16 among women with invasive cervical cancer in Oceania by country and study



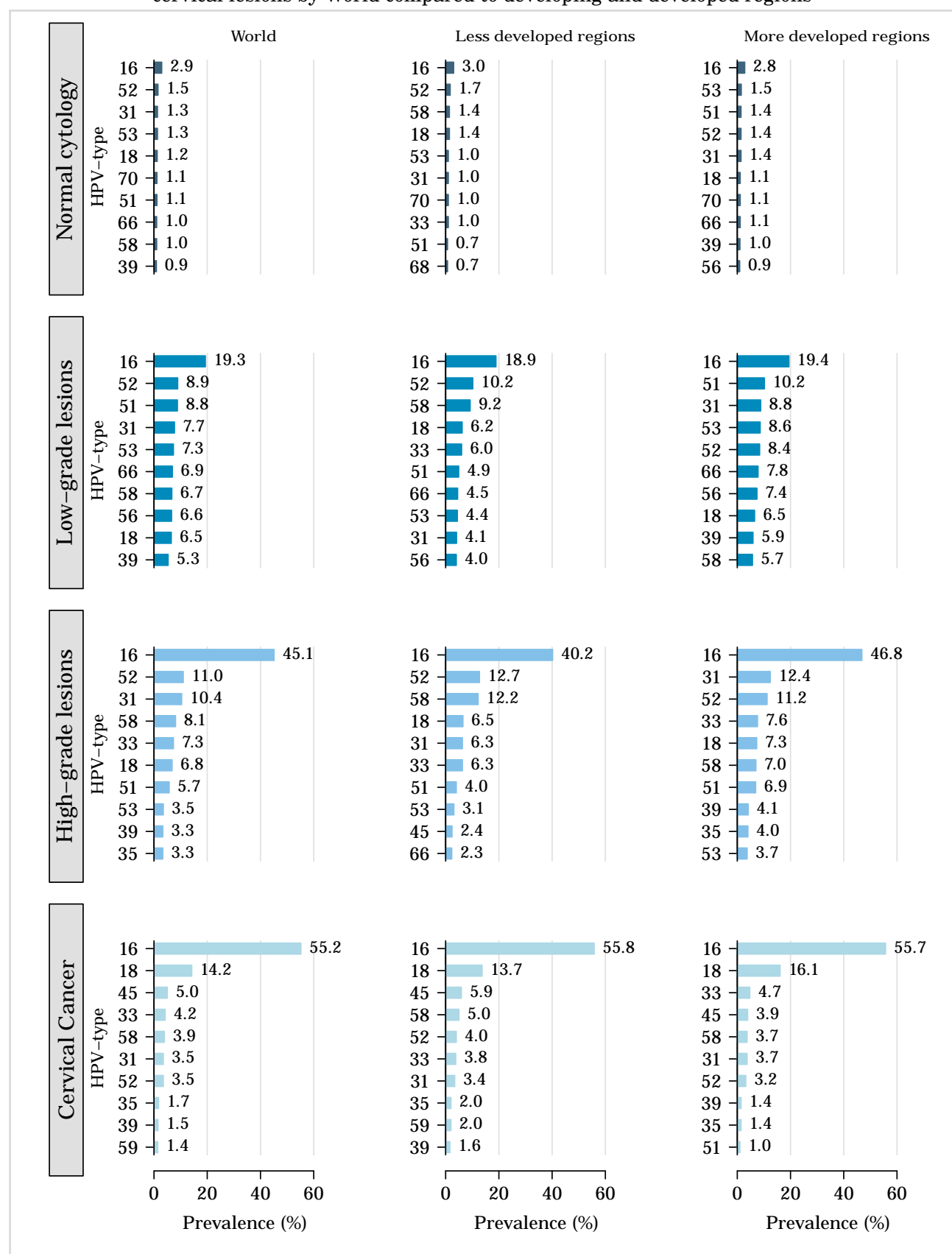
Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells). The line represents the 95% confidence interval and the shadowed square is proportional to the sample size.

Data sources: See references in Section 9.

Figure 100: Comparison of the ten most frequent HPV oncogenic types among women with and without cervical lesions by World compared to developing and developed regions



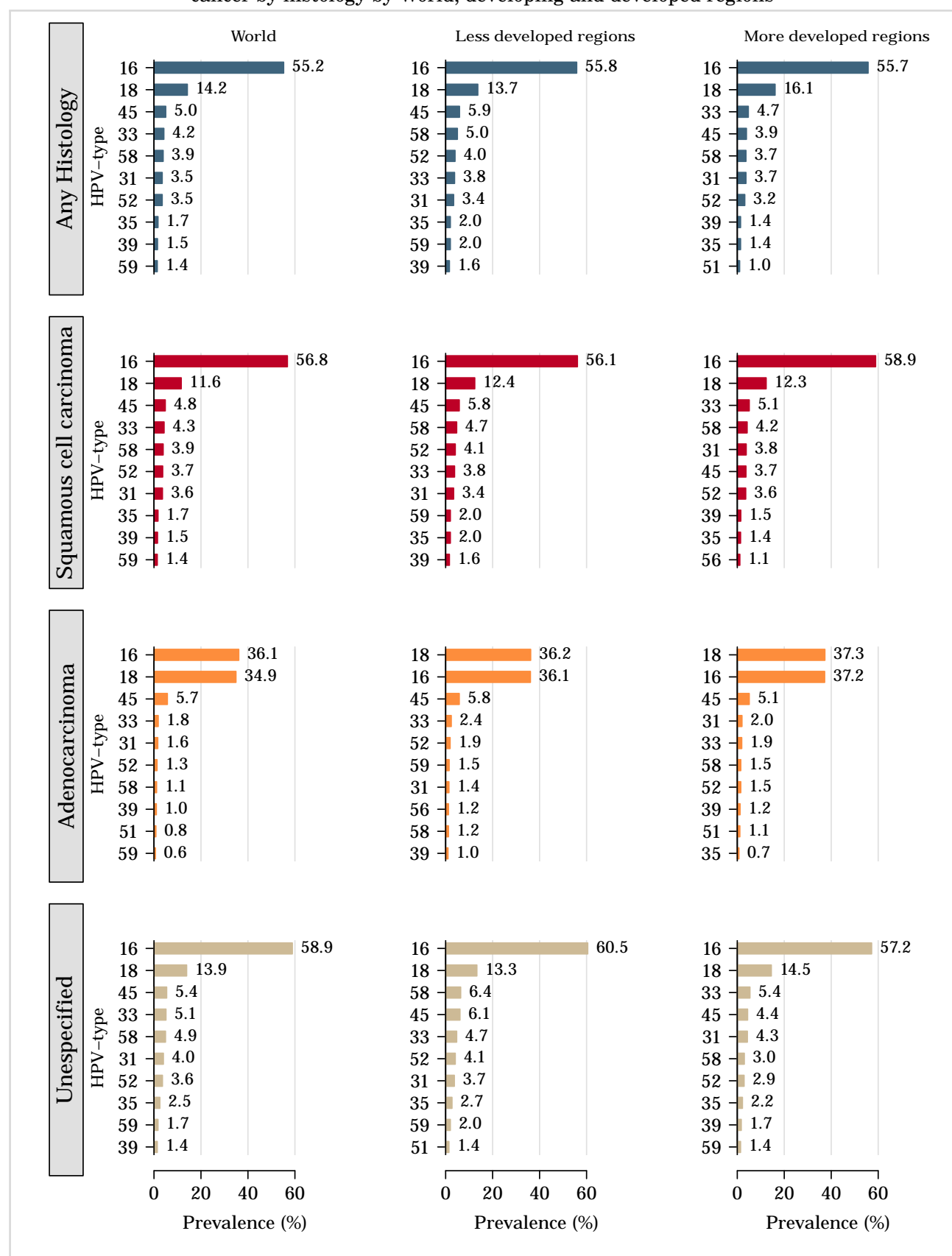
Data updated on 19 May 2017 (data as of 30 Jun 2015).

High-grade lesions: CIN-2, CIN-3, CIS or HSIL; Low-grade lesions: LSIL or CIN-1;

The samples for HPV testing come from cervical specimens (fresh / fixed biopsies or exfoliated cells).

Data sources: See references in Section 9.

Figure 101: Comparison of the ten most frequent HPV types among women with invasive cervical cancer by histology by World, developing and developed regions



Data updated on 19 May 2017 (data as of 30 Jun 2015).

The samples for HPV testing come from cervical specimens (fresh / fixed biopsies or exfoliated cells).

Data sources: See references in Section 9.

Table 14: Type-specific HPV prevalence in women with normal cervical cytology, precancerous cervical lesions and invasive cervical cancer

HPV Type	Normal cytology		Low-grade lesions		High-grade lesions		Cervical cancer	
	No. tested	HPV Prev % (95% CI)	No. tested	HPV Prev % (95% CI)	No. tested	HPV Prev % (95% CI)	No. tested	HPV Prev % (95% CI)
ONCOGENIC HPV TYPES								
High-risk HPV types								
16	514,928	2.9 (2.9-3.0)	38,177	19.3 (18.9-19.7)	50,202	45.1 (44.6-45.5)	58,796	55.2 (54.8-55.6)
18	503,242	1.2 (1.1-1.2)	37,748	6.5 (6.2-6.7)	49,743	6.8 (6.6-7.0)	58,380	14.2 (13.9-14.4)
31	473,568	1.3 (1.3-1.4)	36,170	7.7 (7.4-7.9)	48,538	10.4 (10.2-10.7)	52,417	3.5 (3.4-3.7)
33	471,894	0.7 (0.7-0.8)	35,733	4.7 (4.5-4.9)	48,592	7.3 (7.1-7.6)	53,804	4.2 (4.0-4.3)
35	452,480	0.5 (0.5-0.5)	31,095	3.0 (2.8-3.2)	44,703	3.3 (3.2-3.5)	47,634	1.7 (1.6-1.8)
39	445,908	0.9 (0.9-0.9)	28,820	5.3 (5.0-5.5)	43,746	3.3 (3.2-3.5)	46,420	1.5 (1.3-1.6)
45	453,127	0.8 (0.7-0.8)	31,289	3.2 (3.0-3.4)	44,801	3.0 (2.8-3.2)	47,048	5.0 (4.8-5.2)
51	442,755	1.1 (1.1-1.2)	27,270	8.8 (8.4-9.1)	43,888	5.7 (5.5-6.0)	44,674	1.0 (0.9-1.1)
52	452,302	1.5 (1.5-1.6)	29,132	8.9 (8.6-9.2)	44,723	11.0 (10.7-11.3)	49,978	3.5 (3.3-3.6)
56	449,467	0.8 (0.8-0.8)	28,534	6.6 (6.3-6.9)	43,134	2.5 (2.3-2.6)	46,019	1.0 (0.9-1.1)
58	462,570	1.0 (1.0-1.0)	30,214	6.7 (6.4-7.0)	44,798	8.1 (7.9-8.4)	50,814	3.9 (3.8-4.1)
59	437,025	0.7 (0.6-0.7)	27,049	3.9 (3.6-4.1)	41,553	2.1 (1.9-2.2)	46,703	1.4 (1.3-1.5)
Probable/possible carcinogen								
26	182,611	0.1 (0.1-0.1)	13,939	0.5 (0.4-0.7)	22,694	0.6 (0.5-0.7)	29,492	0.3 (0.2-0.3)
30	58,319	0.2 (0.2-0.3)	3,812	0.5 (0.3-0.8)	2,645	0.3 (0.1-0.5)	14,830	0.3 (0.2-0.4)
34	129,047	0.1 (0.1-0.1)	8,069	0.3 (0.2-0.4)	12,671	0.1 (0.0-0.2)	21,808	0.1 (0.1-0.1)
53	309,365	1.3 (1.3-1.3)	23,411	7.3 (7.0-7.7)	33,241	3.5 (3.3-3.7)	33,940	0.5 (0.5-0.6)
66	374,745	1.0 (0.9-1.0)	26,939	6.9 (6.6-7.2)	39,439	2.6 (2.5-2.8)	40,132	0.4 (0.4-0.5)
67	156,556	0.4 (0.3-0.4)	11,095	1.7 (1.5-2.0)	18,527	0.9 (0.8-1.0)	22,752	0.3 (0.2-0.3)
68	434,494	0.6 (0.6-0.7)	25,619	2.8 (2.6-3.0)	37,760	1.9 (1.8-2.1)	40,197	0.8 (0.8-0.9)
69	150,267	0.1 (0.1-0.1)	11,362	0.3 (0.2-0.4)	19,768	0.3 (0.2-0.4)	20,369	0.2 (0.1-0.3)
70	237,308	1.1 (1.0-1.1)	17,375	2.0 (1.8-2.2)	25,627	1.3 (1.2-1.5)	33,062	0.2 (0.2-0.3)
73	183,558	0.4 (0.4-0.4)	16,732	2.2 (2.0-2.4)	23,450	1.6 (1.4-1.7)	28,944	0.5 (0.4-0.6)
82	206,140	0.3 (0.3-0.3)	16,470	1.5 (1.4-1.7)	25,864	1.9 (1.7-2.0)	30,216	0.2 (0.1-0.2)
85	81,113	0.1 (0.1-0.2)	3,801	0.3 (0.2-0.5)	7,905	0.2 (0.1-0.3)	-	-
97	1,751	3.1 (2.4-4.0)	-	-	-	-	781	0.1 (0.0-0.7)
NON-ONCOGENIC HPV TYPES								
6	429,489	1.2 (1.1-1.2)	26,981	6.2 (5.9-6.5)	34,563	2.3 (2.2-2.5)	38,282	0.5 (0.4-0.5)
11	414,741	0.5 (0.4-0.5)	26,179	2.9 (2.7-3.1)	33,547	1.3 (1.2-1.5)	38,386	0.4 (0.4-0.5)
32	77,668	0.1 (0.1-0.2)	977	0.1 (0.0-0.6)	-	-	2,925	0.1 (0.0-0.2)
40	205,350	0.3 (0.3-0.3)	4,379	1.5 (1.2-1.9)	11,872	0.4 (0.3-0.5)	23,350	0.0 (0.0-0.0)
42	336,041	0.6 (0.6-0.6)	4,932	7.1 (6.4-7.8)	9,543	1.3 (1.1-1.6)	25,715	0.2 (0.2-0.3)
43	266,911	0.2 (0.2-0.2)	3,258	1.7 (1.3-2.2)	5,549	0.4 (0.3-0.6)	21,312	0.1 (0.0-0.1)
44	336,765	0.5 (0.5-0.5)	5,764	5.7 (5.1-6.3)	11,841	2.0 (1.7-2.2)	24,243	0.2 (0.2-0.3)
54	223,182	0.8 (0.8-0.9)	3,316	2.2 (1.8-2.8)	11,907	1.3 (1.1-1.5)	25,201	0.2 (0.2-0.3)
55	-	-	-	-	-	-	-	-
57	63,790	0.0 (0.0-0.0)	1,021	0.2 (0.1-0.7)	2,194	0.3 (0.2-0.7)	6,780	0.0 (0.0-0.1)
61	155,276	0.9 (0.9-1.0)	3,183	1.8 (1.4-2.3)	9,032	1.2 (1.0-1.5)	23,686	0.3 (0.2-0.3)
62	123,056	1.4 (1.3-1.5)	2,713	4.2 (3.5-5.0)	8,236	1.7 (1.4-1.9)	7,058	0.4 (0.3-0.5)
64	-	-	-	-	-	-	-	-
71	144,438	0.3 (0.3-0.3)	2,175	0.7 (0.5-1.2)	8,901	0.2 (0.2-0.4)	9,332	0.2 (0.1-0.3)
72	152,315	0.4 (0.4-0.4)	2,320	0.6 (0.3-1.0)	8,256	0.2 (0.2-0.4)	10,013	0.1 (0.1-0.2)
74	110,914	0.6 (0.6-0.7)	1,255	1.0 (0.6-1.8)	2,936	0.6 (0.4-1.0)	16,341	0.0 (0.0-0.1)
81	248,265	0.8 (0.7-0.8)	2,862	3.4 (2.8-4.1)	8,944	1.0 (0.8-1.2)	9,510	0.2 (0.1-0.3)
83	163,772	0.6 (0.5-0.6)	2,402	0.9 (0.6-1.3)	9,214	0.4 (0.3-0.6)	9,733	0.1 (0.1-0.2)
84	164,918	0.9 (0.8-0.9)	2,745	2.1 (1.7-2.8)	9,237	0.7 (0.6-0.9)	8,081	0.3 (0.2-0.5)
86	33,106	0.2 (0.1-0.2)	-	-	-	-	-	-
87	17,000	0.2 (0.2-0.3)	750	0.1 (0.0-0.8)	-	-	-	-
89	120,768	0.9 (0.8-0.9)	1,755	1.4 (0.9-2.0)	7,456	1.0 (0.8-1.2)	7,806	0.1 (0.1-0.3)
90	40,195	0.6 (0.5-0.7)	750	0.8 (0.4-1.7)	-	-	2,388	0.0 (0.0-0.2)
91	21,230	0.1 (0.1-0.2)	750	0.5 (0.2-1.4)	-	-	12,783	0.0 (0.0-0.1)

Data updated on 19 May 2017 (data as of 30 Jun 2015 / 30 Jun 2015).

95% CI: 95% Confidence Interval; High-grade lesions: CIN-2, CIN-3, CIS or HSIL; Low-grade lesions: LSIL or CIN-1;

^a Kahng 2014 includes lesions CIN2 or worse

Data sources: See references in Section 9.

Table 15: Type-specific HPV prevalence among invasive cervical cancer cases by histology

HPV Type	Any Histology		Squamous cell carcinoma		Adenocarcinoma		Unspecified	
	No. tested	HPV Prev % (95% CI)	No. tested	HPV Prev % (95% CI)	No. tested	HPV Prev % (95% CI)	No. tested	HPV Prev % (95% CI)
ONCOGENIC HPV TYPES								
High-risk HPV types								
16	58,796	55.2 (54.8-55.6)	43,169	56.8 (56.4-57.3)	5,665	36.1 (34.8-37.3)	11,425	58.9 (58.0-59.8)
18	58,380	14.2 (13.9-14.4)	42,890	11.6 (11.3-11.9)	5,665	34.9 (33.7-36.1)	11,288	13.9 (13.2-14.5)
31	52,417	3.5 (3.4-3.7)	39,428	3.6 (3.4-3.8)	4,585	1.6 (1.3-2.0)	9,867	4.0 (3.6-4.4)
33	53,804	4.2 (4.0-4.3)	40,460	4.3 (4.1-4.5)	4,843	1.8 (1.5-2.2)	9,964	5.1 (4.7-5.5)
35	47,634	1.7 (1.6-1.8)	36,045	1.7 (1.5-1.8)	4,239	0.5 (0.3-0.8)	8,535	2.5 (2.2-2.9)
39	46,420	1.5 (1.3-1.6)	36,322	1.5 (1.4-1.7)	4,036	1.0 (0.7-1.3)	6,995	1.4 (1.2-1.8)
45	47,048	5.0 (4.8-5.2)	36,074	4.8 (4.6-5.0)	4,486	5.7 (5.1-6.4)	7,951	5.4 (4.9-5.9)
51	44,674	1.0 (0.9-1.1)	34,508	1.0 (0.9-1.1)	4,026	0.8 (0.6-1.1)	7,117	1.1 (0.9-1.4)
52	49,978	3.5 (3.3-3.6)	38,761	3.7 (3.5-3.9)	4,408	1.3 (1.0-1.7)	8,272	3.6 (3.2-4.0)
56	46,019	1.0 (0.9-1.1)	35,990	1.0 (0.9-1.1)	4,113	0.5 (0.3-0.7)	7,335	0.8 (0.7-1.1)
58	50,814	3.9 (3.8-4.1)	39,001	3.9 (3.8-4.1)	4,236	1.1 (0.9-1.5)	9,040	4.9 (4.5-5.3)
59	46,703	1.4 (1.3-1.5)	36,685	1.4 (1.3-1.5)	4,161	0.6 (0.4-0.9)	7,276	1.7 (1.5-2.1)
Probable/possible carcinogen								
26	29,492	0.3 (0.2-0.3)	-	-	-	-	-	-
30	14,830	0.3 (0.2-0.4)	12,564	0.3 (0.2-0.4)	1,072	0.1 (0.0-0.5)	1,255	0.1 (0.0-0.4)
34	21,808	0.1 (0.1-0.1)	17,035	0.1 (0.1-0.2)	1,912	0.1 (0.0-0.3)	2,996	0.1 (0.1-0.3)
53	33,940	0.5 (0.5-0.6)	-	-	-	-	-	-
66	40,132	0.4 (0.4-0.5)	31,190	0.4 (0.4-0.5)	3,714	0.2 (0.1-0.4)	6,021	0.6 (0.4-0.8)
67	22,752	0.3 (0.2-0.3)	18,225	0.3 (0.2-0.4)	1,750	0.1 (0.0-0.3)	3,231	0.2 (0.1-0.4)
68	40,197	0.8 (0.8-0.9)	30,913	0.8 (0.7-0.9)	3,694	0.3 (0.1-0.5)	5,723	0.8 (0.6-1.0)
69	20,369	0.2 (0.1-0.3)	-	-	-	-	-	-
70	33,062	0.2 (0.2-0.3)	-	-	-	-	-	-
73	28,944	0.5 (0.4-0.6)	-	-	-	-	-	-
82	30,216	0.2 (0.1-0.2)	22,855	0.2 (0.1-0.2)	2,226	0.0 (0.0-0.3)	4,912	0.3 (0.2-0.5)
97	781	0.1 (0.0-0.7)	781	0.1 (0.0-0.7)	-	-	-	-
NON-ONCOGENIC HPV TYPES								
6	38,282	0.5 (0.4-0.5)	-	-	-	-	-	-
11	38,386	0.4 (0.4-0.5)	-	-	-	-	-	-
32	2,925	0.1 (0.0-0.2)	-	-	-	-	-	-
40	23,350	0.0 (0.0-0.0)	-	-	-	-	-	-
42	25,715	0.2 (0.2-0.3)	20,975	0.2 (0.1-0.2)	1,839	0.1 (0.0-0.3)	3,691	0.4 (0.2-0.6)
43	21,312	0.1 (0.0-0.1)	-	-	-	-	-	-
44	24,243	0.2 (0.2-0.3)	20,154	0.2 (0.1-0.3)	1,840	0.1 (0.0-0.4)	3,135	0.4 (0.2-0.7)
54	25,201	0.2 (0.2-0.3)	-	-	-	-	-	-
55	-	-	-	-	-	-	-	-
57	6,780	0.0 (0.0-0.1)	-	-	-	-	-	-
61	23,686	0.3 (0.2-0.3)	-	-	-	-	-	-
62	7,058	0.4 (0.3-0.5)	-	-	-	-	-	-
64	-	-	-	-	-	-	-	-
71	9,332	0.2 (0.1-0.3)	-	-	-	-	-	-
72	10,013	0.1 (0.1-0.2)	-	-	-	-	-	-
74	16,341	0.0 (0.0-0.1)	-	-	-	-	-	-
81	9,510	0.2 (0.1-0.3)	-	-	-	-	-	-
83	9,733	0.1 (0.1-0.2)	-	-	-	-	-	-
84	8,081	0.3 (0.2-0.5)	-	-	-	-	-	-
89	7,806	0.1 (0.1-0.3)	-	-	-	-	-	-
90	2,388	0.0 (0.0-0.2)	-	-	-	-	-	-
91	12,783	0.0 (0.0-0.1)	-	-	-	-	-	-

Data updated on 19 May 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval;

Data sources: See references in Section 9.

4.1.3 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. The condition is graded as CIN 1, 2 or 3, according to the thickness of the abnormal epithelium (1/3, 2/3 or the entire thickness).

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)

Preinvasive malignancy limited to the epithelium without invasion of the basement membrane. CIN 3 encompasses the squamous carcinoma in situ.

Invasive cervical cancer (ICC) / Cervical cancer

If the high-grade precancerous cells invade the basement membrane is called ICC. ICC stages range from stage I (cancer is in the cervix or uterus only) to stage IV (the cancer has spread to distant organs, such as the liver).

Invasive squamous cell carcinoma

Invasive carcinoma composed of cells resembling those of squamous epithelium.

Adenocarcinoma

Invasive tumour with glandular and squamous elements intermingled.

4.2 HPV burden in anogenital cancers other than the cervix

Methods: Prevalence and type distribution of human papillomavirus in carcinoma of the vulva, vagina, anus and penis: systematic review and meta-analysis

A systematic review of the literature was conducted regarding the worldwide HPV-prevalence and type distribution for anogenital carcinomas other than cervix from January 1986 to 'data as of' indicated in each section. The search terms for the review were 'HPV' AND (anus OR anal) OR (penile) OR vagin* OR vulv* using Pubmed. There were no limits in publication language. References cited in selected articles were also investigated. Inclusion criteria were: HPV DNA detection by means of PCR, a minimum of 10 cases by lesion and a detailed description of HPV DNA detection and genotyping techniques used. The number of cases tested and HPV positive cases were extracted for each study to estimate the prevalence of HPV DNA and the HPV type distribution. Binomial 95% confidence intervals were calculated for each HPV prevalence.

4.2.1 Anal cancer and precancerous anal lesions

Anal cancer is similar to cervical cancer with respect to overall HPV DNA positivity, with approximately 88% of cases associated with HPV infection worldwide (*de Martel C et al. Lancet Oncol 2012;13(6):607-15*). HPV16 is the most common type detected, representing 73% of all HPV-positive tumours. HPV18 is the second most common type detected and is found in approximately 5% of cases. HPV DNA is also detected in the majority of precancerous anal lesions (AIN) (91.5% in AIN1 and 93.9% in AIN2/3) (De Vuyst H et al. *Int J Cancer* 2009; 124: 1626-36). In this section, the HPV prevalence among anal cancer cases and precancerous anal lesions in the World are presented.

Table 16: Studies on HPV prevalence among anal cancer cases (male and female)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types HPV type (%)
			%	(95% CI)	
Alemany 2015 ^a (Asia)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	52	80.8	(68.1-89.2)	HPV 16 (67.3%) HPV 18 (3.8%) HPV 35 (3.8%) HPV 56 (1.9%) HPV 58 (1.9%)
Hillman 2014 (Australia)	PCR L1-Consensus primer, (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 82)	105	97.1	(91.9-99.0)	HPV 16 (77.1%) HPV 52 (13.3%) HPV 6 (10.5%) HPV 54 (9.5%) HPV 11 (5.7%)
Ouhoumane 2013 (Canada)	PCR L1-Consensus primer, LBA (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 45, 51, 52, 53, 54, 56, 58, 59, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 81, 82, 83, 84, 89)	96	91.7	(84.4-95.7)	HPV 16 (82.3%) HPV 6 (3.1%) HPV 33 (3.1%) HPV 18 (2.1%) HPV 58 (2.1%)
Tachezy 2011 (Czech Rep.)	PCR L1-Consensus primer, , Sequencing (HPV 6, 11, 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 34, 35, 38, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 74, 80, 81, 82, 83, 84, 85, 86, 87, 89, 90, 91)	26	73.1	(53.9-86.3)	HPV 16 (73.1%)

(Continued on next page)

(Table 16 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types HPV type (%)
			%	(95% CI)	
Serup-Hansen 2014 (Denmark)	PCR-E6, PCR-E7, PCR- MULTIPLEX (HPV 16, 18, 31, 33, 45, 52, 58)	137	87.6	(81.0-92.1)	HPV 16 (81.0%) HPV 33 (5.1%) HPV 18 (2.2%) HPV 58 (0.7%)
Alemaný 2015 ^b (Europe)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	169	87.6	(81.8-91.7)	HPV 16 (73.4%) HPV 6 (3.6%) HPV 18 (3.6%) HPV 11 (3.0%) HPV 33 (2.4%)
Abramowitz 2011 (France)	PCR-SPF10, (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 82)	728	96.7	(95.1-97.8)	HPV 16 (75.5%) HPV 18 (5.9%) HPV 11 (3.7%) HPV 6 (3.0%) HPV 52 (2.6%)
Valmary-Degano 2013 (France)	PCR-E6, (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 82)	73	98.6	(92.6-99.8)	HPV 16 (89.0%) HPV 39 (4.1%) HPV 33 (2.7%) HPV 6 (1.4%) HPV 11 (1.4%)
Vincent-Salomon 1996 (France)	PCR L1-Consensus primer, PCR-E6, TS (HPV 6, 11, 16, 18, 33)	27	74.1	(55.3-86.8)	HPV 16 (63.0%) HPV 18 (7.4%)
Rödel 2015 (Ger- many)	PCR-SPF10, PCR- MULTIPLEX, (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 81, 82)	91	100.0	(95.9-100.0)	HPV 16 (94.5%) HPV 11 (2.2%) HPV 31 (2.2%) HPV 35 (2.2%) HPV 18 (1.1%)
Varnai 2006 (Ger- many)	PCR-MY09/11, TS, Sequencing (HPV 6, 11, 16, 18, 31, 33, 45, 58)	47	83.0	(69.9-91.1)	HPV 16 (74.5%) HPV 33 (6.4%) HPV 18 (2.1%) HPV 31 (2.1%) HPV 45 (2.1%)
Indinnimeo 1999 (Italy)	PCR, TS (HPV 6, 11, 16, 18)	14	64.3	(38.8-83.7)	HPV 16 (42.9%)
Alemaný 2015 (Latin America & Caribbean)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	157	90.4	(84.8-94.1)	-
Yhim 2011 (Rep. Korea)	PCR, TS (HPV 6, 11, 16, 18, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 56, 58, 59, 66, 68, 69)	47	74.5	(60.5-84.7)	HPV 16 (66.0%) HPV 58 (6.4%) HPV 35 (2.1%)
Youk 2001 (Rep. Korea)	PCR-MY09/11, PCR-L1C1/C2, PCR-E6, PCR-E7, TS (HPV 16, 18)	21	100.0	(84.5-100.0)	HPV 16 (100.0%)
Laytragoon-Lewin 2007 (Sweden)	PCR-MY09/11, Sequencing (HPV 16, 18, 33)	72	90.3	(81.3-95.2)	HPV 16 (69.4%) HPV 18 (34.7%) HPV 33 (2.8%)
Baricevic 2015 (UK)	PCR-L1C1/C2, PCR L1-Consensus primer, PCR-E6, PCR-E7, PCR- MULTIPLEX (HPV 6, 11, 16, 18, 31, 33, 45, 52, 58)	151	95.4	(90.7-97.7)	HPV 16 (88.7%) HPV 6 (11.9%) HPV 33 (6.6%) HPV 18 (4.6%) HPV 58 (4.6%)

(Continued on next page)

(Table 16 – continued from previous page)

Study		HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types HPV type (%)
				%	(95% CI)	
Alemaný (USA)	2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	96	95.8	(89.8-98.4)	HPV 16 (81.3%) HPV 18 (7.3%) HPV 31 (4.2%) HPV 39 (3.1%) HPV 52 (3.1%)
Daling (USA)	2004	PCR-MY09/11, PCR L1-Consensus primer, RFLP, TS (HPV 16, 18)	199	86.9	(81.5-90.9)	HPV 16 (69.8%) HPV 18 (8.5%)
Palefsky (USA)	1991	PCR-E6, TS (HPV 06/11, 16, 18, 31, 33)	13	84.6	(57.8-95.7)	HPV 16 (76.9%) HPV 31 (23.1%) HPV 6/11 (15.4%) HPV 33 (7.7%)
Zaki 1992 (USA)		PCR L1-Consensus primer, TS (HPV 6, 11, 16, 18, 16/18)	11	72.7	(43.4-90.3)	HPV 16 (18.2%) HPV 6 (9.1%) HPV 11 (9.1%) HPV 16/18 (9.1%)
Alemaný (Western Africa)	2015 ^c	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	21	61.9	(40.9-79.2)	HPV 16 (28.6%) HPV 6 (9.5%) HPV 18 (9.5%) HPV 31 (4.8%) HPV 35 (4.8%)

Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval;

EIA: Enzyme ImmunoAssay; LBA: Line-Blot Assay; PCR: Polymerase Chain Reaction; RFLP: Restriction Fragment Length Polymorphism; SPF: Short Primer Fragment; TS: Type Specific;

^a Includes cases from Bangladesh, India and South Korea^b Includes cases from Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom^c Includes cases from Mali, Nigeria and Senegal

Data sources: See references in Section 9.

Table 17: Studies on HPV prevalence among AIN 2/3 cases (male and female)

Study		HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types HPV type (%)
				%	(95% CI)	
Hillman (Australia)	2012	HC2, LBA (HPV 16, 18, 31, 33)	21	95.2	(77.3-99.2)	HPV 16 (33.3%) HPV 31 (19.0%) HPV 18 (4.8%)
Gohy (Canada)	2008 ^a	PCR-MY09/11, (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 81, 82, 83, 84, 89)	62	93.5	(84.6-97.5)	HPV 16 (35.5%) HPV 18 (16.1%) HPV 58 (16.1%) HPV 42 (9.7%) HPV 45 (9.7%)
Salit (Canada)	2009 ^a	PCR-PGMY09/11, PCR L1-Consensus primer, LBA (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 42, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 66, 68)	74	100.0	(95.1-100.0)	HPV 16 (52.7%) HPV 18 (32.4%) HPV 31 (31.1%) HPV 6 (28.4%) HPV 52 (27.0%)
Alemaný (Europe)	2015 ^b	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	23	95.7	(79.0-99.2)	HPV 16 (65.2%) HPV 6 (8.7%) HPV 18 (8.7%) HPV 51 (8.7%) HPV 74 (8.7%)
Hampl 2006 (Germany)		, PCR-MY09/11, Sequencing (HPV 6, 11, 20, 21, 22, 23, 26, 30, 32)	16	87.5	(64.0-96.5)	-

(Continued on next page)

(Table 17 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types HPV type (%)
			%	(95% CI)	
Silling 2012 ^a (Germany)	PCR- MULTIPLEX (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 61, 66, 67, 68, 70, 71, 72, 73, 81, 82, 83, 84, 89)	42	100.0	(91.6-100.0)	HPV 16 (69.0%) HPV 11 (23.8%) HPV 18 (23.8%) HPV 6 (19.0%) HPV 67 (19.0%)
Varnai 2006 (Germany)	, PCR-MY09/11, TS, Sequencing (HPV 6, 11, 16, 18, 31, 33, 45, 58)	24	95.8	(79.8-99.3)	HPV 16 (70.8%) HPV 11 (12.5%) HPV 6 (8.3%) HPV 58 (4.2%)
Wieland 2006 ^a (Germany)	PCR, EIA (HPV 6, 11, 16, 18, 31, 33, 34, 35, 42, 44, 45, 52, 53, 54, 56, 58, 59, 66, 68, 70, 72, 73, 81, 82, 83, 84, 89)	18	100.0	(82.4-100.0)	HPV 16 (88.9%) HPV 18 (44.4%) HPV 83 (38.9%) HPV 52 (33.3%) HPV 58 (27.8%)
Tanzi 2009 ^a (Italy)	PCR-MY09/11, PCR L1-Consensus primer, RFLP (HPV 6, 11, 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 34, 35, 38, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 66, 67, 68, 69, 70, 71, 72, 81, 83, 84)	62	91.9	(82.5-96.5)	HPV 6 (38.7%) HPV 16 (37.1%) HPV 11 (27.4%) HPV 58 (8.1%) HPV 18 (4.8%)
Alemaný 2015 ^c (Latin America & Caribbean)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	12	100.0	(75.8-100.0)	HPV 16 (91.7%) HPV 6 (8.3%) HPV 11 (8.3%)
Richel 2014 ^a (Netherlands)	PCR L1-Consensus primer, PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 67, 68, 69, 70, 73, 74)	17	100.0	(81.6-100.0)	HPV 16 (58.8%) HPV 31 (17.6%) HPV 18 (11.8%) HPV 53 (11.8%) HPV 58 (11.8%)
García-Espinosa 2013 ^a (Spain)	PCR-GP5/6, PCR L1-Consensus primer, DBH (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 61, 66, 68, 70, 71, 72, 73, 81, 82, 84)	20	100.0	(83.9-100.0)	HPV 16 (50.0%) HPV 44 (35.0%) HPV 58 (35.0%) HPV 6 (30.0%) HPV 31 (30.0%)
Sirera 2013 ^a (Spain)	PCR- MULTIPLEX (HPV 6, 11, 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 68)	69	84.1	(73.7-90.9)	HPV 16 (55.1%) HPV 58 (34.8%) HPV 33 (29.0%) HPV 51 (23.2%) HPV 18 (21.7%)
Torres 2013 ^a (Spain)	LBA (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 81, 82, 83, 84)	44	97.7	(88.2-99.6)	HPV 16 (59.1%) HPV 6 (34.1%) HPV 66 (31.8%) HPV 52 (29.5%) HPV 53 (29.5%)
Phanuphak 2013 (Thailand)	PCR L1-Consensus primer, PCR-E6, PCR-E7, LBA (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 81, 82, 83, 84)	41	82.9	(68.7-91.5)	HPV 40 (51.2%) HPV 53 (26.8%) HPV 16 (24.4%) HPV 11 (19.5%) HPV 58 (17.1%)

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(Table 17 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPVs HPV type (%)
			%	(95% CI)	
Fox 2005 ^a (UK)	, PCR-MY09/11, (HPV 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59)	74	97.3	(90.7-99.3)	HPV 16 (64.9%) HPV 18 (25.7%) HPV 33 (24.3%) HPV 58 (21.6%) HPV 31 (18.9%)
Sahasrabuddhe 2013 ^a (USA)	PCR-PGMY09/11, LBA (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 81, 82, 83, 84)	104	99.0	(94.8-99.8)	HPV 16 (54.8%) HPV 6 (26.0%) HPV 31 (22.1%) HPV 42 (22.1%) HPV 66 (21.2%)

Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; AIN 2/3: Anal intraepithelial neoplasia of grade 2/3;

DBH: Dot Blot Hybridization; EIA: Enzyme ImmunoAssay; HC2: Hybrid Capture 2; LBA: Line-Blot Assay; PCR: Polymerase Chain Reaction; RFLP: Restriction Fragment Length Polymorphism; SPF: Short Primer Fragment; TS: Type Specific;

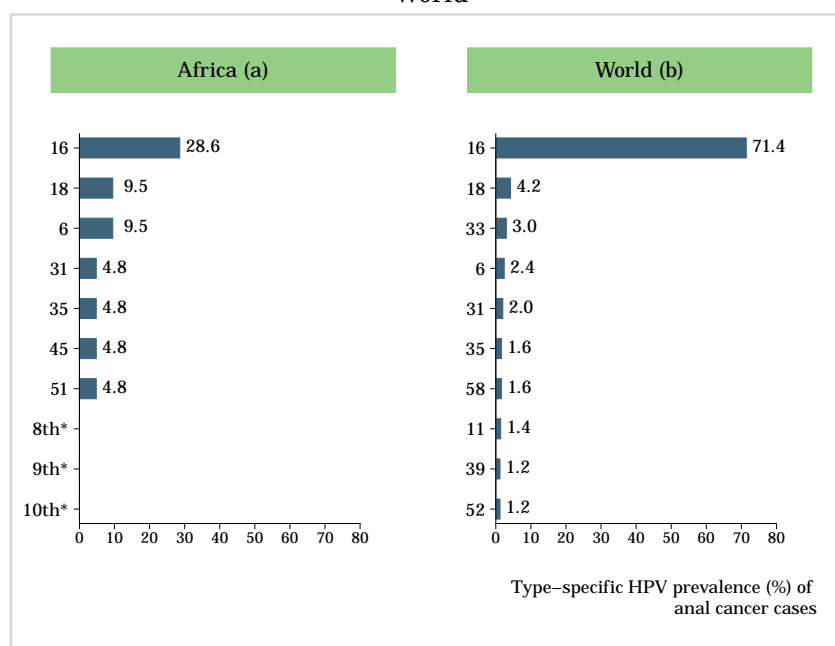
^a HIV positive cases

^b Includes cases from Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom

^c Includes cases from Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico and Paraguay

Data sources: See references in Section 9.

Figure 102: Comparison of the ten most frequent HPV types in anal cancer cases in Africa and the World



*No data available. No more types than shown were tested or were positive.

Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

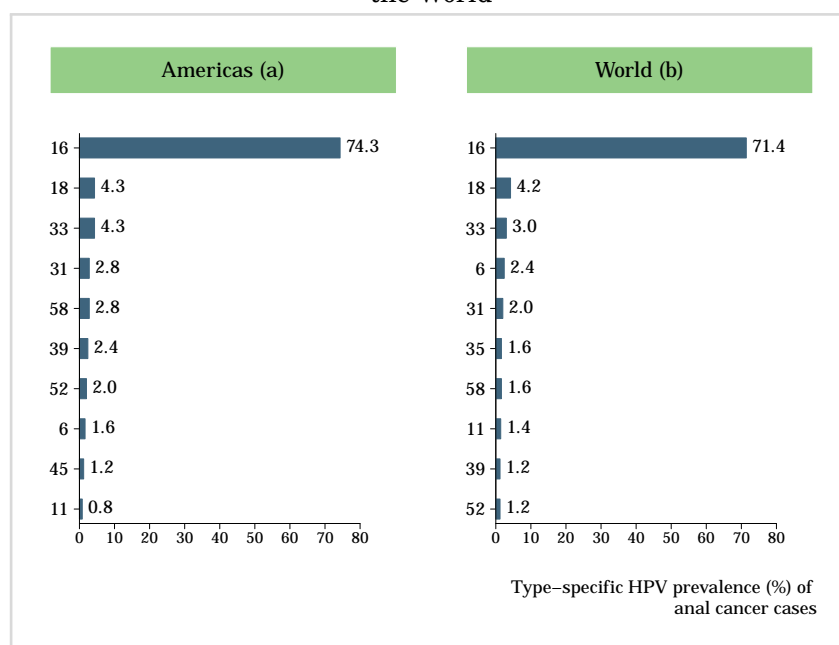
AIN 2/3: Anal intraepithelial neoplasia of grade 2/3;

^a Includes cases from Mali, Nigeria and Senegal.

^b Includes cases from Europe (Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom); America (Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay and United States); Africa (Mali, Nigeria and Senegal); Asia (Bangladesh, India and South Korea)

Data sources: See references in Section 9.

Figure 103: Comparison of the ten most frequent HPV types in anal cancer cases in the Americas and the World



Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

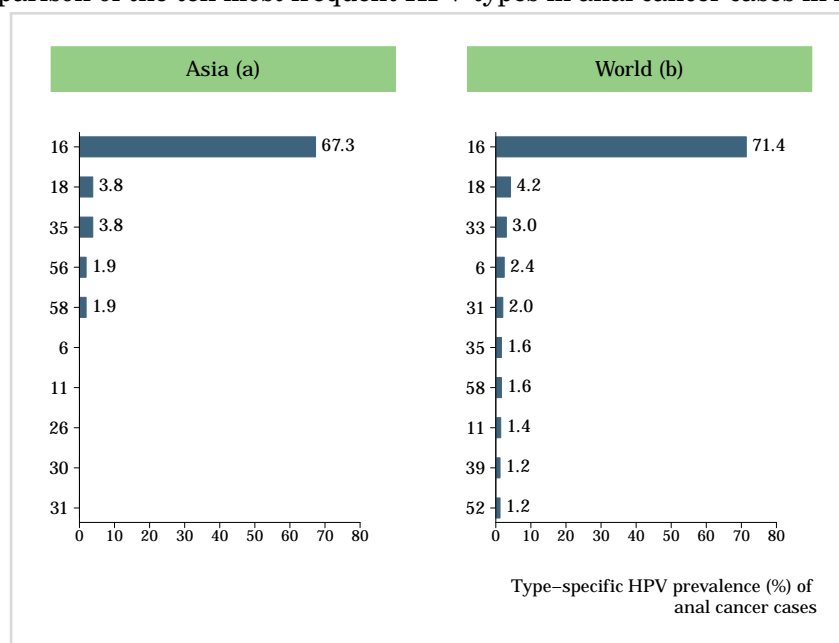
AIN 2/3: Anal intraepithelial neoplasia of grade 2/3;

^a Includes cases from Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay and United States

^b Includes cases from Europe (Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom); America (Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay and United States); Africa (Mali, Nigeria and Senegal); Asia (Bangladesh, India and South Korea)

Data sources: See references in Section 9.

Figure 104: Comparison of the ten most frequent HPV types in anal cancer cases in Asia and the World



Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

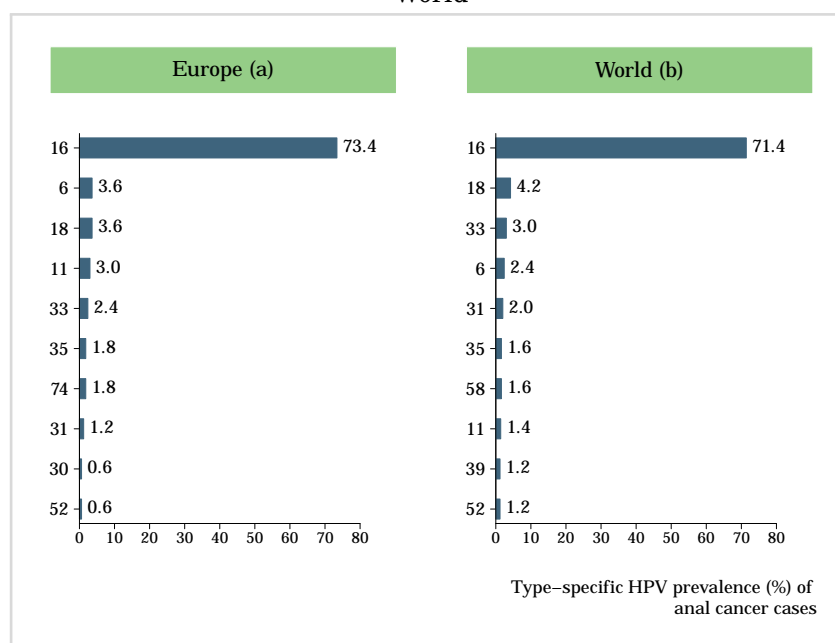
AIN 2/3: Anal intraepithelial neoplasia of grade 2/3;

^a Includes cases from Bangladesh, India and South Korea

^b Includes cases from Europe (Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom); America (Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay and United States); Africa (Mali, Nigeria and Senegal); Asia (Bangladesh, India and South Korea)

Data sources: See references in Section 9.

Figure 105: Comparison of the ten most frequent HPV types in anal cancer cases in Europe and the World



Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

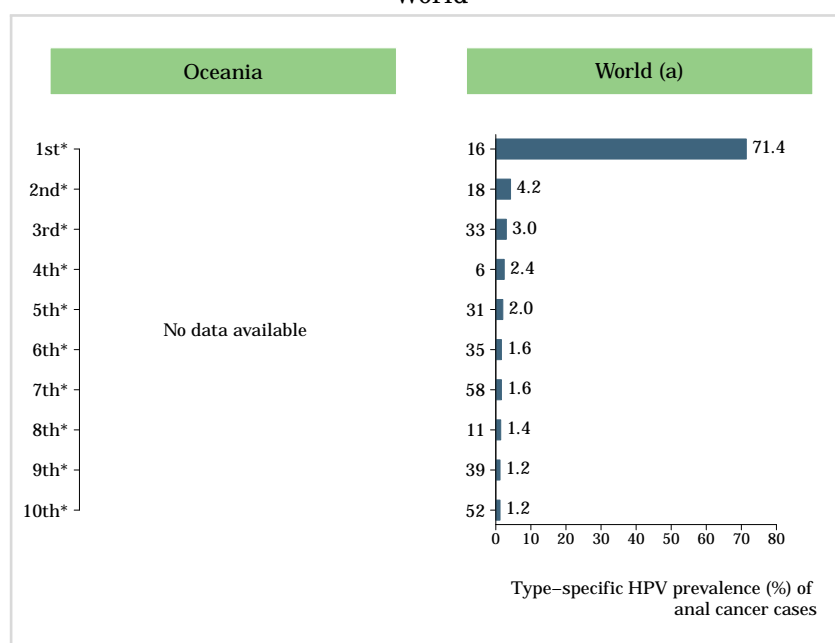
AIN 2/3: Anal intraepithelial neoplasia of grade 2/3;

^a Includes cases from Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom.

^b Includes cases from Europe (Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom); America (Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay and United States); Africa (Mali, Nigeria and Senegal); Asia (Bangladesh, India and South Korea)

Data sources: See references in Section 9.

Figure 106: Comparison of the ten most frequent HPV types in anal cancer cases in Oceania and the World



*No data available. No more types than shown were tested or were positive.

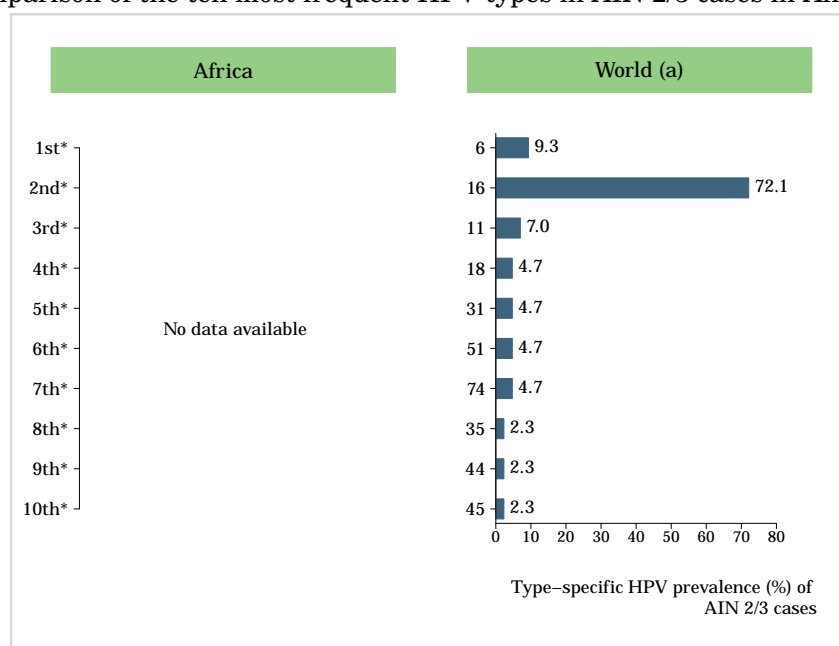
Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

AIN 2/3: Anal intraepithelial neoplasia of grade 2/3;

^a Includes cases from Europe (Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom); America (Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay and United States); Africa (Mali, Nigeria and Senegal); Asia (Bangladesh, India and South Korea)

Data sources: See references in Section 9.

Figure 107: Comparison of the ten most frequent HPV types in AIN 2/3 cases in Africa and the World



*No data available. No more types than shown were tested or were positive.

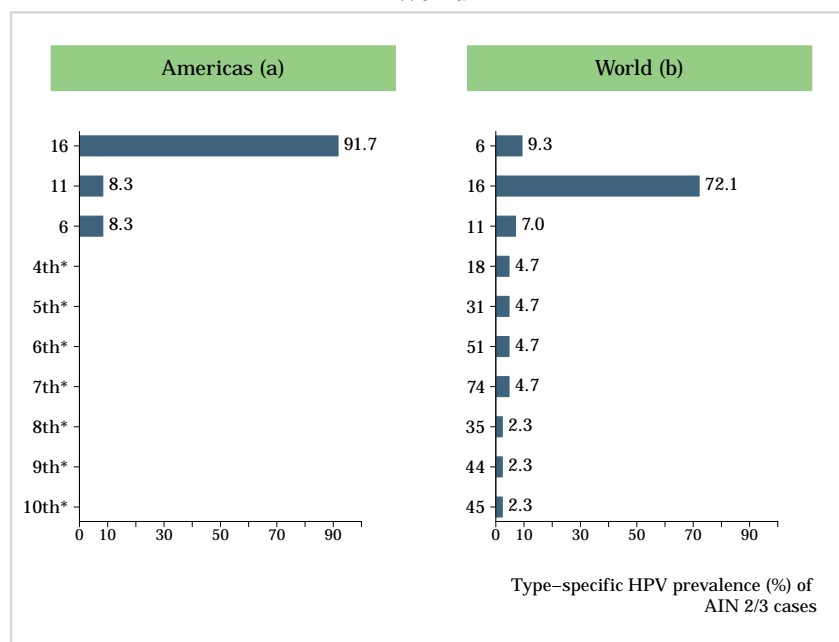
Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

AIN 2/3: Anal intraepithelial neoplasia of grade 2/3;

^aIncludes cases from Europe (Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom); America (Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay)

Data sources: See references in Section 9.

Figure 108: Comparison of the ten most frequent HPV types in AIN 2/3 cases in the Americas and the World



*No data available. No more types than shown were tested or were positive.

Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

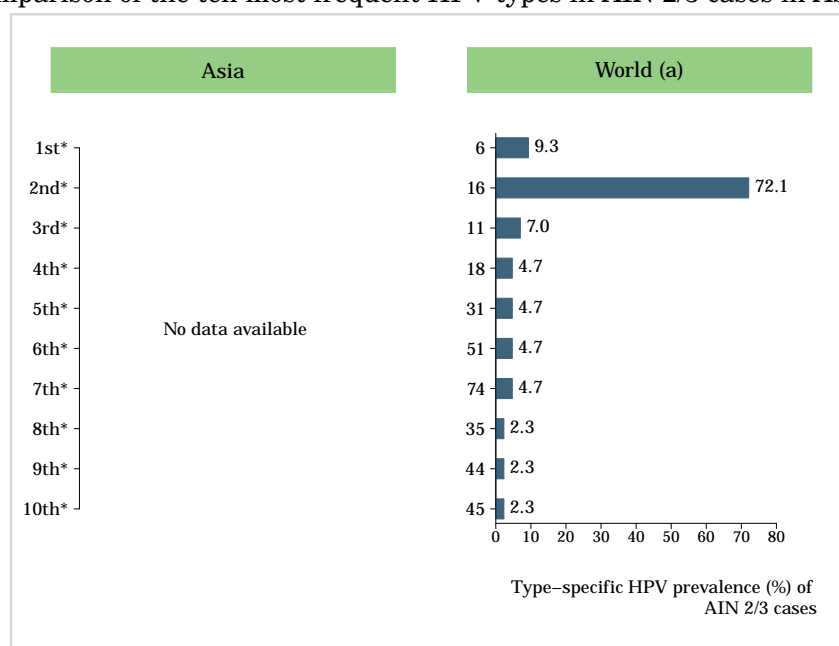
AIN 2/3: Anal intraepithelial neoplasia of grade 2/3;

^aIncludes cases from Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay

^bIncludes cases from Europe (Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom); America (Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay)

Data sources: See references in Section 9.

Figure 109: Comparison of the ten most frequent HPV types in AIN 2/3 cases in Asia and the World



*No data available. No more types than shown were tested or were positive.

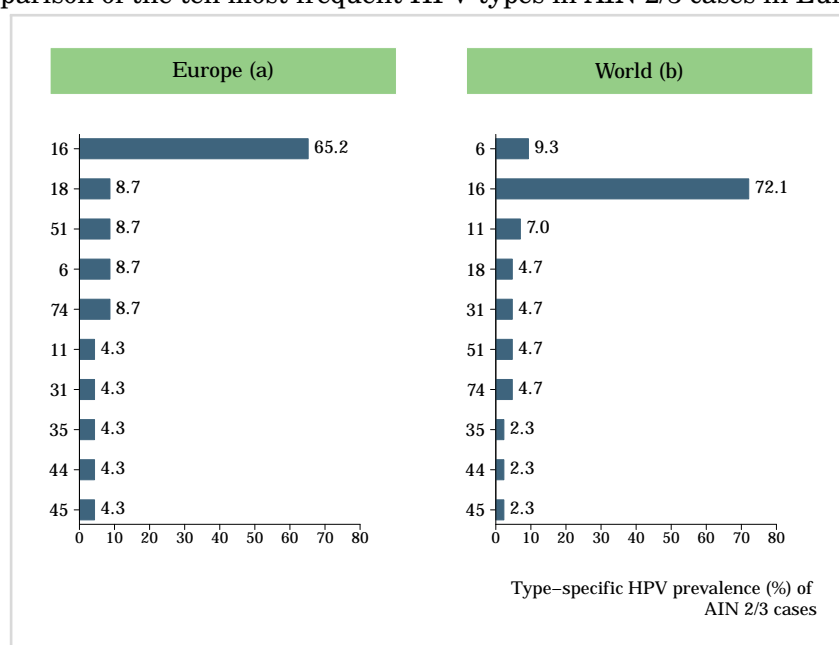
Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

AIN 2/3: Anal intraepithelial neoplasia of grade 2/3;

^aIncludes cases from Europe (Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom); America (Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay)

Data sources: See references in Section 9.

Figure 110: Comparison of the ten most frequent HPV types in AIN 2/3 cases in Europe and the World



Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

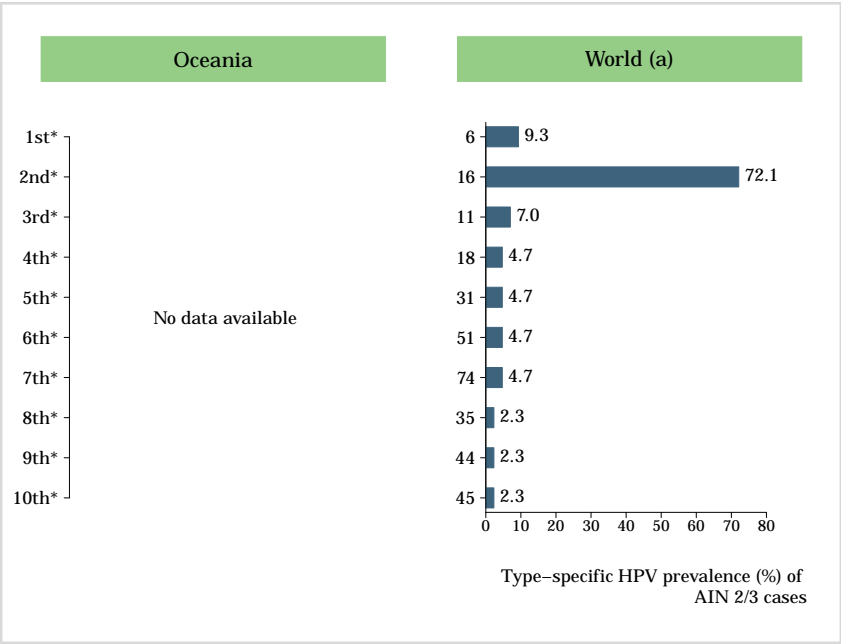
AIN 2/3: Anal intraepithelial neoplasia of grade 2/3;

^aIncludes cases from Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom

^bIncludes cases from Europe (Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom); America (Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay)

Data sources: See references in Section 9.

Figure 111: Comparison of the ten most frequent HPV types in AIN 2/3 cases in Oceania and the World



*No data available. No more types than shown were tested or were positive.
Data updated on 09 Feb 2017 (data as of 30 Jun 2014).
AIN 2/3: Anal intraepithelial neoplasia of grade 2/3;
^aIncludes cases from Europe (Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom); America (Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay)
Data sources: See references in Section 9.

4.2.2 Vulvar cancer and precancerous vulvar lesions

HPV attribution for vulvar cancer is 43% worldwide (*de Martel C et al. Lancet Oncol 2012;13(6):607-15*). Vulvar cancer has two distinct histological patterns with two different risk factor profiles: (1) basaloid/warty types (2) keratinising types. Basaloid/warty lesions are more common in young women, are frequently found adjacent to VIN, are very often associated with HPV DNA detection (86%), and have a similar risk factor profile as cervical cancer. Keratinising vulvar carcinomas represent the majority of the vulvar lesions (>60%). These lesions develop from non HPV-related chronic vulvar dermatoses, especially lichen sclerosus and/or squamous hyperplasia, their immediate cancer precursor lesion is differentiated VIN, they occur more often in older women, and are rarely associated with HPV (6%) or with any of the other risk factors typical of cervical cancer. HPV prevalence is frequently detected among cases of high-grade VIN (VIN2/3) (85.3%). HPV 16 is the most common type detected followed by HPV 33 (De Vuyst H et al. *Int J Cancer* 2009; 124:1626-36). In this section, the HPV prevalence among vulvar cancer cases and precancerous vulvar lesions in the World are presented.

Table 18: Studies on HPV prevalence among vulvar cancer cases

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types HPV type (%)
			%	(95% CI)	
de Sanjosé 2013 ^a (Africa)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	24	70.8	(50.8-85.1)	HPV 16 (58.3%) HPV 18 (4.2%) HPV 45 (4.2%) HPV 52 (4.2%)
de Sanjosé 2013 ^b (Asia)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	188	28.7	(22.7-35.6)	HPV 16 (18.1%) HPV 18 (1.6%) HPV 44 (1.6%) HPV 45 (1.1%) HPV 52 (1.1%)
Tan 2013 (Australia)	PCR L1-Consensus primer, (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 42, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 82)	20	90.0	(69.9-97.2)	HPV 16 (80.0%) HPV 33 (5.0%) HPV 35 (5.0%) HPV 52 (5.0%) HPV 54 (5.0%)
Pinto 1999 (Brazil)	PCR L1-Consensus primer, PCR-E6, TS (HPV 06/11, 16, 18, 40, 42, 43, 44, 45, 51, 52, 54, 56, 58)	158	24.1	(18.1-31.3)	HPV 16 (16.5%) HPV 18 (9.5%) HPV 6/11 (1.3%) HPV 45 (0.6%)
Tachezy 2011 (Czech Rep.)	PCR L1-Consensus primer, Sequencing (HPV 6, 11, 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 34, 35, 38, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 74, 80, 81, 82, 83, 84, 85, 86, 87, 89, 90, 91)	46	41.3	(28.3-55.7)	HPV 16 (23.9%) HPV 33 (8.7%) HPV 6 (2.2%) HPV 42 (2.2%) HPV 45 (2.2%)
Bryndorf 2004 (Denmark)	PCR-SPF10, (HPV 6, 11, 16, 18, 31, 33, 35, 42, 44, 45, 51, 52, 56, 58)	10	60.0	(31.3-83.2)	HPV 16 (40.0%) HPV 33 (20.0%) HPV 56 (10.0%)
Hørting 1993 (Denmark)	PCR-E6, PCR-E7, TS (HPV 6, 11, 16, 18, 33)	62	30.6	(20.6-43.0)	HPV 16 (21.0%) HPV 18 (4.8%) HPV 33 (4.8%)
Hørting 1994 (Denmark)	PCR-E6, PCR-E7, TS (HPV 6, 11, 16, 18, 33)	78	30.8	(21.6-41.7)	HPV 16 (28.2%) HPV 33 (3.8%)

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(Table 18 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types HPV type (%)
			%	(95% CI)	
Madsen 2008 (Denmark)	EIA, (HPV 6, 11, 16, 18, 31, 33, 35, 42, 44, 45, 51, 52, 56, 58, 61, 67, 73)	60	51.7	(39.3-63.8)	HPV 16 (36.7%) HPV 33 (11.7%) HPV 73 (3.3%) HPV 6 (1.7%) HPV 51 (1.7%)
de Sanjosé 2013 ^c (Europe)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	903	19.3	(16.8-22.0)	HPV 16 (13.8%) HPV 33 (1.2%) HPV 18 (0.6%) HPV 31 (0.6%) HPV 44 (0.4%)
Iwasawa 1997 (Finland)	PCR-MY09/11, PCR L1-Consensus primer, PCR-E6, TS (HPV 6, 11, 16, 18, 33)	74	36.5	(26.4-47.9)	HPV 16 (25.7%) HPV 18 (12.2%) HPV 33 (1.4%)
Choschzick 2011 (Germany)	PCR-MY09/11, Sequencing (HPV 6, 11, 16, 18, 33)	39	46.2	(31.6-61.4)	HPV 16 (43.6%) HPV 33 (2.6%)
Hampl 2006 (Ger- many)	PCR-MY09/11, Sequencing (HPV 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 35, 42, 44, 45, 51, 52, 56, 58, 61, 67, 73, 91)	48	60.4	(46.3-73.0)	HPV 16 (39.6%) HPV 33 (8.3%) HPV 31 (4.2%) HPV 18 (2.1%)
Milde-Langosch 1995 (Germany)	PCR-MY09/11, TS (HPV 6, 11, 16, 18, 31, 33, 35)	40	27.5	(16.1-42.8)	HPV 16 (25.0%)
Reuschenbach 2013 (Germany)	PCR- MULTIPLEX (HPV 6, 11, 16, 18, 31, 33, 35, 39, 42, 43, 44, 45, 51, 52, 56, 58, 59, 68, 70, 71, 73, 82)	183	43.7	(36.7-51.0)	HPV 16 (36.1%) HPV 18 (2.7%) HPV 33 (1.1%) HPV 6 (0.5%) HPV 11 (0.5%)
Bonvicini 2005 (Italy)	PCR-MY09/11 (HPV 16, 18, 31, 33, 35, 45, 52, 58)	16	0.0	(0.0-19.4)	-
Nagano 1996 (Japan)	PCR-L1C1/C2, RFLP (HPV 6, 11, 16, 18, 30, 31, 33, 34, 35, 39, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 68, 70)	11	72.7	(43.4-90.3)	HPV 16 (36.4%) HPV 6 (9.1%) HPV 18 (9.1%) HPV 51 (9.1%) HPV 56 (9.1%)
Osakabe 2007 (Japan)	PCR-L1C1/C2, RFLP (HPV 6, 11, 16, 18, 31, 33, 42, 52, 58)	21	23.8	(10.6-45.1)	HPV 16 (14.3%) HPV 6 (4.8%) HPV 52 (4.8%)
de Sanjosé 2013 ^d (Latin America & Caribbean)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	324	40.1	(34.9-45.5)	-
Kagie 1997 (Netherlands)	PCR-CPI/CPIIG, Sequencing (HPV 6, 11, 16, 31, 33, 45)	66	19.7	(11.9-30.8)	HPV 16 (16.7%) HPV 33 (1.5%) HPV 45 (1.5%)
Trietsch 2013 (Netherlands)	PCR, (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 82)	108	16.7	(10.8-24.8)	HPV 16 (10.2%) HPV 33 (5.6%) HPV 18 (1.9%)
van de Nieuwen- hof 2009 (Nether- lands)	PCR L1-Consensus primer, (HPV 6, 11, 16, 18, 31, 33, 35, 42, 45, 51, 52, 53, 54, 56, 58, 66, 73)	130	34.6	(27.0-43.1)	HPV 16 (15.4%) HPV 33 (5.4%) HPV 18 (2.3%) HPV 52 (1.5%) HPV 54 (1.5%)

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(Table 18 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types HPV type (%)
			%	(95% CI)	
van der Avoort 2006 (Nether- lands)	PCR L1-Consensus primer, PCR-SPF10, (HPV 6, 11, 16, 18, 31, 33, 35, 42, 44, 45, 51, 52, 56, 58)	16	0.0	(0.0-19.4)	-
de Sanjosé 2013 ^e (Oceania)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	220	40.0	(33.8-46.6)	HPV 16 (27.3%) HPV 33 (3.6%) HPV 18 (2.7%) HPV 6 (1.4%) HPV 39 (1.4%)
Bujko 2012 (Poland)	PCR, LBA (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 61, 66, 68, 70, 71, 72, 73, 81, 82, 83, 84)	44	34.1	(21.9-48.9)	HPV 16 (20.5%) HPV 11 (11.4%) HPV 44 (4.5%) HPV 52 (4.5%) HPV 58 (4.5%)
Liss 1998 (Poland)	PCR-MY09/11, PCR L1-Consensus primer, PCR-E6, PCR-E7, RFLP (HPV 6, 11, 16, 18, 31, 33, 35, 45, 52, 58)	18	16.7	(5.8-39.2)	HPV 16 (16.7%)
Alonso 2011 (Spain)	PCR-SPF10, (HPV 6, 11, 16, 18, 31, 33, 35, 42, 45, 51, 52, 53, 54, 56, 58, 66)	98	19.4	(12.8-28.3)	HPV 16 (14.3%) HPV 33 (2.0%) HPV 31 (1.0%) HPV 51 (1.0%) HPV 52 (1.0%)
Guerrero 2011 (Spain)	PCR L1-Consensus primer, (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 61, 66, 68, 70, 71, 72, 73, 81, 82, 83, 84)	30	16.7	(7.3-33.6)	HPV 59 (10.0%) HPV 6 (3.3%) HPV 16 (3.3%) HPV 18 (3.3%)
Lerma 1999 (Spain)	PCR L1-Consensus primer, TS (HPV 16, 18)	57	12.3	(6.1-23.2)	HPV 16 (12.3%)
Larsson 2012 (Sweden)	PCR-E6, (HPV 6, 11, 16, 18, 31, 33, 39, 45, 51, 52, 56, 58, 59)	130	30.8	(23.5-39.2)	HPV 16 (23.8%) HPV 33 (3.8%) HPV 18 (1.5%) HPV 56 (0.8%) HPV 59 (0.8%)
Lindell 2010 (Sweden)	PCR-CPI/CPIIG, TS, Sequencing (HPV 6, 11, 16, 18, 33, 52)	75	30.7	(21.4-41.8)	HPV 16 (21.3%) HPV 18 (2.7%) HPV 33 (2.7%) HPV 52 (1.3%)
Ngamkham 2013 (Thailand)	EIA (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 66, 68, 70, 71, 72, 73, 81, 82, 83, 84, 89)	25	44.0	(26.7-62.9)	HPV 16 (36.0%) HPV 33 (8.0%) HPV 35 (8.0%) HPV 18 (4.0%) HPV 58 (4.0%)
Abdel-Hady 2001 (UK)	TS (HPV 6, 11, 16, 18, 31, 33)	11	27.3	(9.7-56.6)	HPV 16 (27.3%) HPV 33 (18.2%) HPV 18 (9.1%)
de Sanjosé 2013 (USA)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	50	50.0	(36.6-63.4)	HPV 16 (34.0%) HPV 33 (8.0%) HPV 6 (2.0%) HPV 18 (2.0%) HPV 44 (2.0%)
Gargano 2012 (USA)	PCR-SPF10, LBA, (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 74, 81, 82, 83, 84)	176	68.8	(61.6-75.1)	HPV 16 (48.3%) HPV 33 (10.2%) HPV 52 (2.8%) HPV 18 (1.7%) HPV 31 (1.1%)

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(Table 18 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types (%)
			%	(95% CI)	
Kim 1996 (USA)	PCR-MY09/11, PCR L1-Consensus primer, TS, Sequencing (HPV 16, 18)	18	38.9	(20.3-61.4)	HPV 16 (27.8%) HPV 18 (5.6%)
Madeleine 1997 (USA)	PCR-MY09/11, PCR L1-Consensus primer, PCR-E6, RFLP (HPV 16)	55	50.9	(38.1-63.6)	HPV 16 (43.6%)
Sutton 2008 (USA)	PCR L1-Consensus primer, LBA (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 45, 51, 52, 53, 54, 56, 58, 59, 61, 62, 66, 67, 68, 70, 71, 72, 73, 81, 82, 83, 84)	116	69.8	(60.9-77.4)	HPV 16 (56.0%) HPV 33 (10.3%) HPV 45 (3.4%) HPV 6 (2.6%) HPV 52 (2.6%)
Tate 1994 (USA)	PCR-MY09/11, PCR L1-Consensus primer, RFLP (HPV 16, 33)	13	53.8	(29.1-76.8)	HPV 16 (46.2%) HPV 33 (7.7%)
Riethdorf 2004 ^f (World)	PCR L1-Consensus primer, TS (HPV 16)	71	87.3	(77.6-93.2)	HPV 16 (87.3%)

Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval;

EIA: Enzyme ImmunoAssay; LBA: Line-Blot Assay; PCR: Polymerase Chain Reaction; RFLP: Restriction Fragment Length Polymorphism; SPF: Short Primer Fragment; TS: Type Specific;

^aIncludes cases from Mali, Mozambique, Nigeria, and Senegal

^bIncludes cases from Bangladesh, India, Israel, South Korea, Kuwait, Lebanon, Philippines, Taiwan and Turkey

^cIncludes cases from Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom

^dIncludes cases from Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay, and Venezuela

^eIncludes cases from Australia and New Zealand

^fIncludes cases from Germany and United States of America

Data sources: See references in Section 9.

Table 19: Studies on HPV prevalence among VIN 2/3 cases

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types (%)
			%	(95% CI)	
de Sanjosé 2013 ^a (Asia)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	20	100.0	(83.9-100.0)	HPV 16 (80.0%) HPV 6 (5.0%) HPV 18 (5.0%) HPV 33 (5.0%) HPV 35 (5.0%)
Tan 2013 (Australia)	PCR L1-Consensus primer, (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 42, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 82)	44	90.9	(78.8-96.4)	HPV 16 (68.2%) HPV 26 (4.5%) HPV 33 (4.5%) HPV 52 (4.5%) HPV 82 (4.5%)
Tachezy 2011 (Czech Rep.)	PCR L1-Consensus primer, , Sequencing (HPV 6, 11, 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 34, 35, 38, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 74, 80, 81, 82, 83, 84, 85, 86, 87, 89, 90, 91)	94	94.7	(88.1-97.7)	HPV 16 (71.3%) HPV 33 (8.5%) HPV 18 (5.3%) HPV 6 (4.3%) HPV 11 (2.1%)
Junge 1995 (Denmark)	PCR-E6, PCR-E7, TS (HPV 6, 11, 16, 18, 31, 33)	58	87.9	(77.1-94.0)	HPV 16 (77.6%) HPV 33 (10.3%)
de Sanjosé 2013 ^b (Europe)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	312	86.9	(82.7-90.2)	HPV 16 (69.6%) HPV 33 (11.2%) HPV 18 (2.2%) HPV 6 (1.6%) HPV 52 (1.3%)

(Continued on next page)

(Table 19 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types HPV type (%)
			%	(95% CI)	
Hampl 2006 (Germany)	PCR-MY09/11, Sequencing (HPV 6, 11, 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 35, 42, 44, 45, 51, 52, 56, 58, 61, 67, 73, 74, 91)	168	100.0	(97.8-100.0)	HPV 16 (79.8%) HPV 33 (10.7%) HPV 31 (4.2%) HPV 18 (3.0%)
Tsimplaki 2012 (Greece)	(HPV 6, 11, 16, 18, 31, 33, 35, 40, 42, 43, 44, 45, 51, 52, 53, 56, 58, 59, 66, 73)	14	78.6	(52.4-92.4)	HPV 16 (64.3%) HPV 18 (7.1%) HPV 51 (7.1%) HPV 52 (7.1%) HPV 53 (7.1%)
Bonvicini 2005 (Italy)	PCR-MY09/11 (HPV 16, 18, 31, 33, 35, 45, 52, 58)	25	44.0	(26.7-62.9)	HPV 16 (36.0%) HPV 35 (8.0%) HPV 33 (4.0%) HPV 52 (4.0%)
de Sanjosé 2013 ^c (Latin America & Caribbean)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	126	77.8	(69.8-84.2)	-
van Beurden 1995 (Netherlands)	PCR-CPI/CPIIG, Sequencing (HPV 6, 11, 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 45)	46	95.7	(85.5-98.8)	HPV 16 (89.1%) HPV 33 (2.2%) HPV 45 (2.2%)
van der Avoort 2006 (Netherlands)	PCR L1-Consensus primer, PCR-SPF10, (HPV 6, 11, 16, 18, 31, 33, 35, 42, 43, 44, 45, 51, 52, 56, 58, 59, 74)	32	56.3	(39.3-71.8)	HPV 16 (40.6%) HPV 6 (6.3%) HPV 31 (6.3%) HPV 33 (3.1%)
van Esch 2014 (Netherlands)	TS (HPV 16, 18, 33, 73)	43	100.0	(91.8-100.0)	HPV 16 (81.4%) HPV 33 (14.0%) HPV 73 (2.3%)
de Sanjosé 2013 ^d (Oceania)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	125	94.4	(88.9-97.3)	HPV 16 (71.2%) HPV 33 (10.4%) HPV 18 (4.0%) HPV 31 (3.2%) HPV 6 (1.6%)
Lerma 1999 (Spain)	PCR L1-Consensus primer, TS (HPV 16, 18)	18	27.8	(12.5-50.9)	HPV 16 (27.8%)
Abdel-Hady 2001 (UK)	TS (HPV 06/11, 16, 18, 31, 33)	32	71.9	(54.6-84.4)	HPV 16 (62.5%) HPV 6/11 (18.8%) HPV 31 (3.1%) HPV 33 (3.1%)
Baldwin 2003 (UK)	PCR L1-Consensus primer, Sequencing (HPV 6, 11, 16, 18, 31, 33)	11	100.0	(74.1-100.0)	HPV 16 (90.9%) HPV 33 (9.1%)
Bryant 2011 (UK)	PCR- MULTIPLEX (HPV 6, 11, 16, 18, 31, 33, 35, 40, 42, 43, 44, 45, 51, 52, 53, 56, 58, 59, 66, 73)	49	81.6	(68.6-90.0)	HPV 16 (67.3%) HPV 33 (16.3%) HPV 6 (10.2%) HPV 18 (2.0%) HPV 31 (2.0%)
Daayana 2010 (UK)	EIA, (HPV 6, 11, 16, 26, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 61, 66, 68, 70, 71, 72, 73, 81, 82, 83, 84)	19	78.9	(56.7-91.5)	HPV 16 (73.7%) HPV 33 (5.3%) HPV 42 (5.3%) HPV 84 (5.3%)

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(Table 19 – continued from previous page)

Study		HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types HPV type (%)
				%	(95% CI)	
Winters (UK)	2008	EIA, (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 61, 66, 68, 70, 71, 72, 73, 81, 82, 83, 84)	20	85.0	(64.0-94.8)	HPV 16 (75.0%) HPV 18 (5.0%) HPV 33 (5.0%)
Gargano (USA)	2012	PCR-SPF10, LBA, (HPV 16, 18, 33, 52, 59)	68	97.1	(89.9-99.2)	HPV 16 (80.9%) HPV 33 (8.8%) HPV 59 (2.9%) HPV 18 (1.5%)
Madeleine (USA)	1997	PCR-MY09/11, PCR L1-Consensus primer, PCR-E6, RFLP (HPV 16)	253	71.5	(65.7-76.7)	HPV 16 (61.7%)
Srodon (USA)	2006	PCR-MY09/11, PCR-SPF10, , Sequencing (HPV 6, 11, 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 34, 35, 38, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 74, 80, 81, 82, 83, 84, 85, 86, 87, 89, 90, 91)	34	100.0	(89.8-100.0)	HPV 16 (91.2%) HPV 18 (5.9%) HPV 35 (5.9%) HPV 11 (2.9%) HPV 33 (2.9%)
Riethdorf (World)	2004 ^e	PCR L1-Consensus primer, TS (HPV 16)	60	68.3	(55.8-78.7)	HPV 16 (68.3%)

Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; VIN 2/3: Vulvar intraepithelial neoplasia of grade 2/3;

EIA: Enzyme ImmunoAssay; LBA: Line-Blot Assay; PCR: Polymerase Chain Reaction; RFLP: Restriction Fragment Length Polymorphism; SPF: Short Primer Fragment; TS: Type Specific;

^a Includes cases from Bangladesh, India, Israel, South Korea, Kuwait, Lebanon, Philippines, Taiwan and Turkey

^b Includes cases from Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom

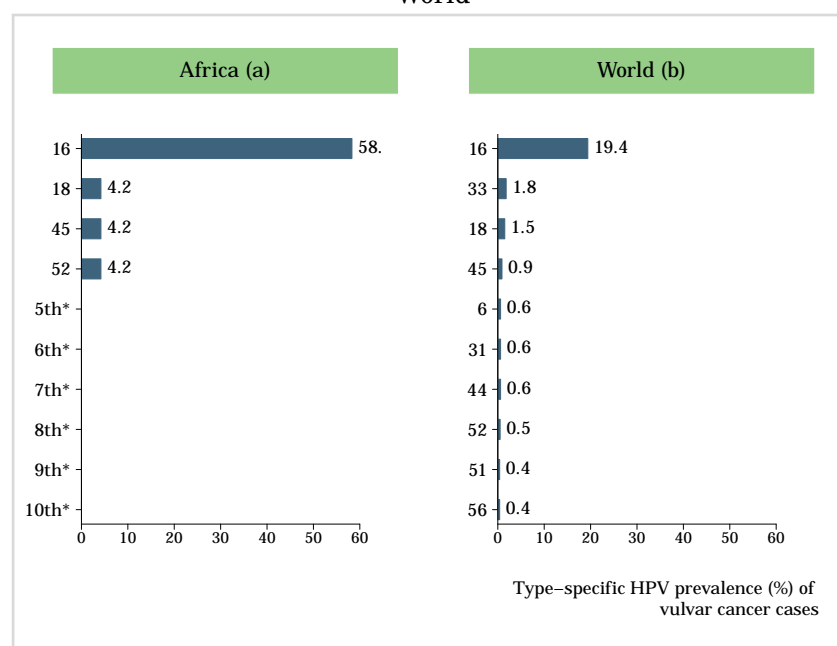
^c Includes cases from Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay, and Venezuela

^d Includes cases from Australia and New Zealand

^e Includes cases from Germany and United States of America

Data sources: See references in Section 9.

Figure 112: Comparison of the ten most frequent HPV types in vulvar cancer cases in Africa and the World



*No data available. No more types than shown were tested or were positive.

Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

VIN 2/3: Vulvar intraepithelial neoplasia of grade 2/3;

^a Includes cases from Mali, Mozambique, Nigeria, and Senegal.

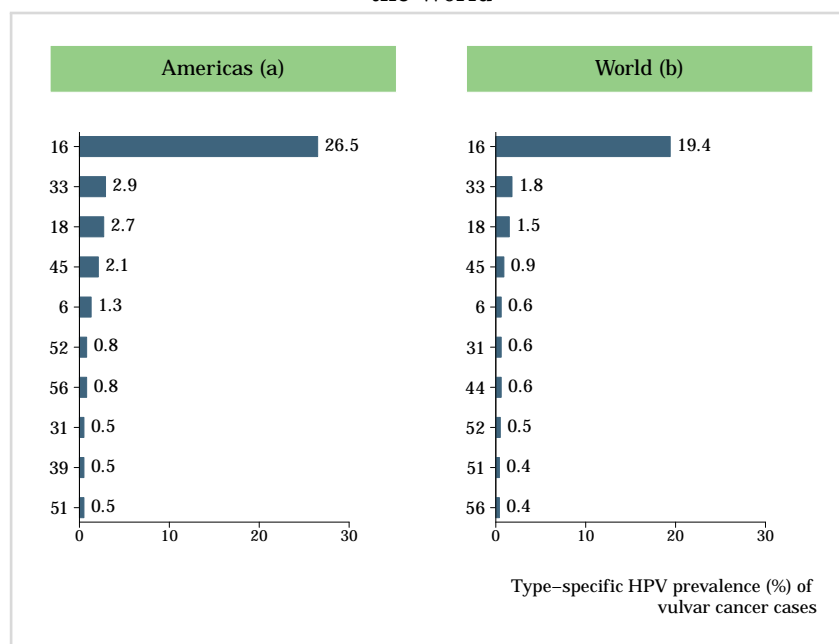
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(Figure 116 – continued from previous page)

^b Includes cases from America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay, United States of America and Venezuela); Africa (Mali, Mozambique, Nigeria, and Senegal); Oceania (Australia and New Zealand); Europe (Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom); and in Asia (Bangladesh, India, Israel, South Korea, Kuwait, Lebanon, Philippines, Taiwan and Turkey)

Data sources: See references in Section 9.

Figure 113: Comparison of the ten most frequent HPV types in vulvar cancer cases in the Americas and the World



Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

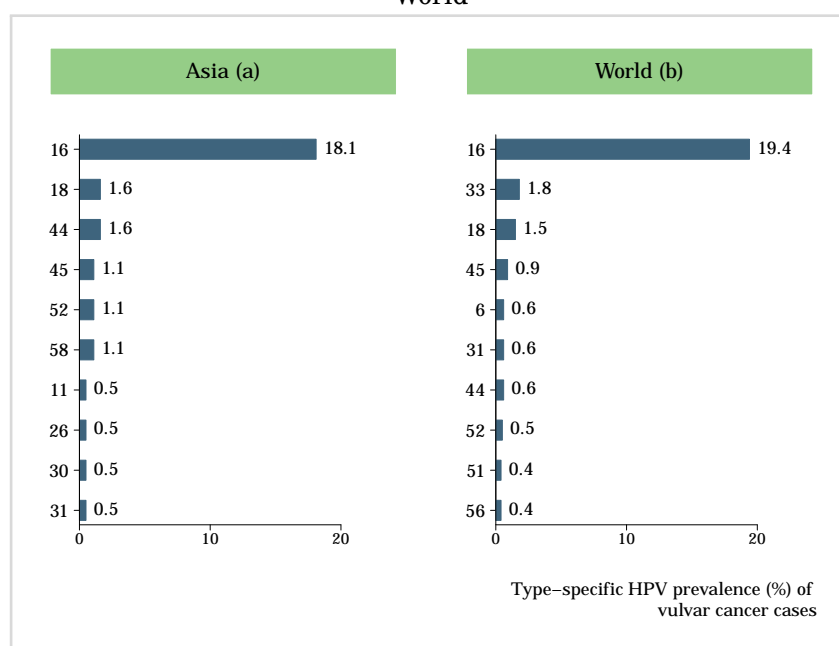
VIN 2/3: Vulvar intraepithelial neoplasia of grade 2/3;

^a Includes cases from Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay, United States of America and Venezuela

^b Includes cases from America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay, United States of America and Venezuela); Africa (Mali, Mozambique, Nigeria, and Senegal); Oceania (Australia and New Zealand); Europe (Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom); and in Asia (Bangladesh, India, Israel, South Korea, Kuwait, Lebanon, Philippines, Taiwan and Turkey)

Data sources: See references in Section 9.

Figure 114: Comparison of the ten most frequent HPV types in vulvar cancer cases in Asia and the World



Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

VIN 2/3: Vulvar intraepithelial neoplasia of grade 2/3;

(Continued on next page)

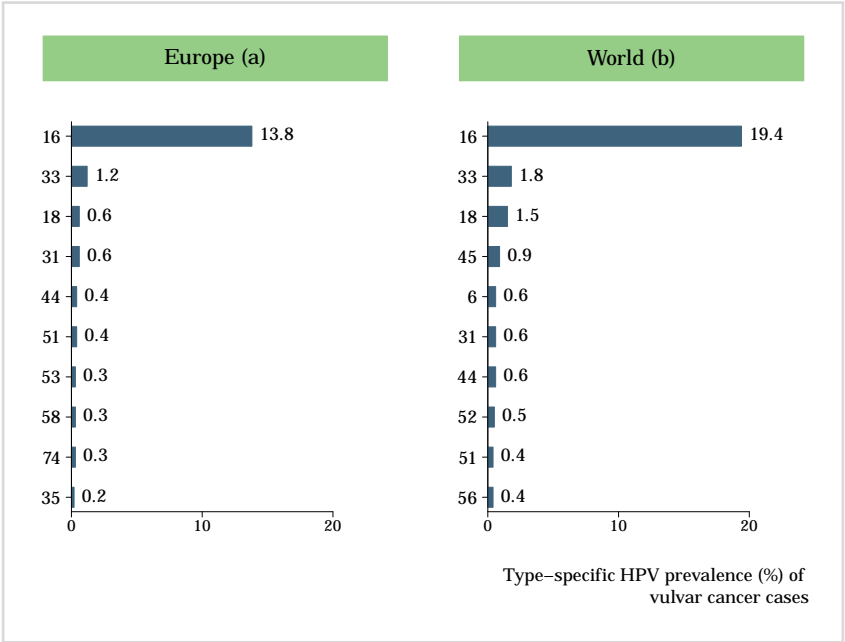
(Figure 116 – continued from previous page)

^a Includes cases from Bangladesh, India, Israel, South Korea, Kuwait, Lebanon, Philippines, Taiwan and Turkey.

^b Includes cases from America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay, United States of America and Venezuela); Africa (Mali, Mozambique, Nigeria, and Senegal); Oceania (Australia and New Zealand); Europe (Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom); and in Asia (Bangladesh, India, Israel, South Korea, Kuwait, Lebanon, Philippines, Taiwan and Turkey)

Data sources: See references in Section 9.

Figure 115: Comparison of the ten most frequent HPV types in vulvar cancer cases in Europe and the World



Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

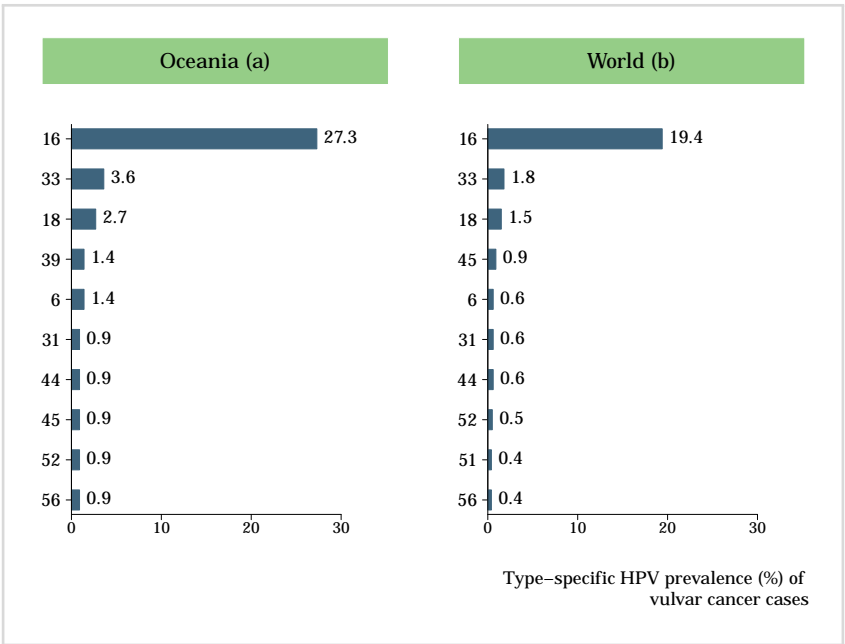
VIN 2/3: Vulvar intraepithelial neoplasia of grade 2/3;

^a Includes cases from Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom.

^b Includes cases from America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay, United States of America and Venezuela); Africa (Mali, Mozambique, Nigeria, and Senegal); Oceania (Australia and New Zealand); Europe (Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom); and in Asia (Bangladesh, India, Israel, South Korea, Kuwait, Lebanon, Philippines, Taiwan and Turkey)

Data sources: See references in Section 9.

Figure 116: Comparison of the ten most frequent HPV types in vulvar cancer cases in Oceania and the World



Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

(Continued on next page)

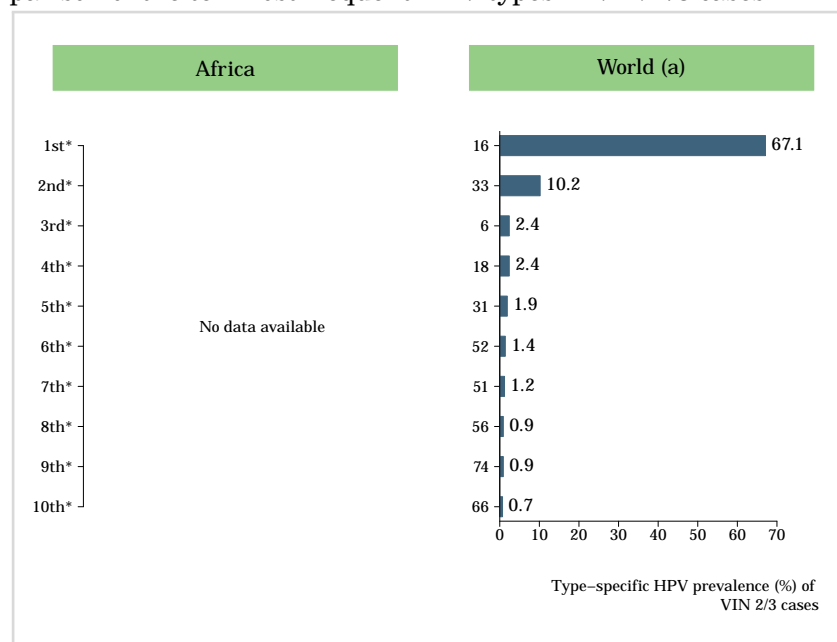
(Figure 116 – continued from previous page)

VIN 2/3: Vulvar intraepithelial neoplasia of grade 2/3;

^a Includes cases from Australia and New Zealand.^b Includes cases from America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay, United States of America and Venezuela); Africa (Mali, Mozambique, Nigeria, and Senegal); Oceania (Australia and New Zealand); Europe (Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom); and in Asia (Bangladesh, India, Israel, South Korea, Kuwait, Lebanon, Philippines, Taiwan and Turkey)

Data sources: See references in Section 9.

Figure 117: Comparison of the ten most frequent HPV types in VIN 2/3 cases in Africa and the World



*No data available. No more types than shown were tested or were positive.

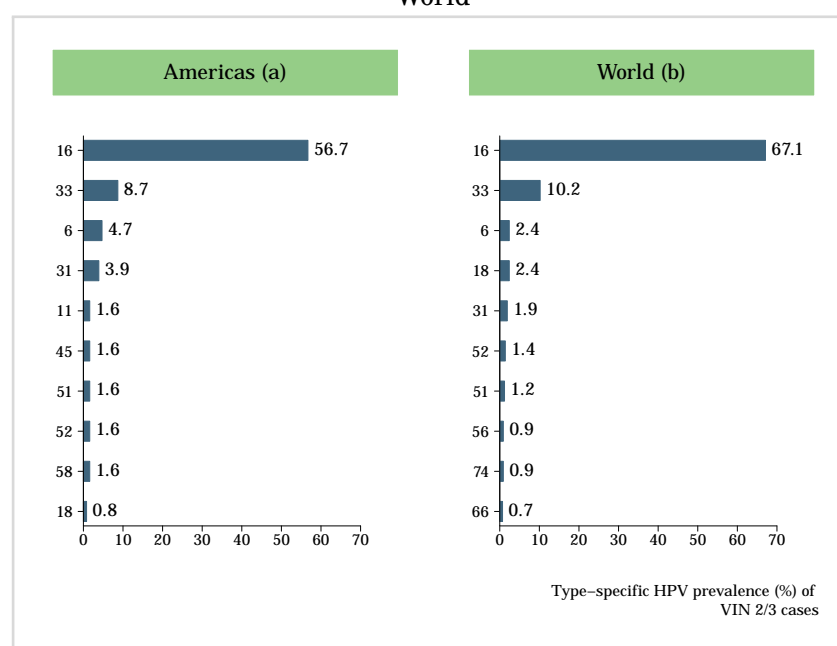
Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

VIN 2/3: Vulvar intraepithelial neoplasia of grade 2/3;

^a Includes cases from America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay and Venezuela); Oceania (Australia and New Zealand); Europe (Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom); and in Asia (Bangladesh, India, Israel, South Korea, Kuwait, Lebanon, Philippines, Taiwan and Turkey)

Data sources: See references in Section 9.

Figure 118: Comparison of the ten most frequent HPV types in VIN 2/3 cases in the Americas and the World

**Data updated on 09 Feb 2017 (data as of 30 Jun 2014).**

VIN 2/3: Vulvar intraepithelial neoplasia of grade 2/3;

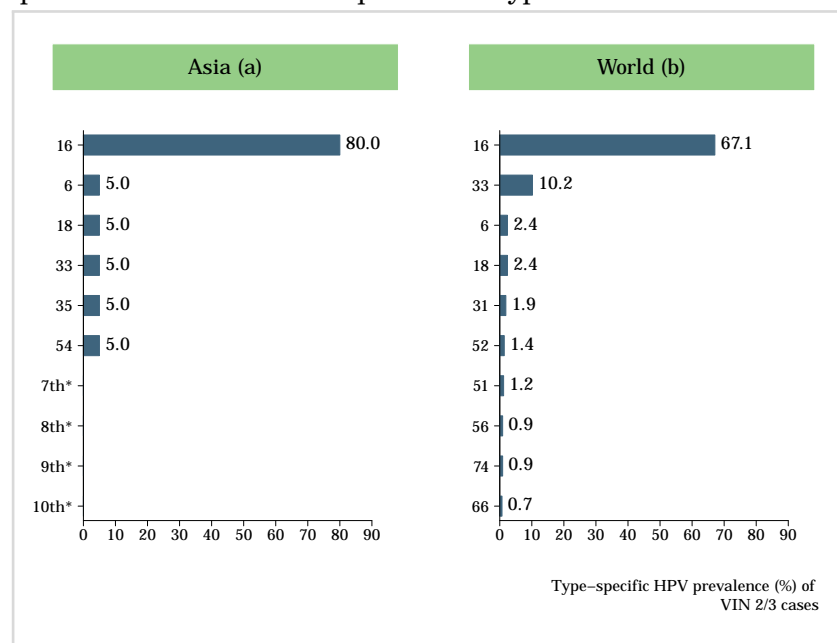
(Continued on next page)

(Figure 121 – continued from previous page)

^a Includes cases from Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay, and Venezuela.^b Includes cases from America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay and Venezuela); Oceania (Australia and New Zealand); Europe (Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom); and in Asia (Bangladesh, India, Israel, South Korea, Kuwait, Lebanon, Philippines, Taiwan and Turkey)

Data sources: See references in Section 9.

Figure 119: Comparison of the ten most frequent HPV types in VIN 2/3 cases in Asia and the World



*No data available. No more types than shown were tested or were positive.

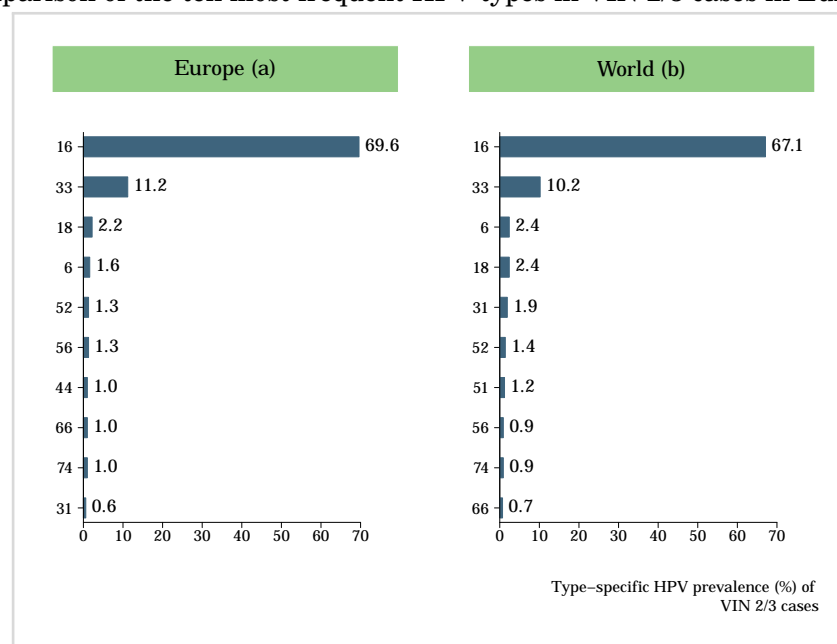
Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

VIN 2/3: Vulvar intraepithelial neoplasia of grade 2/3;

^a Includes cases from Bangladesh, India, Israel, South Korea, Kuwait, Lebanon, Philippines, Taiwan and Turkey.^b Includes cases from America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay and Venezuela); Oceania (Australia and New Zealand); Europe (Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom); and in Asia (Bangladesh, India, Israel, South Korea, Kuwait, Lebanon, Philippines, Taiwan and Turkey)

Data sources: See references in Section 9.

Figure 120: Comparison of the ten most frequent HPV types in VIN 2/3 cases in Europe and the World

**Data updated on 09 Feb 2017 (data as of 30 Jun 2014).**

VIN 2/3: Vulvar intraepithelial neoplasia of grade 2/3;

^a Includes cases from Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom.

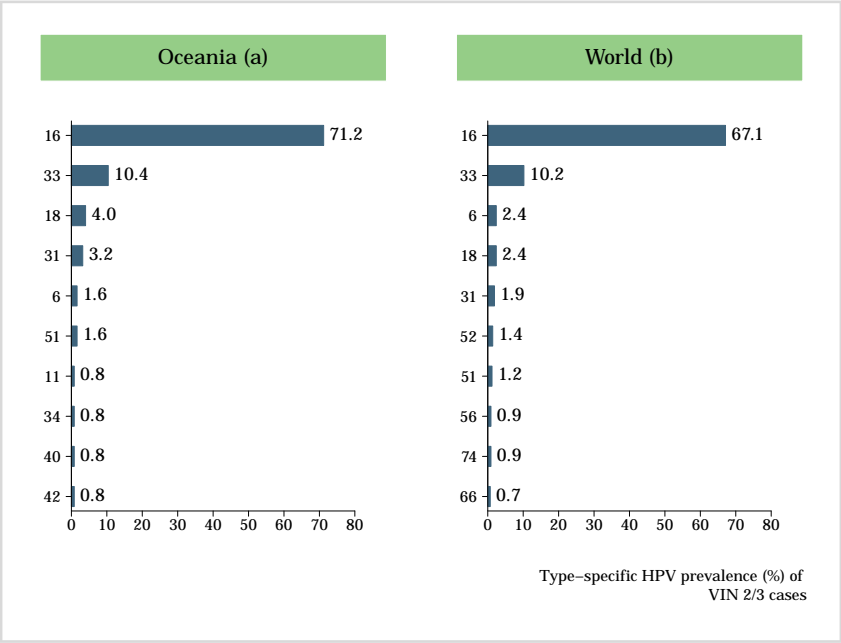
(Continued on next page)

(Figure 121 – continued from previous page)

^b Includes cases from America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay and Venezuela); Oceania (Australia and New Zealand); Europe (Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom); and in Asia (Bangladesh, India, Israel, South Korea, Kuwait, Lebanon, Philippines, Taiwan and Turkey)

Data sources: See references in Section 9.

Figure 121: Comparison of the ten most frequent HPV types in VIN 2/3 cases in Oceania and the World



Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

VIN 2/3: Vulvar intraepithelial neoplasia of grade 2/3;

^a Includes cases from Australia and New Zealand.

^b Includes cases from America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay and Venezuela); Oceania (Australia and New Zealand); Europe (Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom); and in Asia (Bangladesh, India, Israel, South Korea, Kuwait, Lebanon, Philippines, Taiwan and Turkey)

Data sources: See references in Section 9.

4.2.3 Vaginal cancer and precancerous vaginal lesions

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 anogenital cancers, particularly of the cervix, and these two carcinomas are frequently diagnosed simultaneously. HPV DNA is detected among 70% of invasive vaginal carcinomas and 91% of high-grade vaginal neoplasias (VaIN2/3). HPV16 is the most common type in high-grade vaginal neoplasias and it is detected in at least 70% of HPV-positive carcinomas (*de Martel C et al. Lancet Oncol 2012;13(6):607-15; De Vuyst H et al. Int J Cancer 2009; 124: 1626-36*). In this section, the HPV prevalence among vaginal cancer cases and precancerous vaginal lesions in the World are presented.

Table 20: Studies on HPV prevalence among vaginal cancer cases

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types (%)
			%	(95% CI)	
Alemaný 2014 ^a (Africa)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	19	68.4	(46.0-84.6)	HPV 16 (31.6%) HPV 45 (10.5%) HPV 18 (5.3%) HPV 31 (5.3%) HPV 33 (5.3%)
Alemaný 2014 ^b (Americas)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	191	78.0	(71.6-83.3)	HPV 16 (42.4%) HPV 31 (5.8%) HPV 18 (4.2%) HPV 33 (4.2%) HPV 52 (3.1%)
Alemaný 2014 ^c (Asia-Pacific)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	46	71.7	(57.5-82.7)	HPV 16 (41.3%) HPV 33 (4.3%) HPV 68 (4.3%) HPV 18 (2.2%) HPV 26 (2.2%)
Madsen 2008 (Denmark)	EIA, (HPV 6, 11, 16, 18, 31, 33, 35, 39, 40, 42, 44, 45, 51, 52, 56, 58)	27	88.9	(71.9-96.1)	HPV 16 (77.8%) HPV 33 (7.4%) HPV 18 (3.7%) HPV 39 (3.7%) HPV 45 (3.7%)
Alemaný 2014 ^d (Europe)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	152	71.1	(63.4-77.7)	HPV 16 (47.4%) HPV 18 (3.3%) HPV 73 (3.3%) HPV 33 (2.6%) HPV 56 (2.6%)
Ferreira 2008 (Portugal)	PCR, (HPV 6, 11, 16, 18, 31, 33, 35, 40, 42, 44, 45, 51, 52, 56, 58)	21	81.0	(60.0-92.3)	HPV 16 (33.3%) HPV 31 (28.6%) HPV 40 (14.3%) HPV 6 (9.5%) HPV 18 (9.5%)
Fuste 2010 (Spain)	PCR-SPF10, (HPV 6, 11, 16, 18, 31, 33, 35, 39, 40, 42, 45, 51, 52, 56, 58, 59, 68)	32	78.1	(61.2-89.0)	HPV 16 (56.3%) HPV 52 (6.3%) HPV 35 (3.1%) HPV 51 (3.1%) HPV 58 (3.1%)
Larsson 2013 (Sweden)	PCR-E6, (HPV 6, 11, 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59)	69	53.6	(42.0-64.9)	HPV 16 (37.7%) HPV 18 (2.9%) HPV 31 (2.9%) HPV 33 (2.9%) HPV 52 (2.9%)

Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval;

(Continued on next page)

(Table 20 – continued from previous page)

EIA: Enzyme ImmunoAssay; PCR: Polymerase Chain Reaction; SPF: Short Primer Fragment;

^a Includes cases from Mozambique, Nigeria^b Includes cases from Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Paraguay, Uruguay, United States of America and Venezuela^c Includes cases from Australia, Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey^d Includes cases from Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom

Data sources: See references in Section 9.

Table 21: Studies on HPV prevalence among VaIN 2/3 cases

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types (HPV type (%))
			%	(95% CI)	
Alemaný 2014 (Americas)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82, 89)	80	92.5	(84.6-96.5)	HPV 16 (46.3%) HPV 18 (6.3%) HPV 52 (6.3%) HPV 73 (6.3%) HPV 6 (3.8%)
Alemaný 2014 (Asia-Pacific)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82, 89)	13	100.0	(77.2-100.0)	HPV 16 (53.8%) HPV 52 (15.4%) HPV 59 (15.4%) HPV 45 (7.7%) HPV 73 (7.7%)
Alemaný 2014 (Europe)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	96	97.9	(92.7-99.4)	HPV 16 (65.6%) HPV 33 (7.3%) HPV 18 (5.2%) HPV 52 (3.1%) HPV 73 (3.1%)
Hampl 2006 (Germany)	PCR-MY09/11, Sequencing (HPV 6, 11, 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 35, 40, 44, 52, 56, 58)	11	90.9	(62.3-98.4)	HPV 16 (63.6%)
Tsimplaki 2012 (Greece)	(HPV 6, 11, 16, 18, 31, 33, 35, 39, 40, 42, 44, 45, 51, 52, 53, 56, 58, 66, 70)	10	40.0	(16.8-68.7)	HPV 16 (20.0%) HPV 33 (20.0%)
Frega 2007 (Italy)	PCR, TS (HPV 16, 18)	30	100.0	(88.6-100.0)	HPV 16 (86.7%) HPV 18 (13.3%)
Sugase 1997 (Japan)	PCR, TS, Sequencing (HPV 6, 11, 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 34, 35, 38, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 74, 80, 81, 82, 83, 84, 85, 86, 87, 89, 90, 91)	18	100.0	(82.4-100.0)	HPV 16 (16.7%) HPV 58 (16.7%) HPV 53 (11.1%) HPV 67 (11.1%) HPV 35 (5.6%)
Daling 2002 (USA)	PCR-MY09/11, PCR L1-Consensus primer, RFLP, TS (HPV 16, 31, 33, 35, 58, 66, 73)	99	77.8	(68.6-84.8)	HPV 16 (54.5%) HPV 58 (1.0%) HPV 66 (1.0%) HPV 73 (1.0%)
Srodon 2006 (USA)	PCR-MY09/11, PCR-SPF10, , Sequencing (HPV 6, 11, 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 34, 35, 38, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 74, 80, 81, 82, 83, 84, 85, 86, 87, 89, 90, 91)	16	93.8	(71.7-98.9)	HPV 16 (50.0%) HPV 58 (18.8%) HPV 31 (12.5%) HPV 35 (6.3%) HPV 51 (6.3%)

Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; VaIN 2/3: Vaginal intraepithelial neoplasia of grade 2/3;

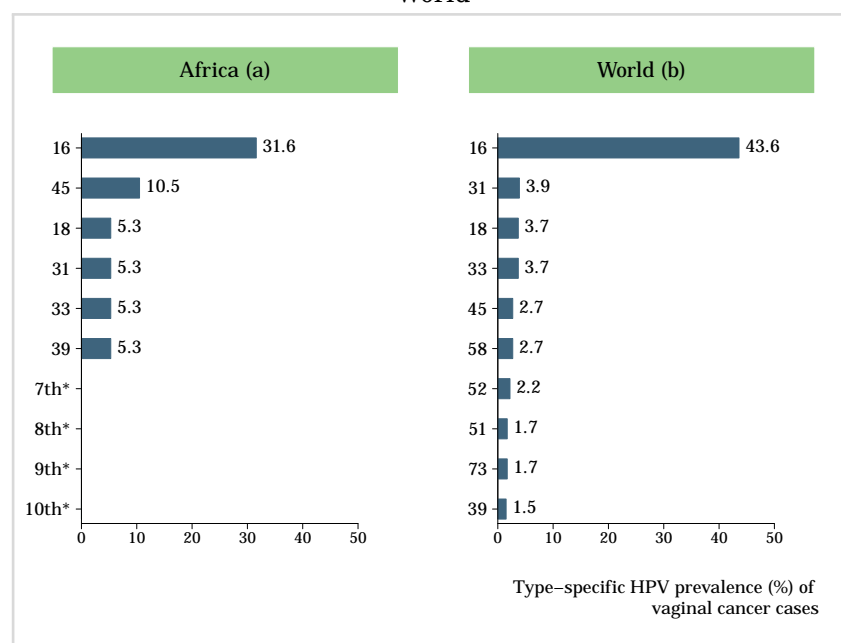
EIA: Enzyme ImmunoAssay; PCR: Polymerase Chain Reaction; RFLP: Restriction Fragment Length Polymorphism; SPF: Short Primer Fragment; TS: Type Specific;

Based on systematic reviews (up to 2008) performed by ICO for the IARC Monograph on the Evaluation of Carcinogenic Risks to Humans volume 100B and IARC's Infections and Cancer Epidemiology Group. The ICO HPV Information Centre has updated data until June 2015. Reference publications: 1) Bouvard V, Lancet Oncol 2009;10:321 2) De Vuyst H, Int J Cancer 2009;124:1626

Alemany L, Eur J Cancer 2014; 50: 2846 | Daling JR, Gynecol Oncol 2002; 84: 263 | Frega A, Cancer Lett 2007; 249: 235 | Hampl M, Obstet Gynecol 2006; 108: 1361 | Srodon M, Am J Surg Pathol 2006; 30: 1513 | Sugase M, Int J Cancer 1997; 72: 412 | Tsimplaki E, J Oncol 2012; 2012: 893275

Data sources: See references in Section 9.

Figure 122: Comparison of the ten most frequent HPV types in vaginal cancer cases in Africa and the World



*No data available. No more types than shown were tested or were positive.

Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

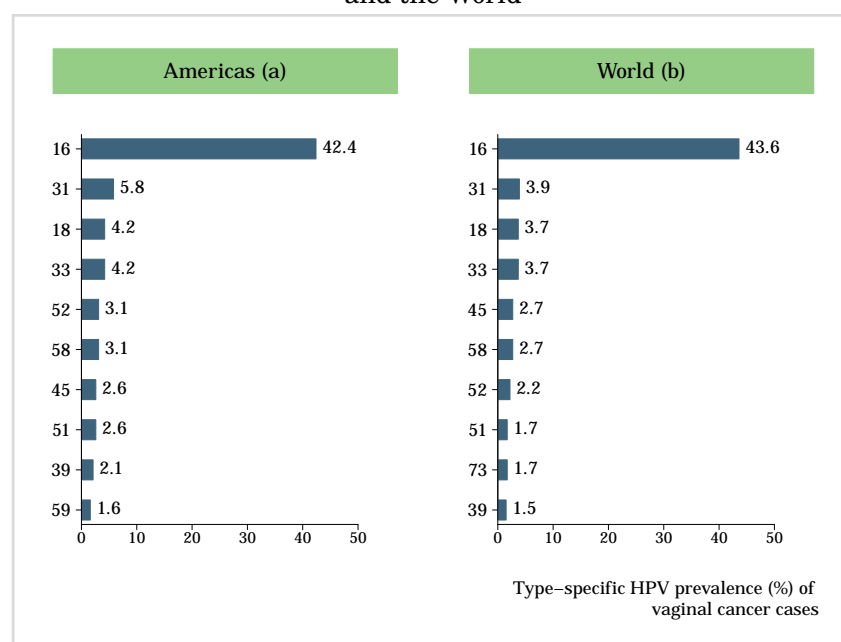
VAIN 2/3: Vaginal intraepithelial neoplasia of grade 2/3;

^a Includes cases from Mozambique, Nigeria.

^b Includes cases from Europe (Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom); America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Paraguay, Uruguay, United states of America and Venezuela); Africa (Mozambique, Nigeria); Asia (Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey); and Oceania (Australia)

Data sources: See references in Section 9.

Figure 123: Comparison of the ten most frequent HPV types in vaginal cancer cases in the Americas and the World



Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

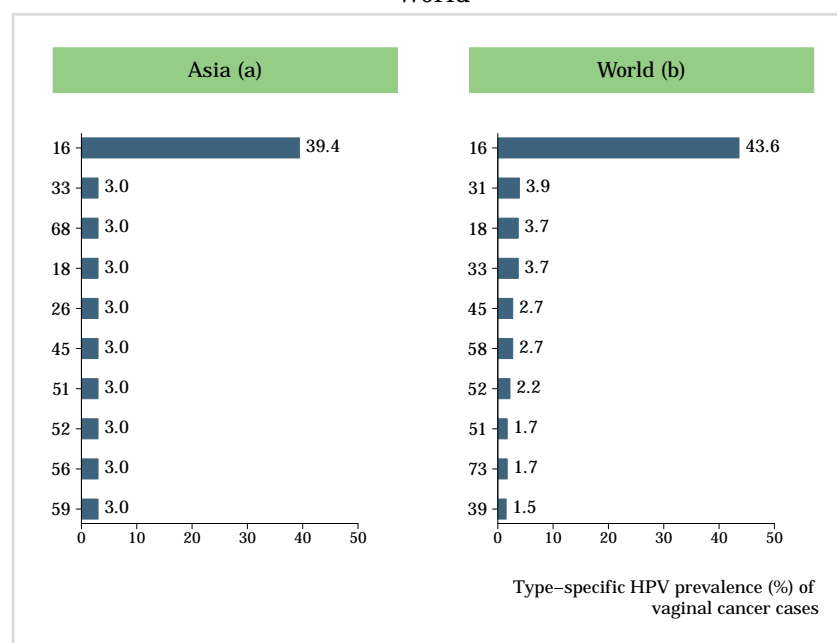
VAIN 2/3: Vaginal intraepithelial neoplasia of grade 2/3;

^a Includes cases from Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Paraguay, Uruguay, United States of America and Venezuela.

^b Includes cases from Europe (Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom); America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Paraguay, Uruguay, United states of America and Venezuela); Africa (Mozambique, Nigeria); Asia (Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey); and Oceania (Australia)

Data sources: See references in Section 9.

Figure 124: Comparison of the ten most frequent HPV types in vaginal cancer cases in Asia and the World



Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

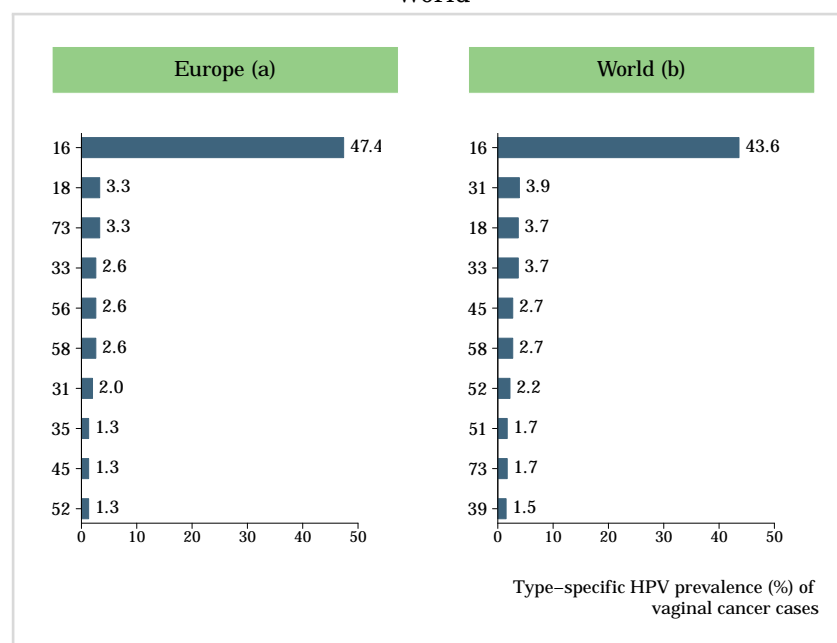
VAIN 2/3: Vaginal intraepithelial neoplasia of grade 2/3;

^a Includes cases from Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey

^b Includes cases from Europe (Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom); America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Paraguay, Uruguay, United states of America and Venezuela); Africa (Mozambique, Nigeria); Asia (Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey); and Oceania (Australia)

Data sources: See references in Section 9.

Figure 125: Comparison of the ten most frequent HPV types in vaginal cancer cases in Europe and the World



Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

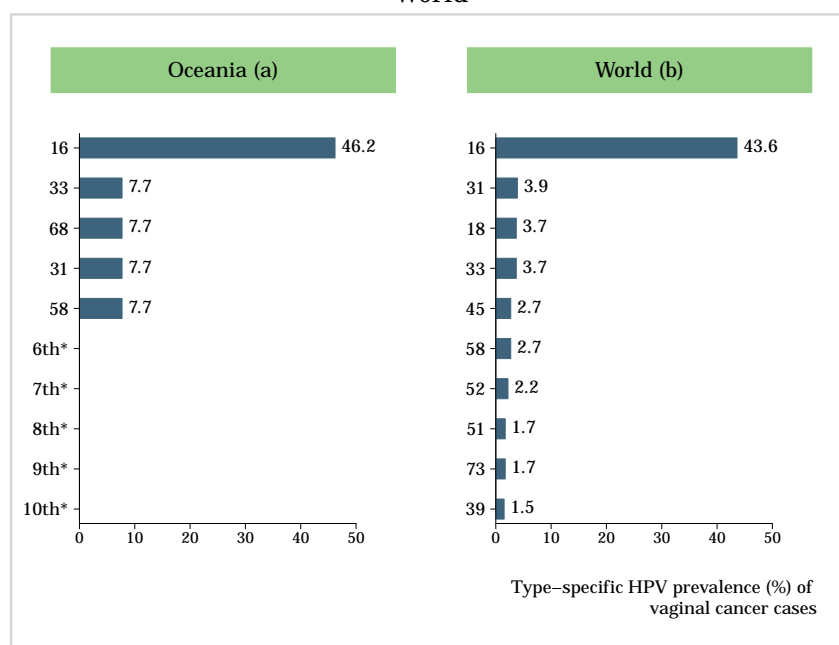
VAIN 2/3: Vaginal intraepithelial neoplasia of grade 2/3;

^a Includes cases from Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom.

^b Includes cases from Europe (Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom); America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Paraguay, Uruguay, United states of America and Venezuela); Africa (Mozambique, Nigeria); Asia (Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey); and Oceania (Australia)

Data sources: See references in Section 9.

Figure 126: Comparison of the ten most frequent HPV types in vaginal cancer cases in Oceania and the World



*No data available. No more types than shown were tested or were positive.

Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

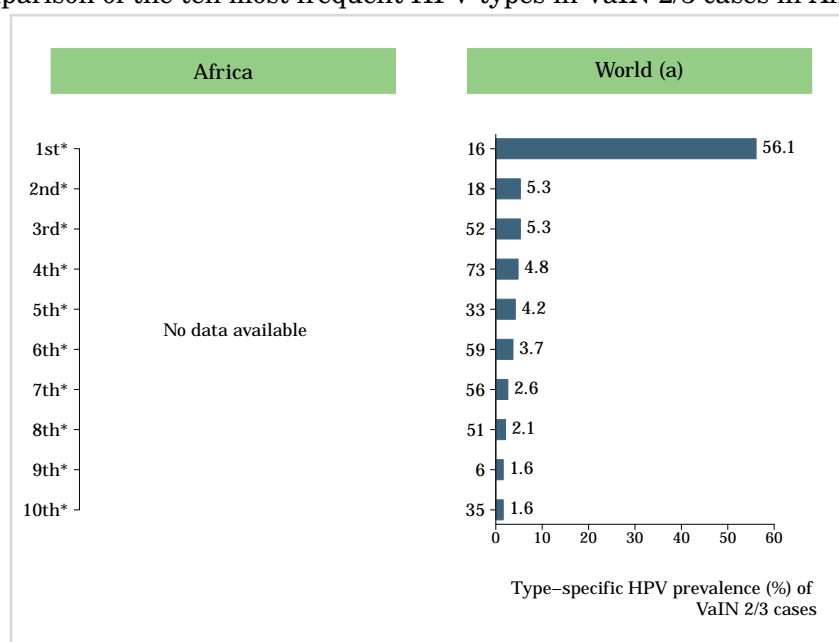
VAIN 2/3: Vaginal intraepithelial neoplasia of grade 2/3;

^a Includes cases from Australia

^b Includes cases from Europe (Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom); America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Paraguay, Uruguay, United states of America and Venezuela); Africa (Mozambique, Nigeria); Asia (Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey); and Oceania (Australia)

Data sources: See references in Section 9.

Figure 127: Comparison of the ten most frequent HPV types in VaIN 2/3 cases in Africa and the World



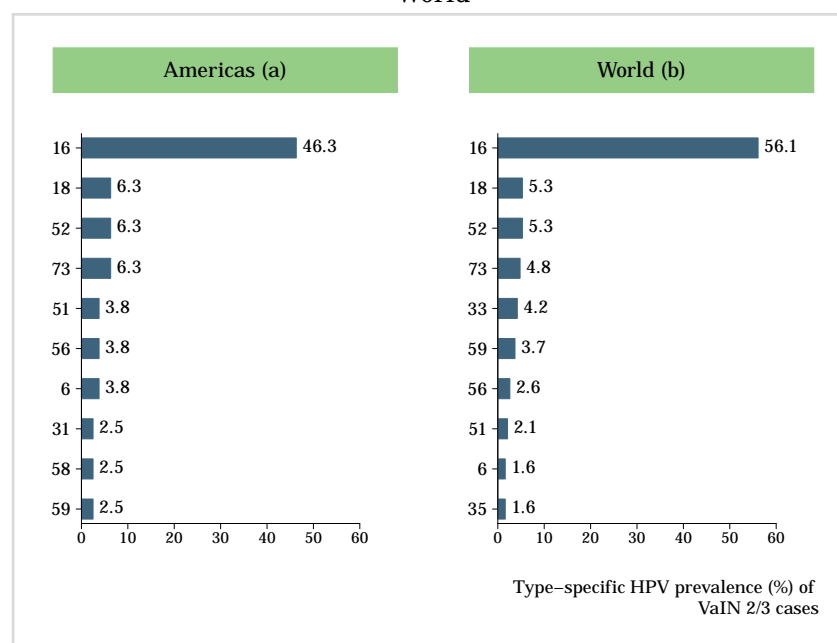
*No data available. No more types than shown were tested or were positive.

Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

^a Includes cases from Europe (Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom); America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Paraguay, Uruguay, United states of America and Venezuela); Asia (Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey); and Oceania (Australia)

Data sources: See references in Section 9.

Figure 128: Comparison of the ten most frequent HPV types in VaIN 2/3 cases in the Americas and the World



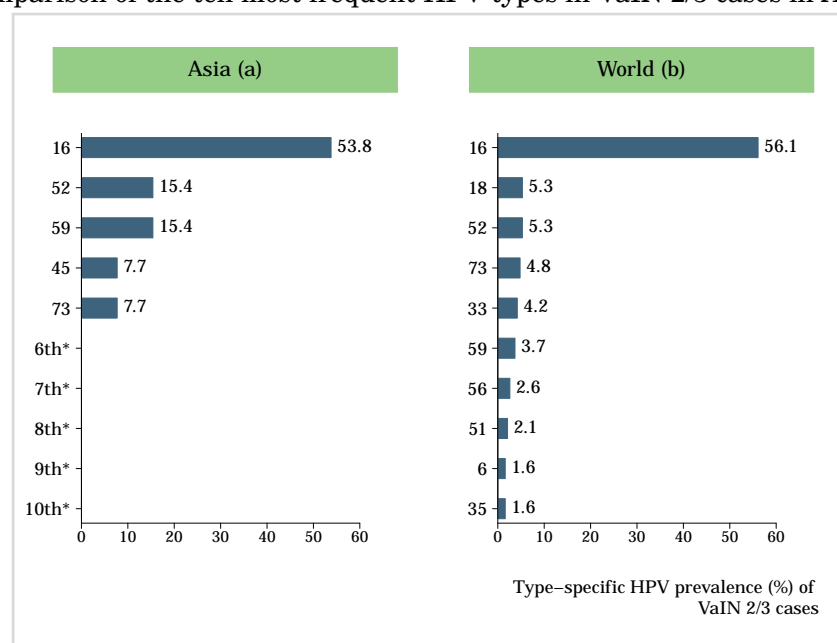
Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

^a Includes cases from Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Paraguay, Uruguay, United States of America and Venezuela.

^b Includes cases from Europe (Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom); America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Paraguay, Uruguay, United states of America and Venezuela); Asia (Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey); and Oceania (Australia)

Data sources: See references in Section 9.

Figure 129: Comparison of the ten most frequent HPV types in VaIN 2/3 cases in Asia and the World



*No data available. No more types than shown were tested or were positive.

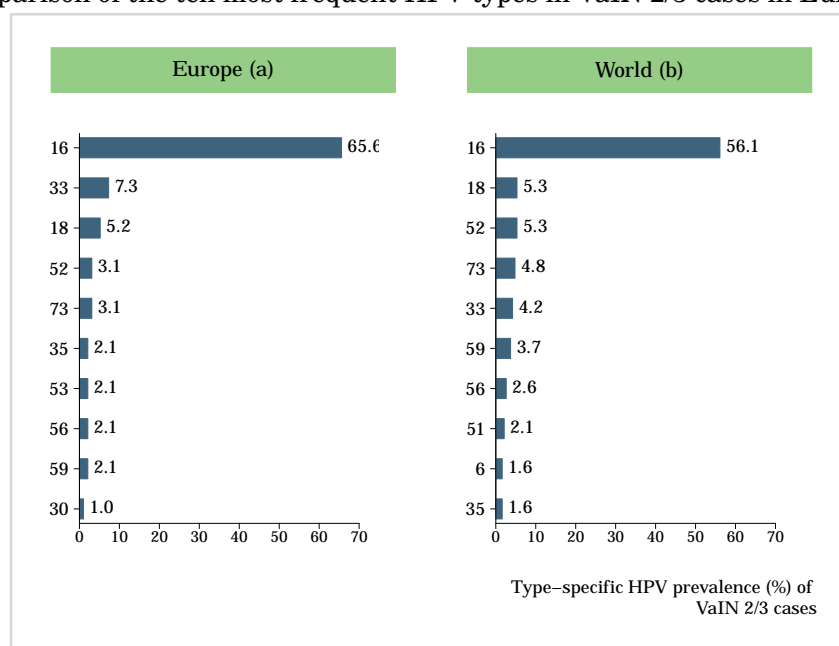
Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

^a Includes cases from Australia, Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey.

^b Includes cases from Europe (Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom); America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Paraguay, Uruguay, United states of America and Venezuela); Asia (Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey); and Oceania (Australia)

Data sources: See references in Section 9.

Figure 130: Comparison of the ten most frequent HPV types in VaIN 2/3 cases in Europe and the World



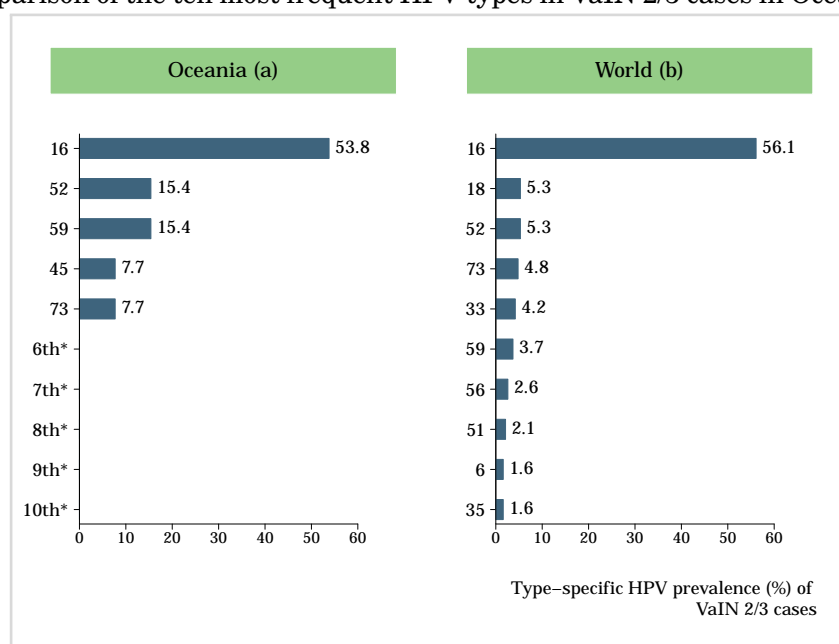
Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

^a Includes cases from Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom.

^b Includes cases from Europe (Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom); America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Paraguay, Uruguay, United states of America and Venezuela); Asia (Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey); and Oceania (Australia)

Data sources: See references in Section 9.

Figure 131: Comparison of the ten most frequent HPV types in VaIN 2/3 cases in Oceania and the World



*No data available. No more types than shown were tested or were positive.

Data updated on 09 Feb 2017 (data as of 30 Jun 2014).

^a Includes cases from Australia, Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey.

^b Includes cases from Europe (Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom); America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Paraguay, Uruguay, United states of America and Venezuela); Asia (Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey); and Oceania (Australia)

Data sources: See references in Section 9.

4.2.4 Penile cancer and precancerous penile lesions

HPV DNA is detectable in approximately 50% of all penile cancers (de Martel C et al. *Lancet Oncol* 2012;13(6):607-15). Among HPV-related penile tumours, HPV16 is the most common type detected, followed by HPV18 and HPV types 6/11 (Miralles C et al. *J Clin Pathol* 2009;62:870-8). Over 95% of invasive penile cancers are SCC and the most common penile SCC histologic sub-types are keratinising (49%), mixed warty-basaloid (17%), verrucous (8%), warty (6%), and basaloid (4%). HPV is commonly detected in basaloid and warty tumours but is less common in keratinising and verrucous tumours. In this section, the HPV prevalence among penile cancer cases and precancerous penile lesions in the World are presented.

Table 22: Studies on HPV prevalence among penile cancer cases

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types HPV type (%)
			%	(95% CI)	
Alemanya 2016 (Africa)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 32, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 90, 91)	19	36.8	(19.1-59.0)	HPV 16 (26.3%) HPV 30 (5.3%) HPV 33 (5.3%) HPV 52 (5.3%)
Rubin 2001 (Americas)	PCR L1-Consensus primer, PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 35, 45, 52, 53, 68)	142	42.3	(34.4-50.5)	HPV 16 (25.4%) HPV 6 (3.5%) HPV 45 (2.8%) HPV 52 (2.8%) HPV 35 (2.1%)
Picconi 2000 (Argentina)	PCR L1-Consensus primer, TS (HPV 6, 16, 18, 31, 33)	38	71.1	(55.2-83.0)	HPV 18 (28.9%) HPV 16 (21.1%) HPV 6 (5.3%)
Alemanya 2016 (Asia)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 32, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 90, 91)	67	13.4	(7.2-23.6)	HPV 16 (9.0%) HPV 33 (1.5%) HPV 35 (1.5%) HPV 45 (1.5%)
Mannweiler 2013 (Austria)	PCR L1-Consensus primer, PCR-SPF10, (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 72, 73, 74, 82)	123	58.5	(49.7-66.9)	HPV 16 (45.5%) HPV 33 (4.9%) HPV 18 (4.1%) HPV 45 (3.3%) HPV 6 (0.8%)
D'Hauwers 2012 (Belgium)	PCR-E6, PCR-E7, qPCR (HPV 6, 11, 16, 18, 31, 33, 35, 39, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68)	36	61.1	(44.9-75.2)	HPV 16 (47.2%) HPV 59 (5.6%) HPV 6 (2.8%) HPV 11 (2.8%) HPV 33 (2.8%)
Afonso 2012 (Brazil)	PCR-MY09/11, PCR L1-Consensus primer, PCR-E6, RFLP (HPV 6, 11, 16, 18, 26, 31, 33, 35, 45, 53, 62, 70, 71, 73)	133	56.4	(47.9-64.5)	HPV 16 (17.3%) HPV 45 (12.8%) HPV 6 (6.8%) HPV 18 (3.8%) HPV 31 (3.0%)
Calmon 2013 (Brazil)	PCR L1-Consensus primer, qPCR, (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 82)	47	48.9	(35.3-62.8)	HPV 16 (40.4%) HPV 11 (10.6%) HPV 35 (2.1%)

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(Table 22 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types (%)
			%	(95% CI)	
de Sousa 2015 (Brazil)	PCR-PGMY09/11, PCR-MULTIPLEX, Sequencing (HPV 11, 16, 18, 45, 69)	76	63.2	(51.9-73.1)	HPV 16 (13.2%) HPV 11 (7.9%) HPV 18 (5.3%) HPV 69 (2.6%) HPV 45 (1.3%)
Fonseca 2013 (Brazil)	Sequencing (HPV 6, 11, 16, 18, 33, 45, 51, 52, 53, 58, 68)	82	61.0	(50.2-70.8)	HPV 11 (39.0%) HPV 6 (19.5%) HPV 16 (18.3%) HPV 53 (11.0%) HPV 33 (2.4%)
Scheiner 2008 (Brazil)	PCR-MY09/11, RFLP (HPV 6, 16, 18, 31, 33, 45, 71)	80	72.5	(61.9-81.1)	HPV 16 (15.0%) HPV 6 (5.0%) HPV 18 (1.3%) HPV 31 (1.3%) HPV 33 (1.3%)
Maden 1993 (Canada)	PCR L1-Consensus primer, PCR-E6, PCR-E7, TS (HPV 16)	67	49.3	(37.7-60.9)	HPV 16 (34.3%)
Chan 1994 (China)	PCR-E6, TS (HPV 16, 18)	41	14.6	(6.9-28.4)	HPV 16 (9.8%) HPV 18 (9.8%)
Alemaný 2016 (Europe)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 31, 32, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 90, 91)	419	32.2	(27.9-36.8)	HPV 16 (23.4%) HPV 52 (1.2%) HPV 6 (1.0%) HPV 33 (1.0%) HPV 45 (0.7%)
Humbey 2003 (France)	PCR-MY09/11, PCR L1-Consensus primer, TS (HPV 6, 11, 16, 18, 31, 33, 35, 45, 51, 52, 58, 68)	36	66.7	(50.3-79.8)	HPV 16 (25.0%)
Perceau 2003 (France)	TS (HPV 16, 18, 31, 33)	17	17.6	(6.2-41.0)	HPV 16 (17.6%)
Poetsch 2011 (Germany)	PCR- MULTIPLEX, TS (HPV 06/11, 16, 18)	52	38.5	(26.5-52.0)	HPV 16 (32.7%) HPV 6/11 (3.8%) HPV 18 (1.9%)
Barzon 2014 (Italy)	qPCR, , TS (HPV 16, 18, 26, 31, 33, 35, 39, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 82)	54	29.6	(19.1-42.8)	HPV 16 (25.9%) HPV 45 (1.9%) HPV 68 (1.9%)
Gentile 2006 (Italy)	PCR-MY09/11, PCR L1-Consensus primer, Sequencing (HPV 16, 18, 53)	11	72.7	(43.4-90.3)	HPV 16 (45.5%) HPV 18 (18.2%) HPV 53 (9.1%)
Tornesello 2008 (Italy)	PCR-MY09/11, PCR-L1C1/C2, PCR-E6, PCR-E7, Sequencing (HPV 6, 16, 18, 33, 35)	61	47.5	(35.5-59.8)	HPV 16 (42.6%) HPV 18 (3.3%) HPV 35 (1.6%)
Iwasawa 1993 (Japan)	PCR-E6, TS (HPV 16, 18, 33)	111	63.1	(53.8-71.5)	HPV 16 (61.3%) HPV 18 (1.8%)
Suzuki 1994 (Japan)	PCR L1-Consensus primer, PCR-E6, RFLP (HPV 6, 11, 16, 18, 31, 33, 42, 52, 58)	13	53.8	(29.1-76.8)	HPV 16 (30.8%) HPV 33 (15.4%) HPV 31 (7.7%)
Yanagawa 2008 (Japan)	PCR-L1C1/C2, RFLP (HPV 6, 11, 16, 18, 31, 33, 42, 52, 58)	26	11.5	(4.0-29.0)	HPV 16 (11.5%)
Alemaný 2016 (Latin America & Caribbean)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 32, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 90, 91)	480	36.5	(32.3-40.9)	HPV 16 (23.8%) HPV 6 (2.5%) HPV 11 (1.5%) HPV 33 (1.3%) HPV 35 (1.3%)

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(Table 22 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types HPV type (%)
			%	(95% CI)	
López-Romero 2013 (Mexico)	PCR-E6, , Sequencing (HPV 11, 16, 18, 31, 33, 58, 59)	76	75.0	(64.2-83.4)	HPV 16 (61.8%) HPV 11 (3.9%) HPV 31 (3.9%) HPV 18 (1.3%) HPV 33 (1.3%)
Heideman 2007 (Netherlands)	PCR-E6, PCR-E7, EIA, (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 61, 66, 68, 70, 71, 72, 73, 81, 82, 83, 84)	171	29.2	(22.9-36.5)	HPV 16 (22.8%) HPV 18 (2.3%) HPV 45 (1.8%) HPV 33 (1.2%) HPV 56 (0.6%)
Cubilla 2010 (Paraguay)	PCR-SPF10, (HPV 6, 11, 16, 18, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 70, 73, 74)	202	31.7	(25.7-38.4)	HPV 16 (22.8%) HPV 6 (3.0%) HPV 18 (2.0%) HPV 11 (1.5%) HPV 35 (1.5%)
Lebelo 2014 (South Africa)	PCR L1-Consensus primer, PCR-E6, PCR-E7, qPCR (HPV 6, 11, 16, 18, 31, 33, 35, 39, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68)	40	87.5	(73.9-94.5)	HPV 16 (55.0%) HPV 11 (30.0%) HPV 18 (10.0%) HPV 45 (5.0%) HPV 6 (2.5%)
Ferrándiz-Pulido 2013 (Spain)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 70, 73, 74)	78	37.2	(27.3-48.3)	HPV 16 (26.9%) HPV 58 (3.8%) HPV 6 (2.6%) HPV 33 (1.3%) HPV 45 (1.3%)
Guerrero 2008 (Spain)	(HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 61, 66, 68, 70, 71, 72, 73, 81, 82, 83, 84)	24	45.8	(27.9-64.9)	HPV 16 (45.8%) HPV 39 (4.2%)
Pascual 2007 (Spain)	PCR-MY09/11, PCR L1-Consensus primer, Sequencing (HPV 6, 11, 16, 18)	49	77.6	(64.1-87.0)	HPV 16 (65.3%) HPV 18 (8.2%)
Senba 2006 (Thai- land)	PCR L1-Consensus primer, PCR-SPF10, Sequencing (HPV 6, 11, 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 34, 35, 38, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 74, 80, 81, 82, 83, 84, 85, 86, 87, 89, 90, 91)	65	81.5	(70.4-89.1)	HPV 18 (55.4%) HPV 6 (40.0%) HPV 34 (3.1%) HPV 11 (1.5%) HPV 22 (1.5%)
Tornesello 2008 (Uganda)	PCR-MY09/11, PCR-L1C1/C2, PCR-E6, PCR-E7, Sequencing (HPV 6, 16, 18, 33, 35)	17	64.7	(41.3-82.7)	HPV 16 (58.8%) HPV 6 (11.8%) HPV 18 (11.8%) HPV 33 (5.9%)
Stankiewicz 2011 (UK)	PCR L1-Consensus primer, PCR-SPF10 (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 82)	102	55.9	(46.2-65.1)	HPV 16 (45.1%) HPV 11 (9.8%) HPV 6 (5.9%) HPV 45 (5.9%) HPV 31 (4.9%)
Alemaný 2016 (USA)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 32, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 90, 91)	16	18.8	(6.6-43.0)	HPV 16 (18.8%)
Cupp 1995 (USA)	PCR L1-Consensus primer, PCR-E6, TS (HPV 16, 18)	42	54.8	(39.9-68.8)	HPV 16 (40.5%) HPV 18 (4.8%)

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(Table 22 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types HPV type (%)
			%	(95% CI)	
Daling 2005 (USA)	PCR-MY09/11, PCR L1-Consensus primer, PCR-E6, RFLP, Sequencing (HPV 6, 16, 18, 31, 33, 45, 53)	94	79.8	(70.6-86.7)	HPV 16 (69.1%) HPV 6 (4.3%) HPV 33 (2.1%) HPV 18 (1.1%) HPV 31 (1.1%)
Hernandez 2014 (USA)	PCR, LBA, (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 42, 45, 51, 52, 53, 54, 56, 58, 59, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 81, 82, 83, 84, 89)	79	63.3	(52.3-73.1)	HPV 16 (44.3%) HPV 18 (5.1%) HPV 33 (5.1%) HPV 45 (3.8%) HPV 6 (2.5%)
Do 2013 (Viet Nam)	PCR-SPF10, PCR-E6, qPCR, (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 82)	120	22.5	(15.9-30.8)	HPV 16 (20.0%) HPV 11 (0.8%) HPV 18 (0.8%) HPV 33 (0.8%) HPV 58 (0.8%)

Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval;

EIA: Enzyme ImmunoAssay; LBA: Line-Blot Assay; PCR: Polymerase Chain Reaction; RFLP: Restriction Fragment Length Polymorphism; SPF: Short Primer Fragment; TS: Type Specific;

Data sources: See references in Section 9.

Table 23: Studies on HPV prevalence among PeIN 2/3 cases

Study	HPV detection method and targeted Method	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types HPV type (%)
			%	(95% CI)	
Mannweiler 2013 (Austria)	PCR L1-Consensus primer, PCR-SPF10, (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 72, 73, 74, 82)	43	76.7	(62.3-86.8)	HPV 16 (62.8%) HPV 18 (9.3%) HPV 33 (2.3%) HPV 73 (2.3%)
D'Hauwers 2012 (Belgium)	PCR-E6, PCR-E7, qPCR (HPV 6, 11, 16, 18, 31, 33, 35, 39, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68)	13	84.6	(57.8-95.7)	HPV 16 (61.5%) HPV 18 (23.1%) HPV 11 (15.4%) HPV 53 (15.4%) HPV 56 (15.4%)
Alemany 2016 (Europe)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 32, 33, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 90, 91)	64	89.1	(79.1-94.6)	HPV 16 (73.4%) HPV 33 (6.3%) HPV 6 (3.1%) HPV 18 (3.1%) HPV 31 (3.1%)
Alemany 2016 (Latin America & Caribbean)	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 32, 33, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 90, 91)	11	63.6	(35.4-84.8)	HPV 16 (36.4%) HPV 66 (18.2%) HPV 11 (9.1%) HPV 31 (9.1%) HPV 51 (9.1%)
López-Romero 2013 (Mexico)	PCR-E6, , Sequencing (HPV 16, 18, 31, 33, 58, 59)	10	100.0	(72.2-100.0)	HPV 16 (100.0%)
Wikström 2012 (Sweden)	PCR-MY09/11, PCR L1-Consensus primer (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 42, 43, 44, 45, 51, 52, 53, 56, 58, 59, 66, 68, 70, 73, 82)	28	85.7	(68.5-94.3)	HPV 16 (39.3%) HPV 6 (21.4%) HPV 31 (7.1%) HPV 33 (7.1%) HPV 45 (7.1%)
Cupp 1995 (USA)	PCR L1-Consensus primer, PCR-E6, TS (HPV 16, 18)	25	92.0	(75.0-97.8)	HPV 16 (80.0%) HPV 18 (8.0%)

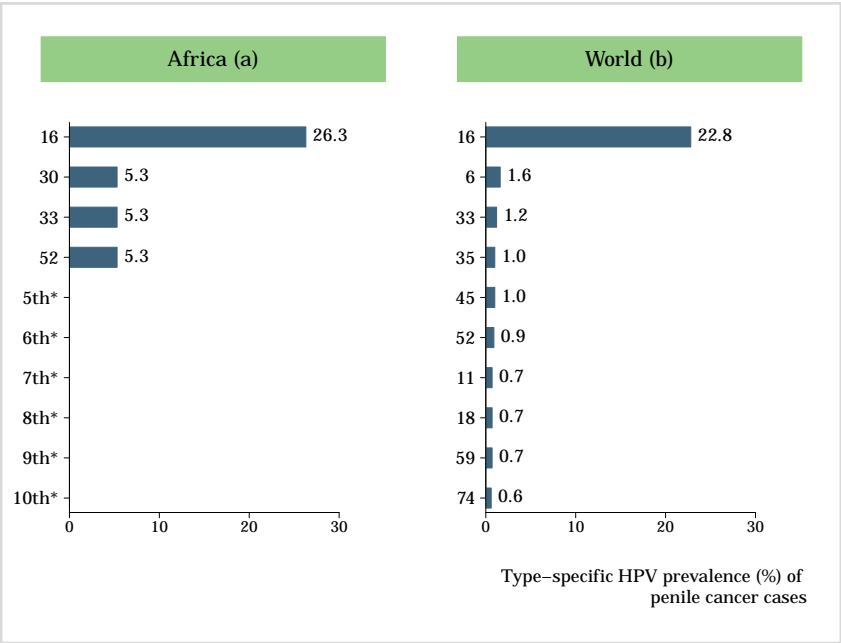
Data updated on 28 Jun 2017 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; PeIN 2/3: Penile intraepithelial neoplasia of grade 2/3;

EIA: Enzyme ImmunoAssay; PCR: Polymerase Chain Reaction; SPF: Short Primer Fragment; TS: Type Specific;

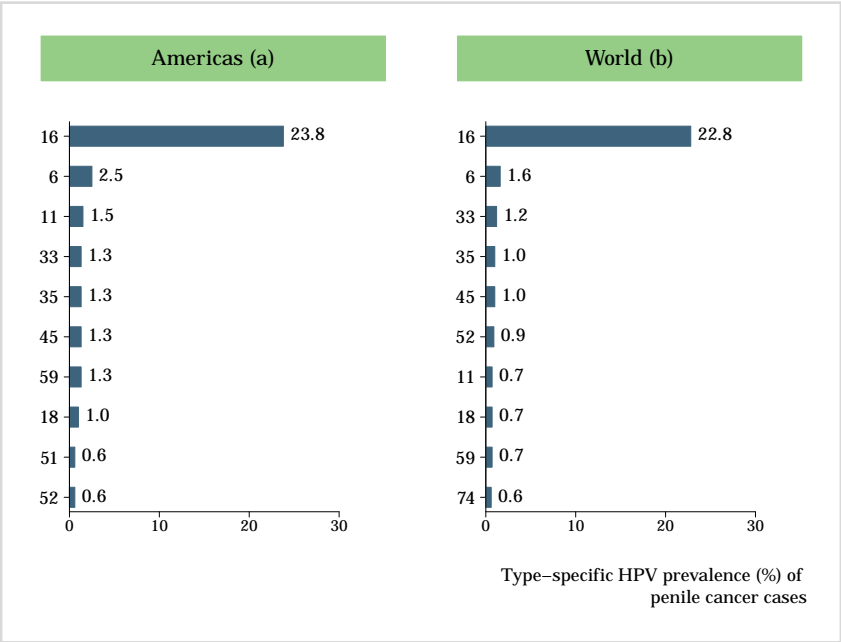
Data sources: See references in Section 9.

Figure 132: Comparison of the ten most frequent HPV types in penile cancer cases in Africa and the World



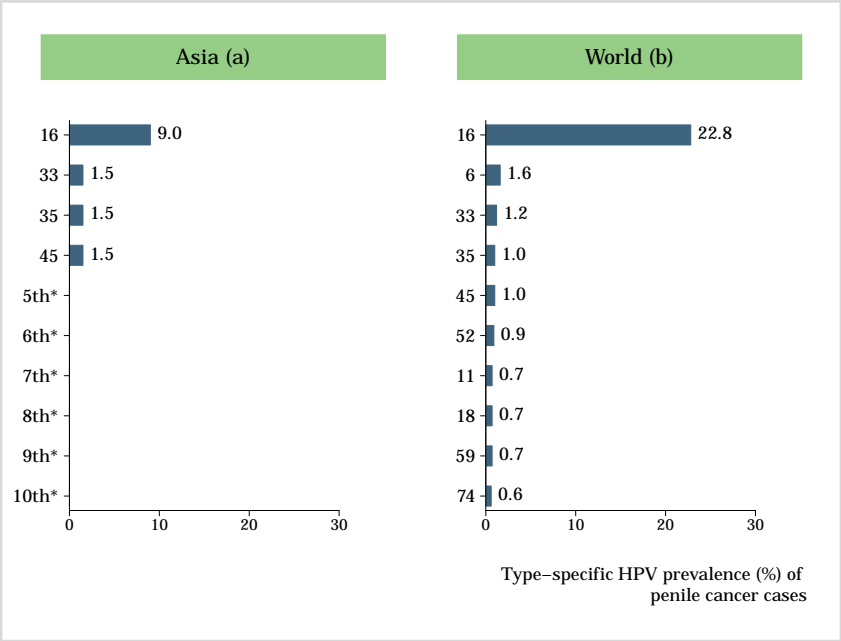
*No data available. No more types than shown were tested or were positive.
Data updated on 09 Feb 2017 (data as of 30 Jun 2015).
^aIncludes cases from Mozambique, Nigeria, Senegal
^bIncludes cases from Australia, Bangladesh, India, South Korea, Lebanon, Philippines, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Venezuela and United States, Mozambique, Nigeria, Senegal, Czech Republic, France, Greece, Poland, Portugal, Spain and United Kingdom.
Data sources: See references in Section 9.

Figure 133: Comparison of the ten most frequent HPV types in penile cancer cases in the Americas and the World



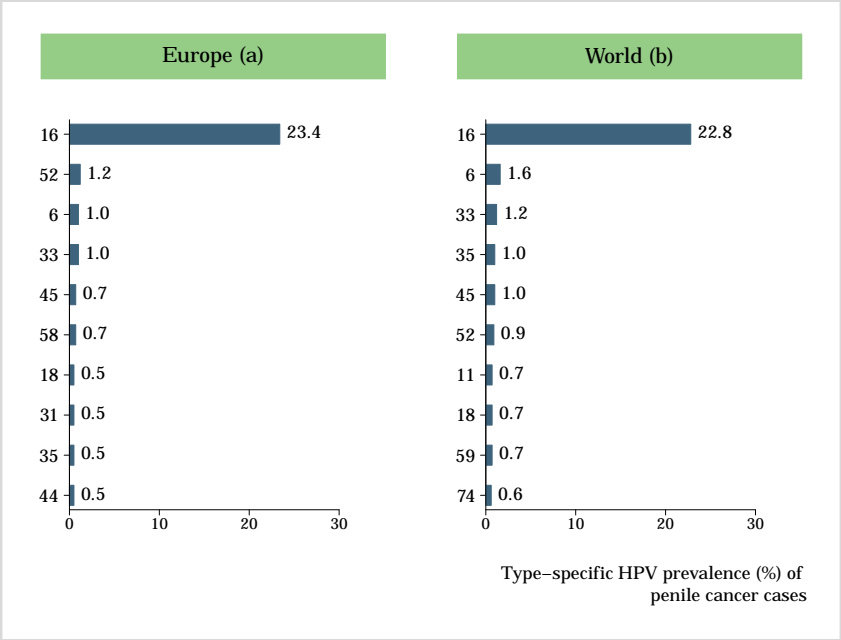
Data updated on 09 Feb 2017 (data as of 30 Jun 2015).
^aIncludes cases from Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Venezuela and United States
^bIncludes cases from Australia, Bangladesh, India, South Korea, Lebanon, Philippines, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Venezuela and United States, Mozambique, Nigeria, Senegal, Czech Republic, France, Greece, Poland, Portugal, Spain and United Kingdom.
Data sources: See references in Section 9.

Figure 134: Comparison of the ten most frequent HPV types in penile cancer cases in Asia and the World



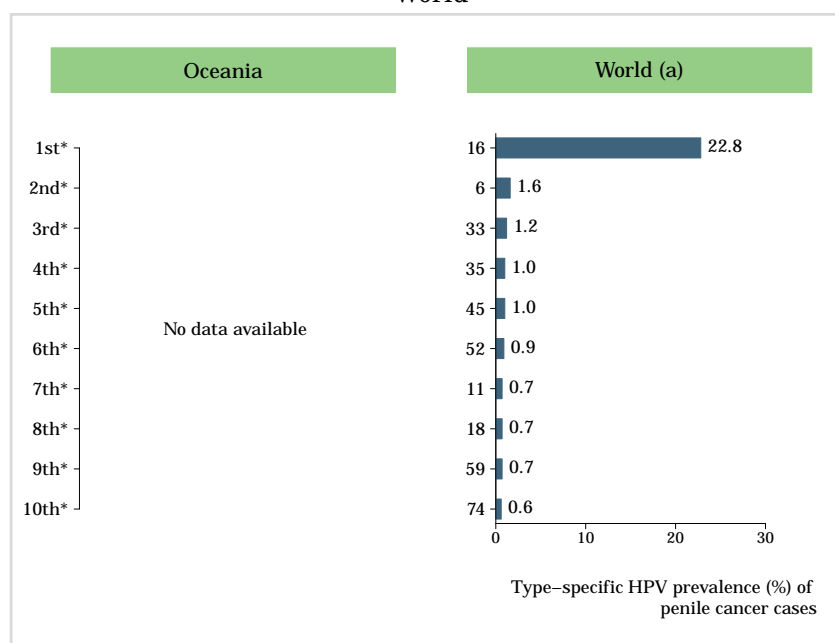
*No data available. No more types than shown were tested or were positive.
Data updated on 09 Feb 2017 (data as of 30 Jun 2015).
^aIncludes cases from Bangladesh, India, South Korea, Lebanon, Philippines
^bIncludes cases from Australia, Bangladesh, India, South Korea, Lebanon, Philippines, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Venezuela and United States, Mozambique, Nigeria, Senegal, Czech Republic, France, Greece, Poland, Portugal, Spain and United Kingdom.
Data sources: See references in Section 9.

Figure 135: Comparison of the ten most frequent HPV types in penile cancer cases in Europe and the World



Data updated on 09 Feb 2017 (data as of 30 Jun 2015).
^aIncludes cases from Czech Republic, France, Greece, Poland, Portugal, Spain and United Kingdom
^bIncludes cases from Australia, Bangladesh, India, South Korea, Lebanon, Philippines, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Venezuela and United States, Mozambique, Nigeria, Senegal, Czech Republic, France, Greece, Poland, Portugal, Spain and United Kingdom.
Data sources: See references in Section 9.

Figure 136: Comparison of the ten most frequent HPV types in penile cancer cases in Oceania and the World



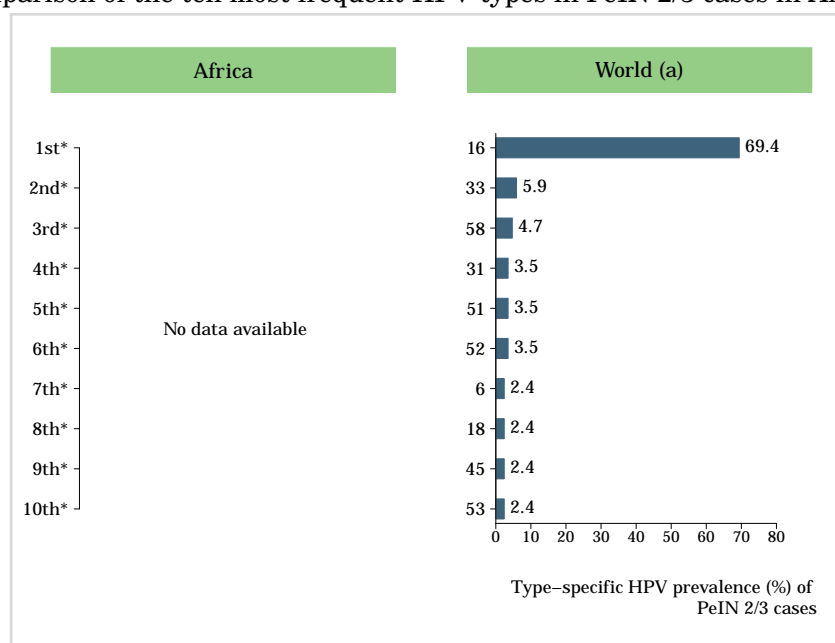
*No data available. No more types than shown were tested or were positive.

Data updated on 09 Feb 2017 (data as of 30 Jun 2015).

^aIncludes cases from Australia, Bangladesh, India, South Korea, Lebanon, Philippines, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Venezuela and United States, Mozambique, Nigeria, Senegal, Czech Republic, France, Greece, Poland, Portugal, Spain and United Kingdom.

Data sources: See references in Section 9.

Figure 137: Comparison of the ten most frequent HPV types in PeIN 2/3 cases in Africa and the World



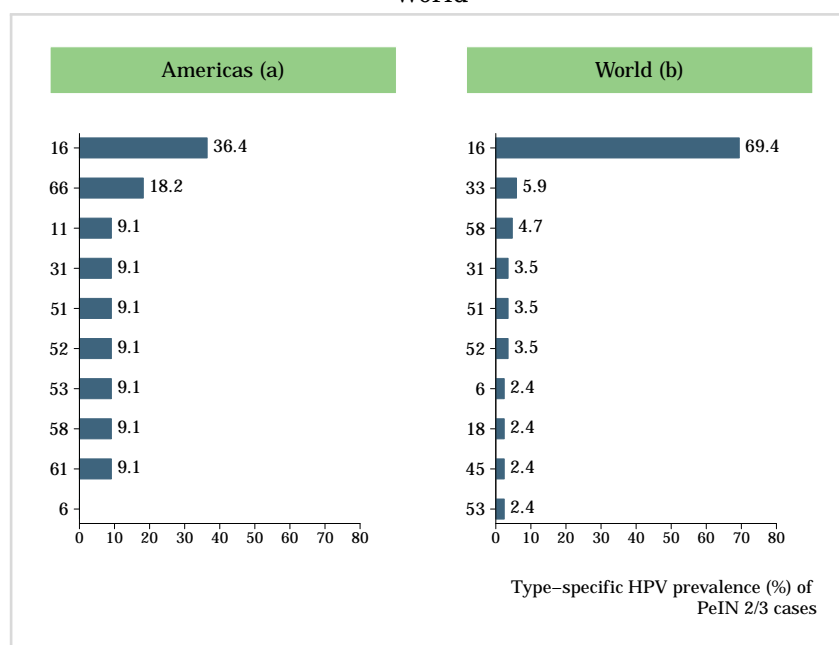
*No data available. No more types than shown were tested or were positive.

Data updated on 09 Feb 2017 (data as of 30 Jun 2015).

^aIncludes cases from Australia, Bangladesh, India, South Korea, Lebanon, Philippines, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Venezuela, Mozambique, Nigeria, Senegal, Czech Republic, France, Greece, Poland, Portugal, Spain and United Kingdom.

Data sources: See references in Section 9.

Figure 138: Comparison of the ten most frequent HPV types in PeIN 2/3 cases in the Americas and the World



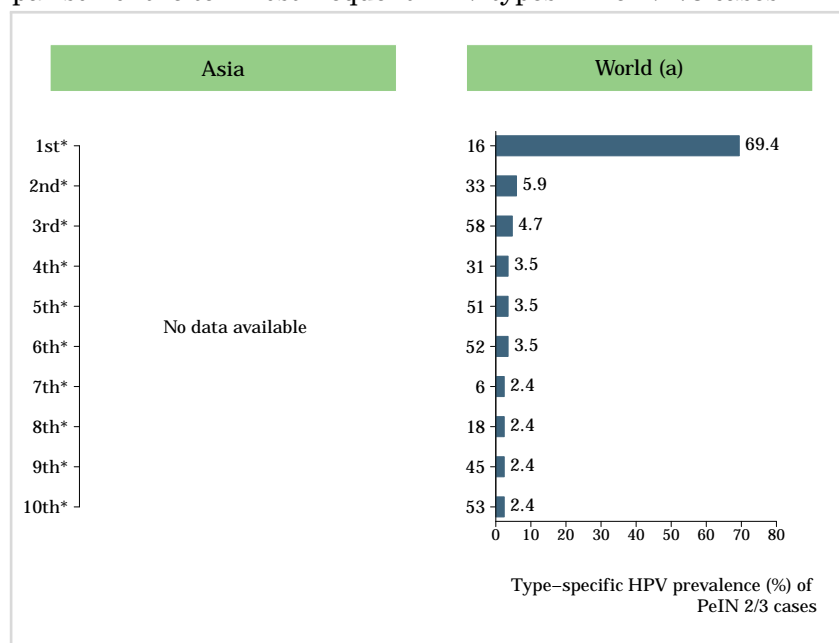
Data updated on 09 Feb 2017 (data as of 30 Jun 2015).

^aIncludes cases from Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Venezuela.

^bIncludes cases from Australia, Bangladesh, India, South Korea, Lebanon, Philippines, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Venezuela, Mozambique, Nigeria, Senegal, Czech Republic, France, Greece, Poland, Portugal, Spain and United Kingdom.

Data sources: See references in Section 9.

Figure 139: Comparison of the ten most frequent HPV types in PeIN 2/3 cases in Asia and the World



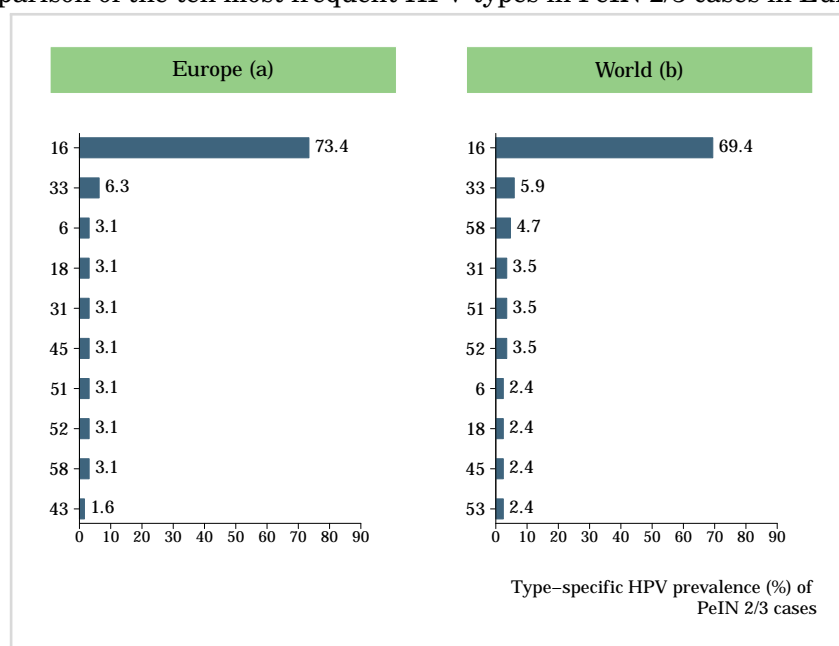
*No data available. No more types than shown were tested or were positive.

Data updated on 09 Feb 2017 (data as of 30 Jun 2015).

^aIncludes cases from Australia, Bangladesh, India, South Korea, Lebanon, Philippines, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Venezuela, Mozambique, Nigeria, Senegal, Czech Republic, France, Greece, Poland, Portugal, Spain and United Kingdom.

Data sources: See references in Section 9.

Figure 140: Comparison of the ten most frequent HPV types in PeIN 2/3 cases in Europe and the World



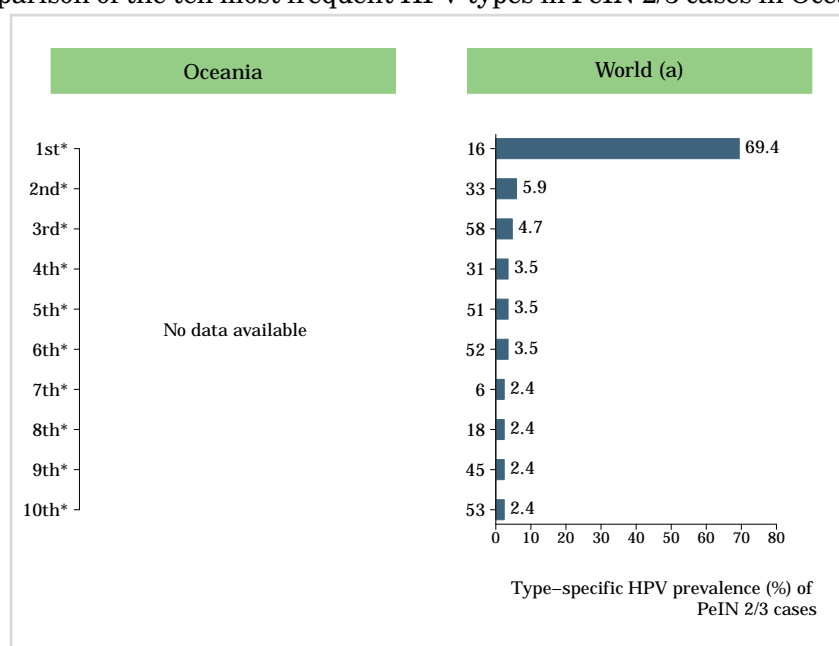
Data updated on 09 Feb 2017 (data as of 30 Jun 2015).

^a Includes cases from Czech Republic, France, Greece, Poland, Portugal, Spain and United Kingdom

^b Includes cases from Australia, Bangladesh, India, South Korea, Lebanon, Philippines, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Venezuela, Mozambique, Nigeria, Senegal, Czech Republic, France, Greece, Poland, Portugal, Spain and United Kingdom.

Data sources: See references in Section 9.

Figure 141: Comparison of the ten most frequent HPV types in PeIN 2/3 cases in Oceania and the World



*No data available. No more types than shown were tested or were positive.

Data updated on 09 Feb 2017 (data as of 30 Jun 2015).

^a Includes cases from Australia, Bangladesh, India, South Korea, Lebanon, Philippines, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Venezuela, Mozambique, Nigeria, Senegal, Czech Republic, France, Greece, Poland, Portugal, Spain and United Kingdom.

Data sources: See references in Section 9.

4.3 HPV burden in men

The information to date regarding anogenital HPV infection is primarily derived from cross-sectional studies of selected populations such as general population, university students, military recruits, and studies that examined husbands of control women, as well as from prospective studies. Special sub-groups include mainly studies that examined STD (sexually transmitted diseases) clinic attendees, MSM (men who have sex with men), HIV positive men, and partners of women with HPV lesions, CIN (cervical intraepithelial neoplasia), cervical cancer or cervical carcinoma in situ. Globally, prevalence of external genital HPV infection in men is higher than cervical HPV infection in women, but persistence is less likely. As with genital HPV prevalence, high numbers of sexual partners increase the acquisition of oncogenic HPV infections (Vaccine 2012, Vol. 30, Suppl 5). In this section, the HPV burden among men in the World is presented.

Methods

HPV burden in men was based on published systematic reviews and meta-analyses (Dunne EF, *J Infect Dis* 2006; 194: 1044, Smith JS, *J Adolesc Health* 2011; 48: 540, Olesen TB, *Sex Transm Infect* 2014; 90: 455, and Hebnes JB, *J Sex Med* 2014; 11: 2630) up to October 31, 2015. The search terms for the review were human papillomavirus, men, polymerase chain reaction (PCR), hybrid capture (HC), and viral DNA. References cited in selected articles were also investigated. Inclusion criteria were: HPV DNA detection by means of PCR or HC (ISH if data are not available for the country), and a detailed description of HPV DNA detection and genotyping techniques used. The number of cases tested and HPV positive cases were extracted for each study to estimate the anogenital prevalence of HPV DNA. Binomial 95% confidence intervals were calculated for each anogenital HPV prevalence.

Table 24: Studies on anogenital HPV prevalence among men

Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	HPV prevalence		
						No	%	(95% CI)
Australia	Vardas 2011 ^a	Penis	RT-PCR-Multiplex or Biplex	Heterosexual men enrolled in a HPV vaccine trial	Median 20 (15-24)	3132	21.2	(19.8-22.7)
Brazil	Franceschi 2002	Glans, corona, urethra	PCR-GP5+/6+	Husbands of control women	24-81	56	39.3	(26.5-53.2)
	Giuliano 2008 ^b	Corona sulcus, glans, shaft and scrotum	PCR-PGMY09/11 and GP5/6+	General population	18-70	382	72.3	(67.5-76.7)
	Nyitray 2011	Anal canal	PCR-PGMY09/11	HIV- MSM from general population and population from a STD clinic	18-70	176	47.2	(39.6-54.8)
				HIV- MSW from general population and population from a STD clinic	18-70	1305	12.2	(10.5-14.1)
	Rosenblatt 2004	Shaft, dorsal and prebalanic area, prepuce, urethral meatus	HC2 HR	Partners of women without CIN	-	60	15	(7.1-26.6)
	Vardas 2011 ^a	Penis	RT-PCR-Multiplex or Biplex	Heterosexual men enrolled in a HPV vaccine trial	Median 20 (15-24)	3132	21.2	(19.8-22.7)
Canada	Vardas 2011 ^a	Penis	RT-PCR-Multiplex or Biplex	Heterosexual men enrolled in a HPV vaccine trial	Median 20 (15-24)	3132	21.2	(19.8-22.7)
Chile	Guzmán 2008	Corona and shaft	PCR-GP5+/6+	University students	20-51	61	83.6	(71.9-91.8)
China	Liu 2015	Coronal sulcus, shaft, glans, and scrotum	PCR-SPF1/GP6+	Population-based esophageal cancer cohort study	25-65	2228	16.9	(15.3-18.5)
Colombia	Franceschi 2002	Glans, corona, urethra	PCR-GP5+/6+	Husbands of control women	23-82	128	18.8	(12.4-26.6)
Croatia	Grce 1996	Urethra	Filter hybridization (slot-blot, TS 6,11,16,18)	Family planning clinic attendees	-	79	26.6	(17.3-37.7)
	Vardas 2011 ^a	Penis	RT-PCR-Multiplex or Biplex	Heterosexual men enrolled in a HPV vaccine trial	Median 20 (15-24)	3132	21.2	(19.8-22.7)
Denmark	Hebnes 2015	Coronal sulcus, glans, preputial cavity, scrotum, shaft and perineum	HC2	Male employees and conscripts at military barracks	Mean 23 (18-65)	2436	22.2	(20.6-24.0)
			PCR-LIPAv2	Male employees and conscripts at military barracks	Mean 23 (18-65)	2436	41.8	(39.9-43.8)
	Kjaer 2005	Glans and corona sulcus	PCR-GP5+/6+ TS oligoprobes	Military conscripts	18-29	337	33.8	(28.8-39.2)
Finland	Hippeläinen 1993	Glans, prepuce, corona sulcus, urethral meatus	PCR-MY09/11 TS 6,11,16,18,31,33	Voluntary conscripts	Mean 20	285	16.5	(12.4-21.3)

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Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	HPV prevalence		
						No	%	(95% CI)
	Kero 2011	Urethra	PCR-MY09/11 and GP5+/6+	Sexual partners of pregnant women	19-46	128	22.7	(15.7-30.9)
Germany	Grussendorf-Conen 1987	Coronal sulcus and glans	ISH	Blood donors or patients from department of dermatology	16-79	530	5.8	(4.0-8.2)
	Vardas 2011 ^a	Penis	RT-PCR-Multiplex or Bplex	Heterosexual men enrolled in a HPV vaccine trial	Median 20 (15-24)	3132	21.2	(19.8-22.7)
India	Gupta 2006	Coronal sulcus, distal and intrameatal urethra and glans	PCR-L1 and TS 16,18	Partners of women with normal cytology	Mean 46.9	30	26.7	(12.3-45.9)
Italy	Lorenzon 2014	Coronal sulcus, shaft, prepuce, and urethral	PCR-Roche Linear Array HPV Genotyping test	Heterosexual men for routine HPV testing	18-68	378	40.5	(35.5-45.6)
	Nasca 2006	Penis	PCR-MY09/11 and GP5+/6+	Hospital based controls attending clinic for nongenital complaints	27-79	46	8.7	(2.4-20.8)
Japan	Takahashi 2003	Glans, corona, prepuce	HC2 HR, LR	University students	18-35	75	1.3	(0.0-7.2)
Kenya	Ng'ayo 2008	Glans, corona sulcus, shaft of the penis, scrotum and the perianal region	PCR-PGMY09/MY11 and HMB01	Men working in the fishing industry	18-63	250	57.6	(51.2-63.8)
	Smith 2010	Shaft, glans, coronal sulcus, and inner and external foreskin tissue	PCR-GP5+/6+	Men screened to participate in an RCT of male circumcision	17-28	2705	51.1	(49.2-53.0)
Korea, Rep.	Shin 2004	Glans, corona, scrotum, prepuce, urethra	PCR-SPF10	Male students	Median 22	381	8.7	(6.0-11.9)
Mexico	Giuliano 2008 ^b	Corona sulcus, glans, shaft and scrotum	PCR-PGMY09/11 and GP5/6+	General population and organized health care systems	18-70	362	61.9	(56.7-66.9)
	Lajous 2005	Corona, shaft, upper third of the scrotum, urethral meatus, urethra	PCR-BGH 20 and BPCO4	Military conscripts	16-40	1030	44.6	(41.5-47.7)
	Lazcano-Ponce 2001	Corona, urethra	PCR-GP5+/6+	Sexually active college students and industry workers	14-55	96	42.7	(32.7-53.2)

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Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	HPV prevalence		
						No	%	(95% CI)
	Nyitray 2011	Anal canal	PCR-PGMY09/11	HIV- MSM from organized health care systems, factories and military	18-70	176	47.2	(39.6-54.8)
				HIV- MSW from organized health care systems, factories and military	18-70	1305	12.2	(10.5-14.1)
	Sánchez- Alemán 2002	Glans and prepuce	HC2 HR	University students	>=18	71	8.5	(3.2-17.5)
	Vaccarella 2006	Scrotum, coronal sulcus, the glans and the opening of the meatus	PCR-PGMY09/11	Men who requested a vasectomy	Mean 34	779	8.7	(6.8-10.9)
	Vardas 2011 ^a	Penis	RT-PCR-Multiplex or Biplex	Heterosexual men enrolled in a HPV vaccine trial	Median 20 (15- 24)	3132	21.2	(19.8-22.7)
Philippines	Franceschi 2002	Glans, corona, urethra	PCR-GP5+/6+	Husbands of control women	19-71	106	4.7	(1.5-10.7)
Rwanda	Veldhuijzen 2012	Shaft, scrotum, glans/sulcus corona, and foreskin in uncircumcised men	PCR-Roche Linear Array HPV Genotyping test (HR-HPV types)	Men participating in a case-control study assessing risk factors for infertility	Median 31 (IQR=27- 38)	166	26.5	(20.0-33.9)
			PCR-Roche Linear Array HPV Genotyping test (LR-HPV types)	Men participating in a case-control study assessing risk factors for infertility	Median 31 (IQR=27- 38)	166	31.3	(24.4-39.0)
South Africa	Auvert 2010	Urethra	PCR-Roche Amplicor HPV test	Men recruited from the general population for an RCT of male circumcision	IQR=19- 22	1683	19.1	(17.2-21.0)
	Mbulawa 2010	Shaft and glans, and the foreskin in uncircumcised men	PCR-Roche Linear Array HPV Genotyping test	HIV- heterosexual men recruited for investigations of genital HPV transmission	18-66	313	50.8	(45.1-56.5)
Spain	Franceschi 2002	Glans, corona, urethra	PCR-GP5+/6+	Husbands of control women	24-78	168	3.6	(1.3-7.6)
	Vardas 2011 ^a	Penis	RT-PCR-Multiplex or Biplex	Heterosexual men enrolled in a HPV vaccine trial	Median 20 (15- 24)	3132	21.2	(19.8-22.7)
Sweden	Forslund 1993	Urethra	PCR-TS (6,11,16,18,31,33,35) and unespecified consensus primer	Military conscripts	20-23	138	8.7	(4.6-14.7)

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Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	HPV prevalence		
						No	%	(95% CI)
	Kataoka 1991	Urethra	PCR-TS 6,11,16,18,33	Army conscripts with normal epithelium	18-23	66	12.1	(5.4-22.5)
Tanzania	Olesen 2013	Glans, preputial cavity (uncircumcised men), coronal sulcus (circumcised men), shaft, corpus	PCR-LIPA and HC2	Men from the general population	Mean 34.2	1813	20.5	(18.7-22.5)
Thailand	Franceschi 2002	Glans, corona, urethra	PCR-GP5+/6+	Husbands of control women	28-78	75	17.3	(9.6-27.8)
Uganda	Tobian 2013	Coronal sulcus and glans	PCR-PGMY09/11	HIV- heterosexual men	15-49	978	60.9	(57.8-64.0)
USA	Giuliano 2008 ^c	Corona sulcus, glans, shaft and scrotum	PCR-PGMY09/11	General population	18-44	290	30	(24.8-35.6)
	Giuliano 2008 ^b	Corona sulcus, glans, shaft and scrotum	PCR-PGMY09/11 and GP5/6+	General population and population from University	18-70	416	61.3	(56.4-66.0)
	Hernandez 2008	Glans, corona sulcus, penile shaft, scrotum	PCR-PGMY09/11	University population	Mean 29	300	35.3	(29.9-41.0)
	Nielson 2007	Glans, corona sulcus, penile shaft and scrotum, perianal area, anus	PCR-PGMY09/11	General population volunteers and STD clinic attendees	18-40	463	65.4	(60.9-69.8)
	Nyitray 2011	Anal canal	PCR-PGMY09/11	HIV- MSM from general population and population from University	18-70	176	47.2	(39.6-54.8)
				HIV- MSW from general population and population from University	18-70	1305	12.2	(10.5-14.1)
	Partridge 2007	Glans, urethral meatus, penile shaft and scrotum	PCR-MY09/11 HMB 01	Heterosexual university students	18-20	240	25.8	(20.4-31.9)
	Vardas 2011 ^a	Penis	RT-PCR-Multiplex or Bplex	Heterosexual men enrolled in a HPV vaccine trial	Median 20 (15- 24)	3132	21.2	(19.8-22.7)
	Weaver 2004	Glans, prepuce, shaft, scrotum	PCR-MY09/11 HMB 01	University students	18-25	283	35	(29.4-40.9)

Data updated on 28 Jun 2017 (data as of 31 Oct 2015).

95% CI: 95% Confidence Interval;

HC2: Hybrid Capture 2; ISH: In Situ Hybridization; PCR: Polymerase Chain Reaction; RT-PCR: Real Time Polymerase Chain Reaction; SPF: Short Primer Fragment; TS: Type Specific;

MSM: Men who have sex with men; MSW: Men who have sex with women; STD: sexually transmitted diseases;

^a Includes cases from Australia, Brazil, Canada, Croatia, Germany, Mexico, Spain, and USA.^b Giuliano AR, Cancer Epidemiol Biomarkers Prev 2008; 17: 2036^c Giuliano AR, J Infect Dis 2008; 198: 827

Data sources: See references in Section 9.

Table 25: Studies on anogenital HPV prevalence among men from special subgroups

Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	HPV prevalence		
						No	%	(95% CI)
Argentina	Pando 2012	Anus	GP-PCR Reverse line blot hybridization	HIV- MSM	Mean/Median 69 31 years		79.7	(68.3-88.4)
				HIV+ MSM	Mean/Median 39 31 years		92.3	(79.1-98.4)
Australia	Anderson 2008	Anal canal	HC2 HR	HIV+ MSM	Median 45 (28- 59)	123	86.2	(78.8-91.7)
	Goldstone 2011	Anus	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16- 27)	602	42.4	(38.4-46.4)
		Penis	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16- 27)	602	18.4	(15.4-21.8)
	Ong 2016	Anus	PCR-Linear Array	HIV+ MSM	Mean 51 (35-82)	281	79.7	(74.5-84.3)
	Vajdic 2009	Anal canal	HC2	HIV- MSM	IQR=36- 48	193	69.9	(62.9-76.3)
				HIV+ MSM	IQR=37- 49	123	94.3	(88.6-97.7)
Brazil	de Lima Rocha 2012	Coronal sulcus, glans, and prepuce	PCR-GP5+/6+	Sexual partners of women with cervical HPV infection	18-60	43	51.2	(35.5-66.7)
	Franceschi 2002	Glans, corona, urethra	PCR-GP5+/6+	Husbands of women with invasive cervical cancer	27-79	53	35.8	(23.1-50.2)
	Freire 2014	Shaft, glans, balanopreputial sulcus and urethral	PCR-Papillocheck	Men referred to the Urological Division	18-81	355	72.1	(67.1-76.7)
	Goldstone 2011	Anus	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16- 27)	602	42.4	(38.4-46.4)
		Penis	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16- 27)	602	18.4	(15.4-21.8)
	Guimarães 2011	Anus	PCR-DBH	HIV+	>=18	445	65.6	(61.0-70.0)
	Nicolau 2005	Glans, urethra, internal and external prepuce, scrotum, anus	HC2 HR, LR	Partners of women with HPV	19-53	50	70	(55.4-82.1)
	Nyitray 2011	Anal canal	PCR-PGMY09/11	HIV- MSM from general population and population from a STD clinic	18-70	176	47.2	(39.6-54.8)
	Rombaldi 2006	Prepuce, preglans, shaft, urethral canal	PCR-L1, MY09/11	Partners of women with CIN	18-56	99	54.5	(44.2-64.6)

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Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	HPV prevalence		
						No	%	(95% CI)
	Rosenblatt 2004	Shaft, dorsal and prebalanic area, prepuce, urethral meatus	HC2 HR	Partners of women with CIN	-	30	76.7	(57.7-90.1)
Canada	de Poko- mandy 2009	Anal canal	PCR-PGMY09/11	HIV+ MSM	Median 43 (21- 66)	241	97.9	(95.2-99.3)
	Goldstone 2011	Anus	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16- 27)	602	42.4	(38.4-46.4)
		Penis	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16- 27)	602	18.4	(15.4-21.8)
	Ogilvie 2009	Shaft, scrotum	PCR-Roche Amplicor HPV test	Heterosexual men attending provincial STD clinic	16-69	262	69.8	(63.9-75.3)
	Salit 2009	Anus	PCR-PGMY09/11	HIV+ MSM participants in TRACE study	38-50	224	93.3	(89.2-96.2)
	Salit 2010	Anal canal	HC2	HIV+ MSM	Median 44.4 (IQR=39.4- 50.6)	400	93	(90.0-95.3)
China	Gao 2010	Anal canal	PCR- Tellgenplex™ HPV DNA Test	HIV- MSM	>=18 (70% <30 years)	528	58.9	(54.6-63.1)
				HIV+ MSM	>=18 (70% <30 years)	50	96	(86.3-99.5)
	Li 2015	Anus	PCR-GenoArray	HIV+ MSM	18-60	193	99	(96.3-99.9)
	Tang 2006	Urethral meatus	PCR-MY09/11	STD clinic attendees	18-70	305	13.8	(10.1-18.2)
	Yang 2012	Anus	PCR- Tellgenplex™ HPV DNA Test	HIV+ MSM	>=18	91	70.3	(59.8-79.5)
	Zhang 2014	Anus	PCR-GenoArray	HIV- MSM, STD clinic attendees	IQR=25- 34.8	380	33.7	(28.9-38.7)
				HIV+ MSM STD clinic attendees	IQR=25- 34.8	28	71.4	(51.3-86.8)
Colombia	Franceschi 2002	Glans, corona, urethra	PCR-GP5+/6+	Husbands of women with cervical carcinoma in situ	23-76	63	20.6	(11.5-32.7)
				Husbands of women with invasive cervical cancer	24-79	50	32	(19.5-46.7)
Croatia	Goldstone 2011	Anus	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16- 27)	602	42.4	(38.4-46.4)
		Penis	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16- 27)	602	18.4	(15.4-21.8)

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Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	HPV prevalence		
						No	%	(95% CI)
Denmark	Svare 2002	Coronal sulcus, glans, perianal area, scrotum, and shaft	PCR-GP5+/6+ and TS 6,11,16,18,31,33	STD clinic attendees	>=18	198	44.9	(37.9-52.2)
France	Aynaud 2003	Meatal urethra	PCR-TS 6,11,42,16,18,33	Men with normal peniscopy whose female partners have genital HPV lesions	Mean 30	34	2.9	(0.1-15.3)
				Men with penile and urethral lesions whose female partners have genital HPV lesions	Mean 29	55	87.3	(75.5-94.7)
	Damay 2010	Anal canal	PCR-PapilloCheck®	HIV+ MSM	Median 45 (39-49.5)	67	74.6	(62.5-84.5)
	Philibert 2014	Anus	PCR-Cobas HR-HPV	HIV- MSM	Mean 46.4 (SD=9.4)	16	75	(47.6-92.7)
				HIV+ MSM	Mean 46.4 (SD=9.4)	82	76.8	(66.2-85.4)
	Piketty 2004	Anal canal	PCR-MY09/11	HIV+ MSM	27-62	45	80	(65.4-90.4)
Germany	Goldstone 2011	Anus	RT-PCR-Multiplex or Bplex	HIV- MSM	Median 22 (16-27)	602	42.4	(38.4-46.4)
		Penis	RT-PCR-Multiplex or Bplex	HIV- MSM	Median 22 (16-27)	602	18.4	(15.4-21.8)
	Schneider 1988	Glans, prepuce, fossa navicularis, shaft	Filter hybridization DNA/DNA	Sexual partners of women with HPV associated lesions of the cervix	Mean 36.5	156	39.1	(31.4-47.2)
	Wieland 2015	Anus	PCR-Multiplex and hybridization	HIV+ MSM	18-80	801	91.5	(89.4-93.3)
Greece	Hadjivassiliou 2007	Urethra	HC2 HR, LR	HIV- STD clinic attendees without genital warts and sexual partners of women with genital warts	15-65	64	20.3	(11.3-32.2)
India	Gupta 2006	Coronal sulcus, distal and intrameatal urethra and glans	PCR-L1 and TS 16,18	Partners of women with cervical cancer	Mean 46.4	30	66.7	(47.2-82.7)
Ireland	Sadlier 2014	Anus	PCR-TS 16,18,31	HIV- MSM	Mean 32 (SD=8)	80	61.3	(49.7-71.9)
				HIV+ MSM	Mean 40 (SD=10)	83	77.1	(66.6-85.6)

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Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	HPV prevalence		
						No	%	(95% CI)
Italy	Barzon 2010	Glans, corona, shaft, perianal area, urethra, and semen	PCR-General primers for L1 (MY09/11, GP5 + /6+)	Men referred for HPV testing. Indications for testing: STD screening, HPV suspected lesions, HPV-positive partners	20-72	947	41.7	(38.5-44.9)
	Benevolo 2008	Coronal sulcus, urethra, prepuce, shaft	PCR-L1	Male partners of women with CIN and/or positive HPV	20-61	71	35.2	(24.2-47.5)
	Chiarini 1998	Urethra	PCR-Generic primers in E1	Men with symptoms of nongonococcal urethritis	-	247	31.2	(25.5-37.4)
	Della Torre 1992	Urethra	PCR-TS 6,11,16,18	Partners of women with HPV	-	64	21.9	(12.5-34.0)
	Dona 2015	Anus	PCR-Linear Array	HIV- MSM	Median 32 (IQR=27-39)	437	72.1	(67.6-76.2)
				HIV+ MSM	Median 41 (IQR=33-47)	172	93	(88.1-96.3)
	Garbuglia 2015	Anus	PCR-MY09/11	HIV+ MSM	Median 39 (IQR=33-44)	220	88.6	(83.7-92.5)
	Giovannelli 2007	Coronal sulcus, frenulum, glans, prepuce, shaft	PCR-LiPA, GP5+/6+ and MY09/11	Partners of women with HPV	23-58	47	68.1	(52.9-80.9)
	Orlando 2008	Anus	HC2	HIV+	Median 34 (IQR=30-42)	233	87.1	(82.1-91.1)
	Pierangeli 2008	Anal canal	PCR-MY09/11	HIV- MSM	28-62	9	88.9	(51.8-99.7)
				HIV+ MSM	25-65	18	94.4	(72.7-99.9)
	Sammarco 2016	Anus	PCR-Multiplex and RFLP and sequencing	HIV+ MSM	Mean 38 (IQR=20-53)	50	56	(41.3-70.0)
		Coronal sulcus	PCR-Multiplex and RFLP and sequencing	HIV+ MSM	Mean 38 (IQR=20-53)	50	22	(11.5-36.0)
		Urethra	PCR-Multiplex and RFLP and sequencing	HIV+ MSM	Mean 38 (IQR=20-53)	50	10	(3.3-21.8)
Japan	Nagata 2015	Anus	PCR-Invader	HIV+ heterosexual men	Median 44 (IQR=39-55)	34	20.6	(8.7-37.9)

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Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	HPV prevalence		
						No	%	(95% CI)
				HIV+ MSM	Median 44 (IQR=39- 55)	361	75.9	(71.1-80.2)
	Shigehara 2010	Coronal sulcus, glans, prepuce, urethra, and urine	PCR-HPV GenoArray	Men with urethritis	Mean 35.2 (19-62)	142	47.9	(39.4-56.4)
	Takahashi 2003	Coronal sulcus, glans, prepuce	HC2 HR, LR	Patients with urethritis	17-49	130	18.5	(12.2-26.2)
	Takahashi 2005	Glans, corona, inner surface of prepuce	HC2 HR, LR	STD clinic attendees	18-35	204	5.9	(3.1-10.0)
Mexico	Goldstone 2011	Anus	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16- 27)	602	42.4	(38.4-46.4)
		Penis	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16- 27)	602	18.4	(15.4-21.8)
	Leyva- López 2003	Urethral meatus	PCR-L1	Partners of women with CIN	17-64	187	2.1	(0.6-5.4)
	Mendez- Martinez 2014	Anus	PCR-INNO-LIPA	HIV+ MSM	Median 39 (IQR=33- 45)	324	86.1	(81.9-89.7)
	Nyitray 2011	Anal canal	PCR-PGMY09/11	HIV- MSM from organized health care systems, factories and military	18-70	176	47.2	(39.6-54.8)
	Torres- Ibarra 2014	Anus	PCR-PGMY09/11	HIV+ MSM	18-69	446	93	(90.3-95.2)
Nether- lands	Bleeker 2002	Glans, corona, frenulum, prepuce	PCR-GP5+/6+	Partners of women with CIN	24-58	119	58.8	(49.4-67.8)
	Bleeker 2005 ^a	Corona, frenulum, glans, inner prepuce	PCR-GP5+/6+	Men visiting department of dermatology for non-STI complaints	22.8-73.2	83	25.3	(16.4-36.0)
	Bleeker 2005 ^b	Corona, frenulum, glans, inner prepuce	PCR-GP5+/6+	Partners of women with dyskaryosis and/or CIN	22.5-57.7	181	72.9	(65.8-79.3)
	van der Snoek 2003	Coronal sulcus	PCR-TS primers and LiPA	HIV- MSM	19-76	241	15.8	(11.4-21.0)
				HIV+ MSM	29-59	17	23.5	(6.8-49.9)
		Perianal area	PCR-TS primers and LiPA	HIV- MSM	19-76	241	32.8	(26.9-39.1)
				HIV+ MSM	29-59	17	64.7	(38.3-85.8)

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Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	HPV prevalence		
						No	%	(95% CI)
	Van Door- num 1994	Corona, urethra, anus, rectum	PCR-TS 6/11,16,18,33	STD clinic attendees	Mean 37	85	28.2	(19.0-39.0)
	van Rijn 2014	Anal canal	PCR-LIPA TS 16,18,31,33,45,52,58	HIV- MSM	Median 37.6 (IQR=33.6- 42.2)	441	33.6	(29.2-38.2)
				HIV+ MSM	Median 45.6 (IQR=39.4- 52.5)	306	56.9	(51.1-62.5)
		Penile shaft	PCR-LIPA TS 16,18,31,33,45,52,58	HIV- MSM	Median 37.6 (IQR=33.6- 42.2)	441	11.1	(8.3-14.4)
				HIV+ MSM	Median 45.6 (IQR=39.4- 52.5)	306	23.2	(18.6-28.3)
	Vriend 2013	Anal canal	PCR-LIPA	MSM STD clinic attendees	Median 22 (16- 24)	56	3.6	(0.4-12.3)
				MSW STD clinic attendees	Median 22 (16- 24)	124	33.1	(24.9-42.1)
		Penis	PCR-LIPA	MSM STD clinic attendees	Median 22 (16- 24)	56	26.8	(15.8-40.3)
				MSW STD clinic attendees	Median 22 (16- 24)	124	16.1	(10.1-23.8)
	Welling 2015	Anus	PCR-SPF DEIA LIPA	HIV- MSM	Median 38 (IQR=33- 42)	461	60.1	(55.5-64.6)
				HIV+ MSM	Median 46 (IQR=39- 53)	317	78.2	(73.3-82.7)
		Penis	PCR-SPF DEIA LIPA	HIV- MSM	Median 38 (IQR=33- 42)	461	29.5	(25.4-33.9)
				HIV+ MSM	Median 46 (IQR=39- 53)	317	49.5	(43.9-55.2)
Peru	Blas 2015	Anal canal	PCR-Linear Array	HIV- MSM	Mean 34 (18-59)	101	76.2	(66.7-84.1)
		Coronal sulcus, glans, penis shaft, and scrotum	PCR-Linear Array	HIV- MSM	Mean 34 (18-59)	101	40.6	(30.9-50.8)

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Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	HPV prevalence		
						No	%	(95% CI)
	Quinn 2012	Anus	PCR-Line blot	MSM	Mean 33 (SD=10.1)	105	77.1	(67.9-84.8)
Philippines	Franceschi 2002	Glans, corona, urethra	PCR-GP5+/6+	Husbands of women with invasive cervical cancer	22-77	149	6	(2.8-11.2)
Russia	Wirtz 2015	Anus	PCR-TS 6,11,16,18,31,33	HIV- MSM	Median 29 (19-50)	65	30.8	(19.9-43.4)
				HIV+ MSM	Median 29 (19-50)	58	50	(36.6-63.4)
Slovenia	Golob 2014	Penis	PCR-Linear Array	Men from infertile couples	Mean 33	299	37.1	(31.6-42.9)
	Milosevic 2010	Anal canal	PCR-Linear Array	HIV- MSM	16-80	116	75	(66.1-82.6)
				HIV+ MSM	20-57	20	95	(75.1-99.9)
South Africa	Firnhaber 2011	Prepuce, penile shaft and genital wart areas of the penis	PCR-Roche Linear Array HPV Genotyping test	Men with penile warts attending a public sector antiretroviral treatment clinic	Mean 36.0	73	100	(95.1-100.0)
	Mbulawa 2010	Shaft and glans, and the foreskin in uncircumcised men	PCR-Roche Linear Array HPV Genotyping test	HIV+ heterosexual men recruited for investigations of genital HPV transmission	19-67	158	77.2	(69.9-83.5)
	Müller 2010	Glans penis, coronal sulcus and penile shaft	PCR-Roche Linear Array HPV Genotyping test	Asymptomatic men attending for HIV voluntary counselling and testing a sexual health clinic	Mean 29.8	50	62	(47.2-75.3)
				Men with urethritis syndrome attending a sexual health clinic	Mean 29.8	56	48.2	(34.7-62.0)
		Glans penis, coronal sulcus, penile shaft and anogenital warts	PCR-Roche Linear Array HPV Genotyping test	Men with anogenital wart attending a sexual health clinic	Mean 29.8	108	100	(96.6-100.0)
	Vogt 2013	Coronal sulcus, glans and shaft	PCR-PGMY09/11	Heterosexual men attending an HIV testing centre	IQR=29-37	34	58.8	(40.7-75.4)
Spain	Álvarez-Argüelles 2013	Anus	PCR-General primers in L1 (MY09/11, GP5 + /6+), PCR with TS primers in E6/E7 for typing	STD clinic attendees	17-87	123	49.6	(40.5-58.8)

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Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	HPV prevalence		
						No	%	(95% CI)
		Balanopreputial	PCR-General primers in L1 (MY09/11, GP5 + /6+), PCR with TS primers in E6/E7 for typing	STD clinic attendees	17-87	1318	36.9	(34.3-39.5)
	Franceschi 2002	Glans, corona, urethra	PCR-GP5+/6+	Husbands of women with cervical carcinoma in situ	22-76	102	21.6	(14.0-30.8)
				Husbands of women with invasive cervical cancer	25-74	84	11.9	(5.9-20.8)
	Goldstone 2011	Anus	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16-27)	602	42.4	(38.4-46.4)
		Penis	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16-27)	602	18.4	(15.4-21.8)
	Hidalgo-Tenorio 2015	Anus	PCR-GeneAmp HR-HPV	HIV+ MSM	Mean 37.4 (SD=9.5)	197	80.2	(73.9-85.5)
	Sendagorta 2014	Anus	PCR-Genomic amplification	HIV+ MSM/bisexual men	>=18	298	93	(89.4-95.6)
	Sendagorta 2015	Anus	PCR-HR Clart HPV2	HIV+ MSM	Median 42 (IQR=33-50)	101	82.2	(73.3-89.1)
	Torres 2013	Anus	PCR-Roche Linear Array HPV Genotyping test	HIV+ MSM	IQR=28.2-40.1	1439	95.8	(94.6-96.7)
	Videla 2013	Anus	PCR-TS primers in E6/E7 F-HPV TM typing (Molgentix SL, Spain)	HIV+ Heterosexual men attending an outpatient HIV clinic	40-48	195	41.5	(34.5-48.8)
				HIV+ MSM attending an outpatient HIV clinic	36-47	538	84.2	(80.8-87.2)
		Coronal sulcus, glans, urethra, shaft	PCR-TS primers in E6/E7 F-HPV TM typing (Molgentix SL, Spain)	HIV+ Heterosexual men attending an outpatient HIV clinic	40-48	191	27.2	(21.0-34.1)
				HIV+ MSM attending an outpatient HIV clinic	36-47	457	24.9	(21.0-29.2)
Sweden	Kataoka 1991	Urethra	PCR-TS 6,11,16,18,33	Army conscripts with aceto-white epithelium	18-23	39	25.6	(13.0-42.1)

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Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	HPV prevalence		
						No	%	(95% CI)
	Löwhagen 1999	Anus	PCR-MY09/11	HIV- MSM	26-62	13	53.8	(25.1-80.8)
				HIV+ MSM	27-54	17	94.1	(71.3-99.9)
	Strand 1993	Coronal sulcus, glans, preputium, and shaft	PCR-MY09/11 and GP5+/6+	STD clinic attendees	20-53	65	29.2	(18.6-41.8)
	Voog 1997	Glans and prepuce	PCR-MY09/11 and GP5+/6+	STD clinic attendees	19-67	20	25	(8.7-49.1)
	Wikström 1991	Coronal sulcus, inner part of the prepuce, urethra	PCR-TS primers followed by dot blot	STD clinic attendees	17-58	228	53.9	(47.2-60.5)
	Wikström 2000	Corona, glans, and prepuce	PCR-GP5+/6+	STD clinic attendees	18-54	235	13.2	(9.1-18.2)
Thailand	Franceschi 2002	Glans, corona, urethra	PCR-GP5+/6+	Husbands of women with invasive cervical cancer	25-77	109	22	(14.6-31.0)
	Leaungwuti- wong 2015	Anus	Nested-PCR and sequencing	HIV- MSM	Median 33	50	30	(17.9-44.6)
				HIV- MSM sex worker	Median 26	50	30	(17.9-44.6)
	Phanuphak 2013	Anus	PCR-Roche Linear Array HPV Genotyping test	HIV- MSM	>=18	123	58.5	(49.3-67.3)
				HIV+ MSM	>=18	123	85.4	(77.9-91.1)
	Supindham 2015	Anus	PCR-Linear Array	MSM-Bisexual men who self-identify as men and engage in insertive and/or receptive anal sex with men and women	18-36	29	48.3	(29.4-67.5)
				MSM-Gay men who self-identify as men and prefer insertive and/or receptive anal sex with other men	18-54	85	89.4	(80.8-95.0)
				MSM-Transgender women who are born as anatomical males (and who may or may not have undergone genital surgery), but who self-identify as women and prefer receptive anal sex with men	18-48	83	80.7	(70.6-88.6)

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Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	HPV prevalence		
						No	%	(95% CI)
Uganda	Tobian 2013	Coronal sulcus and glans	PCR-PGMY09/11	HIV+ heterosexual men	15-49	421	90.7	(87.6-93.3)
UK	Bissett 2011	Glans, prepuce, shaft, scrotum	PCR-General primers (GP5 + /6+), Bio-Plex array technology for typing	Genitourinary clinic attendees with multiple sexual partners or diagnosis of genital warts within 6 months	-	87	49.4	(38.5-60.4)
	Cuschieri 2011	Shaft	PCR-INNO-LiPA	Drop-in sexual health service attendees	16-25	117	29.1	(21.0-38.2)
	Hillman 1993	Urethra	PCR-GP5+/6+	Men infected with gonorrhea	17-55.6	100	18	(11.0-26.9)
	Jalal 2007	Urethra	PCR-General primers for L1 (MY09/11, GP5 + /6+) and RLH	Genitourinary clinic attendees	15-77	437	20.8	(17.1-24.9)
	King 2015	Anus	PCR-Multiplex and Bio-Plex Any nonavalent vaccine HPV types	MSM	Median 30 (IQR=25- 35)	454	40.1	(35.5-44.8)
		Coronal sulcus, glans, penis shaft, scrotum and perianal area	PCR-Multiplex and Bio-Plex Any nonavalent vaccine HPV types	MSM	Median 30 (IQR=25- 35)	446	36.1	(31.6-40.7)
	Lacey 1999	Anal canal	PCR-GP5+/6+	HIV+ MSM	19-62	57	84.2	(72.1-92.5)
USA	Baken 1995	Penis	PCR-MY09/11	Heterosexual partners of STD clinic attendees	>17	48	62.5	(47.4-76.0)
	Baldwin 2003	Glans, corona, urethra	PCR-PGMY09/11	STD clinic attendees	18-70	393	28.2	(23.8-33.0)
	Berry 2009	Anal canal	PCR-MY09/11	HIV- MSM	26-75	81	56.8	(45.3-67.8)
				HIV+ MSM	26-75	32	90.6	(75.0-98.0)
	Caussey 1990	Anus	PCR-TS 6,11,16,18,31,33,35	HIV± homosexual men	Mean 40.6	105	39	(29.7-49.1)
	Chin-Hong 2004	Anus	PCR-MY09/11	HIV- MSM in EXPLORE cohort	18-89	1218	56.8	(54.0-59.6)
	Chin-Hong 2008	Anus	PCR- generic probe set by DBH	HIV- homosexual or bisexual men	24-73	87	57.5	(46.4-68.0)
				HIV+ homosexual or bisexual men	24-73	38	86.8	(71.9-95.6)
	Colón- López 2014	Anus	PCR-MY09/11	STD clinic attendees (29.8% MSM)	>=18	192	57.8	(50.5-64.9)
	Conley 2010	Anal canal	PCR-Linear Array	HIV + MSM	Median 42 (IQR=36- 48)	379	95.8	(93.2-97.6)

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Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	HPV prevalence		
						No	%	(95% CI)
				HIV+ MSW	Median 42 (IQR=38-48)	92	58.7	(47.9-68.9)
	Critchlow 1998	Anus	PCR-MY09/11	HIV- homosexual men	Mean 34	284	66.5	(60.7-72.0)
				HIV+ homosexual men	Mean 34	322	91.6	(88.0-94.4)
	Fife 2003	Glans, corona, shaft, inguinal skin, scrotum, perineum, perianal, urine	PCR-TS 6,11	STD clinic attendees	18-50	20	10	(1.2-31.7)
	Friedman 1998	Anal canal	PCR-MY09/11, HMB01, and HC	HIV- MSM	<40 years	46	69.6	(54.2-82.3)
				HIV+ MSM	<40 years	135	90.4	(84.1-94.8)
	Gandra 2015	Anus	HC2	HIV+ heterosexual men	Median 55 (IQR=49-60)	40	27.5	(14.6-43.9)
				HIV+ MSM	Median 49 (IQR=41-57)	107	54.2	(44.3-63.9)
	Goldstone 2011	Anus	RT-PCR-Multiplex or Bplex	HIV- MSM	Median 22 (16-27)	602	42.4	(38.4-46.4)
		Penis	RT-PCR-Multiplex or Bplex	HIV- MSM	Median 22 (16-27)	602	18.4	(15.4-21.8)
	Hood 2016	Anus	PCR-MY09/11	HIV+ MSM	Mean 39.5 (SD=7.8)	309	92.6	(89.0-95.2)
	Kiviat 1993	Anal canal	PCR-MY09/11	HIV- MSM/bisexual men	16-50	152	78.3	(70.9-84.6)
				HIV+ MSM/bisexual men	16-50	241	91.7	(87.5-94.9)
	Moscicki 2003	Anus	PCR-MY09/11 and HMB01	High-risk adolescent boys in REACH cohort	13-18	83	44.6	(33.7-55.9)
	Nyitray 2011	Anal canal	PCR-PGMY09/11	HIV- MSM from general population and population from University	18-70	176	47.2	(39.6-54.8)
	Palefsky 1997	Anus	PCR-MY09/11	HIV+ homosexual or bisexual men	24-66	118	93.2	(87.1-97.0)
	Palefsky 1998	Anus	PCR-MY09/11	HIV- homosexual or bisexual men	26-73	200	61	(53.9-67.8)
				HIV+ homosexual or bisexual men	24-64	289	93.1	(89.5-95.7)
				HIV± homosexual or bisexual men	24-73	489	80	(76.1-83.4)

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Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	HPV prevalence		
						No	%	(95% CI)
	Palefsky 2005	Anal canal	PCR-L1 consensus primers	HIV+ MSM	-	323	95.4	(92.5-97.4)
	Wiley 2013	Anus	PCR-PGMY09/11	HIV- MSM	Mean 55	683	70.3	(66.7-73.7)
				HIV+ MSM	Mean 55	579	90.7	(88.0-92.9)
	Wilkin 2004	Anal canal	HC2	HIV+ MSM	90% > 30 years	55	78.2	(65.0-88.2)

Data updated on 28 Jun 2017 (data as of 31 Oct 2015).

95% CI: 95% Confidence Interval;

DBH: Dot Blot Hybridization; EIA: Enzyme ImmunoAssay; HC2: Hybrid Capture 2; LiPA: Line Probe Assay; PCR: Polymerase Chain Reaction; RFLP: Restriction Fragment Length Polymorphism; RLH: Reverse Line Hybridisation; RT-PCR: Real Time Polymerase Chain Reaction; SPF: Short Primer Fragment; TS: Type Specific; MSM: Men who have sex with men;

MSW: Men who have sex with women; STD: sexually transmitted diseases;

^a Bleeker MC, Int J Cancer 2005; 113: 36

^b Bleeker MC, Clin Infect Dis 2005; 41: 612

Data sources: See references in Section 9.

4.4 HPV burden in the head and neck

The last evaluation of the International Agency for Research in Cancer (IARC) on the carcinogenicity of HPV in humans concluded that (a) there is enough evidence for the carcinogenicity of HPV type 16 in the oral cavity, oropharynx (including tonsil cancer, base of tongue cancer and other oropharyngeal cancer sites), and (b) limited evidence for laryngeal cancer (*IARC Monograph Vol 100B*). There is increasing evidence that HPV-related oropharyngeal cancers constitute an epidemiological, molecular and clinical distinct form as compared to non HPV-related ones. Some studies indicate that the most likely explanation for the origin of this distinct form of head and neck cancers associated with HPV is a sexually acquired oral HPV infection that is not cleared, persists and evolves into a neoplastic lesion. The most recent figures estimate that 25.6% of all oropharyngeal cancers are attributable to HPV infection with HPV16 being the most frequent type (*de Martel C. Lancet Oncol. 2012;13(6):607*). In this section, the HPV burden in the head and neck in the World is presented.

4.4.1 Burden of oral HPV infection in healthy population

Table 26: Studies on oral HPV prevalence among healthy populations

Country	Study	HPV detection Method and targeted HPV types	Population	Age (years)	No. Tested	HPV prevalence	
						%	(95% CI)
MEN							
Denmark	Eike 1995	PCR-MY09/11. Genotyping by amplification with TS primers (6, 11, 16, 18) and RFLP	Patients with unrelated disease (otosclerosis, nasal complaints)and their accompanying relatives	20-79	31	0.0 (0.0-11.2)	
Finland	Kero 2012	PCR-GP5+/GP6+ and MY09/MY11. Genotyping with Multimerix kit (6, 11, 16, 18, 31, 33, 39, 42, 43, 44, 45, 51, 52, 58, 59, 68, 70, 73, 82)	Fathers-to-be of cohort study	-	131	18.3 (12.1-26.0)	
Italy	Montaldo 2007	PCR-MY09/MY11 and GP5+N. Genotyping by sequencing	Dental clinic visitors	4-77	69	14.5 (7.2-25.0)	
United Kingdom	Kujan 2006	PCR-Roche master mix and HC2 digene (both able to detect the following HR types: 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59 and 68). No further genotyping	Healthy volunteers from university dental hospital.	-	26	3.9 (0.1-19.6)	

(Continued)

Country	Study	HPV detection Method and targeted HPV types	Population	Age (years)	No. Tested	HPV prevalence % (95% CI)
WOMEN						
Denmark	Eike 1995	PCR-MY09/11. Genotyping by amplification with TS primers (6, 11, 16, 18) and RFLP	Patients with unrelated disease (otosclerosis, nasal complaints) and their accompanying relatives	20-79	30	0.0 (0.0-11.6)
Finland	Leimola-Virtanen 1996	PCR-GP5/GP6. No genotyping	Post-menopausal women participating in annual mass-screening program for the detection of cervical precancerous lesions	55	131	10.7 (6.0-17.3)
Finland	Kero 2011	PCR-GP5+/GP6+ and MY09/MY11. Genotyping with Multimerix kit (6, 11, 16, 18, 31, 33, 39, 42, 43, 44, 45, 51, 52, 58, 59, 68, 70, 73, 82)	Spouses in 3rd trimestres of pregnancy of the fathers-to-be of cohort study	-	128	17.2 (11.1-24.9)
Italy	Montaldo 2007	PCR-MY09/MY11 and GP5+N. Genotyping by sequencing	Dental clinic visitors	4-77	95	21.1 (13.4-30.6)
Spain	Cañadas 2004	PCR-MY09/MY11. Genotyping by DBH with TS probes (6, 11, 16, 18, 26, 31-33, 35, 39, 40, 45, 51-56, 58, 59, 61, 66-68, 70, 71 (AE8), 72, 73, 81 (AE7), 83 (PAP291), 84 (PAP155), 85 (AE5), AE2 (IS39), and AE6)	Female sex workers who attended a dermatology or STD clinic.	-	188	8.5 (4.9-13.5)
United Kingdom	Kujan 2006	PCR-Roche master mix and HC2 digene (both able to detect the following HR types: 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59 and 68). No further genotyping	Healthy volunteers from university dental hospital.	-	24	12.5 (2.7-32.4)
BOTH OR UNSPECIFIED						
Denmark	Eike 1995	PCR-MY09/11. Genotyping by amplification with TS primers (6, 11, 16, 18) and RFLP	Patients with unrelated disease (otosclerosis, nasal complaints) and their accompanying relatives	20-79	61	0.0 (0.0-5.9)
Finland	Leimola-Virtanen 1996	PCR-GP5/GP6. No genotyping	Post-menopausal women participating in annual mass-screening program for the detection of cervical precancerous lesions	55	131	10.7 (6.0-17.3)
Finland	Kero 2011	PCR-GP5+/GP6+ and MY09/MY11. Genotyping with Multimerix kit (6, 11, 16, 18, 31, 33, 39, 42, 43, 44, 45, 51, 52, 58, 59, 68, 70, 73, 82)	Spouses in 3rd trimestres of pregnancy of the fathers-to-be of cohort study	-	128	17.2 (11.1-24.9)
Finland	Kero 2012	PCR-GP5+/GP6+ and MY09/MY11. Genotyping with Multimerix kit (6, 11, 16, 18, 31, 33, 39, 42, 43, 44, 45, 51, 52, 58, 59, 68, 70, 73, 82)	Fathers-to-be of cohort study	-	131	18.3 (12.1-26.0)
Greece	Lambropoulos 1997	PCR-MY09/MY11. Genotyping by SBH with TS probes (6, 11, 16, 18, 33)	Healthy population receiving routine oral examination	14-85	169	9.5 (5.5-14.9)
Italy	Montaldo 2007	PCR-MY09/MY11 and GP5+N. Genotyping by sequencing	Dental clinic visitors	4-77	164	18.3 (12.7-25.1)
Italy	Migaldi 2012	PCR-GP5+/GP6+, MY09/11, LCRS/E7AS, pU-1M and pU-2R. Genotyping by sequencing	Patients undergoing to routine oral examination	49-77	81	1.2 (0.0-6.7)

(Continued)

Country	Study	HPV detection Method and targeted HPV types	Population	Age (years)	No. Tested	HPV prevalence % (95% CI)
Spain	Cañadas 2004	PCR-MY09/MY11. Genotyping by DBH with TS probes (6, 11, 16, 18, 26, 31-33, 35, 39, 40, 45, 51-56, 58, 59, 61, 66-68, 70, 71 (AE8), 72, 73, 81 (AE7), 83 (PAP291), 84 (PAP155), 85 (AE5), AE2 (IS39), and AE6)	Female sex workers who attended a dermatology or STD clinic.	-	188	8.5 (4.9-13.5)
United Kingdom	Kujan 2006	PCR-Roche master mix and HC2 digene (both able to detect the following HR types: 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59 and 68). No further genotyping	Healthy volunteers from university dental hospital.	-	50	8.0 (2.2-19.2)

Data updated on 15 Dec 2014 (data as of 29 Feb 2012). Only for European countries.

95% CI: 95% Confidence Interval;

Data sources: See references in Section 9.

4.4.2 HPV burden in head and neck cancers

Table 27: Studies on HPV prevalence among cases of oral cavity cancer

Study		HPV detection method and targeted HPV types	No. Tested	HPV prevalence % (95% CI)		Prevalence of 5 most frequent HPV HPV type (%)
MEN						
Oliveira (Brazil)	2009	GP5+/GP6+ (L1) DBH (6. 11. 16. 18. 31. 33. 34. 35. 39. 40. 42. 43. 44. 45. 51. 52. 54. 56. 58)	57	31.6	(21.0-44.5)	-
Herrero (Canada)	2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	17	11.8	(3.3-34.3)	HPV 16 (11.8%)
Noble-Topham 1993 (Canada)		TS-PCR E6/E7 for 6b/11/16/18 Amplification with TS primers (6b/11. 16. 18)	7	57.1	(25.0-84.2)	HPV 18 (57.1%) HPV 16 (14.3%)
Zhang (China)	2004	TS-PCR E6 for 16/18 Amplification with TS primers (16. 18)	48	81.3	(68.1-89.8)	-
Herrero (Cuba)	2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	53	0.0	-	-
Krüger 2014 (Germany)		PCR L1-Consensus primer, PCR-SPF10, LiPA (HPV 6, 11, 16, 18, 16/18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 81)	56	8.9	(3.9-19.3)	-
Nemes (Hungary)	2006	MY09/MY11 (L1) Hybridization with TS probes (16. 18. 31. 33. 45. 51. 52. 58)	67	44.8	(33.5-56.6)	-
Balaram 1995 (India)		MY09/MY11 (L1). GP5+/GP6+ (L1)/GP17+/GP18+ (L1). Y1/Y2 and TS-PCR for 6/11/16/18 Sequencing	50	74.0	(60.4-84.1)	-
Chaudhary (India)	2010	MY09/MY11 (L1) Amplification with TS primers (16)	146	33.6	(26.4-41.6)	HPV 16 (33.6%)
D'Costa 1998 (India)		MY09/MY11 (L1) SBH (6. 11. 16. 18. 33)	71	12.7	(6.8-22.4)	HPV 16 (12.7%)
Herrero 2003 (India)		GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	127	4.7	(2.2-9.9)	HPV 16 (3.9%) HPV 18 (0.8%) HPV 35 (0.8%)
Laprise 2016 (India)		PCR-PGMY09/11, LBA (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 42, 44, 51, 53, 54, 56, 58, 59, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 81, 82, 83, 84, 89)	196	0.0	-	-
Saghravanian 2011 (Iran)		GP5+/GP6+ (L1) Amplification with TS primers HPV E6/7 (16. 18. 31. 33)	8	0.0	-	-
Herrero 2003 (Ireland)		GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	22	4.5	(0.8-21.8)	HPV 16 (4.5%)

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(Table 27 – continued from previous page)

Study		HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPVs HPV type (%)
				%	(95% CI)	
Herrero (Italy)	2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	32	0.0	-	-
Bhawal (Japan)	2008	TS-PCR E6 for 16 Electrophoretic analysis using SiHa DNA as positive control for HPV-16	19	26.3	(11.8-48.8)	HPV 16 (26.3%)
Chiba (Japan)	1996	TS-PCR E6/E7 for 6/11/16/18/31/33/52b/58 Restriction enzyme digestion (6. 11. 16. 18. 31. 33. 52b. 58)	22	27.3	(13.2-48.2)	HPV 16 (27.3%)
Shimizu (Japan)	2004	TS-PCR L1 for 16/18/31/33/35/39/45/51/52/56/58/59/68/73/75/76/82 Sequencing	13	15.4	(4.3-42.2)	HPV 58 (7.7%) HPV 120 (7.7%)
Tsuhako (Japan)	2000	TS-PCR E6/E7 for 16/18 and E6 for 6/11 Amplification with TS primers (6.11.16.18)	51	52.9	(39.5-65.9)	HPV 16 (33.3%) HPV 18 (33.3%) HPV 6 (11.8%) HPV 11 (2.0%)
Shin 2002 (Korea, Rep.)		TS-PCR E6 for 16/18/33 Amplification with TS primers (16. 18. 33)	76	9.2	(4.5-17.8)	HPV 18 (6.6%) HPV 16 (1.3%) HPV 33 (1.3%)
Ibieta 2005 (Mex- ico)		MY09/MY11 (L1) and GP5/GP6 (L1) Amplification with TS primers (16. 18)	36	41.7	(27.1-57.8)	-
Cruz (Netherlands)	1996	GP5+/GP6+ (L1) and CPI/CPII (L1) Amplification with TS primers and hybridization with TS probes (2. 4. 6. 10. 11. 13. 16. 18. 25. 31. 33. 46. 51. 52)	22	63.6	(43.0-80.3)	HPV 16 (54.5%) HPV 6 (4.5%)
Herrero (Poland)	2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	53	0.0	-	-
Kozomara (Serbia)	2005	TS-PCR E6 for 16. L1 for 18. E4 for 31 and E1 for 33 Amplification with TS primers (16. 18. 31. 33)	42	61.9	(46.8-75.0)	-
Kansky (Slovenia)	2003	PGMY09/11 (L1). GP5+/GP6+ (L1) and WD72/76/66/67/154 (E6) RFLP	48	4.2	(1.2-14.0)	HPV 33 (2.1%) HPV 58 (2.1%)
Boy 2006 (South Africa)		TS-PCR E1 for 16 and E7 for 18 Hybridization with TS probes (16. 18)	22	9.1	(2.5-27.8)	HPV 18 (9.1%)
Herrero (Spain)	2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	140	5.7	(2.9-10.9)	HPV 16 (5.7%)
Llamas-Martínez 2008 (Spain)		WD-66/67/72/76/154 (E6) RFLP (6.11.16.18.31.33.39.42.45.52)	19	47.4	(27.3-68.3)	-

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(Table 27 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPVs HPV type (%)
			%	(95% CI)	
Herrero 2003 (Sudan)	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	28	3.6	(0.6-17.7)	HPV 16 (3.6%)
Dahlgren 2004 (Sweden)	GP5+/GP6+ (L1) and CPI/CPII (L1) Amplification with TS primers (16. 18. 33) and sequencing	51	3.9	(1.1-13.2)	-
Chang 2003 (Taiwan)	MY09 (L1) and GP5+/GP6+ (L1) Sequencing	42	33.3	(21.0-48.4)	-
Chen 2002 (Taiwan)	MY09/MY11 (L1) Hybridization with TS probes (6. 11. 16. 18)	28	92.9	(77.4-98.0)	HPV 16 (82.1%) HPV 18 (71.4%) HPV 6 (10.7%) HPV 11 (3.6%)
Lohavanichbutr 2009 (USA)	MY09/MY11 (L1) and GP5+/GP6+ (L1) Hybridization with Roche LBA (6. 11. 16. 18. 26. 31. 33. 35. 39. 40. 42. 45. 51. 52. 53. 54. 55. 56. 58. 59. 61. 62. 64. 66. 67. 68. 69. 70. 71. 72. 73. 81. 82. 83. 84. 89)	56	19.6	(11.3-31.8)	-
Miller 1994 (Venezuela)	TS-PCR E6 for 16/18 Hybridization with TS probes (16. 18)	14	78.6	(52.4-92.4)	HPV 16 (71.4%) HPV 18 (42.9%)
Premoli-De-Percoco 2001 (Venezuela)	TS-PCR for 6/11/16/18 Hybridization with TS probes (6. 11. 16. 18)	0	-	-	-
WOMEN					
Oliveira 2009 (Brazil)	GP5+/GP6+ (L1) DBH (6. 11. 16. 18. 31. 33. 34. 35. 39. 40. 42. 43. 44. 45. 51. 52. 54. 56. 58)	31	25.8	(13.7-43.2)	-
Herrero 2003 (Canada)	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	11	9.1	(1.6-37.7)	HPV 16 (9.1%)
Noble-Topham 1993 (Canada)	TS-PCR E6/E7 for 6b/11/16/18 Amplification with TS primers (6b/11. 16. 18)	13	46.2	(23.2-70.9)	HPV 18 (30.8%) HPV 16 (7.7%)
Zhang 2004 (China)	TS-PCR E6 for 16/18 Amplification with TS primers (16. 18)	25	60.0	(40.7-76.6)	-
Herrero 2003 (Cuba)	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	25	4.0	(0.7-19.5)	HPV 16 (4.0%)
Krüger 2014 (Germany)	PCR L1-Consensus primer, PCR-SPF10, LiPA (HPV 6, 11, 16, 18, 16/18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 81)	32	0.0	-9999	-
Nemes 2006 (Hungary)	MY09/MY11 (L1) Hybridization with TS probes (16. 18. 31. 33. 45. 51. 52. 58)	12	25.0	(8.9-53.2)	-

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(Table 27 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPVs HPV type (%)
			%	(95% CI)	
Balaram 1995 (India)	MY09/MY11 (L1). GP5+/GP6+ (L1)/GP17+/GP18+ (L1). Y1/Y2 and TS-PCR for 6/11/16/18 Sequencing	41	68.3	(53.0-80.4)	-
Chaudhary 2010 (India)	MY09/MY11 (L1) Amplification with TS primers (16)	76	30.3	(21.1-41.3)	HPV 16 (30.3%)
D'Costa 1998 (India)	MY09/MY11 (L1) SBH (6. 11. 16. 18. 33)	5	20.0	(3.6-62.4)	-
Herrero 2003 (India)	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	135	1.5	(0.4-5.2)	HPV 16 (1.5%) HPV 18 (0.7%)
Laprise 2016 (India)	PCR-PGMY09/11, LBA (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 42, 44, 51, 53, 54, 56, 58, 59, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 81, 82, 83, 84, 89)	154	0.0	-9999	-
Saghravanian 2011 (Iran)	GP5+/GP6+ (L1) Amplification with TS primers HPV E6/7 (16. 18. 31. 33)	13	23.1	(8.2-50.3)	HPV 16 (23.1%) HPV 18 (23.1%)
Herrero 2003 (Ireland)	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	8	25.0	(7.1-59.1)	HPV 16 (25.0%)
Herrero 2003 (Italy)	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	21	9.5	(2.7-28.9)	HPV 16 (9.5%)
Bhawal 2008 (Japan)	TS-PCR E6 for 16 Electrophoretic analysis using SiHa DNA as positive control for HPV-16	9	55.6	(26.7-81.1)	HPV 16 (55.6%)
Chiba 1996 (Japan)	TS-PCR E6/E7 for 6/11/16/18/31/33/52b/58 Restriction enzyme digestion (6. 11. 16. 18. 31. 33. 52b. 58)	1	0.0	-9999	-
Shimizu 2004 (Japan)	TS-PCR L1 for 16/18/31/33/35/39/45/51/52/56/58/59/68/73/75/76/82 Sequencing	11	18.2	(5.1-47.7)	HPV 75 (9.1%) HPV 76 (9.1%)
Tsuhako 2000 (Japan)	TS-PCR E6/E7 for 16/18 and E6 for 6/11 Amplification with TS primers (6.11.16.18)	21	66.7	(45.4-82.8)	HPV 18 (52.4%) HPV 16 (28.6%) HPV 6 (19.0%)
Shin 2002 (Korea, Rep.)	TS-PCR E6 for 16/18/33 Amplification with TS primers (16. 18. 33)	76	5.3	(2.1-12.8)	HPV 16 (3.9%) HPV 18 (3.9%) HPV 33 (1.3%)
Ibieta 2005 (Mexico)	MY09/MY11 (L1) and GP5/GP6 (L1) Amplification with TS primers (16. 18)	14	42.9	(21.4-67.4)	-
Cruz 1996 (Netherlands)	GP5+/GP6+ (L1) and CPI/CPII (L1) Amplification with TS primers and hybridization with TS probes (2. 4. 6. 10. 11. 13. 16. 18. 25. 31. 33. 46. 51. 52)	13	38.5	(17.7-64.5)	HPV 16 (23.1%)

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(Table 27 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types (%)
			%	(95% CI)	
Herrero (Poland) 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	30	0.0	-9999	-
Kozomara (Serbia) 2005	TS-PCR E6 for 16. L1 for 18. E4 for 31 and E1 for 33 Amplification with TS primers (16. 18. 31. 33)	8	75.0	(40.9-92.9)	-
Kansky (Slovenia) 2003	PGMY09/11 (L1). GP5+/GP6+ (L1) and WD72/76/66/67/154 (E6) RFLP	7	14.3	(2.6-51.3)	HPV 16 (14.3%)
Boy 2006 (South Africa)	TS-PCR E1 for 16 and E7 for 18 Hybridization with TS probes (16. 18)	37	13.5	(5.9-28.0)	HPV 18 (13.5%)
Herrero (Spain) 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	32	6.3	(1.7-20.1)	HPV 16 (6.3%)
Llamas-Martínez 2008 (Spain)	WD-66/67/72/76/154 (E6) RFLP (6.11.16.18.31.33.39.42.45.52)	14	35.7	(16.3-61.2)	-
Herrero 2003 (Sudan)	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	15	0.0	-9999	-
Dahlgren (Sweden) 2004	GP5+/GP6+ (L1) and CPI/CPII (L1) Amplification with TS primers (16. 18. 33) and sequencing	34	0.0	-9999	-
Chang 2003 (Taiwan)	MY09 (L1) and GP5+/GP6+ (L1) Sequencing	61	60.7	(48.1-71.9)	-
Chen 2002 (Taiwan)	MY09/MY11 (L1) Hybridization with TS probes (6. 11. 16. 18)	1	100.0	(20.7-100.0)	HPV 16 (100.0%)
Lohavanichbutr 2009 (USA)	MY09/MY11 (L1) and GP5+/GP6+ (L1) Hybridization with Roche LBA (6. 11. 16. 18. 26. 31. 33. 35. 39. 40. 42. 45. 51. 52. 53. 54. 55. 56. 58. 59. 61. 62. 64. 66. 67. 68. 69. 70. 71. 72. 73. 81. 82. 83. 84. 89)	32	21.9	(11.0-38.8)	-
Miller (Venezuela) 1994	TS-PCR E6 for 16/18 Hybridization with TS probes (16. 18)	13	53.8	(29.1-76.8)	HPV 16 (46.2%) HPV 18 (7.7%)
Premoli-De-Percoco 2001 (Venezuela)	TS-PCR for 6/11/16/18 Hybridization with TS probes (6. 11. 16. 18)	50	60.0	(46.2-72.4)	HPV 16 (50.0%) HPV 18 (16.0%)
BOTH OR UNSPECIFIED					
González (Argentina) 2007	MY09/MY11 (L1) and GP5+/GP6+ (L1) RFLP and DBH	25	60.0	(40.7-76.6)	HPV 16 (48.0%) HPV 11 (28.0%) HPV 6 (8.0%) HPV 18 (4.0%)

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Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types HPV type (%)
			%	(95% CI)	
Gudleviciene 2014 (Belarus)	PCR-GP5+/6+, PCR-PGMY09/11, PCR L1-Consensus primer, PCR-E6, PCR- MULTIPLEX (HPV 6, 11, 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, 68, 73, 82)	55	18.2	(10.2-30.3)	-
Duray 2012 (Belgium)	PCR-GP5+/6+, PCR L1-Consensus primer, PCR-E6, PCR-E7, qPCR, TS (HPV 6, 11, 16, 18, 31, 33, 35, 39, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68)	147	44.2	(36.4-52.3)	-
Oliveira 2009 (Brazil)	GP5+/GP6+ (L1) DBH (6. 11. 16. 18. 31. 33. 34. 35. 39. 40. 42. 43. 44. 45. 51. 52. 54. 56. 58)	88	29.5	(21.0-39.8)	HPV 18 (28.4%) HPV 16 (5.7%)
Rivero 2006 (Brazil)	GP5+/GP6+ (L1) CSA-ISH (DAKO) (6. 11. 16. 18)	40	0.0	-9999	-
Herrero 2003 (Canada)	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	28	10.7	(3.7-27.2)	HPV 16 (10.7%)
Noble-Topham 1993 (Canada)	TS-PCR E6/E7 for 6b/11/16/18 Amplification with TS primers (6b/11. 16. 18)	23	43.5	(25.6-63.2)	HPV 18 (34.8%) HPV 16 (8.7%)
Gan 2014 (China)	PCR-GP5+/6+, PCR L1-Consensus primer (HPV 6, 16, 18)	200	27.5	(21.8-34.1)	-
Lee 2015 (China)	PCR-GP5+/6+, PCR-MY09/11, PCR L1-Consensus primer, (HPV 6, 11, 16, 18, 26, 31, 32, 33, 35, 39, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 62, 66, 67, 68, 69, 70, 71, 72, 74, 81, 82, 83, 84)	1002	19.4	(17.0-21.9)	-
Tang 2003 (China)	TS-PCR E6 for 16/18/33 Sequencing	30	46.7	(30.2-63.9)	HPV 16 (36.7%) HPV 18 (16.7%)
Wen 1997 (China)	TS-PCR E6 for 16/18 Hybridization with TS probes (HPV16.18 E6)	45	31.1	(19.5-45.7)	HPV 18 (24.4%) HPV 16 (20.0%)
Zhang 2004 (China)	TS-PCR E6 for 16/18 Amplification with TS primers (16. 18)	73	74.0	(62.9-82.7)	HPV 16 (58.9%) HPV 18 (24.7%)
Herrero 2003 (Cuba)	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	78	1.3	(0.2-6.9)	HPV 16 (1.3%) HPV 18 (1.3%)
Koskinen 2003 (Finland)	SPF10 (L1) LiPA 25	28	64.3	(45.8-79.3)	HPV 16 (46.4%) HPV 33 (21.4%)
Klussmann 2001 (Germany)	A10/A5-A6/A8 (L1) and CP62/70-CP65/69a (L1) Sequencing	22	18.2	(7.3-38.5)	HPV 16 (13.6%) HPV 19 (4.5%)
Krüger 2014 (Germany)	PCR L1-Consensus primer, PCR-SPF10, LiPA (HPV 6, 11, 16, 18, 16/18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 81)	88	5.7	(2.5-12.6)	-

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(Table 27 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types (%)
			%	(95% CI)	
Ostwald 2003 (Germany)	TS-PCR E6 for 6/11/16/18 Hybridization with TS probes (6/11. 16. 18)	118	43.2	(34.6-52.2)	HPV 16 (29.7%) HPV 18 (13.6%)
Weiss 2011 (Germany)	RT-PCR E6/E7 for 16 Hybridization with TS probes (16)	34	2.9	(0.5-14.9)	HPV 16 (2.9%)
Aggelopoulou 1999 (Greece)	L1 consensus primers and TS-PCR E7 for 16/18 Amplification with TS primers (16. 18)	81	49.4	(38.8-60.0)	HPV 18 (27.2%) HPV 16 (6.2%)
Blioumi 2014 (Greece)	PCR-GP5+/6+, PCR-MY09/11, PCR L1-Consensus primer, Sequencing (HPV 16, 56, 66)	63	22.2	(13.7-33.9)	-
Romanitan 2008 (Greece)	GP5+/GP6+ (L1). CPI/CPIIG (E1) and TS-PCR E6/E7 for 16 Amplification with TS primers (16)	75	1.3	(0.2-7.2)	-
Nemes 2006 (Hungary)	MY09/MY11 (L1) Hybridization with TS probes (16. 18. 31. 33. 45. 51. 52. 58)	79	41.8	(31.5-52.8)	HPV 16 (34.2%) HPV 18 (6.3%) HPV 31 (3.8%) HPV 33 (2.5%)
Szarka 2009 (Hungary)	MY09/MY11 (L1) and GP5+/GP6+ (L1) RFLP	65	47.7	(36.0-59.6)	HPV 16 (27.7%) HPV 11 (6.2%) HPV 18 (6.2%) HPV 33 (3.1%) HPV 31 (1.5%)
Balaram 1995 (India)	MY09/MY11 (L1). GP5+/GP6+ (L1)/GP17+/GP18+ (L1). Y1/Y2 and TS-PCR for 6/11/16/18 Sequencing	91	73.6	(63.7-81.6)	HPV 18 (47.3%) HPV 16 (41.8%) HPV 11 (19.8%) HPV 6 (14.3%)
Bhattacharya 2009 (India)	MY09/MY11 (L1) Amplification with TS primers (16. 18)	193	62.2	(55.2-68.7)	HPV 16 (60.1%) HPV 18 (5.2%)
Chaudhary 2010 (India)	MY09/MY11 (L1) Amplification with TS primers (16)	222	32.4	(26.6-38.8)	HPV 16 (32.4%)
D'Costa 1998 (India)	MY09/MY11 (L1) SBH (6. 11. 16. 18. 33)	99	15.2	(9.4-23.5)	HPV 16 (15.2%)
Herrero 2003 (India)	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	262	3.1	(1.6-5.9)	HPV 16 (2.7%) HPV 18 (0.8%) HPV 35 (0.4%)
Laprise 2016 (India)	PCR-PGMY09/11, LBA (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 42, 44, 51, 53, 54, 56, 58, 59, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 81, 82, 83, 84, 89)	350	0.0	-9999	-
Mishra 2006 (India)	MY09/MY11 (L1) Amplification with TS primers (16. 18)	66	27.3	(18.0-39.0)	HPV 16 (27.3%)
Sebastian 2014 (India)	PCR, LBA (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 81, 82, 83, 84)	22	0.0	-9999	-
Saghravanian 2011 (Iran)	GP5+/GP6+ (L1) Amplification with TS primers HPV E6/7 (16. 18. 31. 33)	21	14.3	(5.0-34.6)	HPV 16 (14.3%) HPV 18 (14.3%)

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(Table 27 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types (%)
			%	(95% CI)	
Herrero 2003 (Ireland)	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	30	10.0	(3.5-25.6)	HPV 16 (10.0%)
Badaracco 2000 (Italy)	MY09/MY11 (L1) Amplification with TS primers (6.16) and hybridization with TS probes (11.16.18.31.45.56.57)	38	26.3	(15.0-42.0)	HPV 18 (13.2%) HPV 6 (10.5%) HPV 16 (10.5%) HPV 11 (5.3%) HPV 56 (5.3%)
Badaracco 2007 (Italy)	MY09/MY11 (L1) and GP5+/GP6+ (L1) Sequencing	53	11.3	(5.3-22.6)	HPV 16 (7.5%) HPV 33 (1.9%) HPV 58 (1.9%)
Herrero 2003 (Italy)	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	53	3.8	(1.0-12.8)	HPV 16 (3.8%)
Rittà 2009 (Italy)	MY09/MY11 (L1) and GP5+/GP6+ (L1) Sequencing	25	36.0	(20.2-55.5)	HPV 16 (36.0%)
Scapoli 2009 (Italy)	RT-PCR for 16/18/31/45 Hybridization with TS probes (16. 18. 31. 45)	247	1.2	(0.4-3.5)	HPV 16 (1.2%)
Bhawal 2008 (Japan)	TS-PCR E6 for 16 Electrophoretic analysis using SiHa DNA as positive control for HPV-16	28	35.7	(20.7-54.2)	HPV 16 (35.7%)
Chiba 1996 (Japan)	TS-PCR E6/E7 for 6/11/16/18/31/33/52b/58 Restriction enzyme digestion (6. 11. 16. 18. 31. 33. 52b. 58)	32	18.8	(8.9-35.3)	HPV 16 (18.8%)
Deng 2013 (Japan)	PCR-GP5+/6+, PCR-MY09/11, TS, Sequencing (HPV 6, 11, 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 34, 35, 38, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 74, 80, 81, 82, 83, 84, 85, 86, 87, 89, 90, 91)	31	32.3	(18.6-49.9)	-
Higa 2003 (Japan)	TS-PCR E6/E7 for 16/18 Amplification with TS E6/E7 primers (6. 11. 16. 18)	46	80.4	(66.8-89.3)	HPV 16 (52.2%) HPV 18 (52.2%) HPV 6 (21.7%) HPV 11 (2.2%)
Kojima 2002 (Japan)	TS-PCR L1 and E6 for 38 Sequencing	53	66.0	(52.6-77.3)	HPV 38 (66.0%)
Shima 2000 (Japan)	TS-PCR E6/E7 for 6/11/16/18/31/33/52b/58 RFLP (16. 18)	46	73.9	(59.7-84.4)	HPV 18 (54.3%) HPV 16 (19.6%)
Shimizu 2004 (Japan)	TS-PCR L1 for 16/18/31/33/35/39/45/51/52/56/58/59/68/73/75/76/82 Sequencing	24	16.7	(6.7-35.9)	HPV 58 (4.2%) HPV 75 (4.2%) HPV 76 (4.2%) HPV 120 (4.2%)
Sugiyama 2003 (Japan)	TS-PCR E6/E7 for 16/18 Electrophoretic analysis using SiHa DNA and HeLa DNA as positive controls for HPV-16 and HPV-18. respectively.	79	35.4	(25.8-46.4)	HPV 16 (32.9%) HPV 18 (2.5%)

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(Table 27 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types HPV type (%)
			%	(95% CI)	
Tang 2003 (Japan)	TS-PCR E6 for 16/18/33 Sequencing	30	50.0	(33.2-66.8)	HPV 18 (33.3%) HPV 16 (23.3%)
Tsuhako 2000 (Japan)	TS-PCR E6/E7 for 16/18 and E6 for 6/11 Amplification with TS primers (6.11.16.18)	72	56.9	(45.4-67.7)	HPV 18 (38.9%) HPV 16 (31.9%) HPV 6 (13.9%) HPV 11 (1.4%)
Shin 2002 (Korea, Rep.)	TS-PCR E6 for 16/18/33 Amplification with TS primers (16. 18. 33)	76	14.5	(8.3-24.1)	HPV 18 (10.5%) HPV 16 (5.3%) HPV 33 (2.6%)
Lim 2007 (Malaysia)	GP5+/GP6+ (L1) Amplification with TS primers (16. 18)	20	85.0	(64.0-94.8)	HPV 18 (75.0%) HPV 16 (30.0%)
Anaya-Saavedra 2008 (Mexico)	MY09/MY11 (L1) and GP5+/GP6+ (L1) Sequencing	62	43.5	(31.9-55.9)	HPV 16 (24.2%) HPV 18 (8.1%) HPV 33 (3.2%) HPV 2 (1.6%) HPV 11 (1.6%)
Ibieta 2005 (Mexico)	MY09/MY11 (L1) and GP5/GP6 (L1) Amplification with TS primers (16. 18)	50	42.0	(29.4-55.8)	HPV 16 (28.0%)
Braakhuis 2004 (Netherlands)	GP5+/GP6+ (L1) and TS-PCR RLBH (6. 11. 16. 18. 26. 31. 33. 34. 35. 39. 40. 42. 43. 44. 45. 51. 52. 53. 54. 55. 56. 57. 58. 59. 61. 66. 68.70.72.73. 82/MM4. 83. 84. 82/IS39. 71/CP8061. 81/CP8304. 89)	106	9.4	(5.2-16.5)	HPV 16 (9.4%)
Cruz 1996 (Netherlands)	GP5+/GP6+ (L1) and CPI/CPII (L1) Amplification with TS primers and hybridization with TS probes (2. 4. 6. 10. 11. 13. 16. 18. 25. 31. 33. 46. 51. 52)	35	54.3	(38.2-69.5)	HPV 16 (42.9%) HPV 6 (2.9%)
van Monsjou 2012 (Netherlands)	PCR, LiPA (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 72, 73, 82)	20	10.0	(2.8-30.1)	-
Lingen 2013 ^a (Northern America)	PCR L1-Consensus primer, PCR-SPF10, LiPA (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 81)	409	5.9	(4.0-8.6)	-
Mork 2001 ^b (Northern Europe)	GP5+/GP6+ (L1) and CPI/CPII (L1) Amplification with TS primers (6. 11. 16. 18. 33)	91	7.7	(3.8-15.0)	HPV 16 (4.4%) HPV 6 (1.1%) HPV 11 (1.1%) HPV 33 (1.1%)
Matzow 1998 (Norway)	GP5+/GP6+ (L1). CPI/CPIIG (E1) and TS-PCR for 6/16/18/31/33 Amplification with TS primers (6. 16. 18. 31. 33)	30	0.0	-9999	-
Herrero 2003 (Poland)	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	83	0.0	-9999	-

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(Table 27 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types HPV type (%)
			%	(95% CI)	
Snietura 2010 (Poland)	Real-time High Risk HPV test (Abbott Molecular) using L1 consensus primers Amplification with TS primers (16. 18. 31. 33. 35. 39. 45. 51. 52. 56. 58. 59. 66 and 68 - the technique only differentiates 16-18-other)	45	4.4	(1.2-14.8)	HPV 16 (4.4%)
Kozomara 2005 (Serbia)	TS-PCR E6 for 16. L1 for 18. E4 for 31 and E1 for 33 Amplification with TS primers (16. 18. 31. 33)	50	64.0	(50.1-75.9)	HPV 31 (32.0%) HPV 16 (26.0%) HPV 18 (26.0%)
Kansky 2003 (Slovenia)	PGMY09/11 (L1). GP5+/GP6+ (L1) and WD72/76/66/67/154 (E6) RFLP	55	5.5	(1.9-14.9)	HPV 16 (1.8%) HPV 33 (1.8%) HPV 58 (1.8%)
Boy 2006 (South Africa)	TS-PCR E1 for 16 and E7 for 18 Hybridization with TS probes (16. 18)	59	11.9	(5.9-22.5)	HPV 18 (11.9%)
Van Rensburg 1996 (South Africa)	TS-PCR E6 for 6/11/16/18 Hybridization with TS probes (4. 16. 18)	146	1.4	(0.4-4.9)	HPV 11 (0.7%) HPV 16 (0.7%)
García-de Marcos 2014 (Spain)	PCR L1-Consensus primer, PCR-SPF10, EIA, LiPA (HPV 6, 11, 16, 18, 31, 33, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 70, 73, 74)	61	26.2	(16.8-38.4)	-
Herrero 2003 (Spain)	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	172	5.8	(3.2-10.4)	HPV 16 (5.8%)
Llamas-Martínez 2008 (Spain)	WD-66/67/72/76/154 (E6) RFLP (6.11.16.18.31.33.39.42.45.52)	33	42.4	(27.2-59.2)	HPV 16 (33.3%) HPV 6 (30.3%) HPV 31 (9.1%)
Herrero 2003 (Su- dan)	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	43	2.3	(0.4-12.1)	HPV 16 (2.3%)
Dahlgren 2004 (Sweden)	GP5+/GP6+ (L1) and CPI/CPII (L1) Amplification with TS primers (16. 18. 33) and sequencing	85	2.4	(0.6-8.2)	HPV 16 (2.4%)
Sand 2000 (Swe- den)	MY09/MY11 (L1) Amplification with TS primers (6b/11. 16. 18)	24	12.5	(4.3-31.0)	HPV 16 (4.2%) HPV 18 (4.2%)
Chang 2003 (Tai- wan)	MY09 (L1) and GP5+/GP6+ (L1) Sequencing	103	49.5	(40.1-59.0)	HPV 16 (28.2%) HPV 18 (26.2%) HPV 6 (1.0%) HPV 11 (1.0%) HPV 32 (1.0%)
Chen 2002 (Tai- wan)	MY09/MY11 (L1) Hybridization with TS probes (6. 11. 16. 18)	29	93.1	(78.0-98.1)	HPV 16 (82.8%) HPV 18 (75.9%) HPV 6 (10.3%) HPV 11 (3.4%)
Yang 2004 (Tai- wan)	MY09/MY11 (L1) Amplification with TS primers (6.11.16.18.31.33.35.45.58)	37	10.8	(4.3-24.7)	HPV 16 (8.1%) HPV 18 (5.4%)

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(Table 27 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types (%)
			%	(95% CI)	
Lopes 2011 (UK)	GP5+/GP6+ (L1) and qPCR for 16/18 Hybridization with TS probes (16. 18)	142	3.5	(1.5-8.0)	HPV 16 (2.1%) HPV 18 (2.1%)
Snijders 1996 (UK)	GP5+/GP6+ (L1) Amplification with TS primers and SBH with TS probes (6. 11. 16. 18. 31. 33)	25	20.0	(8.9-39.1)	HPV 16 (20.0%)
Yeudall 1991 (UK)	TS-PCR E6/E7 for 16. E6 for 18 and specific for 4 Hybridization with TS probes (4. 16. 18)	39	46.2	(31.6-61.4)	HPV 16 (25.6%) HPV 18 (20.5%)
Chuang 2008 (USA)	RT-PCR E6/E7 for 16 Hybridization with TS probes (16)	21	0.0	-9999	-
Furniss 2007 (USA)	TS-PCR L1 for 16 Amplification with TS primers (16)	150	25.3	(19.0-32.8)	HPV 16 (25.3%)
Ha 2002 (USA)	RT-PCR E6/E7 for 16 Amplification with TS primers (16)	34	2.9	(0.5-14.9)	HPV 16 (2.9%)
Harris 2011 (USA)	MY09/MY11 (L1) and GP5+/GP6+ (L1) Sequencing	25	8.0	(2.2-25.0)	HPV 16 (8.0%)
Holladay 1993 (USA)	L1 consensus primers Hybridization with TS probes (6. 11. 16. 18. 33)	39	17.9	(9.0-32.7)	HPV 16 (17.9%) HPV 18 (2.6%)
Hooper 2015 (USA)	HC2, PCR-E6, PCR-E7, PCR-MULTIPLEX (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 42, 44, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 70, 73, 82)	24	8.3	(2.3-25.8)	-
Liang 2008 (USA)	GP5+/GP6+ (L1) Amplification with TS primers (16)	51	2.0	(0.3-10.3)	HPV 16 (2.0%)
Lohavanichbutr 2009 (USA)	MY09/MY11 (L1) and GP5+/GP6+ (L1) Hybridization with Roche LBA (6. 11. 16. 18. 26. 31. 33. 35. 39. 40. 42. 45. 51. 52. 53. 54. 55. 56. 58. 59. 61. 62. 64. 66. 67. 68. 69. 70. 71. 72. 73. 81. 82. 83. 84. 89)	88	20.5	(13.3-30.0)	HPV 16 (18.2%) HPV 32 (1.1%) HPV 53 (1.1%)
Paz 1997 (USA)	MY09/MY11 (L1) and IU/IWDO (E1) Amplification with TS primers (6. 16. 18)	53	13.2	(6.5-24.8)	HPV 16 (9.4%) HPV 6 (1.9%) HPV 8 (1.9%)
Schlecht 2011 (USA)	MY09/MY11 (L1) and HMB01 (L1) DBH (40 HPV types including 16. 18. 31. 33. 35. 39. 45. 51. 52. 56. 58. 66)	36	13.9	(6.1-28.7)	HPV 16 (11.1%)
Schwartz 1998 (USA)	MY09/MY11 (L1) and TS-PCR E6 for 6/11/16/18 Hybridization with TS probes (6. 11. 16. 18. 31/33/35)	193	21.2	(16.1-27.5)	HPV 16 (11.4%) HPV 6 (6.2%) HPV 11 (3.6%) HPV 18 (1.0%)
Smith 2004 (USA)	MY09/MY11 (L1) and HMB01 (L1) Sequencing	123	10.6	(6.3-17.2)	HPV 16 (8.1%) HPV 33 (2.4%)
Walline 2013 (USA)	PCR-PGMY09/11, PCR L1-Consensus primer, PCR-E6, PCR-MULTIPLEX (HPV 16, 31, 33, 35, 39, 58, 66)	108	25.9	(18.6-34.9)	-
Zhao 2005 (USA)	RT-PCR E6/E7 for 16 Hybridization with TS probes (16)	38	15.8	(7.4-30.4)	HPV 16 (15.8%)

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(Table 27 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types (%)
			%	(95% CI)	
Miller 1994 (Venezuela)	TS-PCR E6 for 16/18 Hybridization with TS probes (16. 18)	27	66.7	(47.8-81.4)	HPV 16 (59.3%) HPV 18 (25.9%)
Premoli-De-Percoco 2001 (Venezuela)	TS-PCR for 6/11/16/18 Hybridization with TS probes (6. 11. 16. 18)	50	60.0	(46.2-72.4)	HPV 16 (50.0%) HPV 18 (16.0%)
Ribeiro 2011 ^c (World)	PGMY09/11 (L1) Amplification with TS primers (16)	132	0.0	-9999	-

Data updated on 28 Jun 2017 (data as of 31 Dec 2015).

95% CI: 95% Confidence Interval;

DBH: Dot Blot Hybridization; EIA: Enzyme ImmunoAssay; HC2: Hybrid Capture 2; ISH: In Situ Hybridization; LBA: Line-Blot Assay; LiPA: Line Probe Assay; PCR: Polymerase Chain Reaction; RFLP: Restriction Fragment Length Polymorphism; RLBH: Reverse Line Blot Hybridization; RT-PCR: Real Time Polymerase Chain Reaction; SBH: Southern Blot Hybridization; SPF: Short Primer Fragment; TS: Type Specific;

^aIncludes cases from Canada and USA^bIncludes cases from Norway, Sweden and Finland^cIncludes cases from Argentina, Brazil, Cuba, Russia, Slovakia, Czech Republic, Romania and Poland

Data sources: See references in Section 9.

Table 28: Studies on HPV prevalence among cases of oropharyngeal cancer

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types HPV type (%)
			%	(95% CI)	
MEN					
Li 2007 (China)	GP5+/GP6+ (L1). CP65/70ct-CP66/69ct (L1). FAP59/6415 (L1). A5/A10-A6/A8 (L1) and TS-PCR E6 for 16 Sequencing	21	14.3	(5.0-34.6)	HPV 16 (14.3%)
Herrero (Cuba)	2003 GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	21	19.0	(7.7-40.0)	HPV 16 (19.0%)
Rotnáglová (Czech Rep.)	2011 GP5+/GP6+ (L1) RBLH (6. 11. 16. 18. 26. 31. 33. 34. 35. 39. 40. 42. 43. 44. 45. 51. 52. 53. 54. 55. 56. 57. 58. 59. 61. 66. 68. 70. 71. 72. 73. 81. 82. 83. 84. 89)	90	64.4	(54.2-73.6)	-
Charfi (France)	2008 GP5+/GP6+ (L1) and TS-PCR for 6/11/16/18/33 Amplification with TS primers (6. 11. 16. 18. 33)	36	55.6	(39.6-70.5)	-
Hoffmann (Germany)	2010 GP5+/GP6+ (L1). MY09/MY11 (L1) and TS-PCR for 6/11/16/18 Hybridization with TS probes - Multiplex luminex*	31	54.8	(37.8-70.8)	HPV 16 (51.6%) HPV 35 (6.5%)
Krupar 2014 (Germany)	PCR-E6, PCR-E7, PCR-MULTIPLEX (HPV 11, 16, 18, 31, 33, 35, 39, 42, 43, 44, 45, 51, 52, 56, 58, 59, 66, 68)	34	50.0	(34.1-65.9)	HPV 16 (50.0%)
Reimers (Germany)	2007 A10/A5-A6/A8 (L1) and CP62/70-CP65/69a (L1) Sequencing	83	25.3	(17.2-35.6)	-
Herrero (Italy)	2003 GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	30	23.3	(11.8-40.9)	HPV 16 (20.0%) HPV 33 (3.3%) HPV 35 (3.3%)

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(Table 28 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPVs HPV type (%)
			%	(95% CI)	
Hannisdal 2010 (Norway)	GP5+/GP6+ (L1) Sequencing	99	56.6	(46.7-65.9)	-
Herrero 2003 (Spain)	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	40	5.0	(1.4-16.5)	HPV 16 (5.0%)
Attner 2010 (Sweden)	GP5+/GP6+ (L1). CPI/IIG (E1) and TS-PCR E6/7 for 16/33 Amplification with TS primers (16. 33) and sequencing	65	75.4	(63.7-84.2)	-
Dahlgren 2004 (Sweden)	GP5+/GP6+ (L1) and CPI/CPII (L1) Amplification with TS primers (16. 18. 33) and sequencing	18	44.4	(24.6-66.3)	-
Hammarstedt 2006 (Sweden)	GP5+/GP6+ (L1). CPI/CPIIG (E1) and TS-PCR E6 for 16 Sequencing	145	48.3	(40.3-56.3)	-
Näsman 2009 (Sweden)	GP5+/GP6+ (L1). CPI/CPIIG (E1) and TS-PCR E6 for 16 Sequencing	76	81.6	(71.4-88.7)	-
Lindel 2001 (Switzerland)	SPF10 (L1) Sequencing	75	8.0	(3.7-16.4)	-
Al-Swiahb 2010 (Taiwan)	MY09/MY11 (L1) and GP5/GP6 (L1) In situ hybridization with TS probes (6. 11. 16. 18. 31) and Roche LBA	260	13.8	(10.2-18.6)	-
Kuo 2008 (Taiwan)	MY09 (L1) and GP5+/GP6+ (L1) Hybridization with HPV gene chip (6.11.16.18.26.31-33.35.37.39. 42-45.51-56.58.59.61.62.66-70. 72.74.82.CP8061.CP8304.L1AE5MM4.MM7.MM8)	79	70.9	(60.1-79.7)	-
Chaturvedi 2011 (USA)	SPF10 (L1) Inno-LiPA (6. 11. 16. 18. 26. 31. 33. 35. 40. 43. 44. 45. 51. 52. 53. 54. 56. 58. 59. 66. 68. 69-71. 70. 73. 74. 82)	210	47.6	(41.0-54.4)	-
Cohen 2008 (USA)	GP5+/GP6+ (L1) and TS-PCR E7 for 16 Hybridization with TS probes (16)	27	70.4	(51.5-84.1)	HPV 16 (70.4%)
Ernster 2007 (USA)	TS-PCR for 16/18 Amplification with TS primers (16. 18)	51	72.5	(59.1-82.9)	HPV 16 (72.5%)
Lohavanichbutr 2009 (USA)	MY09/MY11 (L1) and GP5+/GP6+ (L1) Hybridization with Roche LBA (6. 11. 16. 18. 26. 31. 33. 35. 39. 40. 42. 45. 51. 52. 53. 54. 55. 56. 58. 59. 61. 62. 64. 66. 67. 68. 69. 70. 71. 72. 73. 81. 82. 83. 84. 89)	28	82.1	(64.4-92.1)	-
Posner 2011 (USA)	TS-PCR E6/E7 for 16 Amplification with TS primers (16)	89	50.6	(40.4-60.7)	HPV 16 (50.6%)
Tezal 2009 (USA)	TS-PCR E6 for 16/18 Amplification with TS primers (16. 18)	26	76.9	(57.9-89.0)	HPV 16 (76.9%)
WOMEN					

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(Table 28 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPVs HPV type (%)
			%	(95% CI)	
Li 2007 (China)	GP5+/GP6+ (L1). CP65/70ct-CP66/69ct (L1). FAP59/6415 (L1). A5/A10-A6/A8 (L1) and TS-PCR E6 for 16 Sequencing	10	60.0	(31.3-83.2)	HPV 16 (60.0%)
Herrero 2003 (Cuba)	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	5	0.0	-9999	-
Rotnáglová 2011 (Czech Rep.)	GP5+/GP6+ (L1) RBLH (6. 11. 16. 18. 26. 31. 33. 34. 35. 39. 40. 42. 43. 44. 45. 51. 52. 53. 54. 55. 56. 57. 58. 59. 61. 66. 68. 70. 71. 72. 73. 81. 82. 83. 84. 89)	19	68.4	(46.0-84.6)	-
Charfi 2008 (France)	GP5+/GP6+ (L1) and TS-PCR for 6/11/16/18/33 Amplification with TS primers (6. 11. 16. 18. 33)	16	75.0	(50.5-89.8)	-
Hoffmann 2010 (Germany)	GP5+/GP6+ (L1). MY09/MY11 (L1) and TS-PCR for 6/11/16/18 Hybridization with TS probes - Multiplex luminex*	8	50.0	(21.5-78.5)	HPV 16 (50.0%)
Reimers 2007 (Germany)	A10/A5-A6/A8 (L1) and CP62/70-CP65/69a (L1) Sequencing	23	39.1	(22.2-59.2)	-
Herrero 2003 (Italy)	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	6	0.0	-9999	-
Hannisdal 2010 (Norway)	GP5+/GP6+ (L1) Sequencing	38	39.5	(25.6-55.3)	-
Herrero 2003 (Spain)	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	4	50.0	(15.0-85.0)	HPV 16 (50.0%)
Attner 2010 (Sweden)	GP5+/GP6+ (L1). CPI/IIG (E1) and TS-PCR E6/7 for 16/33 Amplification with TS primers (16. 33) and sequencing	30	73.3	(55.6-85.8)	-
Dahlgren 2004 (Sweden)	GP5+/GP6+ (L1) and CPI/CPII (L1) Amplification with TS primers (16. 18. 33) and sequencing	7	28.6	(8.2-64.1)	-
Hammarstedt 2006 (Sweden)	GP5+/GP6+ (L1). CPI/CPIIG (E1) and TS-PCR E6 for 16 Sequencing	58	50.0	(37.5-62.5)	-
Näsman 2009 (Sweden)	GP5+/GP6+ (L1). CPI/CPIIG (E1) and TS-PCR E6 for 16 Sequencing	22	95.5	(78.2-99.2)	-
Lindel 2001 (Switzerland)	SPF10 (L1) Sequencing	24	33.3	(18.0-53.3)	-
Al-Swiahb 2010 (Taiwan)	MY09/MY11 (L1) and GP5/GP6 (L1) In situ hybridization with TS probes (6. 11. 16. 18. 31) and Roche LBA	14	64.3	(38.8-83.7)	-

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(Table 28 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types (%)
			%	(95% CI)	
Kuo 2008 (Taiwan)	MY09 (L1) and GP5+/GP6+ (L1) Hybridization with HPV gene chip (6.11.16.18.26.31-33.35.37.39.42-45.51-56.58.59.61.62.66-70.72.74.82.CP8061.CP8304.L1AE5MM4.MM7.MM8)	13	100.0	(77.2-100.0)	-
Chaturvedi 2011 (USA)	SPF10 (L1) Inno-LiPA (6. 11. 16. 18. 26. 31. 33. 35. 40. 43. 44. 45. 51. 52. 53. 54. 56. 58. 59. 66. 68. 69-71. 70. 73. 74. 82)	53	30.2	(19.5-43.5)	-
Cohen 2008 (USA)	GP5+/GP6+ (L1) and TS-PCR E7 for 16 Hybridization with TS probes (16)	8	62.5	(30.6-86.3)	HPV 16 (62.5%)
Ernster 2007 (USA)	TS-PCR for 16/18 Amplification with TS primers (16. 18)	21	61.9	(40.9-79.2)	HPV 16 (61.9%)
Lohavanichbutr 2009 (USA)	MY09/MY11 (L1) and GP5+/GP6+ (L1) Hybridization with Roche LBA (6. 11. 16. 18. 26. 31. 33. 35. 39. 40. 42. 45. 51. 52. 53. 54. 55. 56. 58. 59. 61. 62. 64. 66. 67. 68. 69. 70. 71. 72. 73. 81. 82. 83. 84. 89)	3	0.0	-9999	-
Posner 2011 (USA)	TS-PCR E6/E7 for 16 Amplification with TS primers (16)	22	50.0	(30.7-69.3)	HPV 16 (50.0%)
Tezal 2009 (USA)	TS-PCR E6 for 16/18 Amplification with TS primers (16. 18)	4	25.0	(4.6-69.9)	HPV 16 (25.0%)
BOTH OR UNSPECIFIED					
Hong 2010 (Australia)	E6-based MT-PCR Amplification with MT-PCR kit (6. 11. 16. 18. 26. 31. 33. 35. 39. 45. 51. 52. 53. 56. 58. 59. 66. 68. 70. 73. 82)	302	47.7	(42.1-53.3)	HPV 16 (42.1%) HPV 18 (1.7%) HPV 35 (1.7%) HPV 39 (1.0%) HPV 33 (0.7%)
Hong 2013 (Australia)	PCR-E6, PCR- MULTIPLEX, Sequencing (HPV 16, 18, 35, 51, 53)	647	57.3	(53.5-61.1)	HPV 16 (54.7%) HPV 18 (1.4%) HPV 35 (0.3%) HPV 53 (0.3%) HPV 51 (0.2%)
Cortezzi 2004 (Brazil)	GP5+/GP6+ (L1) DBH (6. 11. 16. 18. 31. 33. 34. 39. 42. 45. 51. 52. 54. 56)	21	14.3	(5.0-34.6)	HPV 16 (14.3%)
Nichols 2013 (Canada)	PCR-E6, PCR-E7, PCR- MULTIPLEX (HPV 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 67, 68)	95	52.6	(42.7-62.4)	HPV 16 (47.4%) HPV 18 (2.1%) HPV 67 (2.1%) HPV 33 (1.1%)
Li 2007 (China)	GP5+/GP6+ (L1). CP65/70ct-CP66/69ct (L1). FAP59/6415 (L1). A5/A10-A6/A8 (L1) and TS-PCR E6 for 16 Sequencing	31	29.0	(16.1-46.6)	HPV 16 (29.0%)
Herrero 2003 (Cuba)	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	26	15.4	(6.2-33.5)	HPV 16 (15.4%)

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(Table 28 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPVs HPV type (%)
			%	(95% CI)	
Klozar 2008 (Czech Rep.)	GP5+/GP6+ (L1) RLBH (6. 11. 16. 18. 26. 31. 33. 34. 35. 39. 40. 42. 43. 44. 45. 51. 52. 53. 54. 55. 56. 57. 58. 59. 61. 66. 68. 70. 71. 72. 73. 81. 82. 83. 84. 89)	20	45.0	(25.8-65.8)	HPV 16 (40.0%) HPV 33 (5.0%)
Rotnáglová 2011 (Czech Rep.)	GP5+/GP6+ (L1) RBLH (6. 11. 16. 18. 26. 31. 33. 34. 35. 39. 40. 42. 43. 44. 45. 51. 52. 53. 54. 55. 56. 57. 58. 59. 61. 66. 68. 70. 71. 72. 73. 81. 82. 83. 84. 89)	109	65.1	(55.8-73.4)	HPV 16 (60.6%) HPV 33 (1.8%) HPV 18 (0.9%) HPV 26 (0.9%) HPV 52 (0.9%)
Jouhi 2015 (Finland)	PCR-E6, PCR-E7, PCR-MULTIPLEX (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 42, 43, 44, 45, 51, 52, 53, 56, 58, 59, 66, 68, 70, 73, 82)	35	51.4	(35.6-67.0)	HPV 16 (45.7%) HPV 18 (2.9%) HPV 45 (2.9%)
Charfi 2008 (France)	GP5+/GP6+ (L1) and TS-PCR for 6/11/16/18/33 Amplification with TS primers (6. 11. 16. 18. 33)	52	61.5	(48.0-73.5)	HPV 16 (51.9%) HPV 33 (1.9%)
Fonmarty 2015 (France)	PCR, LiPA (HPV 6, 11, 16, 18, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 82)	71	31.0	(21.4-42.5)	HPV 16 (28.2%) HPV 33 (2.8%) HPV 6 (1.4%)
Fouret 1997 (France)	TS-PCR E6 for 16/18/31/33/45 Hybridization with TS probes (16. 18. 31. 33. 45)	58	17.2	(9.6-28.9)	HPV 16 (15.5%)
Andl 1998 (Germany)	TS-PCR for 6/11/16/18 Hybridization with TS probes (6. 11. 16. 18) and cycle sequencing system of BRL	21	52.4	(32.4-71.7)	HPV 16 (38.1%) HPV 33 (4.8%)
Hoffmann 1998 (Germany)	MY09/MY11 (L1) and TS-PCR for 6/11/16/18/33 SBH (6. 11. 16. 18. 31. 33. 45)	23	26.1	(12.5-46.5)	HPV 16 (8.7%) HPV 45 (8.7%) HPV 6 (4.3%)
Hoffmann 2010 (Germany)	GP5+/GP6+ (L1). MY09/MY11 (L1) and TS-PCR for 6/11/16/18 Hybridization with TS probes - Multiplex luminex*	39	53.8	(38.6-68.4)	HPV 16 (51.3%) HPV 35 (5.1%)
Holzinger 2012 (Germany)	PCR-GP5+/6+, PCR L1-Consensus primer, PCR-MULTIPLEX (HPV 16, 18, 33, 35)	199	50.3	(43.4-57.1)	HPV 16 (48.7%) HPV 18 (0.5%) HPV 33 (0.5%) HPV 35 (0.5%)
Klussmann 2001 (Germany)	A10/A5-A6/A8 (L1) and CP62/70-CP65/69a (L1) Sequencing	33	45.5	(29.8-62.0)	HPV 16 (42.4%) HPV 5 (3.0%) HPV 33 (3.0%) HPV 96 (3.0%)
Krupar 2014 (Germany)	PCR-E6, PCR-E7, PCR-MULTIPLEX (HPV 11, 16, 18, 31, 33, 35, 39, 42, 43, 44, 45, 51, 52, 56, 58, 59, 66, 68)	34	50.0	(34.1-65.9)	HPV 16 (50.0%)
Reimers 2007 (Germany)	A10/A5-A6/A8 (L1) and CP62/70-CP65/69a (L1) Sequencing	106	28.3	(20.6-37.5)	HPV 16 (27.4%) HPV 33 (0.9%)
Weiss 2011 (Germany)	RT-PCR E6/E7 for 16 Hybridization with TS probes (16)	86	38.4	(28.8-48.9)	HPV 16 (38.4%)
Wittekindt 2005 (Germany)	A10/A5-A6/A8 (L1) and (L1) Sequencing	34	52.9	(36.7-68.5)	HPV 16 (50.0%) HPV 33 (2.9%)

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(Table 28 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types HPV type (%)
			%	(95% CI)	
Romanitan 2008 (Greece)	GP5+/GP6+ (L1). CPI/CPIIG (E1) and TS-PCR E6/E7 for 16 Amplification with TS primers (16)	28	42.9	(26.5-60.9)	HPV 16 (32.1%)
Bahl 2014 (India)	PCR-PGMY09/11, PCR L1-Consensus primer, LBA (HPV 6, 11, 16, 18, 31, 33, 34, 35, 39, 40, 42, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 82, 83, 84, 89)	105	22.9	(15.9-31.8)	HPV 16 (18.1%) HPV 18 (2.9%) HPV 31 (1.0%) HPV 33 (1.0%)
Boscolo-Rizzo 2009 (Italy)	MY09/MY11 (L1) RFLP* and amplification with TS primers E6/E2 for 16	22	18.2	(7.3-38.5)	HPV 16 (18.2%)
Herrero 2003 (Italy)	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	36	19.4	(9.8-35.0)	HPV 16 (16.7%) HPV 33 (2.8%) HPV 35 (2.8%)
Licitra 2006 (Italy)	RT-PCR E1 for 16/18 Hybridization with TS probes (16. 18)	90	18.9	(12.1-28.2)	HPV 16 (18.9%)
Rittà 2009 (Italy)	MY09/MY11 (L1) and GP5+/GP6+ (L1) Sequencing	22	50.0	(30.7-69.3)	HPV 16 (50.0%)
Deng 2013 (Japan)	PCR-GP5+/6+, PCR-MY09/11, TS, Sequencing (HPV 6, 11, 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 34, 35, 38, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 74, 80, 81, 82, 83, 84, 85, 86, 87, 89, 90, 91)	48	50.0	(36.4-63.6)	HPV 16 (37.5%) HPV 33 (4.2%) HPV 58 (4.2%) HPV 35 (2.1%) HPV 67 (2.1%)
Hama 2014 (Japan)	HC2, PCR-E6, PCR-E7 (HPV 6, 11, 16, 18, 26, 31, 33, 35, 52, 58)	157	50.3	(42.6-58.0)	HPV 16 (44.6%) HPV 18 (1.9%) HPV 58 (1.3%) HPV 31 (0.6%) HPV 33 (0.6%)
Hatakeyama 2014 (Japan)	PCR- MULTIPLEX (HPV 6, 11, 16, 18, 30, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66)	79	29.1	(20.3-39.9)	HPV 16 (25.3%) HPV 18 (2.5%) HPV 58 (1.3%)
Braakhuis 2004 (Netherlands)	GP5+/GP6+ (L1) and TS-PCR RLBH (6. 11. 16. 18. 26. 31. 33. 34. 35. 39. 40. 42. 43. 44. 45. 51. 52. 53. 54. 55. 56. 57. 58. 59. 61. 66. 68.70.72.73. 82/MM4. 83. 84. 82/IS39. 71/CP8061. 81/CP8304. 89)	37	37.8	(24.1-53.9)	HPV 16 (37.8%)
Henneman 2015 (Netherlands)	PCR-SPF10, LiPA (HPV 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, 68)	146	34.9	(27.7-43.0)	HPV 16 (32.2%) HPV 33 (2.1%) HPV 35 (0.7%)
van Monsjou 2012 (Netherlands)	PCR, LiPA (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 72, 73, 82)	20	65.0	(43.3-81.9)	HPV 16 (60.0%) HPV 35 (5.0%)

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(Table 28 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types (%)
			%	(95% CI)	
Hannisdal 2010 (Norway)	GP5+/GP6+ (L1) Sequencing	137	51.8	(43.5-60.0)	HPV 16 (48.9%) HPV 31 (2.9%) HPV 18 (2.2%) HPV 33 (0.7%) HPV 67 (0.7%)
Snietura 2010 (Poland)	Real-time High Risk HPV test (Abbott Molecular) using L1 consensus primers Amplification with TS primers (16. 18. 31. 33. 35. 39. 45. 51. 52. 56. 58. 59. 66 and 68 - the technique only differentiates 16-18-other)	14	50.0	(26.8-73.2)	HPV 16 (50.0%)
Szkaradkiewicz 2002 (Poland)	MY09/MY11 (L1) Amplification with TS primers (16. 18)	28	10.7	(3.7-27.2)	-
Kim 2007 (Rep. Korea)	RT-PCR E2/E6 for 16 Hybridization with HPV genotyping DNA chip arrayed by multiple oligonucleotide probes (6.11.16.18.31.33.34.35.39.40.42. 43.44.45.51.52.56.58.59.66.68.69)	52	73.1	(59.7-83.2)	HPV 16 (65.4%) HPV 18 (1.9%) HPV 33 (1.9%) HPV 35 (1.9%) HPV 58 (1.9%)
Oh 2004 (Rep. Korea)	MY09/MY11 (L1) and HMB01 (L1) Microarray hybridization (6. 11. 16. 18. 31. 33. 34. 35. 39. 40. 42. 43. 44. 45. 51. 52. 54. 56. 58. 59. 62. 66. 67. 68. 69. 70. 72)	39	64.1	(48.4-77.3)	HPV 16 (59.0%) HPV 6 (2.6%) HPV 33 (2.6%) HPV 58 (2.6%)
Paquette 2013 (South Africa)	PCR-GP5+/6+, PCR L1-Consensus primer, PCR-E6, PCR-E7, TS (HPV 16, 18, 31, 33, 52, 58)	55	74.5	(61.7-84.2)	HPV 16 (61.8%) HPV 31 (21.8%) HPV 18 (7.3%)
Herrero 2003 (Spain)	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	44	9.1	(3.6-21.2)	HPV 16 (9.1%)
Attner 2010 (Sweden)	GP5+/GP6+ (L1). CPI/IIG (E1) and TS-PCR E6/7 for 16/33 Amplification with TS primers (16. 33) and sequencing	95	74.7	(65.2-82.4)	HPV 16 (64.2%) HPV 33 (7.4%) HPV 35 (2.1%) HPV 58 (1.1%)
Dahlgren 2004 (Sweden)	GP5+/GP6+ (L1) and CPI/CPII (L1) Amplification with TS primers (16. 18. 33) and sequencing	25	40.0	(23.4-59.3)	HPV 16 (28.0%) HPV 33 (4.0%) HPV 35 (4.0%) HPV 38 (4.0%)
Hammarstedt 2006 (Sweden)	GP5+/GP6+ (L1). CPI/CPIIG (E1) and TS-PCR E6 for 16 Sequencing	203	48.8	(42.0-55.6)	HPV 16 (42.9%) HPV 33 (1.5%) HPV 35 (0.5%) HPV 45 (0.5%)
Lindquist 2012 (Sweden)	GP5+/GP6+ (L1) and CPI/CPIIG (E1) Amplification with TS primers (16) and Multiplex Luminex (6. 11. 16. 18. 26. 31. 33. 35. 39. 42. 43. 44. 45. 51. 52. 53. 56. 58. 59. 66. 68. 70. 73. 82)	56	64.3	(51.2-75.5)	HPV 16 (64.3%)
Näsman 2009 (Sweden)	GP5+/GP6+ (L1). CPI/CPIIG (E1) and TS-PCR E6 for 16 Sequencing	98	84.7	(76.3-90.5)	HPV 16 (78.6%) HPV 33 (1.0%) HPV 35 (1.0%) HPV 59 (1.0%)

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(Table 28 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types (%)
			%	(95% CI)	
Lindel 2001 (Switzerland)	SPF10 (L1) Sequencing	99	14.1	(8.6-22.3)	HPV 16 (11.1%) HPV 33 (1.0%) HPV 35 (1.0%) HPV 45 (1.0%)
Al-Swiahb 2010 (Taiwan)	MY09/MY11 (L1) and GP5/GP6 (L1) In situ hybridization with TS probes (6. 11. 16. 18. 31) and Roche LBA	274	16.4	(12.5-21.3)	HPV 16 (14.2%) HPV 18 (2.6%) HPV 31 (0.7%) HPV 6 (0.4%) HPV 11 (0.4%)
Kuo 2008 (Taiwan)	MY09 (L1) and GP5+/GP6+ (L1) Hybridization with HPV gene chip (6.11.16.18.26.31-33.35.37.39. 42-45.51-56.58.59.61.62.66-70. 72.74.82.CP8061.CP8304.L1AE5MM4.MM7.MM8)	92	75.0	(65.3-82.7)	HPV 16 (63.0%) HPV 58 (3.3%) HPV 18 (2.2%) HPV 33 (2.2%) HPV 69 (2.2%)
Tural 2013 (Turkey)	PCR-MY09/11, PCR L1-Consensus primer, PCR-E6, PCR-E7, PCR- MULTIPLEX, Sequencing (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 70, 73, 82, 85)	81	51.9	(41.1-62.4)	HPV 16 (44.4%) HPV 18 (6.2%) HPV 33 (1.2%)
Anderson 2007 (UK)	GP5+/GP6+ (L1) Hybridization with Roche LBA (6. 11. 16. 18. 26. 31. 33. 35. 39. 40. 42. 45. 51. 52. 53. 54. 55. 56. 58. 59. 61. 62. 64. 66. 67. 68. 69. 70. 71. 72. 73. 81. 82. 83. 84. 89)	36	22.2	(11.7-38.1)	HPV 16 (19.4%) HPV 11 (2.8%)
Conway 2012 (UK)	PCR-GP5+/6+, TS, Sequencing (HPV 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 34, 35, 38, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 74, 80, 81, 82, 83, 84, 85, 86, 87, 89, 90, 91)	20	40.0	(21.9-61.3)	HPV 16 (40.0%)
Evans 2013 (UK)	PCR-GP5+/6+, EIA (HPV 6, 11, 16, 18, 31, 33, 35, 39, 40, 42, 43, 44, 45, 51, 52, 56, 58, 59, 66, 68)	83	83.1	(73.7-89.7)	HPV 16 (80.7%) HPV 18 (1.2%) HPV 33 (1.2%) HPV 56 (1.2%)
Schache 2011 (UK)	TS-PCR E6 for 16 Amplification with TS primers (16)	98	40.8	(31.6-50.7)	HPV 16 (40.8%)
Thavaraj 2011 (UK)	GP5+/GP6+ (L1) Luminex 200 IS (16. 18. 26. 31. 33. 35. 39. 45. 51. 52. 53. 56. 58. 59. 66. 68. 73. 82)	142	70.4	(62.5-77.3)	HPV 16 (64.1%) HPV 33 (2.1%) HPV 18 (0.7%) HPV 35 (0.7%)
Wells 2015 (UK)	PCR- MULTIPLEX (HPV 16, 18, 35, 51, 82)	57	50.9	(38.3-63.4)	HPV 16 (45.6%) HPV 18 (5.3%) HPV 35 (1.8%) HPV 51 (1.8%) HPV 82 (1.8%)
Agoston 2010 (USA)	Generic L1 primers from Access Genetics and TS-PCR E7 for 16 RFLP	102	90.2	(82.9-94.6)	HPV 16 (73.5%) HPV 58 (1.0%)

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(Table 28 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types (%)
			%	(95% CI)	
Chaturvedi 2011 (USA)	SPF10 (L1) Inno-LiPA (6. 11. 16. 18. 26. 31. 33. 35. 40. 43. 44. 45. 51. 52. 53. 54. 56. 58. 59. 66. 68. 69-71. 70. 73. 74. 82)	263	44.1	(38.2-50.1)	HPV 16 (38.8%) HPV 35 (1.5%) HPV 33 (1.1%) HPV 58 (1.1%) HPV 18 (0.8%)
Cohen 2008 (USA)	GP5+/GP6+ (L1) and TS-PCR E7 for 16 Hybridization with TS probes (16)	35	68.6	(52.0-81.4)	HPV 16 (68.6%)
D'Souza 2007 (USA)	MY09/MY11 (L1) Hybridization with Roche LBA (6. 11. 16. 18. 26. 31. 33. 35. 39. 40. 42. 45. 51. 52. 53. 54. 55. 56. 58. 59. 61. 62. 64. 66. 67. 68. 69. 70. 71. 72. 73. 81. 82. 83. 84. 89)	60	63.3	(50.7-74.4)	HPV 16 (58.3%) HPV 33 (6.7%) HPV 35 (1.7%)
D'Souza 2014 (USA)	PCR-PGMY09/11, LiPA (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 81, 82, 83, 84)	164	64.6	(57.1-71.5)	HPV 16 (53.7%) HPV 52 (8.5%) HPV 33 (2.4%) HPV 73 (1.8%) HPV 51 (1.2%)
Ernster 2007 (USA)	TS-PCR for 16/18 Amplification with TS primers (16. 18)	72	69.4	(58.0-78.9)	HPV 16 (69.4%)
Furniss 2007 (USA)	TS-PCR L1 for 16 Amplification with TS primers (16)	43	34.9	(22.4-49.8)	HPV 16 (34.9%)
Hooper 2015 (USA)	HC2, PCR-E6, PCR-E7, PCR-MULTIPLEX (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 42, 44, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 70, 73, 82)	44	75.0	(60.6-85.4)	HPV 16 (70.5%) HPV 18 (2.3%) HPV 33 (2.3%) HPV 35 (2.3%)
Isayeva 2014 (USA)	PCR-E6, PCR-E7, TS (HPV 16, 18)	102	62.7	(53.1-71.5)	HPV 16 (65.7%) HPV 18 (14.7%)
Jordan 2012 (USA)	PCR L1-Consensus primer, PCR-SPF10, LiPA (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 72, 73, 82)	233	79.0	(73.3-83.7)	HPV 16 (73.0%) HPV 18 (2.6%) HPV 33 (1.7%) HPV 6 (1.3%) HPV 11 (1.3%)
Kerr 2015 (USA)	PCR, RFLP, TS (HPV 16, 33, 35, 58)	28	89.3	(72.8-96.3)	HPV 16 (71.4%) HPV 33 (3.6%) HPV 35 (3.6%) HPV 58 (3.6%)
Kingma 2010 (USA)	PGMY09/11 (L1) Inno-LiPA (6. 11. 16. 18. 26. 31. 33. 35. 40. 43. 44. 45. 51. 52. 53. 54. 56. 58. 59. 66. 68. 69-71. 70. 73. 74. 82)	61	86.9	(76.2-93.2)	HPV 16 (67.2%) HPV 18 (14.8%) HPV 33 (4.9%) HPV 45 (1.6%) HPV 82 (1.6%)
Kong 2009 (USA)	GP5+/GP6+ (L1) and TS-PCR Sequencing	49	67.3	(53.4-78.8)	HPV 16 (65.3%) HPV 18 (2.0%) HPV 33 (2.0%)
Lohavanichbutr 2009 (USA)	MY09/MY11 (L1) and GP5+/GP6+ (L1) Hybridization with Roche LBA (6. 11. 16. 18. 26. 31. 33. 35. 39. 40. 42. 45. 51. 52. 53. 54. 55. 56. 58. 59. 61. 62. 64. 66. 67. 68. 69. 70. 71. 72. 73. 81. 82. 83. 84. 89)	31	74.2	(56.8-86.3)	HPV 16 (67.7%) HPV 35 (3.2%) HPV 45 (3.2%)
Posner 2011 (USA)	TS-PCR E6/E7 for 16 Amplification with TS primers (16)	111	50.5	(41.3-59.6)	HPV 16 (50.5%)

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Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types (%)
			%	(95% CI)	
Schlecht 2011 (USA)	MY09/MY11 (L1) and HMB01 (L1) DBH (40 HPV types including 16. 18. 31. 33. 35. 39. 45. 51. 52. 56. 58. 66)	30	50.0	(33.2-66.8)	HPV 16 (43.3%) HPV 35 (3.3%)
Schwartz 1998 (USA)	MY09/MY11 (L1) and TS-PCR E6 for 6/11/16/18 Hybridization with TS probes (6. 11. 16. 18. 31/33/35)	55	41.8	(29.7-55.0)	HPV 16 (34.5%) HPV 6 (12.7%) HPV 11 (3.6%)
Sethi 2012 (USA)	PCR-SPF10, EIA, LiPA (HPV 6, 11, 16, 18, 31, 33, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 70, 73, 74)	81	50.6	(40.0-61.2)	HPV 16 (45.7%) HPV 33 (2.5%) HPV 35 (1.2%) HPV 56 (1.2%)
Smith 2004 (USA)	MY09/MY11 (L1) and HMB01 (L1) Sequencing	62	40.3	(29.0-52.7)	HPV 16 (37.1%) HPV 18 (1.6%) HPV 33 (1.6%)
Steinau 2014 (USA)	PCR, LBA, LiPA (HPV 16, 18, 31, 33, 35, 39, 45, 52)	557	72.4	(68.5-75.9)	HPV 16 (60.5%) HPV 33 (5.6%) HPV 18 (2.5%) HPV 35 (2.0%) HPV 39 (0.9%)
Strome 2002 (USA)	MY09/MY11 (L1) and TS-PCR E6 for 6/11/16/18 Sequencing	52	46.2	(33.3-59.5)	HPV 16 (40.4%) HPV 12 (3.8%) HPV 59 (1.9%)
Tezal 2009 (USA)	TS-PCR E6 for 16/18 Amplification with TS primers (16. 18)	30	70.0	(52.1-83.3)	HPV 16 (70.0%)
Walline 2013 (USA)	PCR-PGMY09/11, PCR L1-Consensus primer, PCR-E6, PCR- MULTIPLEX (HPV 16, 18, 33, 35, 39, 66)	208	88.0	(82.9-91.7)	HPV 16 (78.8%) HPV 33 (1.9%) HPV 35 (1.9%) HPV 18 (1.0%) HPV 39 (0.5%)
Zhao 2005 (USA)	RT-PCR E6/E7 for 16 Hybridization with TS probes (16)	26	57.7	(38.9-74.5)	HPV 16 (57.7%)
Ribeiro 2011 ^a (World)	PGMY09/11 (L1) Amplification with TS primers (16)	136	0.7	(0.1-4.0)	HPV 16 (0.7%)

Data updated on 28 Jun 2017 (data as of 31 Dec 2015 / 31 Dec 2015).

95% CI: 95% Confidence Interval;

DBH: Dot Blot Hybridization; EIA: Enzyme ImmunoAssay; HC2: Hybrid Capture 2; LBA: Line-Blot Assay; LiPA: Line Probe Assay; PCR: Polymerase Chain Reaction; RFLP: Restriction Fragment Length Polymorphism; RLBH: Reverse Line Blot Hybridization; RT-PCR: Real Time Polymerase Chain Reaction; SBH: Southern Blot Hybridization; SPF: Short Primer Fragment; TS: Type Specific;

^a Includes cases from Argentina, Brazil, Cuba, Russia, Slovakia, Czech Republic, Romania and Poland

Data sources: See references in Section 9.

Table 29: Studies on HPV prevalence among cases of hypopharyngeal or laryngeal cancer

Table 25. Studies on HPV prevalence among cases of hypopharyngeal or laryngeal cancer						
Study		HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types HPV type (%)
				%	(95% CI)	
MEN						
Fliss (Canada)	1994	TS-PCR E6/E7 for 6b/11/16/18 Amplification with TS primers (6b/11. 16. 18)	28	46.4	(29.5-64.2)	HPV 16 (32.1%) HPV 18 (32.1%)
Torrente (Chile)	2005	MY09/MY11 (L1) RFLP	25	36.0	(20.2-55.5)	-

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(Table 29 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPVs HPV type (%)
			%	(95% CI)	
Liu 2010 (China)	GP5+/GP6+ (L1) and TS-PCR E6/E7 for 16 and E6 for 18 Amplification with TS primers (16. 18)	61	37.7	(26.6-50.3)	-
Hoffmann 2006 (Germany)	MY09/MY11 (L1) and TS-PCR for 6/11/16/18/33 Hybridization with TS and consensus probes and further confirmation by SBH with TS and consensus probes (6. 11. 16. 18. 31. 33. 45)	17	23.5	(9.6-47.3)	HPV 16 (23.5%)
Hoffmann 2009 (Germany)	MY09/MY11 (L1) and TS-PCR for 6/11/16/18 Hybridization with TS and consensus probes and further confirmation by SBH with TS and consensus probes (6. 11. 16. 18. 31. 33. 45)	21	33.3	(17.2-54.6)	HPV 16 (19.0%)
Azzimonti 2004 (Italy)	GP5+/GP6+ (L1) Sequencing	23	56.5	(36.8-74.4)	HPV 16 (43.5%) HPV 18 (13.0%)
Cattani 1998 (Italy)	MY09/MY11 (L1) and TS-PCR for 33 Hybridization with TS probes (6.11.16.18.31) and amplification with TS primer (33)	70	30.0	(20.5-41.5)	-
Gallo 2009 (Italy)	MY09/MY11 (L1). LCRF1. LCRF2. LCRF3. LCRF4. E7R1. E7R2. E7R3. E7R4 (E6) and TS-PCR E1 for 6/11/16/18-31/33 Sequencing	36	0.0	-	-
Anwar 1993 (Japan)	TS-PCR for 16/18/33 Hybridization with TS probes (4. 16. 18)	26	38.5	(22.4-57.5)	HPV 18 (34.6%) HPV 16 (3.8%) HPV 33 (3.8%)
Shidara 1994 (Japan)	L1C1/L1C2 RFLP (6. 11. 16. 18. 31. 33. 42. 52. 58)	40	20.0	(10.5-34.8)	HPV 16 (17.5%) HPV 18 (2.5%)
Lie 1996 (Norway)	CP (E1). MY09/MY11 (L1) and GP5+/GP6+ (L1) Amplification with TS primers (6.11.16.18.31.33.35)	38	7.9	(2.7-20.8)	HPV 16 (2.6%)
Morshed 2008 (Poland)	SPF10 (L1) LiPA 25	78	34.6	(25.0-45.7)	-
Bozdayi 2009 (Turkey)	MY09/MY11 (L1) Amplification with GP5+/6+ and TS primers for HPV16 positive; For HPV16 negative cases. sequencing was performed	62	43.5	(31.9-55.9)	-
Dönmez 2000 (Turkey)	MY09/MY11 (L1) RFLP (6. 11. 16. 18. 31. 33. 35. 39. 42. 51. 58)	55	12.7	(6.3-24.0)	HPV 11 (7.3%) HPV 6 (5.5%)
WOMEN					
Fliss 1994 (Canada)	TS-PCR E6/E7 for 6b/11/16/18 Amplification with TS primers (6b/11. 16. 18)	1	0.0	-	-
Torrente 2005 (Chile)	MY09/MY11 (L1) RFLP	6	16.7	(3.0-56.4)	-
Liu 2010 (China)	GP5+/GP6+ (L1) and TS-PCR E6/E7 for 16 and E6 for 18 Amplification with TS primers (16. 18)	23	34.8	(18.8-55.1)	-

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(Table 29 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types (%)
			%	(95% CI)	
Hoffmann 2006 (Germany)	MY09/MY11 (L1) and TS-PCR for 6/11/16/18/33 Hybridization with TS and consensus probes and further confirmation by SBH with TS and consensus probes (6. 11. 16. 18. 31. 33. 45)	3	33.3	(6.1-79.2)	HPV 16 (33.3%)
Hoffmann 2009 (Germany)	MY09/MY11 (L1) and TS-PCR for 6/11/16/18 Hybridization with TS and consensus probes and further confirmation by SBH with TS and consensus probes (6. 11. 16. 18. 31. 33. 45)	6	16.7	(3.0-56.4)	-
Azzimonti 2004 (Italy)	GP5+/GP6+ (L1) Sequencing	2	50.0	(9.5-90.5)	HPV 16 (50.0%)
Cattani 1998 (Italy)	MY09/MY11 (L1) and TS-PCR for 33 Hybridization with TS probes (6.11.16.18.31) and amplification with TS primer (33)	28	21.4	(10.2-39.5)	HPV 16 (21.4%)
Gallo 2009 (Italy)	MY09/MY11 (L1). LCRF1. LCRF2. LCRF3. LCRF4. E7R1. E7R2. E7R3. E7R4 (E6) and TS-PCR E1 for 6/11/16/18-31/33 Sequencing	4	0.0	-	-
Anwar 1993 (Japan)	TS-PCR for 16/18/33 Hybridization with TS probes (4. 16. 18)	4	25.0	(4.6-69.9)	HPV 18 (25.0%)
Shidara 1994 (Japan)	L1C1/L1C2 RFLP (6. 11. 16. 18. 31. 33. 42. 52. 58)	5	60.0	(23.1-88.2)	HPV 16 (40.0%) HPV 18 (20.0%)
Lie 1996 (Norway)	CP (E1). MY09/MY11 (L1) and GP5+/GP6+ (L1) Amplification with TS primers (6.11.16.18.31.33.35)	10	0.0	-	-
Morshed 2008 (Poland)	SPF10 (L1) LiPA 25	15	40.0	(19.8-64.3)	-
Bozdayi 2009 (Turkey)	MY09/MY11 (L1) Amplification with GP5+/6+ and TS primers for HPV16 positive; For HPV16 negative cases. sequencing was performed	3	0.0	-	-
Dönmez 2000 (Turkey)	MY09/MY11 (L1) RFLP (6. 11. 16. 18. 31. 33. 35. 39. 42. 51. 58)	0	-	-	-
BOTH OR UNSPECIFIED					
Gudleviciene 2014 (Belarus)	PCR-GP5+/6+, PCR-PGMY09/11, PCR L1-Consensus primer, PCR-E6, PCR- MULTIPLEX (HPV 6, 11, 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, 68, 73, 82)	34	5.9	(1.6-19.1)	HPV 6 (2.9%) HPV 16 (2.9%)
Duray 2011 (Belgium)	GP5+/GP6+ (L1) and RT-PCR E6/E7 for 6. 11. 16. 18. 31. 33. 35. 39. 45. 51. 52. 53. 56. 58. 59. 66. 67-L1. 68 TS real-time and consensus PCR E6/E7 (6. 11. 16. 18. 31. 33. 35. 39. 45. 51. 52. 53. 56. 58. 59. 66. 67-L1. 68)	59	79.7	(67.7-88.0)	HPV 16 (62.7%) HPV 18 (16.9%) HPV 51 (8.5%) HPV 33 (5.1%) HPV 66 (5.1%)

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(Table 29 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPVs HPV type (%)
			%	(95% CI)	
Miranda 2009 (Brazil)	GP5+/GP6+ (L1) Amplification with TS primers (16. 18. 33) and sequencing	27	7.4	(2.1-23.4)	HPV 16 (7.4%) HPV 6 (3.7%)
Fliss 1994 (Canada)	TS-PCR E6/E7 for 6b/11/16/18 Amplification with TS primers (6b/11. 16. 18)	29	44.8	(28.4-62.5)	HPV 16 (31.0%) HPV 18 (31.0%)
Gheit 2014 (Chile)	PCR-E7, PCR- MULTIPLEX (HPV 6, 11, 16, 18, 31, 33, 35, 39, 45, 51, 52, 53, 56, 58, 59, 66, 68, 70, 73, 82)	32	12.5	(5.0-28.1)	HPV 31 (6.3%) HPV 11 (3.1%) HPV 59 (3.1%)
Torrente 2005 (Chile)	MY09/MY11 (L1) RFLP	31	32.3	(18.6-49.9)	HPV 16 (9.7%) HPV 58 (6.5%) HPV 38 (3.2%) HPV 39 (3.2%) HPV 45 (3.2%)
Liu 2010 (China)	GP5+/GP6+ (L1) and TS-PCR E6/E7 for 16 and E6 for 18 Amplification with TS primers (16. 18)	84	36.9	(27.4-47.6)	HPV 16 (34.5%) HPV 18 (7.1%)
Ma 1998 (China)	TS-PCR E6/E7 for 6/11/16/18/31/33/52b/58 SBH (6. 11. 16. 18. 31. 33. 52b. 58)	102	58.8	(49.1-67.9)	HPV 16 (29.4%) HPV 6 (24.5%) HPV 18 (21.6%) HPV 11 (2.0%) HPV 33 (1.0%)
García-Milián 1998 (Cuba)	MY09/MY11 (L1) and TS-PCR E6 for 6/11/16/18 SBH (6. 11. 16. 18)	33	48.5	(32.5-64.8)	HPV 16 (45.5%) HPV 6 (3.0%) HPV 18 (3.0%)
Lindeberg 1999 (Denmark)	MY09/MY11 (L1). GP5+/GP6+ (L1) and CPII/II (L1) Hybridization with TS probes (6.11.16.18.30.31.33.35)	30	3.3	(0.6-16.7)	-
Koskinen 2003 (Finland)	SPF10 (L1) LiPA 25	28	50.0	(32.6-67.4)	HPV 16 (46.4%) HPV 33 (14.3%) HPV 6 (10.7%) HPV 11 (3.6%) HPV 51 (3.6%)
Fouret 1997 (France)	TS-PCR E6 for 16/18/31/33/45 Hybridization with TS probes (16. 18. 31. 33. 45)	103	6.8	(3.3-13.4)	HPV 16 (6.8%)
Fischer 2003 (Germany)	L1-CP65F. 66F. 69F. 70F Sequencing	47	34.0	(22.2-48.3)	HPV 73 (4.3%) HPV 21 (2.1%) HPV 22 (2.1%) HPV 38 (2.1%) HPV 41 (2.1%)
Hoffmann 1998 (Germany)	MY09/MY11 (L1) and TS-PCR for 6/11/16/18/33 SBH (6. 11. 16. 18. 31. 33. 45)	51	21.6	(12.5-34.6)	HPV 16 (3.9%) HPV 18 (2.0%) HPV 45 (2.0%)
Hoffmann 2006 (Germany)	MY09/MY11 (L1) and TS-PCR for 6/11/16/18/33 Hybridization with TS and consensus probes and further confirmation by SBH with TS and consensus probes (6. 11. 16. 18. 31. 33. 45)	20	25.0	(11.2-46.9)	HPV 16 (25.0%)

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(Table 29 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPVs HPV type (%)
			%	(95% CI)	
Hoffmann 2009 (Germany)	MY09/MY11 (L1) and TS-PCR for 6/11/16/18 Hybridization with TS and consensus probes and further confirmation by SBH with TS and consensus probes (6. 11. 16. 18. 31. 33. 45)	27	29.6	(15.9-48.5)	HPV 16 (14.8%)
Kleist 2000 (Germany)	MY09/MY11 (L1) Amplification with TS primers (16. 18)	35	20.0	(10.0-35.9)	HPV 16 (8.6%) HPV 18 (8.6%)
Klussmann 2001 (Germany)	A10/A5-A6/A8 (L1) and CP62/70-CP65/69a (L1) Sequencing	30	16.7	(7.3-33.6)	HPV 16 (13.3%) HPV 19 (3.3%)
Krupar 2014 (Germany)	PCR-E6, PCR-E7, PCR-MULTIPLEX (HPV 11, 16, 18, 31, 33, 35, 39, 42, 43, 44, 45, 51, 52, 56, 58, 59, 66, 68)	49	0.0	-	-
Gorgoulis 1999 (Greece)	MY09/MY11 (L1) and GP5/GP6 (L1) Amplification with TS primers (6. 11. 16. 18. 31. 33. 35) and confirmation by DBH with TS probes (6.11.16.18. 31.33.35).	91	20.9	(13.8-30.3)	HPV 16 (14.3%) HPV 6 (3.3%) HPV 18 (3.3%) HPV 33 (3.3%)
Vlachtsis 2005 (Greece)	TS-PCR for 16/18 Amplification with TS primers (16. 18)	90	40.0	(30.5-50.3)	HPV 16 (34.4%) HPV 18 (6.7%)
Major 2005 (Hungary)	MY09/MY11 (L1) and GP5+/GP6+ (L1) RFLP (6. 11. 16. 18)	22	54.5	(34.7-73.1)	HPV 11 (18.2%) HPV 6 (13.6%) HPV 16 (13.6%)
Jacob 2002 (India)	TS-PCR E1 for 6/11/18 and L1 for 16 SBH with TS probes (6. 11. 16. 18)	44	34.1	(21.9-48.9)	HPV 16 (34.1%)
Azzimonti 2004 (Italy)	GP5+/GP6+ (L1) Sequencing	25	56.0	(37.1-73.3)	HPV 16 (44.0%) HPV 18 (12.0%)
Badaracco 2000 (Italy)	MY09/MY11 (L1) Amplification with TS primers (6.16) and hybridization with TS probes (11.16.18.31.45.56.57)	22	50.0	(30.7-69.3)	HPV 16 (27.3%) HPV 6 (18.2%) HPV 45 (4.5%)
Badaracco 2007 (Italy)	MY09/MY11 (L1) and GP5+/GP6+ (L1) Sequencing	30	16.7	(7.3-33.6)	HPV 16 (10.0%) HPV 6 (6.7%)
Boscolo-Rizzo 2009 (Italy)	MY09/MY11 (L1) RFLP* and amplification with TS primers E6/E2 for 16	45	4.4	(1.2-14.8)	HPV 16 (4.4%)
Cattani 1998 (Italy)	MY09/MY11 (L1) and TS-PCR for 33 Hybridization with TS probes (6.11.16.18.31) and amplification with TS primer (33)	75	29.3	(20.2-40.4)	HPV 16 (12.0%) HPV 18 (10.7%) HPV 33 (1.3%)
Gallo 2009 (Italy)	MY09/MY11 (L1). LCRF1. LCRF2. LCRF3. LCRF4. E7R1. E7R2. E7R3. E7R4 (E6) and TS-PCR E1 for 6/11/16/18-31/33 Sequencing	40	0.0	-	-
Anwar 1993 (Japan)	TS-PCR for 16/18/33 Hybridization with TS probes (4. 16. 18)	30	36.7	(21.9-54.5)	HPV 18 (33.3%) HPV 16 (3.3%) HPV 33 (3.3%)

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(Table 29 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPV types HPV type (%)
			%	(95% CI)	
Deng 2013 (Japan)	PCR-GP5+/6+, PCR-MY09/11, TS, Sequencing (HPV 6, 11, 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 34, 35, 38, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 74, 80, 81, 82, 83, 84, 85, 86, 87, 89, 90, 91)	26	15.4	(6.2-33.5)	HPV 16 (11.5%) HPV 33 (3.8%)
Mineta 1998 (Japan)	TS-PCR E7 for 16/18 Amplification with TS primers (16. 18)	42	31.0	(19.1-46.0)	HPV 16 (26.2%) HPV 18 (4.8%)
Ogura 1991 (Japan)	TS-PCR E6 for 16/18 Hybridization with TS probes (16. 18)	28	10.7	(3.7-27.2)	HPV 16 (10.7%) HPV 18 (3.6%)
Shidara 1994 (Japan)	L1C1/L1C2 RFLP (6. 11. 16. 18. 31. 33. 42. 52. 58)	45	24.4	(14.2-38.7)	HPV 16 (20.0%) HPV 18 (4.4%)
Gudleviciene 2009 (Lithuania)	Consensus primers from Master Mix Amplification with TS primers (16. 18)	25	32.0	(17.2-51.6)	HPV 16 (12.0%)
Gudleviciene 2014 (Lithuania)	PCR-GP5+/6+, PCR-PGMY09/11, PCR L1-Consensus primer, PCR-E6, PCR- MULTIPLEX (HPV 6, 11, 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, 68, 73, 82)	53	20.8	(12.0-33.5)	HPV 6 (1.9%) HPV 16 (1.9%) HPV 31 (1.9%) HPV 39 (1.9%) HPV 58 (1.9%)
Koskinen 2007 ^a (Northern Eu- rope)	MY09/MY11 (L1). GP5+/GP6+ (L1) and SPF10 (L1) LiPA 25	69	4.3	(1.5-12.0)	HPV 16 (1.4%)
Mork 2001 ^a (Northern Eu- rope)	GP5+/GP6+ (L1) and CPI/CPII (L1) Amplification with TS primers (6. 11. 16. 18. 33)	40	2.5	(0.4-12.9)	HPV 16 (2.5%)
Lie 1996 (Norway)	CP (E1). MY09/MY11 (L1) and GP5+/GP6+ (L1) Amplification with TS primers (6.11.16.18.31.33.35)	39	7.7	(2.7-20.3)	HPV 16 (2.6%)
Morshed 2008 (Poland)	SPF10 (L1) LiPA 25	93	35.5	(26.5-45.6)	HPV 16 (30.1%) HPV 18 (6.5%) HPV 33 (5.4%)
Snietura 2011 (Poland)	Real-time High Risk HPV test (Abbott Molecular) using L1 consensus primers RT-PCR (16. 18. 31. 33. 35. 39. 45. 51. 52. 56. 58. 59. 66. 68)	65	0.0	-	-
Poljak 1997 (Slovenia)	PGMY09/11 (L1). GP5+/GP6+ (L1) and WD72/76/66/67/154 (E6) Amplification with TS primers (6.11.16.18.31.33.51)	30	3.3	(0.6-16.7)	HPV 16 (3.3%)
Alvarez 1997 (Spain)	TS-PCR E6 and L1 for 6b/16/18 Amplification with TS primers (6b. 16. 18)	35	25.7	(14.2-42.1)	HPV 6 (22.9%) HPV 16 (5.7%)
Pérez-Ayala 1990 (Spain)	TS-PCR E6 for 6/11 Hybridization with TS probes (11.16)	51	56.9	(43.3-69.5)	HPV 16 (56.9%)
Adams 1999 (Switzerland)	MY09/MY11 (L1) RFLP (6.11.16.18.31.33.35.51.53.56)	36	16.7	(7.9-31.9)	HPV 16 (16.7%)

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(Table 29 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence		Prevalence of 5 most frequent HPVs HPV type (%)
			%	(95% CI)	
Bozdayi 2009 (Turkey)	MY09/MY11 (L1) Amplification with GP5+/6+ and TS primers for HPV16 positive; For HPV16 negative cases. sequencing was performed	65	41.5	(30.4-53.7)	HPV 16 (40.0%) HPV 6 (1.5%)
Dönmez 2000 (Turkey)	MY09/MY11 (L1) RFLP (6. 11. 16. 18. 31. 33. 35. 39. 42. 51. 58)	55	12.7	(6.3-24.0)	HPV 11 (7.3%) HPV 6 (5.5%)
Gungor 2007 (Turkey)	SP10296 (L1) Amplification with mPCR kit (6. 11. 16. 18. 31. 33. 52. 58)	95	7.4	(3.6-14.4)	HPV 11 (7.4%) HPV 6 (2.1%) HPV 16 (1.1%)
Anderson 2007 (UK)	GP5+/GP6+ (L1) Hybridization with Roche LBA (6. 11. 16. 18. 26. 31. 33. 35. 39. 40. 42. 45. 51. 52. 53. 54. 55. 56. 58. 59. 61. 62. 64. 66. 67. 68. 69. 70. 71. 72. 73. 81. 82. 83. 84. 89)	64	0.0	-	-
Conway 2012 (UK)	PCR-GP5+/6+, TS, Sequencing (HPV 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 34, 35, 38, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 74, 80, 81, 82, 83, 84, 85, 86, 87, 89, 90, 91)	12	0.0	-	-
Salam 1995 (UK)	MY09/MY11 (L1) RFLP (6. 11. 16. 18. 33)	36	22.2	(11.7-38.1)	HPV 6 (8.3%) HPV 16 (5.6%) HPV 11 (2.8%)
Snijders 1996 (UK)	GP5+/GP6+ (L1) Amplification with TS primers and SBH with TS probes (6. 11. 16. 18. 31. 33)	31	19.4	(9.2-36.3)	HPV 16 (19.4%)
Brandwein 1993 (USA)	Perkin Censu L1 consensus primers Hybridization with TS probes (6. 11. 16. 18. 31. 35. 51)	40	7.5	(2.6-19.9)	HPV 16 (2.5%)
Chernock 2013 (USA)	PCR L1-Consensus primer, PCR-SPF10, LiPA (HPV 16, 18, 31, 33, 35, 39, 45, 51, 52, 53, 56, 58, 59, 66, 68)	76	17.1	(10.3-27.1)	HPV 16 (13.2%) HPV 31 (10.5%) HPV 53 (9.2%)
Furniss 2007 (USA)	TS-PCR L1 for 16 Amplification with TS primers (16)	63	31.7	(21.6-44.0)	HPV 16 (31.7%)
Paz 1997 (USA)	MY09/MY11 (L1) and IU/IWDO (E1) Amplification with TS primers (6. 16. 18)	43	4.7	(1.3-15.5)	HPV 16 (2.3%)
Schlecht 2011 (USA)	MY09/MY11 (L1) and HMB01 (L1) DBH (40 HPV types including 16. 18. 31. 33. 35. 39. 45. 51. 52. 56. 58. 66)	40	27.5	(16.1-42.8)	HPV 16 (27.5%)
Shen 1996 (USA)	MY09/MY11 (L1) and TS-PCR E7 for 16/18 RFLP*	32	9.4	(3.2-24.2)	HPV 6 (3.1%) HPV 11 (3.1%) HPV 18 (3.1%)
Zhao 2005 (USA)	RT-PCR E6/E7 for 16 Hybridization with TS probes (16)	22	18.2	(7.3-38.5)	HPV 16 (18.2%)
Ribeiro 2011 ^b (World)	PGMY09/11 (L1) Amplification with TS primers (16)	239	0.8	(0.2-3.0)	HPV 16 (0.8%)

Data updated on 28 Jun 2017 (data as of 31 Dec 2015).

95% CI: 95% Confidence Interval;

DBH: Dot Blot Hybridization; LBA: Line-Blot Assay; LiPA: Line Probe Assay; PCR: Polymerase Chain Reaction; RFLP: Restriction Fragment Length Polymorphism; RT-PCR: Real Time Polymerase Chain Reaction; SBH: Southern Blot Hybridization; SPF: Short Primer Fragment; TS: Type Specific;

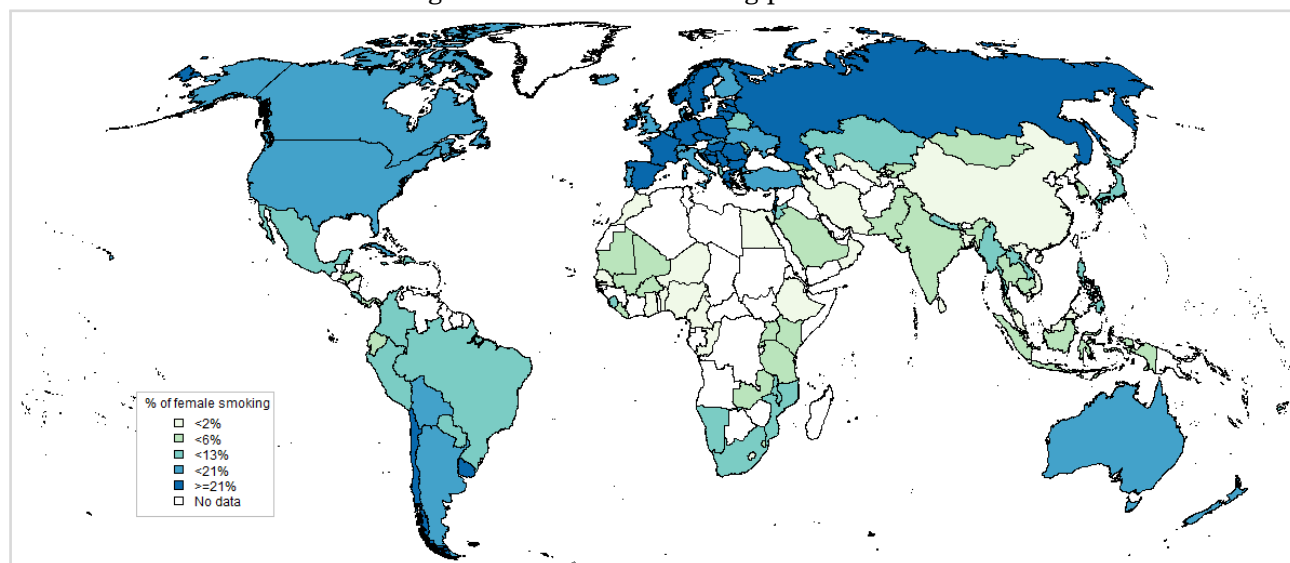
^a Includes cases from Norway, Sweden and Finland^b Includes cases from Argentina, Brazil, Cuba, Russia, Slovakia, Czech Republic, Romania and Poland

Data sources: See references in Section 9.

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; 24(S3): 1-10). In this section, the prevalence of smoking, parity (fertility), oral contraceptive use, and HIV in the World are presented.

Figure 142: Female smoking prevalence

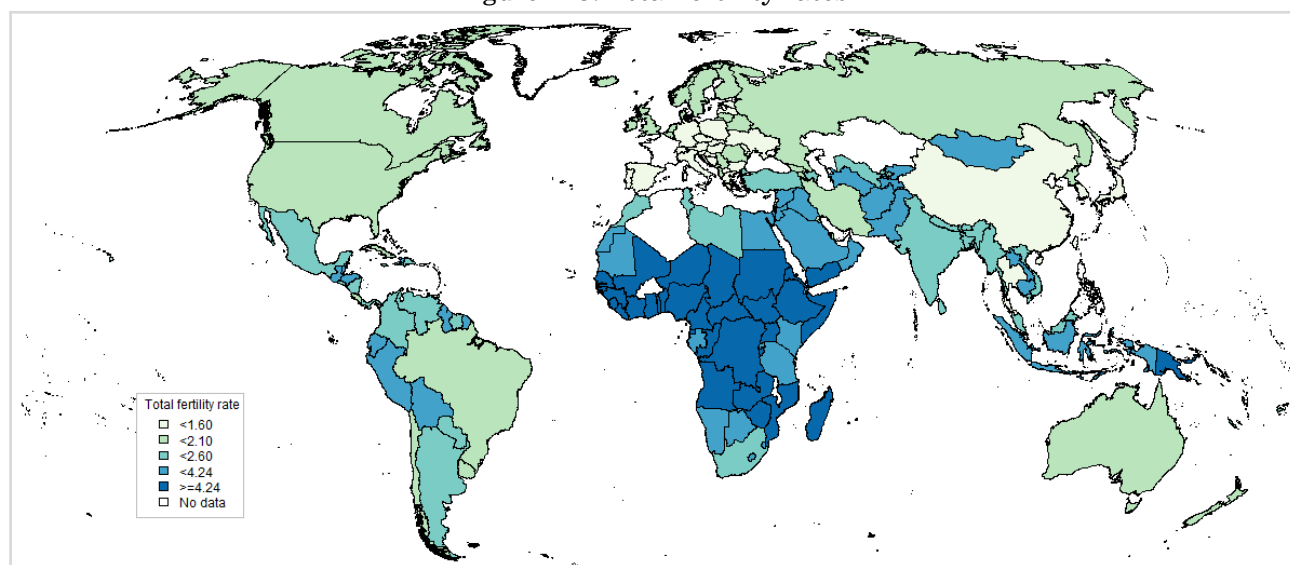


Data accessed on 22 Mar 2017.

Adjusted and age-standardized prevalence estimates of tobacco use by country, for the year 2013. These rates are constructed solely for the purpose of comparing tobacco use prevalence estimates across countries, and should not be used to estimate the number of smokers in the population.

Data sources: WHO report on the global tobacco epidemic, 2015: The MPOWER package. Geneva, World Health Organization, 2015. Available at http://www.who.int/tobacco/global_report/2015/en/index.html

Figure 143: Total fertility rates

**Data accessed on 22 Mar 2017.**

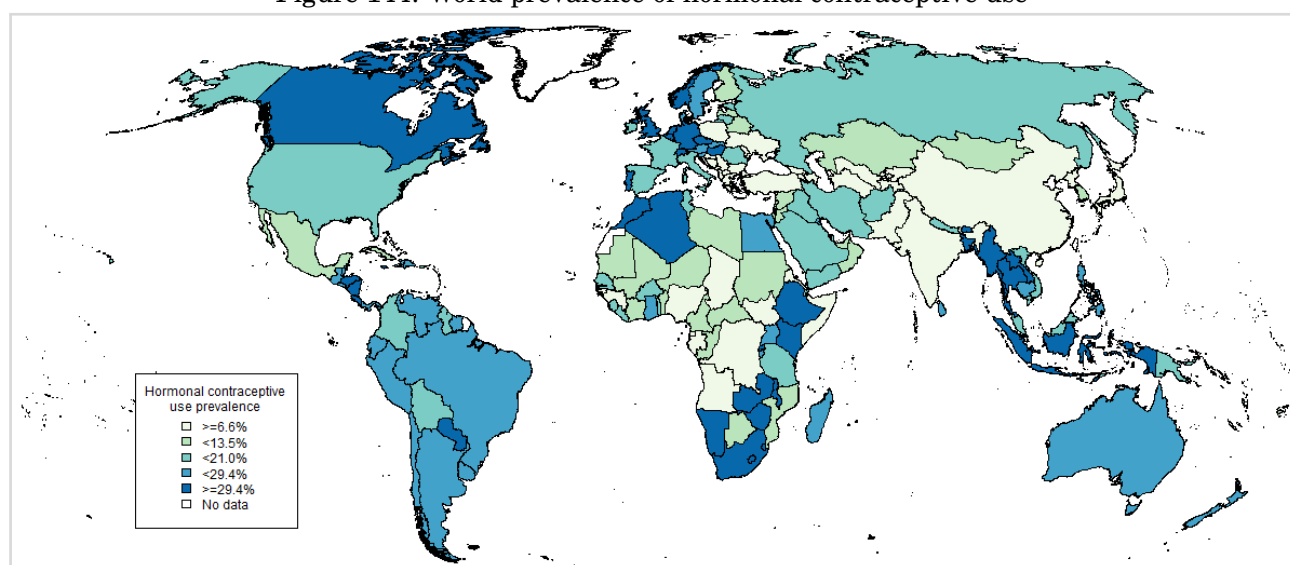
For Aruba, Argentina, Australia, Austria, Belgium, Bulgaria, Belarus, Brunei, Chile, Costa Rica, Cuba, Germany, Fiji, United Kingdom, Georgia, Grenada, Hong Kong SAR, Hungary, Iran, Japan, Kyrgyzstan, Republic of Korea, Kuwait, Libya, St Lucia, Macao SAR, Malaysia, New Caledonia, Netherlands, New Zealand, Oman, Puerto Rico, Qatar, Romania, Sweden, Trinidad & Tobago, St Vincent & The Grenadines: The number of women by age is estimated by the United Nations Population Division and published in World Population Prospects: the 2015 Revision.

Data sources:

For Channel Islands, Aruba, Afghanistan, Angola, United Arab Emirates, Argentina, Armenia, Australia, Burundi, Benin, Burkina Faso, Bangladesh, Bahrain, Bahamas, Bosnia & Herzegovina, Belize, Bolivia, Brazil, Barbados, Brunei, Bhutan, Botswana, Central African Republic, Canada, Chile, China, Côte d'Ivoire, Cameroon, DR Congo, Congo, Colombia, Comoros, Cape Verde, Costa Rica, Cuba, Curaçao, Djibouti, Dominican Republic, Algeria, Ecuador, Egypt, Eritrea, Western Sahara, Ethiopia, Fiji, FS Micronesia, Gabon, Ghana, Guinea, Guadeloupe, Gambia, Guinea-Bissau, Equatorial Guinea, Grenada, Guatemala, French Guiana, Guam, Guyana, Hong Kong SAR, Honduras, Haiti, Indonesia, India, Iran, Iraq, Israel, Jamaica, Jordan, Japan, Kazakhstan, Kenya, Kyrgyzstan, Cambodia, Kiribati, Republic of Korea, Kuwait, Laos, Lebanon, Liberia, Libya, St Lucia, Sri Lanka, Lesotho, Macao SAR, Morocco, Republic of Moldova, Madagascar, Maldives, Mexico, Mali, Myanmar, Mongolia, Mozambique, Mauritania, Martinique, Mauritius, Malawi, Malaysia, Mayotte, Namibia, New Caledonia, Niger, Nigeria, Nicaragua, Nepal, New Zealand, Oman, Pakistan, Panama, Peru, Philippines, Papua New Guinea, Puerto Rico, DPR Korea, Paraguay, Palestine, French Polynesia, Qatar, Reunion, Rwanda, Saudi Arabia, Sudan, Senegal, Singapore, Solomon Islands, Sierra Leone, El Salvador, Somalia, South Sudan, Sao Tome & Principe, Suriname, Swaziland, Syria, Chad, Togo, Thailand, Tajikistan, Turkmenistan, Timor-Leste, Tonga, Trinidad & Tobago, Tunisia, Taiwan, Tanzania, Uganda, Uruguay, USA, Uzbekistan, St Vincent & The Grenadines, Venezuela, US Virgin Islands, Viet Nam, Vanuatu, Samoa, Yemen, South Africa, Zambia, Zimbabwe: United Nations, Department of Economic and Social Affairs, Population Division (2015). World Fertility Data 2015 (POP/DB/Fert/Rev2015). Available at: <http://www.un.org/en/development/desa/population/publications/dataset/fertility/wfd2015.shtml>. [Accessed on March 22, 2017].

Albania, Austria, Azerbaijan, Belgium, Bulgaria, Belarus, Switzerland, Cyprus, Czech Republic, Germany, Denmark, Spain, Estonia, Finland, France, United Kingdom, Georgia, Greece, Croatia, Hungary, Ireland, Iceland, Italy, Liechtenstein, Lithuania, Luxembourg, Latvia, Macedonia, Malta, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Sweden, Turkey, Ukraine: Eurostat - Statistical office of the European Commission [web site]. Luxembourg: European Commission; 2015. Available at: <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tsdde220&plugin=1>. [Accessed on March 22, 2017].

Figure 144: World prevalence of hormonal contraceptive use

**Data accessed on 22 Mar 2017.**

Proportion (%) of women using hormonal contraception (pill, injectable or implant), among those of reproductive age who are married or in union.

For Anguilla, Argentina, Botswana, Cook Islands, Guadeloupe, Croatia, N Mariana Islands, Martinique, Palau, Reunion: Data pertain to all women of reproductive age, irrespective of marital status.

For United Arab Emirates, Bahrain, Saudi Arabia: Data pertain to nationals of the country.

For Belgium, Puerto Rico: Data pertain to sexually active women of reproductive age.

For Bulgaria, Germany, Estonia, Lithuania, Romania: Data pertain to women with co-resident male partner.

For Canada: Data pertain to women who have ever had sex. Data pertain to all women of reproductive age, irrespective of marital status. Data pertain to sexually active, non-pregnant women.

For Chile: Data pertain to men and women of reproductive age.

For Czech Republic, Russian Federation: Data pertain to women with a partner.

For Denmark: Data pertain to women in a steady sexual relationship.

For United Kingdom: Excluding Northern Ireland.

For Greece, Poland: Data pertain to women who were sexually active during the month prior to the interview.

For Guam: Data pertain to sexually active, non-pregnant women.

For Israel: Data pertain to the Jewish population.

For Kuwait: Data pertain to nationals of the country. Data pertain to non-pregnant women.

For Sri Lanka: Excluding the Northern Province.

For Malta: Data pertain to married women who visited a practitioner belonging to the Malta College of Family Doctors.

For Myanmar: Data pertain to ever-married women of reproductive age.

For Norway: Data pertain to women who were sexually active during the three months prior to the interview.

For Portugal: Data pertain to non-pregnant women.

For Slovakia, US Virgin Islands: Data pertain to women exposed to the risk of pregnancy.

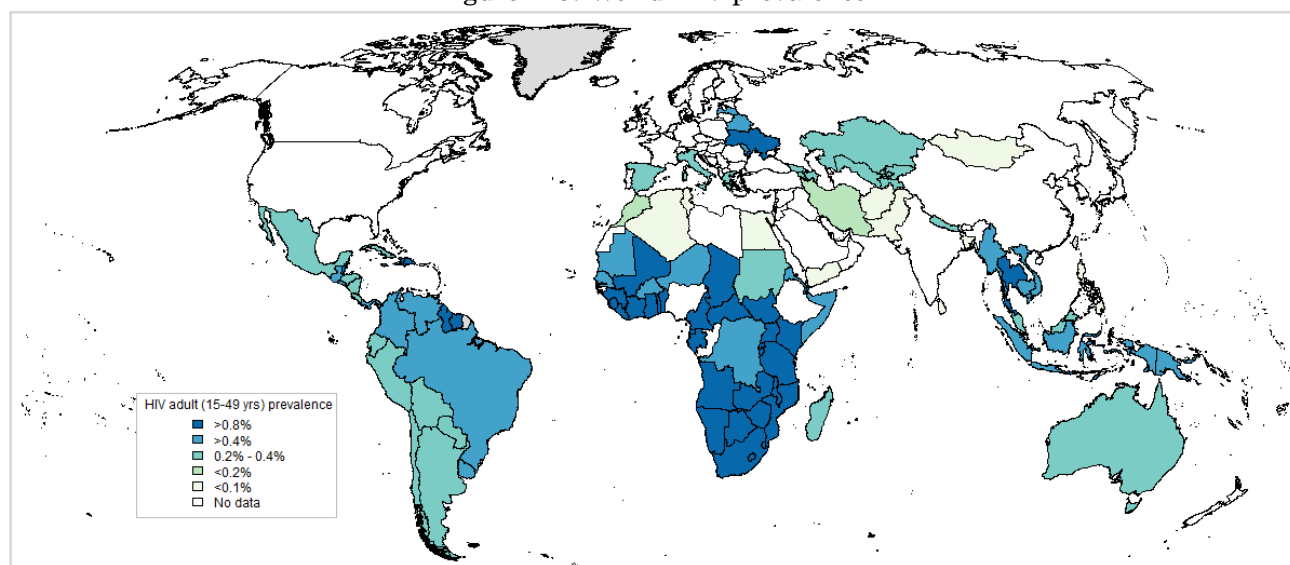
For Sweden: Data pertain to women who have ever had sex.

For Chad: Includes sexually active unmarried women

For Uruguay: Data pertain to men and women of reproductive age who are married or in a union.

Data sources: United Nations, Department of Economic and Social Affairs, Population Division (2016). World Contraceptive Use 2016 (POP/DB/CP/Rev2016). <http://www.un.org/en/development/desa/population/publications/dataset/contraception/wcu2016.shtml>. Available at: [Accessed on March 22, 2017].

Figure 145: World HIV prevalence

**Data accessed on 22 Mar 2017.**

Estimates include all people with HIV infection, regardless of whether they have developed symptoms of AIDS.

For Armenia, Barbados, Chile, Lebanon, Mauritius, Tunisia: Child estimates not published due to small numbers

For Benin: PMTCT numerator for 2015 was unavailable at the time of development of projection

For Colombia, Greece, Italy: Antiretroviral therapy data was not available at the time of publication

For Kyrgyzstan: Approximately 400 children (01-14)

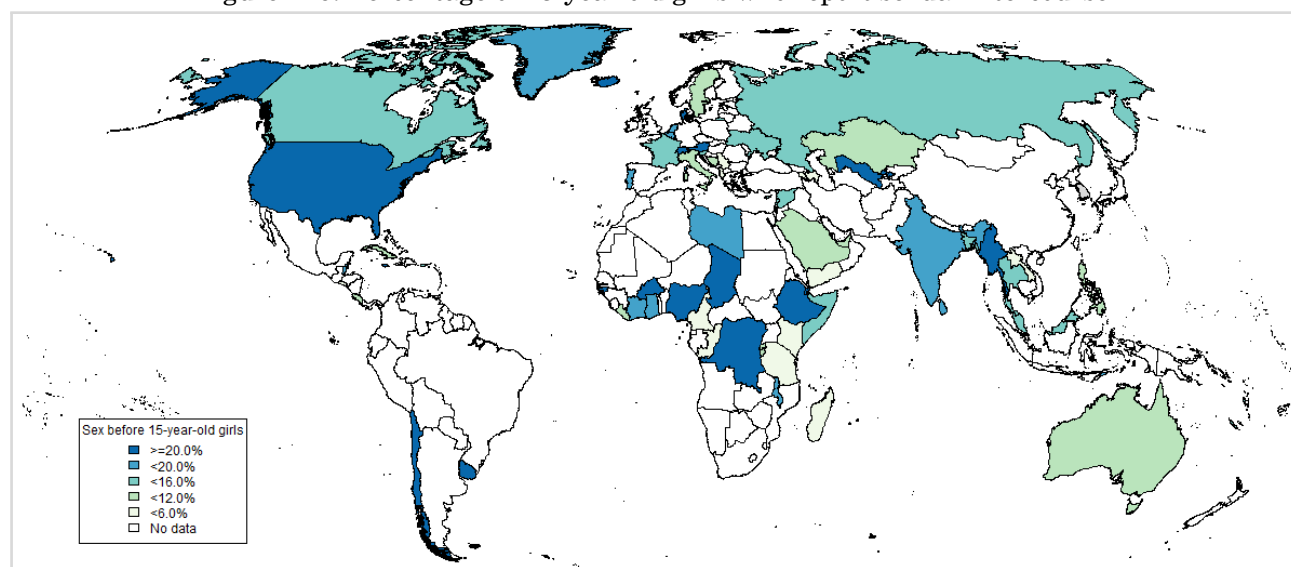
For Cambodia: Child estimates not published

Data sources: UNAIDS database [internet]. Available at: <http://aidsinfo.unaids.org/> [Accessed on March 22, 2017]

6 Sexual behaviour and reproductive health 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. Several studies have reported that earlier sexual debut is a risk factor for HPV infection, although the reason for this relationship is still unclear. In this section, information on sexual and reproductive health behaviour in the World is presented.

Figure 146: Percentage of 15-year-old girls who report sexual intercourse



Data accessed on 16 Mar 2017.

For Albania, Armenia, Austria, Belgium, Bulgaria, Canada, Switzerland, Czech Republic, Germany, Denmark, Spain, Estonia, Finland, France, United Kingdom, United Kingdom, United Kingdom, Greece, Croatia, Hungary, Ireland, Iceland, Israel, Italy, Lithuania, Luxembourg, Latvia, Republic of Moldova, Macedonia, Malta, Netherlands, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, Sweden, Ukraine: Fifteen-year-olds teenagers only were asked whether they had ever had sexual intercourse.

For Albania, Armenia, Bulgaria, Switzerland, Spain, France, Greece, Croatia, Ireland, Israel, Lithuania, Latvia, Republic of Moldova, Macedonia, Portugal, Romania, Russian Federation, Slovenia, Ukraine: Indicates a significant gender difference (at $p < 0.05$).

For Albania, Armenia, Austria, Belgium, Bulgaria, Canada, Switzerland, DR Congo, Czech Republic, Germany, Denmark, Spain, Estonia, Finland, France, United Kingdom, United Kingdom, United Kingdom, Greece, Croatia, Hungary, Ireland, Iceland, Israel, Italy, Lithuania, Luxembourg, Latvia, Republic of Moldova, Macedonia, Malta, Netherlands, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, Sweden, Ukraine: Year of estimation: 2013-2014

For Australia, Bonaire, St Eustatius & Saba, Bolivia, Brazil, Central African Republic, Kazakhstan, Chad, Togo, Viet Nam: The main sources of data were surveys by the MEASURE DHS (Demographic and Health Surveys) project and published estimates from Reproductive National Health Surveys.

For Australia, Bonaire, St Eustatius & Saba, Bolivia, Brazil, Central African Republic, Kazakhstan, Chad, Togo, Viet Nam: Year of estimation: not reported

For Azerbaijan, Burkina Faso, Bangladesh, Côte d'Ivoire, Cameroon, DR Congo, Colombia, Comoros, Dominican Republic, Egypt, Gabon, Ghana, Gambia, Honduras, Haiti, India, Jordan, Kenya, Kyrgyzstan, Cambodia, Mali, Mozambique, Malawi, Namibia, Nigeria, Nepal, Peru, Philippines, Rwanda, Sierra Leone, Sao Tome & Principe, Tajikistan, Tanzania, USA: Percentage of all 15- to 19-year-olds who report having had sex before the age of 15 years.

For Azerbaijan: Year of estimation: 2006

For Benin, Congo, Ethiopia, Guinea, Liberia, Lesotho, Madagascar, Niger, Senegal, Swaziland, Uganda, Zambia, Zimbabwe: Percentage of all 15- to 19-year-olds who report having had sex before the age of 15 years in MEASURE DHS (Demographic and Health Surveys), STATcompiler (<http://www.statcompiler.com/>) or HIV/AIDS Survey Indicator database (<http://www.measuredhs.com/hivdata/>).

For Benin, Congo, Ethiopia, Guinea, Liberia, Lesotho, Madagascar, Niger, Senegal, Swaziland, Uganda, Zambia, Zimbabwe: Year of estimation: 2005-2010

For Burkina Faso, Colombia: Year of estimation: 2010

For Bangladesh, Egypt, Ghana, Kenya, Cambodia: Year of estimation: 2014

For Chile: Year of estimation: 2000

For China: Year of estimation: 1997

For Côte d'Ivoire, Honduras: Year of estimation: 2011-2012

For Cameroon, Mozambique, Nepal: Year of estimation: 2011

For Comoros, Gabon, Haiti, Jordan, Kyrgyzstan, Peru, Tajikistan: Year of estimation: 2012

For Dominican Republic, Gambia, Namibia, Nigeria, Philippines, Sierra Leone: Year of estimation: 2013

For India: Year of estimation: 2005-2006

For Mali: Year of estimation: 2012-2013

For Malawi, Tanzania: Year of estimation: 2015-2016

For Rwanda: Year of estimation: 2014-2015

For Sao Tome & Principe: Year of estimation: 2008-2009

For USA: Year of estimation: 2011-2013

Data sources:

For Albania, Armenia, Austria, Belgium, Bulgaria, Canada, Switzerland, Czech Republic, Germany, Denmark, Spain, Estonia, Finland, France, United Kingdom, United Kingdom, United Kingdom, Greece, Croatia, Hungary, Ireland, Iceland, Israel, Italy, Lithuania, Luxembourg, Latvia, Republic of Moldova, Macedonia, Malta, Netherlands, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, Sweden, Ukraine: Growing up unequal: gender and socioeconomic differences in young people's health and well-being. Health Behaviour in School-aged Children (HBSC) study: international report from the 2013/2014 survey. Inchley J, Currie D, Young T, et al. Copenhagen, WHO Regional Office for Europe, 2016 (Health Policy for Children and Adolescents, No. 7). Available at: http://www.euro.who.int/_data/assets/pdf_file/0003/303438/HBSC-No-7-Growing-up-unequal-Full-Report.pdf?ua=1

Australia, Bonaire, St Eustatius & Saba, Bolivia, Brazil, Central African Republic, Kazakhstan, Chad, Togo, Viet Nam: Sexual behaviour in context: a global perspective. Wellings K, Collumbien M, Slaymaker E, et al. Lancet. 2006 Nov 11;368(9548):1706-28. Review. Erratum in: Lancet. 2007 Jan 27;369(9558):274. PMID:17098090

Azerbaijan, Burkina Faso, Bangladesh, Côte d'Ivoire, Cameroon, DR Congo, Colombia, Comoros, Dominican Republic, Egypt, Gabon, Ghana, Gambia, Honduras, Haiti, India, Jordan, Kenya, Kyrgyzstan, Cambodia, Mali, Mozambique, Malawi, Namibia, Nigeria, Nepal, Peru, Philippines, Rwanda, Sierra Leone, Sao Tome & Principe, Tajikistan, Tanzania: ICF International, 2015. The DHS (Demographic and Health Surveys) Program STATcompiler. Funded by USAID. <http://www.statcompiler.com>. Accessed on March 16 2017.

Benin, Congo, Ethiopia, Guinea, Liberia, Lesotho, Madagascar, Niger, Senegal, Swaziland, Uganda, Zambia, Zimbabwe: The sexual behaviour of adolescents in sub-Saharan Africa: patterns and trends from national surveys. Doyle AM, Mavedzenge SN, Plummer ML, Ross DA. Trop Med Int Health. 2012 Jul;17(7):796-807. doi: 10.1111/j.1365-3156.2012.03005.x. Review. PMID:22594660

USA: CDC/NCHS, National Survey of Family Growth, 2011-2013. Sexual Activity, Contraceptive Use, and Childbearing of Teenagers Aged 15-19 in the United States. NCHS Data Brief No. 209, July 2015. Martinez G, Abma J. Available at: <https://www.cdc.gov/nchs/products/databriefs/db209.htm>

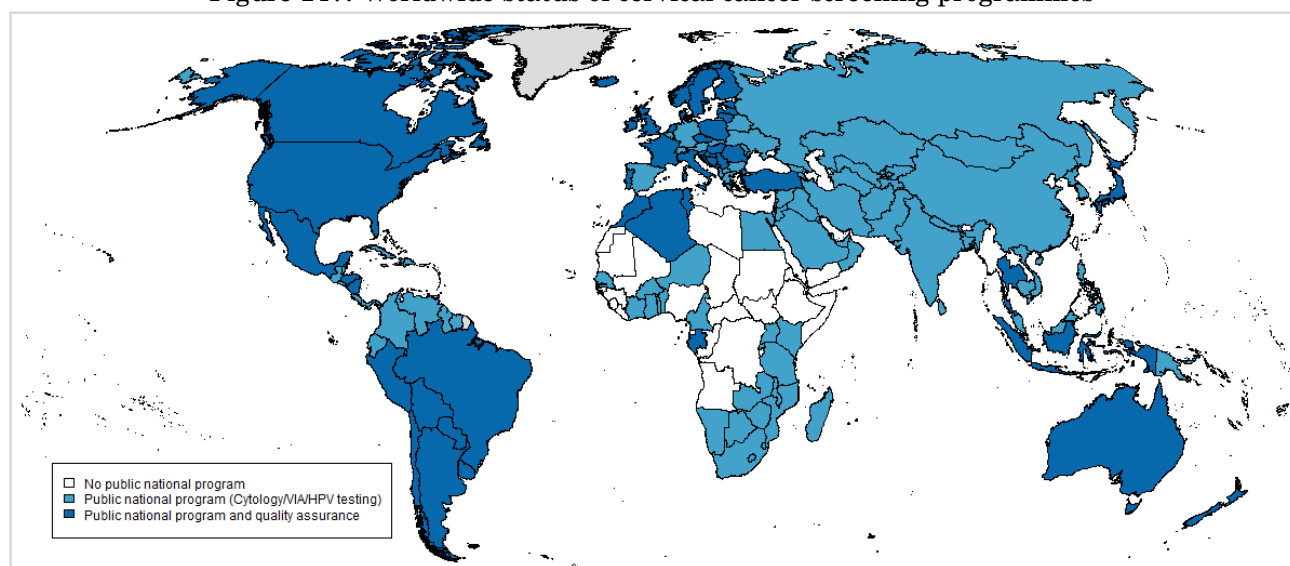
7 HPV preventive strategies

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. This section presents indicators on basic characteristics and performance of cervical cancer screening, status of HPV vaccine licensure and introduction in the World.

7.1 Cervical cancer screening practices

Screening strategies differ between countries. Some countries have population-based programmes, where in each round of screening women in the target population are individually identified and invited to attend screening. This type of programme can be implemented nationwide or only in specific regions of the country. In opportunistic screening, invitations depend on the individual's decision or on encounters with health-care providers. The most frequent method for cervical cancer screening is cytology, and there are alternative methods such as HPV DNA tests and visual inspection with acetic acid (VIA). VIA is an alternative to cytology-based screening in low-resource settings (the 'see and treat' approach). HPV DNA testing is being introduced into some countries as an adjunct to cytology screening ('co-testing') or as the primary screening test to be followed by a secondary, more specific test, such as cytology.

Figure 147: Worldwide status of cervical cancer screening programmes



Data accessed on 31 Dec 2016.

Availability of a cervical cancer screening program: Public national cervical cancer screening program in place (Cytology/VIA/HPV testing). Countries may have clinical guidelines or protocols, and cervical cancer screening services in a private sector but without a public national program. Publicly mandated programs have a law, official regulation, decision, directive or recommendation that provides the public mandate to implement the program with an authorised screening test, examination interval, target group and funding and co-payment determined.

Self-reported quality assurance: Organised programs provide for a national or regional team responsible for implementation and require providers to follow guidelines, rules, or standard operating procedures. They also define a quality assurance structure and mandate supervision and monitoring of the screening process. To evaluate impact, organised programs also require ascertainment of the population disease burden. Quality assurance consists of the management and coordination of the program throughout all levels of the screening process (invitation, testing, diagnosis and follow-up of screen-positives) to assure that the program performs adequately and provides services that are effective and in-line with program standards. The quality assurance structure is self-reported as part of the national cancer programs or plans. For some countries when less than 50% of its regions haven't had a quality assurance plan, the country is categorised as not having quality assurance.

Note: For more detail information, please read the country report.

Table 30: Cervical cancer screening policies

Country	Availability of cervical cancer screening programme ^a	Quality assurance structure and mandate to supervise and to monitor the screening process ^b	Active invitation to screening ^c	Main screening test used for primary screening	Demonstration projects	Screening ages (years)	Screening interval or frequency of screenings
Africa	-	-	-	-	-	-	-
Algeria	Yes	Yes	No	Cytology		25/30-60/65	3 Years
Angola	No	-	-	-	VIA	-	-
Benin	Yes	No	No	Cytology	VIA	-	-
Botswana	Yes	No	No	VIA		30-49	5 years
Burkina Faso	Yes	No	No	Cytology	VIA	-	-
Burundi	No	-	-	-		-	-
Cameroon	Yes	No	No	Cytology/VIA		-	-
Cape Verde	Yes	No	No	Cytology/VIA		20-49	-
CAR	No	-	-	-		-	-
Chad	No	-	-	-		-	-
Comoros	No	-	-	-		-	-
Congo	No	-	-	-	VIA	-	-
Côte d'Ivoire	Yes	No	No	Cytology/VIA		30-50 (VIA), unknown (cytology)	-
Djibouti	No	-	-	-		-	-
DR Congo	No	-	-	-		-	-
Egypt	Yes	No	No	Cytology		20-50	-
Eq. Guinea	No	-	-	-		-	-
Eritrea	No	-	-	-		-	-
Ethiopia	No	-	-	-	VIA	-	-
Gabon	Yes	Yes	No	VIA		Above 25	3 years
Gambia	Yes	No	No	-	VIA	-	-
Ghana	Yes	No	No	VIA/Cytology		25 to 45 (VIA)/Above 45 (cytology)	3-5 years
Guinea	No	-	-	-	VIA pilot program in Khorira and Conakry (2003) and Faranah Kankan and Siguiro (2005)	-	-
Guinea-Bissau	No	-	-	-		-	-
Kenya	Yes	No	No	VIA/Cytology		25-49	5 years
Lesotho	Yes	-	-	VIA		-	-
Liberia	No	-	-	-		-	-
Libya	No	-	-	-		-	-
Madagascar	Yes	No	No	VIA		30-50	3-5 years
Malawi	Yes	No	No	VIA		30-50	3-5 years
Mali	No	-	-	-	VIA pilot program for women ages 30-59 (interval 3-5 years)	-	-
Mauritania	No	-	-	-	VIA	-	-
Mauritius	Yes	No	No	VIA		35-55/60	5 years

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(Table 30 – continued from previous page)

Country	Availability of cervical cancer screening programme ^a	Quality assurance structure and mandate to supervise and to monitor the screening process ^b	Active invitation to screening ^c	Main screening test used for primary screening	Demonstration projects	Screening ages (years)	Screening interval or frequency of screenings
Morocco	Yes	Yes	No	VIA		30-50	3 years
Mozambique	Yes	-	-	VIA		30-55	-
Namibia	Yes	No	No	Cytology	VIA	21-64 (cytology)	1 year
Niger	Yes	-	-	VIA		-	-
Nigeria	No	-	-	-	VIA pilot program for women between 30-50 years (interval 3-5 years)	-	-
Rwanda	Yes	-	-	HPV test/VIA (if positive HPV test)	-	35-45	7 years
S.Tome & Prin.	No	-	-	-		-	-
Senegal	Yes	No	No	Cytology	VIA	25-65 (cytology)	2 year
Seychelles	Yes	-	-	Cytology		Sexually active (not specified age)	2 years
Sierra Leone	No	-	-	-	VIA	-	-
Somalia	No	-	-	-		-	-
South Africa	Yes	No	No	Cytology	VIA	Above 30	10 years
South Sudan	No	-	-	-		-	-
Sudan	No	-	-	-	VIA pilot program in Khartoum (2009-2010)	-	-
Swaziland	Yes	-	No	VIA/Cytology		25-45	2 years
Tanzania	Yes	No	No	VIA		30-50	3 years
Togo	Yes	No	No	Cytology	VIA	35-65 (cytology)	-
Tunisia	Yes	Yes	No	Cytology		35-65	5 Years
Uganda	Yes	No	No	VIA/Cytology	HPV test	25-65 (cytology), 25-49 (VIA)	3 years
Zambia	Yes	No	No	VIA		25-49	3-5 years
Zimbabwe	Yes	No	No	VIA		25-59	3 years
Americas	-	-	-	-	-	-	-
Antigua & Bar.	Yes	No	No	Cytology	HPV test	21-65 (cytology), over 30 (HPV test)	5 years (cytology)

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(Table 30 – continued from previous page)

Country	Availability of cervical cancer screening programme ^a	Quality assurance structure and mandate to supervise and to monitor the screening process ^b	Active invitation to screening ^c	Main screening test used for primary screening	Demonstration projects	Screening ages (years)	Screening interval or frequency of screenings
Argentina	Yes	Yes	Yes	Cytology/HPV test		35-64 (cytology), above 30 (HPV test)	Cytology every 3 years, after 2 consecutive annual negative tests. HPV test every 3 years
Bahamas	Yes	No	No	Cytology		Above 21-59	1 year
Barbados	Yes	No	No	Cytology		21-65	3 years (ages 21-49), 5 years (ages 50-65)
Belize	Yes	No	No	Cytology		21-55	3 years, after 3 consecutive annual negative tests
Bolivia	Yes	Yes	No	Cytology/VIA		25-64	3 years, after 2 consecutive annual negative tests
Brazil	Yes	Yes	No	Cytology		25-64	3 years, after 2 consecutive annual negative tests

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(Table 30 – continued from previous page)

Country	Availability of cervical cancer screening programme ^a	Quality assurance structure and mandate to supervise and to monitor the screening process ^b	Active invitation to screening ^c	Main screening test used for primary screening	Demonstration projects	Screening ages (years)	Screening interval or frequency of screenings
Canada	Yes	Yes, varies among regions	No, varies among regions	Cytology	HPV test	21-65/69/70 varies by region	Varies among regions: Manitoba, Ontario, Québec, Nova Scotia: every 3 years (ages 21- 65/69). Prince Edward island: every 2 years (ages 21-65). Other regions every 2-3 years (ages 21-70) after 3 consecutive annual negative tests
Chile	Yes	Yes	No	Cytology		25-64	3 years
Colombia	Yes	No	No	Cytology/VIA/HPV test		25-69 (cytology), 30-50 (VIA), 30-69 (HPV test)	Cytology every 3 years, after 2 consecutive annual negative tests. VIA every 3 years. HPV test every 5 years
Costa Rica	Yes	No	No	Cytology		Above 20	1 year
Cuba	Yes	No	No	Cytology		25-64	3 years
Dominica	Yes	No	No	Cytology		18-65	-
Dominican Rep.	Yes	No	No	Cytology/HPV test		35-64	Cytology every 1 year
Ecuador	Yes	No	No	Cytology		35-64	5 years
El Salvador	Yes	No	No	Cytology/VIA	HPV test	30-59	2 years
Grenada	Yes	-	-	Cytology	VIA	21 (or 3 years after sexually debut)	3 years, after 3 consecutive annual negative tests
Guatemala	Yes	No	No	Cytology/VIA		25-54	3 years
Guyana	Yes	No	No	VIA/cytology		30-49	-

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(Table 30 – continued from previous page)

Country	Availability of cervical cancer screening programme ^a	Quality assurance structure and mandate to supervise and to monitor the screening process ^b	Active invitation to screening ^c	Main screening test used for primary screening	Demonstration projects	Screening ages (years)	Screening interval or frequency of screenings
Haiti	Yes	No	No	VIA		>=35	-
Honduras	Yes	Yes	No	Cytology	VIA	30-59 (cytology)	3 years, after 2 consecutive annual negative tests
Jamaica	Yes	No	No	Cytology		25-54	3 years, after 2 consecutive annual negative tests
Mexico	Yes	Yes	No	Cytology/HPV test		25-64	Cytology every 3 years, after 2 consecutive annual negative tests
Nicaragua	Yes	Yes	No	Cytology/VIA	HPV test	25-64 (cytology), 30-50 (VIA)	Cytology/VIA every 3 years, after 3 consecutive annual negative tests
Panama	Yes	No	No	Cytology/VIA		25-59	3 years, after 3 consecutive annual negative tests
Paraguay	Yes	Yes	No	Cytology/VIA	HPV test	25-49	Cytology/VIA every 3 years, after 3 consecutive annual negative tests
Peru	Yes	Yes	Yes	Cytology/VIA	HPV test	PAP/VIA: 30-49	Cytology/VIA every 3 years
St Kitts & Nev.	Yes	No	No	Cytology		18-55	3 years, after 2 consecutive annual negative tests
St Lucia	Yes	-	-	Cytology	VIA	18-55	1 year

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(Table 30 – continued from previous page)

Country	Availability of cervical cancer screening programme ^a	Quality assurance structure and mandate to supervise and to monitor the screening process ^b	Active invitation to screening ^c	Main screening test used for primary screening	Demonstration projects	Screening ages (years)	Screening interval or frequency of screenings
St Vincent	Yes	No	No	Cytology		20-65	3 years after 2 consecutive annual negative tests
Suriname	Yes	No	No	Cytology/VIA		23-55	2 years
Trinidad & Tob.	Yes	No	No	Cytology		Sexually active (not specified age)	1 year
Uruguay	Yes	Yes	No	Cytology		21-69	3 years, after 2 consecutive annual negative tests
USA	Yes	Yes only in NBCCED Program	No	Cytology/HPV test		21-65 (cytology), over 30 (HPV test)	3 years (cytology), 5 years (HPV test)
Venezuela	Yes	No	No	Cytology		25-64	3 years
Asia	-	-	-	-	-	-	-
Afghanistan	Yes	No	No	Cytology	VIA	15-49	5 years
Armenia	Yes	No	No	Cytology		30-60	3 years
Azerbaijan	No	-	-	-		-	-
Bahrain	Yes	No	No	Cytology		30-65	3 years after 2-3 consecutive annual negative tests
Bangladesh	Yes	No	No	VIA		Above 30	-
Bhutan	No	-	-	-	VIA	-	-
Brunei	Yes	No	Yes	Cytology		22-65	3 years
Cambodia	Yes	No	No	VIA		30-49	5 years
China	Yes	No	No	Cytology/VIA	HPV test	30-59	Cytology every 3 years (ages 35-59). VIA in rural women (ages 30-54)
DPR Korea	Yes	No	No	Cytology		30-60	1 year
Georgia	Yes	No	No	Cytology	HPV test	25-60	3 years
India	Yes	No	No	Cytology	VIA/HPV test	35-64 (cytology)	3 years
Indonesia	Yes	Yes	No	VIA		30-50	5 years
Iran	Yes	No	No	Cytology		Married	3 years after 3 consecutive annual negative tests

(Continued on next page)

(Table 30 – continued from previous page)

Country	Availability of cervical cancer screening programme ^a	Quality assurance structure and mandate to supervise and to monitor the screening process ^b	Active invitation to screening ^c	Main screening test used for primary screening	Demonstration projects	Screening ages (years)	Screening interval or frequency of screenings
Iraq	Yes	-	-	-		Above 20	-
Israel	Yes	No	No	Cytology		35-54	3 years
Japan	Yes	Yes	Yes	Cytology		Above 20	2 years
Jordan	Yes	No	No	Cytology		25-35	-
Kazakhstan	Yes	No	No	Cytology		30-60	5 years
Kuwait	Yes	No	No	Cytology		Married	5 years
Kyrgyzstan	Yes	No	No	Cytology		-	5 year
Laos	No	-	-	-		-	-
Lebanon	Yes	No	No	Cytology		3 years after becoming sexually active	2-3 years
Malaysia	Yes	No	No	Cytology		20-65	3 years
Maldives	Yes	-	-	VIA		30-50	5 years
Mongolia	Yes	No	No	VIA		30-60	3 years
Myanmar	No	-	-	-	VIA	-	-
Nepal	Yes	No	No	VIA		30-60	5 years
Oman	Yes	No	No	Cytology		20-69	3 Years
Pakistan	Yes	No	No	VIA		30-60	5 years
Philippines	Yes	No	No	VIA		25-55	5-7 years
Qatar	Yes	No	No	Cytology		21-65	1 year
Rep. Korea	Yes	No	No	Cytology		Above 30	2 years
Saudi Arabia	Yes	No	No	Cytology		21-65 (married women)	3 Years
Singapore	Yes	No	No	Cytology		25-69	3 years
Sri Lanka	Yes	No	No	Cytology		30-65	5 years
Syria	Yes	No	No	Cytology		15-55	-
Tajikistan	Yes	No	No	Cytology		Above 20	-
Thailand	Yes	Yes	No	Cytology/VIA		30-65	5 years
Timor-Leste	No	-	-	-		-	-
Turkey	Yes	Yes	Yes	Cytology	VIA	30-65 (cytology)	5 Years
Turkmenistan	Yes	No	No	Cytology		Above 20	1 year
UAE	Yes	No	No	Cytology		30-64	3 years
Uzbekistan	Yes	No	No	Cytology		25-49	-
Viet Nam	Yes	-	No	Cytology/VIA		-	-
Yemen	No	-	-	-		-	-
Europe	-	-	-	-	-	-	-
Albania	Yes	No	No	Cytology		Above 20	2-3 Years
Andorra	Yes	No	No	Cytology		-	-
Austria	Yes	No	No	Cytology		Above 18	1 year
Belarus	Yes	No	No	Cytology		Above 18	1 year
Belgium	Yes	No. Varies by region ^A	No	Cytology		25-64	3 years
Bosnia & H.	Yes	Yes	No	Cytology		21-70	1 year

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(Table 30 – continued from previous page)

Country	Availability of cervical cancer screening programme ^a	Quality assurance structure and mandate to supervise and to monitor the screening process ^b	Active invitation to screening ^c	Main screening test used for primary screening	Demonstration projects	Screening ages (years)	Screening interval or frequency of screenings
Bulgaria	Yes	No	No	Cytology		30-59	3 years
Croatia	Yes	Yes ^A	No	Cytology		25-64	3 years
Cyprus	Yes	No	No	Cytology		24-65	-
Czech Rep.	Yes	Yes	No	Cytology		25-60	1 year
Denmark	Yes	Yes ^A	Yes	Cytology		23-65	3 years (ages 23-49), 5 years (ages 50-65)
Estonia	Yes	Yes ^A	Yes	Cytology		30-59	5 years
Finland	Yes	Yes ^A	Yes	Cytology		30-60	5 years
France	Yes	Yes ^A	Yes	Cytology		25-65	3 years
Germany	Yes	No	No	Cytology	HPV test	Above 20	1 year
Greece	Yes	No	No	Cytology		Above 20	1 year
Hungary	Yes	Yes ^A	Yes	Cytology		25-65	3 years
Iceland	Yes	Yes	Yes	Cytology		20-69	2 years (ages 20-39), 4 years (ages 40-69)
Ireland	Yes	Yes	Yes	Cytology		25-60	3 years (ages 25-44), 5 years (ages 45-60)
Italy	Yes	Yes ^A	Yes	Cytology/HPV test		25-64	3 years (Cytology), 5 years (HPV test)
Latvia	Yes	Yes ^A	Yes	Cytology		25-70	3 years
Lithuania	Yes	Yes ^A	Yes	Cytology		25-60	3 years
Luxembourg	Yes	No	No	Cytology		Above 15	1 year
Macedonia	Yes	No	No	Cytology		30-55	3 years
Malta	Yes	Yes	Yes	Cytology/HPV test		Above 25 (cytology), Above 30 (HPV test)	Cytology every 3 years (ages 25-50), VIA every 5 years (above 50 years old). HPV test every 5 years
Moldova	Yes	No	No	Cytology		Above 20	2 years
Monaco	Yes	-	No	Cytology		21-65	3 years after 2 consecutive annual negative tests
Montenegro	Yes	Yes	No	Cytology		25-64	3 years
Netherlands	Yes	Yes ^A	Yes	Cytology/HPV test		30-60	5 years

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(Table 30 – continued from previous page)

Country	Availability of cervical cancer screening programme ^a	Quality assurance structure and mandate to supervise and to monitor the screening process ^b	Active invitation to screening ^c	Main screening test used for primary screening	Demonstration projects	Screening ages (years)	Screening interval or frequency of screenings
Norway	Yes	Yes	Yes	Cytology		25-69	3 years
Poland	Yes	Yes ^A	Yes	Cytology		25-59	3 years
Portugal	Yes	Yes ^A	Yes	Cytology		25-64	3 years
Romania	Yes	Yes ^A	Yes	Cytology		25-64	5 years
Russia	Yes	No	No	Cytology		Above 18	1 year
San Marino	Yes	-	Yes	Cytology/HPV test		25-30 (cytology), 30-65 (HPV test)	3 years (cytology), 5 years (HPV test)
Serbia	Yes	Yes	Yes	Cytology		25-65	3 years
Slovakia	Yes	No	No	Cytology		23-64	3 years
Slovenia	Yes	Yes	Yes	Cytology		20-64	3 years
Spain	Yes	No. Varies by region	No. Varies by region	Cytology/HPV test		25-65 (cytology), 30-65 (HPV test)	3 years (cytology), 5 years (HPV test)
Sweden	Yes	Yes ^A	Yes	Cytology		23-60	3 years (ages 23-50), 5 years (ages 50-60)
Switzerland	Yes	No	No	Cytology		Above 20	3 years
UK	Yes	Yes ^A	Yes	Cytology/HPV test		25-64	3 years (ages 25-49), 5 years (ages 50-64)
Ukraine	Yes	No	No	Cytology		18-65	1 year
Oceania	-	-	-	-	-	-	-
Australia	Yes	Yes	Yes	Cytology	HPV test	18-69 (cytology), 25-74 (HPV test)	2 years (cytology), 5 years (HPV test)
Fiji	Yes	No	No	Cytology	VIA	25-60 (cytology), 30-49 (VIA)	3 Years
FS Micronesia	Yes	No	No	Cytology/VIA		25-49	5 years
Kiribati	Yes	-	-	Cytology/VIA		-	-
Marshall Is.	Yes	-	-	VIA/Cytology		21-50 (VIA), 50-60 (cytology)	2 years (VIA)
Nauru	Yes	No	No	Cytology		-	-
New Zealand	Yes	Yes	Yes	Cytology/HPV test		20-70 (cytology), 25-69 (HPV test)	3 years (cytology), 5 years (HPV test)
Palau	Yes	No	No	Cytology/HPV test		21-65 (cytology), over 30 (HPV test)	3 years (cytology), 5 years (HPV test)
Papua N. Guinea	Yes	No	No	-		-	-
Samoa	No	-	-	-		-	-
Solomon Is.	No	-	-	-		-	-

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(Table 30 – continued from previous page)

Country	Availability of cervical cancer screening programme ^a	Quality assurance structure and mandate to supervise and to monitor the screening process ^β	Active invitation to screening ^γ	Main screening test used for primary screening	Demonstration projects	Screening ages (years)	Screening interval or frequency of screenings
Tonga	No	-	-	-		-	-
Tuvalu	No	-	-	-		-	-
Vanuatu	No	-	-	-	VIA	-	-

Data accessed on 31 Dec 2016.

^AInformation about performance indicators in organized and population-based cervical cancer screening programmes in European countries is found in the following document "Cancer Screening in the European Union (2017). Report on the implementation of the Council Recommendation on cancer screening. International Agency for Research on Cancer. European Commission. January 2017. Available at: https://ec.europa.eu/health/sites/health/files/major_chronic_diseases/docs/2017_cancerscreening_2ndreportimplementation_en.pdf."

^aPublic national cervical cancer screening program in place (Cytology/VIA/HPV testing). Countries may have clinical guidelines or protocols, and cervical cancer screening services in a private sector but without a public national program. Publicly mandated programmes have a law, official regulation, decision, directive or recommendation that provides the public mandate to implement the programme with an authorised screening test, examination interval, target group and funding and co-payment determined.

^βSelf-reported quality assurance: Organised programmes provide for a national or regional team responsible for implementation and require providers to follow guidelines, rules, or standard operating procedures. They also define a quality assurance structure and mandate supervision and monitoring of the screening process. To evaluate impact, organised programmes also require ascertainment of the population disease burden. Quality assurance consists of the management and coordination of the programme throughout all levels of the screening process (invitation, testing, diagnosis and follow-up of screen-positives) to assure that the programme performs adequately and provides services that are effective and in-line with programme standards. The quality assurance structure is self-reported as part of the national cancer programs or plans.

^γSelf-reported active invitation or recruitment, as organised population-based programmes, identify and personally invite each eligible person in the target population to attend a given round of screening.

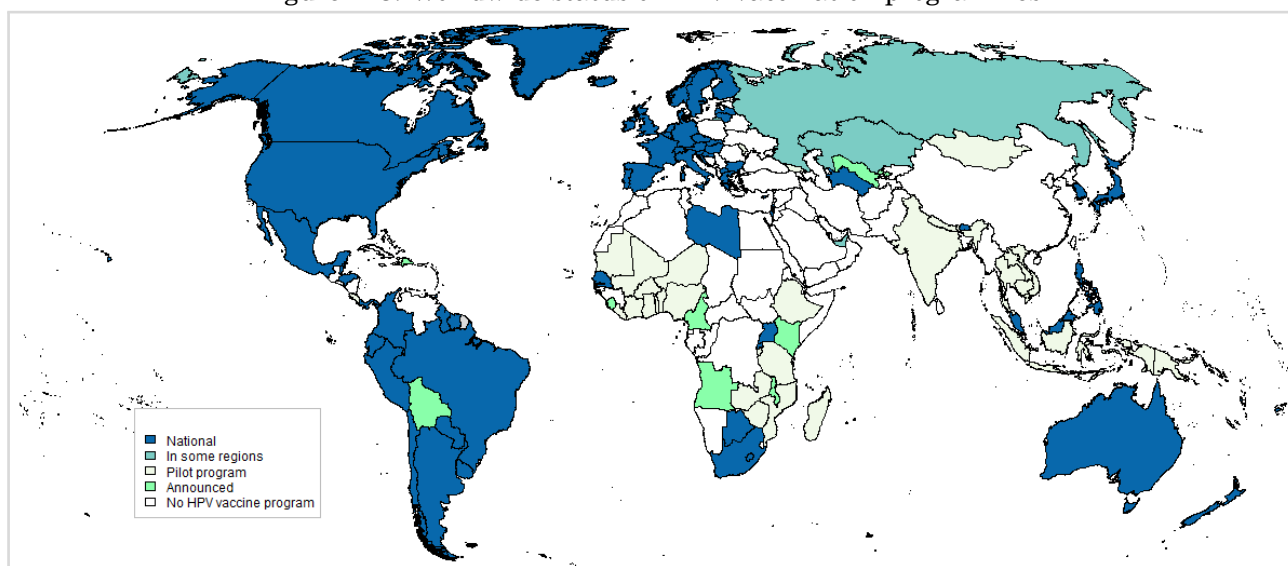
Data sources:

Data sources are detailed at the country-specific report

7.2 HPV vaccination

7.2.1 HPV vaccine licensure and introduction

Figure 148: Worldwide status of HPV vaccination programmes



Data accessed on 31 Dec 2016.

Data sources: Adapted from Bruni L, Diaz M, Barrionuevo-Rosas L, Herrero R, Bray F, Bosch FX, de Sanjosé S, Castellsagué X. Global estimates of human papillomavirus vaccination coverage by region and income level: a pooled analysis. *Lancet Glob Health*. 2016 Jul;4(7):e453-63

Table 31: HPV vaccination policies for the female population in the World

Country	Routine Immunization	
	HPV vaccination programme	Date of start
Afghanistan	No program	-
Albania	No program	-
Algeria	No program	-
Andorra	National program	2014
Angola	Announced	-
Antigua and Barbuda	National program	2016
Argentina	National program	2011
Armenia	No program	-
Australia	National program	2007
Austria	National program	2014
Azerbaijan	No program	-
Bahamas	National program	2015
Bahrain	No program	-
Bangladesh	No program	-
Barbados	National program	2014
Belarus	No program	-
Belgium	National program	2007
Belize	National program	2016
Benin	Pilot	-
Bhutan	National program	2010
Bolivia (Plurinational State of)	Announced	-
Bosnia and Herzegovina	No program	-
Botswana	National program	2015
Brazil	National program	2014
Brunei Darussalam	National program	2012
Bulgaria	National program	2012
Burkina Faso	Pilot	-
Burundi	Pilot	-
Cambodia	Pilot	-
Cameroon	Announced	-
Canada	National program	2007
Cape Verde	No program	-
Central African Republic	No program	-
Chad	No program	-
Chile	National program	2014
China	No program	-
Colombia	National program	2012
Comoros	No program	-
Congo	No program	-
Costa Rica	Pilot	-
Côte d'Ivoire	Pilot	-
Croatia	National program	2016
Cuba	No program	-
Cyprus	National program	2016
Czech Republic	National program	2012
Democratic People's Republic of Korea	No program	-
Democratic Republic of the Congo	No program	-
Denmark	National program	2009
Djibouti	No program	-
Dominica	No program	-
Dominican Republic	Announced	-
Ecuador	National program	2015
Egypt	No program	-

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(Table 31 – continued from previous page)

Country	Routine Immunization	
	HPV vaccination programme	Date of start
El Salvador	No program	-
Equatorial Guinea	No program	-
Eritrea	No program	-
Estonia	No program	-
Ethiopia	Pilot	-
Fiji	National program	2013
Finland	National program	2013
France	National program	2007
Gabon	No program	-
Gambia	Pilot	-
Georgia	Pilot	-
Germany	National program	2007
Ghana	Pilot	-
Greece	National program	2008
Grenada	No program	-
Guatemala	No program	-
Guinea	No program	-
Guinea-Bissau	No program	-
Guyana	National program	2011
Haiti	Pilot	-
Honduras	National program	2016
Hungary	National program	2014
Iceland	National program	2011
India	Pilot	-
Indonesia	Pilot	-
Iran (Islamic Republic of)	No program	-
Iraq	No program	-
Ireland	National program	2010
Israel	National program	2013
Italy	National program	2007
Jamaica	No program	-
Japan	National program	2011
Jordan	No program	-
Kazakhstan	Partial program	2013
Kenya	Announced	-
Kiribati	National program	2011
Kuwait	No program	-
Kyrgyzstan	No program	-
Lao People's Democratic Republic	Pilot	-
Latvia	National program	2010
Lebanon	No program	-
Lesotho	National program	2012
Liberia	Pilot	-
Libya	National program	2013
Liechtenstein	National program	2008
Lithuania	National program	2016
Luxembourg	National program	2008
Madagascar	Pilot	-
Malawi	Announced	-
Malaysia	National program	2010
Maldives	No program	-
Mali	Pilot	-
Malta	National program	2012

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(Table 31 – continued from previous page)

Country	Routine Immunization	
	HPV vaccination programme	Date of start
Marshall Islands	National program	2008
Mauritania	Pilot	-
Mauritius	No program	-
Mexico	National program	2012
Micronesia (Federated States of)	National program	2009
Monaco	National program	2011
Mongolia	Pilot	-
Montenegro	No program	-
Morocco	No program	-
Mozambique	Pilot	-
Myanmar	No program	-
Namibia	No program	-
Nauru	No program	-
Nepal	Pilot	-
Netherlands	National program	2010
New Zealand	National program	2008
Nicaragua	No program	-
Niger	Pilot	-
Nigeria	Pilot	-
Norway	National program	2009
Oman	No program	-
Pakistan	No program	-
Palau	National program	2009
Panama	National program	2008
Papua New Guinea	Pilot	-
Paraguay	National program	2013
Peru	National program	2011
Philippines	National program	2016
Poland	No program	-
Portugal	National program	2008
Qatar	No program	-
Republic of Korea	National program	2016
Republic of Moldova	Pilot	-
Romania	No program	-
Russian Federation	Partial program	2009
Rwanda	National program	2011
Saint Kitts and Nevis	No program	-
Saint Lucia	No program	-
Saint Vincent and the Grenadines	No program	-
Samoa	No program	-
San Marino	National program	2008
Sao Tome and Principe	National program	2016
Saudi Arabia	No program	-
Senegal	National program	2016
Serbia	No program	-
Seychelles	National program	2014
Sierra Leone	Announced	-
Singapore	National program	2010
Slovakia	National program	2014
Slovenia	National program	2009
Solomon Islands	Pilot	-
Somalia	No program	-
South Africa	National program	2014

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(Table 31 – continued from previous page)

Country	Routine Immunization	
	HPV vaccination programme	Date of start
South Sudan	No program	-
Spain	National program	2007
Sri Lanka	No program	-
State of Palestine	No program	-
Sudan	No program	-
Suriname	National program	2013
Swaziland	No program	-
Sweden	National program	2010
Switzerland	National program	2008
Syrian Arab Republic	No program	-
Taiwan	No program	-
Tajikistan	No program	-
Thailand	Pilot	-
The former Yugoslav Republic of Macedonia	National program	2009
Timor-Leste	No program	-
Togo	Pilot	-
Tonga	No program	-
Trinidad and Tobago	National program	2013
Tunisia	No program	-
Turkey	No program	-
Turkmenistan	National program	2016
Tuvalu	No program	-
Uganda	National program	2012
Ukraine	No program	-
United Arab Emirates	Partial program	2008
United Kingdom of Great Britain and Northern Ireland	National program	2008
United Republic of Tanzania	Pilot	-
United States of America	National program	2006
Uruguay	National program	2013
Uzbekistan	Announced	-
Vanuatu	National program	2015
Venezuela (Bolivarian Republic of)	No program	-
Viet Nam	Pilot	-
Western Sahara	No program	-
Yemen	No program	-
Zambia	Pilot	-
Zimbabwe	Pilot	-

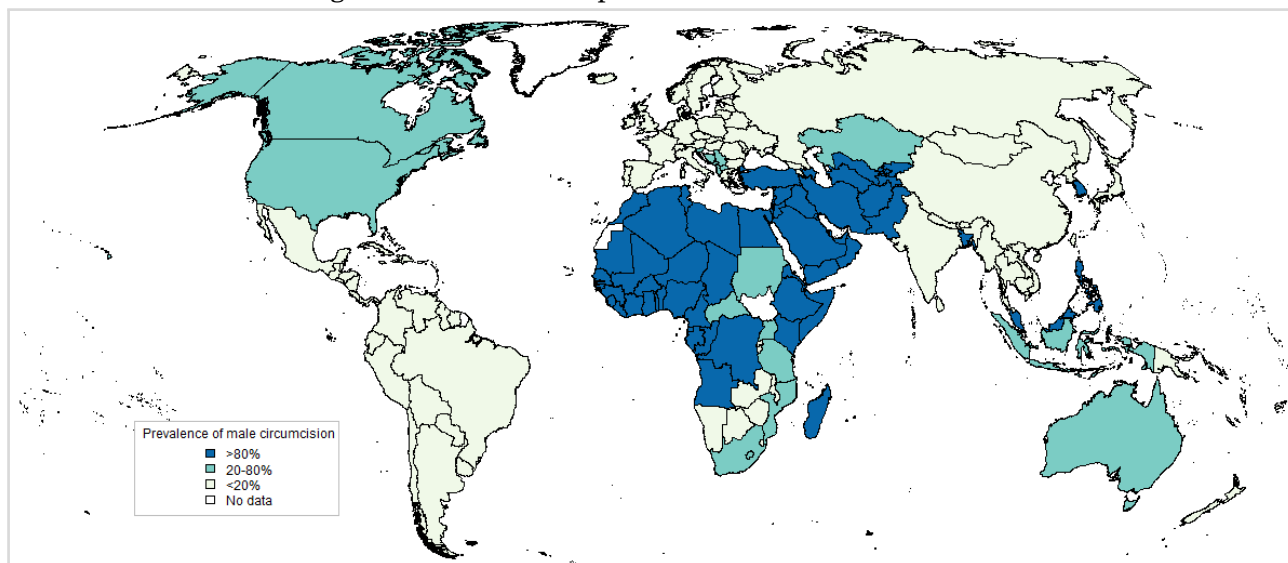
Data accessed on 31 Dec 2016.Data sources:

Adapted from Bruni L, Diaz M, Barrionuevo-Rosas L, Herrero R, Bray F, Bosch FX, de Sanjosé S, Castellsagué X. Global estimates of human papillomavirus vaccination coverage by region and income level: a pooled analysis. *Lancet Glob Health*. 2016 Jul;4(7):e453-63

8 Protective factors for cervical cancer

Male circumcision and the use of condoms have shown a significant protective effect against HPV transmission.

Figure 149: Worldwide prevalence of male circumcision



Data accessed on 31 Aug 2015.

Data from Demographic and Health Surveys (DHS) and other publications to categorise the country-wide prevalence of male circumcision as <20%, 20-80%, or >80%.

Please refer to country-specific reference(s) for full methodologies.

Data sources: Based on systematic reviews and meta-analysis performed by ICO. The ICO HPV Information Centre has updated data until August 2015. Reference publication: Albero G, Sex Transm Dis. 2012 Feb;39(2):104-13.

For Afghanistan, Bulgaria, Bosnia & Herzegovina, Belize, Bolivia, Bhutan, Cape Verde, Algeria, Ecuador, Egypt, Fiji, FS Micronesia, Georgia, Guatemala, Honduras, Indonesia, Iran, Jordan, Kazakhstan, Laos, Lebanon, Libya, Sri Lanka, Morocco, Maldives, Macedonia, Myanmar, Montenegro, Mongolia, Mauritius, Nicaragua, Nepal, Oman, Pakistan, Panama, Peru, Papua New Guinea, DPR Korea, Paraguay, Romania, Russian Federation, Saudi Arabia, Solomon Islands, El Salvador, Serbia, Suriname, Syria, Tajikistan, Turkmenistan, Tunisia, Turkey, Uzbekistan, Venezuela, Viet Nam, Samoa, Yemen: Drain PK, BMC Infect Dis 2006; 6: 172 | WHO 2007: Male circumcision: Global trends and determinants of prevalence, safety and acceptability

Angola, Botswana, Central African Republic, Djibouti, Eritrea, Gambia, Guinea-Bissau, Equatorial Guinea, Mauritania, Sudan, Somalia: Drain PK, BMC Infect Dis 2006; 6: 172 | WHO 2007: Male circumcision: Global trends and determinants of prevalence, safety and acceptability | Williams BG, PLoS Med 2006; 3: e262

Albania, Madagascar: 2008 Demographic and Health Surveys (DHS) | Drain PK, BMC Infect Dis 2006; 6: 172 | WHO 2007: Male circumcision: Global trends and determinants of prevalence, safety and acceptability

United Arab Emirates, Argentina, Armenia, Austria, Bahrain, Belarus, Brunei, Switzerland, Chile, Costa Rica, Cuba, Cyprus, Czech Republic, Estonia, Finland, France, Greece, Hungary, Iceland, Israel, Italy, Kuwait, Lithuania, Latvia, Netherlands, Norway, Poland, Portugal, Qatar, Slovakia, Sweden, Trinidad & Tobago, Taiwan, Uruguay: WHO 2007: Male circumcision: Global trends and determinants of prevalence, safety and acceptability

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Congo, Ethiopia, Mozambique: 2011 Demographic and Health Surveys (DHS) | Drain PK, BMC Infect Dis 2006; 6: 172 | WHO 2007: Male circumcision: Global trends and determinants of prevalence, safety and acceptability | Williams BG, PLoS Med 2006; 3: e262

Colombia, Philippines, Thailand: Castellsagué X, Am J Epidemiol 2005; 162: 907 | Drain PK, BMC Infect Dis 2006; 6: 172 | WHO 2007: Male circumcision: Global trends and determinants of prevalence, safety and acceptability

Comoros: 2012 Demographic and Health Surveys (DHS) | Drain PK, BMC Infect Dis 2006; 6: 172 | WHO 2007: Male circumcision: Global trends and determinants of prevalence, safety and acceptability

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Japan: WHO 2007: Male circumcision: Global trends and determinants of prevalence, safety and acceptability | Yamagishi T, Sex Transm Infect 2012; 88: 534

Kenya: 2008 Demographic and Health Surveys (DHS) | Auvert B, AIDS 2001; 15 Suppl 4: S31 | Drain PK, BMC Infect Dis 2006; 6: 172 | Lavreys L, J Infect Dis 1999; 180: 330 | Ng'ayo MO, Sex Transm Infect 2008; 84: 62 | WHO 2007: Male circumcision: Global trends and determinants of prevalence, safety and acceptability | Williams BG, PLoS Med 2006; 3: e262

Kyrgyzstan: 2012 Demographic and Health Surveys (DHS) | WHO 2007: Male circumcision: Global trends and determinants of prevalence, safety and acceptability

Cambodia, Republic of Moldova: 2005 Demographic and Health Surveys (DHS) | Drain PK, BMC Infect Dis 2006; 6: 172 | WHO 2007: Male circumcision: Global trends and determinants of prevalence, safety and acceptability

Republic of Korea: Ku JH, Sex Transm Infect 2003; 79: 65 | Shin HR, J Infect Dis 2004; 190: 468 | WHO 2007: Male circumcision: Global trends and determinants of prevalence, safety and acceptability

Liberia, Namibia, Nigeria, Sierra Leone, Togo: 2013 Demographic and Health Surveys (DHS) | Drain PK, BMC Infect Dis 2006; 6: 172 | WHO 2007: Male circumcision: Global trends and determinants of prevalence, safety and acceptability | Williams BG, PLoS Med 2006; 3: e262

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Malaysia: Drain PK, BMC Infect Dis 2006; 6: 172 | Tang WS, J Sex Med 2011; 8: 2071 | WHO 2007: Male circumcision: Global trends and determinants of prevalence, safety and acceptability

Niger, Swaziland: 2006 Demographic and Health Surveys (DHS) | Drain PK, BMC Infect Dis 2006; 6: 172 | WHO 2007: Male circumcision: Global trends and determinants of prevalence, safety and acceptability | Williams BG, PLoS Med 2006; 3: e262

New Zealand: 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

Slovenia: Klavs I, Sex Transm Infect 2008; 84: 49 | WHO 2007: Male circumcision: Global trends and determinants of prevalence, safety and acceptability

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Timor-Leste: 2009 Demographic and Health Surveys (DHS) | WHO 2007: Male circumcision: Global trends and determinants of prevalence, safety and acceptability

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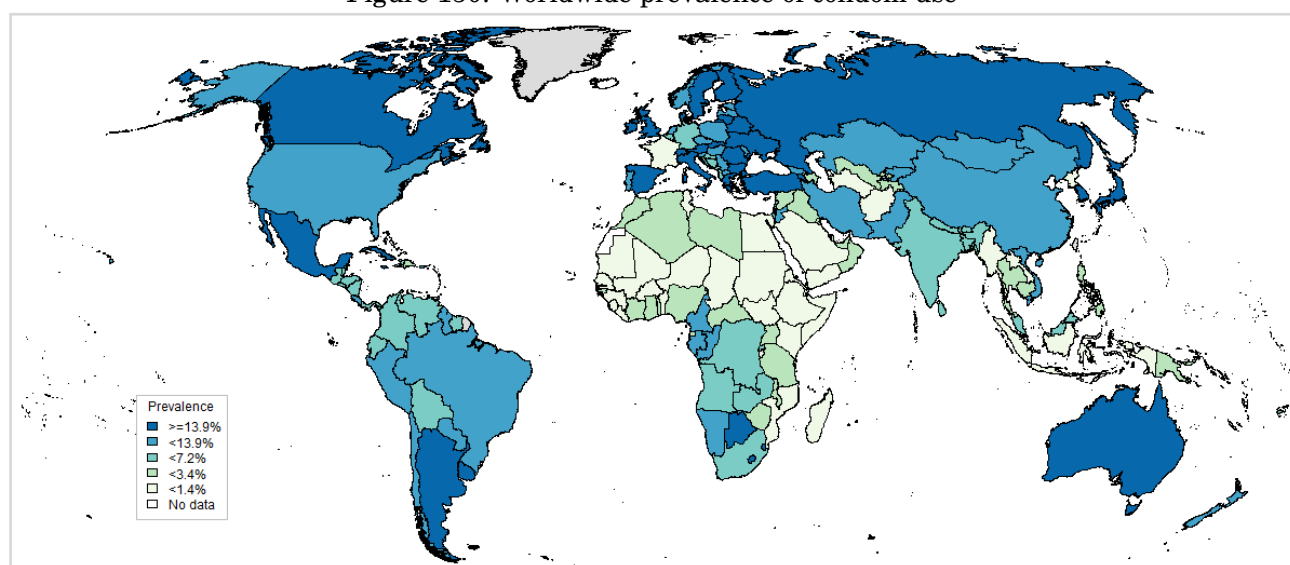
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Figure 150: Worldwide prevalence of condom use

**Data accessed on 21 Mar 2017.**

Please refer to original source for methods of estimation.

Condom use: Proportion of male partners who are using condoms with their female partners of reproductive age (15-49 years) to whom they are married or in union by country.

For Argentina: Data pertain to urban centers with 2,000 or more people.

For United Kingdom: Excluding Northern Ireland.

For Sri Lanka: Excluding the Northern Province.

Data sources: United Nations, Department of Economic and Social Affairs, Population Division (2016). World Contraceptive Use 2016 (POP/DB/CP/Rev2016). <http://www.un.org/en/development/desa/population/publications/dataset/contraception/wcu2016.shtml>. Available at: [Accessed on March 22, 2017].

For Afghanistan: Afghanistan 2010-2011 Multiple Indicator Cluster Survey

Angola: Angola 2008-2009 Inquerito Integrado Sobre o Bem-estar da Populacão (IBEP)

Anguilla: Anguilla 2003 Reproductive Health Survey

Albania: Albania 2008-2009 Demographic and Health Survey

United Arab Emirates: United Arab Emirates 1995 Family Health Survey

Argentina: Argentina 2013 Encuesta Nacional sobre Salud Sexual y Reproductiva

Armenia: Armenia 2010 Demographic and Health Survey

Antigua & Barbuda: Antigua and Barbuda 1988 Contraceptive Prevalence Survey in Antigua

Australia: Australia 2011-2012 HILDA

Austria: Austria 2012-2013 Generations and Gender Survey

Azerbaijan: Azerbaijan 2006 Demographic and Health Survey

Burundi: Burundi 2012 Enquête ménages pour le suivi et l'évaluation de l'impact de l'appui au système de remboursement du Paquet Minimum des Services de santé

Belgium: Belgium 2008-2010 Generations and Gender Survey

Benin: Benin 2014 Multiple Indicator Cluster Survey

Burkina Faso: Burkina Faso 2015 PMA2020

Bangladesh: Bangladesh 2014 Demographic and Health Survey (DHS)

Bulgaria: Bulgaria 2007 Generations and Gender Survey Wave 2

Bahrain: Bahrain 1995 Family Health Survey

Bahamas: Bahamas 1988 IPPF-WHR Caribbean Contraceptive Prevalence Survey

Bosnia & Herzegovina: Bosnia and Herzegovina 2011-2012 Multiple Indicator Cluster Survey

Belarus: Belarus 2012 Multiple Indicator Cluster Survey

Belize: Belize 2011 Multiple Indicator Cluster Survey

Bolivia: Bolivia 2008 Demographic and Health Survey

Brazil: Brazil 2006-2007 Demographic and Health Survey

Barbados: Barbados 2012 Multiple Indicator Cluster Survey

Bhutan: Bhutan 2010 Multiple Indicator Survey

Botswana: Botswana 2007 Family Health Survey - Multiple Indicator Cluster Survey

Central African Republic: Central African Republic 2010 Multiple Indicator Cluster Survey

Canada: Canada 2006 Contraceptive Studies

Switzerland: Switzerland 2012 Health Survey

Chile: Chile 2006 Encuesta Nacional de Calidad de Vida y Salud

China: China 2006 National Family Planning and Reproductive Health Survey

Côte d'Ivoire: Côte d'Ivoire 2011-2012 Demographic and Health Survey

Cameroon: Cameroon 2014 Multiple Indicator Cluster Survey

DR Congo: Democratic Republic of the Congo 2013-2014 Demographic and Health Survey

Congo: Congo 2014-2015 Multiple Indicator Cluster Survey

Cook Islands: Cook Islands 1999 Reproductive Health Knowledge and Services

Colombia: Colombia 2010 Demographic and Health Survey

Comoros: Comoros 2012 Demographic and Health Survey and Multiple Indicator Cluster Survey

Cape Verde: Cape Verde 2005 Demographic and Reproductive Health Survey

Costa Rica: Costa Rica 2011 Multiple Indicator Cluster Survey

Cuba: Cuba 2014 Multiple Indicator Cluster Survey

Czech Republic: Czech Republic 2008 Generations and Gender Survey

Germany: Germany 2005 Generations and Gender Survey

Djibouti: Djibouti 2012 Family Health Survey

Dominica: Dominica 1987 IPPF/WHR Caribbean Contraceptive Prevalence Survey

Denmark: Denmark 1991-1993 Infertility Survey

Dominican Republic: Dominican Republic 2014 Multiple Indicator Cluster Survey

Algeria: Algeria 2012-2013 Multiple Indicator Cluster Survey

Ecuador: Ecuador 2012 Encuesta Nacional de Salud y Nutrición

Egypt: Egypt 2014 Demographic and Health Survey

Eritrea: Eritrea 2010 Population and Health Survey

Spain: Spain 2006 Fertility and Values Survey

Estonia: Estonia 2005 Gender and Generation Survey

Ethiopia: Ethiopia 2015 PMA2020 Round 3

Finland: Finland 1989-1990 Fertility and Family Survey

Fiji: Fiji 1974 World Fertility Survey

France: France 2010 Enquête Fécond

Gabon: Gabon 2012 Demographic and Health Survey

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United Kingdom: United Kingdom 2008-2009 National Statistics Opinions Survey
 Georgia: Georgia 2010 Reproductive Health Survey
 Ghana: Ghana 2015 PMA2020 Round 4
 Guinea: Guinea 2012 Demographic and Health Survey
 Guadeloupe: Guadeloupe 1976 Fertility Survey
 Gambia: Gambia 2013 DHS
 Guinea-Bissau: Guinea-Bissau 2014 Multiple Indicator Cluster Survey
 Equatorial Guinea: Equatorial Guinea 2011 Demographic and Health Survey
 Greece: Greece 2001 Family planning survey
 Grenada: Grenada 1990 IPPF/WHO Caribbean Contraceptive Prevalence Survey
 Guatemala: Guatemala 2014-2015 Demographic and Health Survey (DHS)
 Guam: Guam 2002 Behavioral Risk Factor Surveillance System
 Guyana: Guyana 2014 Multiple Indicator Cluster Survey
 Hong Kong SAR: China, Hong Kong (SAR) 2012 Family Planning Knowledge, Attitude and Practice
 Honduras: Honduras 2011-2012 Demographic and Health Survey
 Croatia: Croatia 1970 Yugoslavia Fertility Survey
 Haiti: Haiti 2012 Demographic and Health Survey
 Hungary: Hungary 1992-1993 Fertility and Family Survey
 Indonesia: Indonesia 2015 PMA2020 Round 1
 India: India 2007-2008 District Level Household Survey
 Ireland: Ireland 2004-2005 SSHR
 Iran: Iran (Islamic Republic of) 2010 Multiple-Indicator Demographic and Health Survey
 Iraq: Iraq 2011 Multiple Indicator Cluster Survey
 Israel: Israel 1987-1988 Study of Fertility and Family Formation Survey
 Italy: Italy 1995-1996 Fertility and Family Survey
 Jamaica: Jamaica 2008 Reproductive and Health Survey
 Jordan: Jordan 2012 Demographic and Health Survey
 Japan: Japan 2005 13th National Fertility Survey
 Kazakhstan: Kazakhstan 2010-2011 Multiple Indicator Cluster Survey
 Kenya: Kenya 2015 PMA Round 4
 Kyrgyzstan: Kyrgyzstan 2014 Multiple Indicator Cluster Survey
 Cambodia: Cambodia 2014 Demographic and Health Survey
 Kiribati: Kiribati 2009 Demographic and Health Survey
 St Kitts & Nevis: Saint Kitts and Nevis 1984 Contraceptive Prevalence Survey
 Republic of Korea: Republic of Korea 2009 National Fertility and Family Health Survey
 Kuwait: Kuwait 1999 Desired Fertility and Contraceptive Use
 Laos: Lao People's Democratic Republic 2011-2012 Social Indicator Survey (MICS/DHS)
 Lebanon: Lebanon 2009 Multiple Indicator Cluster Survey
 Liberia: Liberia 2013 Demographic and Health Survey
 Libya: Libya 2007 Family Health Survey
 St Lucia: Saint Lucia 2012 Multiple Indicator Cluster Survey
 Sri Lanka: Sri Lanka 2006-2007 Demographic and Health Survey
 Lesotho: Lesotho 2014 Demographic and Health Survey
 Lithuania: Lithuania 2006 Generations and Gender Survey
 Latvia: Latvia 1995 Fertility and Family Survey
 Morocco: Morocco 2011 Enquête Nationale sur la Population et la Santé Familiale
 Republic of Moldova: Moldova 2012 Multiple Indicator Cluster Survey
 Madagascar: Madagascar 2008-2009 Demographic and Health Survey
 Maldives: Maldives 2009 Demographic and Health Survey
 Mexico: Mexico 2014 Encuesta Nacional de la Dinámica Demográfica
 Marshall Islands: Marshall Islands 2007 Demographic Health Survey (national)
 Macedonia: The former Yugoslav Republic of Macedonia 2011 Multiple Indicator Cluster Survey
 Mali: Mali 2012-2013 Demographic and Health Survey
 Malta: Malta 1993 Survey of Family Planning
 Myanmar: Myanmar 2009-2010 Multiple Indicator Cluster Survey
 Montenegro: Montenegro 2013 Multiple Indicator Cluster Survey
 Mongolia: Mongolia 2013 Multiple Indicator Cluster Survey
 N Mariana Islands: Northern Mariana Islands 1970 KAP Survey Trust Territory
 Mozambique: Mozambique 2011 Demographic and Health Survey
 Mauritania: Mauritania 2011 Multiple Indicator Cluster Survey
 Montserrat: Montserrat 1984 IPPF-WHO Caribbean Contraceptive Prevalence Survey
 Martinique: Martinique 1976 Fertility Survey
 Mauritius: Mauritius 2014 Contraceptive Prevalence Survey
 Malawi: Malawi 2013-2014 Multiple Indicator Cluster Survey
 Malaysia: Malaysia 2014 Population and Family Survey
 Namibia: Namibia 2013 Demographic and Health Survey
 Niger: Niger 2012 Demographic and Health Survey
 Nigeria: Nigeria 2013 Demographic and Health Survey
 Nicaragua: Nicaragua 2011-2012 Demographic and Health Survey
 Netherlands: Netherlands 2013 Family Formation Survey
 Norway: Norway 2005 Survey on Contraceptive Use
 Nepal: Nepal 2014 Multiple Indicator Cluster Survey
 Nauru: Nauru 2007 Demographic Health Survey (national)
 New Zealand: New Zealand 1995 Fertility and Family Survey
 Oman: Oman 2014 Multiple Indicator Cluster Survey
 Pakistan: Pakistan 2012-2013 Demographic and Health Survey
 Panama: Panama 2013 Multiple Indicator Cluster Survey
 Peru: Peru 2014 Demographic and Health Survey (Continuous)
 Philippines: Philippines 2013 Demographic and Health Survey
 Palau: Palau 2003 Population, Environment and Labor Force Survey
 Papua New Guinea: Papua New Guinea 2006 Demographic and Health Survey (national)
 Poland: Poland 1991 Fertility and Family Survey
 Puerto Rico: Puerto Rico 2002 Behavioral Risk Factor Surveillance System
 DPR Korea: Democratic People's Republic of Korea 2010 Reproductive Health Survey
 Portugal: Portugal 2014 Health Survey
 Paraguay: Paraguay 2008 Encuesta Nacional de Demografía y Salud Sexual y Reproductiva
 Palestine: State of Palestine 2014 MICS
 Qatar: Qatar 2012 Multiple Indicator Cluster Survey
 Reunion: Reunion 1997 Enquête DEMO97, volet Famille
 Romania: Romania 2005 Generations and Gender Survey
 Russian Federation: Russian Federation 2011 Reproductive Health Survey
 Rwanda: Rwanda 2014-2015 Demographic and Health Survey (DHS)
 Saudi Arabia: Saudi Arabia 2007 Demographic Survey
 Sudan: Sudan 2014 Multiple Indicator Cluster Survey
 Senegal: Senegal 2015 Demographic and Health Survey
 Singapore: Singapore 1997 National Family Planning and Population Survey
 Solomon Islands: Solomon Islands 2006-2007 Demographic and Health Survey
 Sierra Leone: Sierra Leone 2013 Demographic and Health Survey
 El Salvador: El Salvador 2014 MICS

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Somalia: Somalia 2006 Multiple Indicator Cluster Survey
Serbia: Serbia 2014 Multiple Indicator Cluster Survey
South Sudan: South Sudan 2010 Household Health Survey Second Round
Sao Tome & Principe: Sao Tome and Principe 2014 Multiple Indicator Cluster Survey
Suriname: Suriname 2010 Multiple Indicator Cluster Survey
Slovakia: Slovakia 1997 Reproductive Practices of Slovak Women
Slovenia: Slovenia 1994-1995 Fertility and Family Survey
Sweden: Sweden 1996 National Survey on Sexual Behavior
Swaziland: Swaziland 2014 Multiple Indicator Cluster Survey
Syria: Syrian Arab Republic 2009-2010 Family Health Survey
Chad: Chad 2014-2015 Demographic and Health Survey and MICS
Togo: Togo 2013-2014 Demographic and Health Survey and MICS
Thailand: Thailand 2012 Multiple Indicator Cluster Survey
Tajikistan: Tajikistan 2012 Demographic and Health Survey
Turkmenistan: Turkmenistan 2006 Multiple Indicator Cluster Survey
Timor-Leste: Timor-Leste 2009-2010 Demographic and Health Survey
Tonga: Tonga 2012 Demographic Health Survey (national)
Trinidad & Tobago: Trinidad and Tobago 2006 Multiple Indicator Cluster Survey
Tunisia: Tunisia 2011-2012 Multiple Indicator Cluster Survey
Turkey: Turkey 2013 Demographic and Health Survey
Tuvalu: Tuvalu 2007 Demographic Health Survey (national)
Tanzania: United Republic of Tanzania 2010 Demographic and Health Survey
Uganda: Uganda 2015 PMA Round 3
Ukraine: Ukraine 2012 Multiple Indicator Cluster Survey
Uruguay: Uruguay 2004 Encuesta Nacional sobre Reproducción Biológica y Social de la Poblacion
USA: United States of America 2011-2013 National Survey of Family Growth
Uzbekistan: Uzbekistan 2006 Multiple Indicator Cluster Survey
St Vincent & The Grenadines: Saint Vincent and the Grenadines 1988 IPPF-WHR Caribbean Contraceptive Prevalence Survey
Venezuela: Venezuela (Bolivarian Republic of) 1998 Encuesta Nacional de Poblacion y Familia
US Virgin Islands: United States Virgin Islands 2002 Behavioral Risk Factor Surveillance System
Viet Nam: Viet Nam 2013-2014 Multiple Indicator Cluster Survey
Vanuatu: Vanuatu 2013 DHS-MICS
Samoa: Samoa 2014 Demographic and Health Survey (national)
Yemen: Yemen 2013 Demographic and Health Survey
South Africa: South Africa 2003 Demographic and Health Survey
Zambia: Zambia 2013-2014 Demographic and Health Survey
Zimbabwe: Zimbabwe 2014 Multiple Indicator Cluster Survey

9 References

HPV-related statistics were gathered from specific databases created at the Institut Català d'Oncologia and the International Agency for Research on Cancer.

Systematic collection of published literature from peer-reviewed journals is stored in these databases. Data correspond to results from the following reference papers as well as updated results from continuous monitoring of the literature by the HPV Information Centre:

Table 32: References of studies included

Country	Study
HPV prevalence and HPV type distribution for cytologically normal women	
General sources	Based on systematic reviews and meta-analysis performed by ICO. The ICO HPV Information Centre has updated data until June 2015. Reference publications: 1) Bruni L, J Infect Dis 2010; 202: 1789. 2) De Sanjosé S, Lancet Infect Dis 2007; 7: 453
Africa	
Benin	Piras F, Virol J 2011; 8: 514
Burkina Faso	Ouédraogo CM, J Gynecol Obstet Biol Reprod (Paris) 2015; 44: 715
Côte d'Ivoire	Adjorlolo-Johnson G, BMC Infect Dis 2010; 10: 242 La Ruche G, Int J Cancer 1998; 76: 480
Cameroon	Catarino R, Cancer Epidemiol 2016; 40: 60 Tebeu PM, Int J Cancer 2015; 136: E743 Untiet S, Int J Cancer 2014; 135: 1911
DR Congo	Hovland S, Br J Cancer 2010; 102: 957 Sangwa-Lugoma G, Sex Transm Dis 2011; 38: 308
Congo	Boumba LM, J Med Virol 2015; 87: 1769
Algeria	Hammouda D, Int J Cancer 2005; 113: 483 Hammouda D, Int J Cancer 2011; 128: 2224
Egypt	Abdel Aziz MT, Med Sci Monit 2006; 12: MT43 Shaltout MF, Int J Infect Dis 2014; 29: 226
Ethiopia	Leyh-Bannurah SR, Infect Agents Cancer 2014; 9: 33 Ruland R, Eur J Epidemiol 2006; 21: 727
Gabon	Si-Mohamed A, J Med Virol 2005; 77: 430
Ghana	Yar DD, Trop Med Int Health 2016; 21: 275
Guinea	Keita N, Br J Cancer 2009; 101: 202
Gambia	Wall SR, Br J Cancer 2005; 93: 1068
Kenya	De Vuyst H, Cancer Causes Control 2010; 21: 2309 De Vuyst H, Sex Transm Dis 2003; 30: 137 Maranga IO, Open Virol J 2013; 7: 19 Temmerman M, Int J Gynaecol Obstet 1999; 65: 171 Yamada R, J Med Virol 2008; 80: 847
Morocco	Alhamany Z, J Infect Dev Ctries 2010; 4: 732 Amrani M, J Clin Virol 2003; 27: 286 Belglaiiaa E, Infect Agents Cancer 2015; 10: 44 Bennani B, J Infect Dev Ctries 2012; 6: 543 Chaouki N, Int J Cancer 1998; 75: 546
Mali	Schluterman NH, BMC Womens Health 2013; 13: 4 Tracy JK, Trop Med Int Health 2011; 16: 1432
Mozambique	Castellsagué X, Lancet 2001; 358: 1429 Naucler P, J Gen Virol 2011; 92: 2784
Nigeria	Akarolo-Anthony SN, BMC Infect Dis 2013; 13: 521 Dareng EO, Epidemiol Infect 2016; 144: 123 Gage JC, Int J Cancer 2012; 130: 2111 Manga MM, Infect Agents Cancer 2015; 10: 39 Pimentel VM, J Low Genit Tract Dis 2013; 17: 203 Thomas JO, Br J Cancer 2004; 90: 638
Rwanda	Sinayobye Jd, Infect Agents Cancer 2014; 9: 40 Singh DK, J Infect Dis 2009; 199: 1851 Veldhuijzen NJ, Sex Transm Dis 2012; 39: 128
Senegal	Astori G, Intervirology 1999; 42: 221 Hanisch RA, J Clin Virol 2013; 58: 696 Hawes SE, J Infect Dis 2003; 188: 555 Mbaye el HS, J Med Virol 2014; 86: 248 Xi LF, Int J Cancer 2003; 103: 803
Tunisia	Guettiti H, Asian Pac J Cancer Prev 2014; 15: 9361 Hassen E, Infection 2003; 31: 143
Tanzania	Dartell MA, Int J Cancer 2014; 135: 896 Vidal AC, Infect Agents Cancer 2011; 6: 20 Watson-Jones D, Sex Transm Infect 2013; 89: 358

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Table 32 – Continued

Country	Study
Uganda	Asiimwe S, <i>Int J STD AIDS</i> 2008; 19: 605 Banura C, <i>J Infect Dis</i> 2008; 197: 555 Jeronimo J, <i>Int J Gynecol Cancer</i> 2014; 24: 576 Moses E, <i>Trop Med Int Health</i> 2015; 20: 1355 Odida M, <i>Infect Agents Cancer</i> 2011; 6: 8 Safaeian M, <i>Sex Transm Dis</i> 2007; 34: 429 Taube JM, <i>Diagn Cytopathol</i> 2010; 38: 555
South Africa	Allan B, <i>J Clin Microbiol</i> 2008; 46: 740 Denny L, <i>JAMA</i> 2005; 294: 2173 Giuliano AR, <i>J Acquir Immune Defic Syndr</i> 2015; 68: 227 Jones HE, <i>J Clin Microbiol</i> 2007; 45: 1679 Mbulawa ZZ, <i>BMC Infect Dis</i> 2015; 15: 459 McDonald AC, <i>PLoS ONE</i> 2012; 7: e44332 Richter K, <i>S Afr Med J</i> 2013; 103: 313 Wright TC, <i>JAMA</i> 2000; 283: 81
Zimbabwe	Baay MF, <i>J Med Virol</i> 2004; 73: 481 Fukuchi E, <i>Sex Transm Dis</i> 2009; 36: 305 Nowak RG, <i>J Infect Dis</i> 2011; 203: 1182 Womack SD, <i>Int J Cancer</i> 2000; 85: 206
Americas	
Argentina	Abba MC, <i>Rev Argent Microbiol</i> 2003; 35: 74 Badano I, <i>Rev Argent Microbiol</i> 2011; 43: 263 Chouhy D, <i>J Med Virol</i> 2013; 85: 655 Matos E, <i>Sex Transm Dis</i> 2003; 30: 593
Belize	Cathro HP, <i>Hum Pathol</i> 2009; 40: 942
Bolivia	Cervantes J, <i>Rev Inst Med Trop Sao Paulo</i> 2003; 45: 131
Brazil	Augusto EF, <i>Rev Lat Am Enfermagem</i> 2014; 22: 100 Caixeta RC, <i>Diagn Cytopathol</i> 2015; 43: 780 Campos KL, <i>Mem Inst Oswaldo Cruz</i> 2014; 109: 352 Carestiatto FN, <i>Braz J Infect Dis</i> 2006; 10: 331 Cassel AP, <i>Genet Mol Biol</i> 2014; 37: 360 Chagas BS, <i>PLoS ONE</i> 2015; 10: e0132570 Coser J, <i>Genet Mol Res</i> 2013; 12: 4276 da Silva MC, <i>Arch Gynecol Obstet</i> 2012; 286: 1015 de Abreu AL, <i>Am J Trop Med Hyg</i> 2012; 87: 1149 de Oliveira GR, <i>Rev Bras Ginecol Obstet</i> 2013; 35: 226 Entiauspe LG, <i>Braz J Microbiol</i> 2014; 45: 689 Fernandes JV, <i>Int J Gynaecol Obstet</i> 2009; 105: 21 Figueiredo Alves RR, <i>BMC Public Health</i> 2013; 13: 1041 Franco EL, <i>J Infect Dis</i> 1995; 172: 756 Girianelli VR, <i>Rev Bras Ginecol Obstet</i> 2010; 32: 39 Lippman SA, <i>Int J STD AIDS</i> 2010; 21: 105 Lorenzato F, <i>Int J Gynecol Cancer</i> 2000; 10: 143 Lorenzi AT, <i>Gynecol Oncol</i> 2013; 131: 131 Magalhães PA, <i>Arch Gynecol Obstet</i> 2015; 291: 1095 Miranda PM, <i>Genet Mol Res</i> 2012; 11: 1752 Muñoz N, <i>Sex Transm Dis</i> 1996; 23: 504 Noronha VL, <i>DST J Bras Doenças Sex Transm</i> 2005; 17: 49 Oliveira FA, <i>Mem Inst Oswaldo Cruz</i> 2007; 102: 751 Oliveira LH, <i>Rev Soc Bras Med Trop</i> 2010; 43: 4 Pinto Dda S, <i>Cad Saude Publica</i> 2011; 27: 769 Rocha DA, <i>Infect Dis Obstet Gynecol</i> 2013; 2013: 514859 Roteli-Martins CM, <i>Int J Gynecol Pathol</i> 2011; 30: 173 Silva KC, <i>Mem Inst Oswaldo Cruz</i> 2009; 104: 885 Tamegão-Lopes BP, <i>Infect Agents Cancer</i> 2014; 9: 25 Tomita LY, <i>Int J Cancer</i> 2010; 126: 703 Trottier H, <i>Cancer Epidemiol Biomarkers Prev</i> 2006; 15: 1274 Vieira RC, <i>Infect Agents Cancer</i> 2015; 10: 21
Canada	Demers AA, <i>Chronic Dis Inj Can</i> 2012; 32: 177 Jiang Y, <i>Infect Agents Cancer</i> 2013; 8: 25 Kapala J, <i>J Virol Methods</i> 2007; 142: 223 Louvanto K, <i>Am J Obstet Gynecol</i> 2014; 210: 474.e1 Mayrand MH, <i>Int J Cancer</i> 2006; 119: 615 Moore RA, <i>Cancer Causes Control</i> 2009; 20: 1387 Ogilvie GS, <i>Vaccine</i> 2013; 31: 1129 Richardson H, <i>Cancer Epidemiol Biomarkers Prev</i> 2003; 12: 485 Roteli-Martins CM, <i>Int J Gynecol Pathol</i> 2011; 30: 173 Sellors JW, <i>CMAJ</i> 2000; 163: 503 Young TK, <i>Sex Transm Dis</i> 1997; 24: 293
Chile	Ferreccio C, <i>BMC Public Health</i> 2008; 8: 78 Ferreccio C, <i>Cancer Epidemiol Biomarkers Prev</i> 2004; 13: 2271 Ferreccio C, <i>Int J Cancer</i> 2013; 132: 916 Montalvo MT, <i>Oncol Lett</i> 2011; 2: 701
Colombia	Camargo M, <i>BMC Cancer</i> 2014; 14: 451 Leon S, <i>Sex Transm Dis</i> 2009; 36: 290 Molano M, <i>Br J Cancer</i> 2002; 87: 324 Muñoz N, <i>Sex Transm Dis</i> 1996; 23: 504 Soto-De Leon S, <i>PLoS ONE</i> 2011; 6: e14705
Costa Rica	Herrero R, <i>J Infect Dis</i> 2005; 191: 1796 Safaeian M, <i>J Clin Microbiol</i> 2007; 45: 1447
Cuba	Soto Y, <i>J Low Genit Tract Dis</i> 2014; 18: 210

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Table 32 – Continued

Country	Study
Ecuador	Brown CR, <i>Braz J Med Biol Res</i> 2009; 42: 629 Cecchini G, <i>Pathologica</i> 2009; 101: 76
Guatemala	Vallès X, <i>Int J Cancer</i> 2009; 125: 1161
Guyana	Kightlinger RS, <i>Am J Obstet Gynecol</i> 2010; 202: 626.e1
Honduras	Ferrera A, <i>Int J Cancer</i> 1999; 82: 799 Ferrera A, <i>Int J Gynaecol Obstet</i> 2011; 113: 96 Tábor N, <i>Am J Trop Med Hyg</i> 2005; 73: 50 Tábor N, <i>Cancer Causes Control</i> 2009; 20: 1663
Haiti	Mandigo M, <i>Int J Gynaecol Obstet</i> 2015; 128: 206 Walmer DK, <i>PLoS ONE</i> 2013; 8: e76110
Jamaica	Lewis-Bell K, <i>Rev Panam Salud Publica</i> 2013; 33: 159 Watt A, <i>Infect Agents Cancer</i> 2009; 4 Suppl 1: S11
Mexico	Aguilar-Lemarroy A, <i>J Med Virol</i> 2015; 87: 871 Carrillo-García A, <i>Gynecol Oncol</i> 2014; 134: 534 Giuliano AR, <i>Cancer Epidemiol Biomarkers Prev</i> 2001; 10: 1129 Giuliano AR, <i>Int J STD AIDS</i> 2005; 16: 247 Hernández-Avila M, <i>Arch Med Res</i> 1997; 28: 265 Hernández-Girón C, <i>Sex Transm Dis</i> 2005; 32: 613 Illades-Aguir B, <i>Cancer Detect Prev</i> 2009; 32: 300 Illades-Aguir B, <i>Gynecol Oncol</i> 2010; 117: 291 Lazcano-Ponce E, <i>Cancer Causes Control</i> 2010; 21: 1693 Lazcano-Ponce E, <i>Int J Cancer</i> 2001; 91: 412 López Rivera MG, <i>Infect Dis Obstet Gynecol</i> 2012; 2012: 384758 Monroy OL, <i>J Clin Virol</i> 2010; 47: 43 Orozco-Colín A, <i>Int J Infect Dis</i> 2010; 14: e1082 Parada R, <i>BMC Infect Dis</i> 2010; 10: 223 Rojo Contreras W, <i>Ginecol Obstet Mex</i> 2008; 76: 9 Salcedo M, <i>Asian Pac J Cancer Prev</i> 2014; 15: 10061 Salmerón J, <i>Cancer Causes Control</i> 2003; 14: 505 Sánchez-Anguiano LF, <i>BMC Infect Dis</i> 2006; 6: 27
Nicaragua	Jeronimo J, <i>Int J Gynecol Cancer</i> 2014; 24: 576
Peru	Almonte M, <i>Int J Cancer</i> 2007; 121: 796 García PJ, <i>Bull World Health Organ</i> 2004; 82: 483 Iwasaki R, <i>Braz J Infect Dis</i> 2014; 18: 469 Martorell M, <i>Genet Mol Res</i> 2012; 11: 2099 Santos C, <i>Br J Cancer</i> 2001; 85: 966 Silva-Caso W, <i>Asian Pac J Trop Med</i> 2014; 7S1: S121
Paraguay	Mendoza LP, <i>J Med Virol</i> 2011; 83: 1351 Rolón PA, <i>Int J Cancer</i> 2000; 85: 486 Torres LM, <i>Braz J Infect Dis</i> 2009; 13: 203
Suriname	Geraets DT, <i>Sex Transm Infect</i> 2014
Trinidad & Tobago	Andall-Brereton GM, <i>Rev Panam Salud Publica</i> 2011; 29: 220 Ragin CC, <i>Biomarkers</i> 2007; 12: 510
Uruguay	Berois N, <i>J Med Virol</i> 2014; 86: 647 Ramas V, <i>J Med Virol</i> 2013; 85: 845
USA	Castle PE, <i>J Clin Oncol</i> 2012; 30: 3044 Castle PE, <i>Obstet Gynecol</i> 2009; 113: 595 Chaturvedi AK, <i>J Med Virol</i> 2005; 75: 105 Cibas ES, <i>Gynecol Oncol</i> 2007; 104: 702 Cuzick J, <i>Int J Cancer</i> 2015; 136: 2854 Datta SD, <i>Ann Intern Med</i> 2008; 148: 493 Dunne EF, <i>Cancer Causes Control</i> 2013; 24: 403 Dunne EF, <i>JAMA</i> 2007; 297: 813 Evans MF, <i>Cancer</i> 2006; 106: 1054 Giuliano AR, <i>Cancer Epidemiol Biomarkers Prev</i> 1999; 8: 615 Giuliano AR, <i>Cancer Epidemiol Biomarkers Prev</i> 2001; 10: 1129 Goodman MT, <i>Cancer Res</i> 2008; 68: 8813 Hernandez BY, <i>Nutr Cancer</i> 2004; 49: 109 Insinga RP, <i>Cancer Epidemiol Biomarkers Prev</i> 2007; 16: 709 Kahn JA, <i>Obstet Gynecol</i> 2008; 111: 1103 Khanna N, <i>Int J Gynecol Cancer</i> 2007; 17: 615 Kotloff KL, <i>Sex Transm Dis</i> 1998; 25: 243 Monsonego J, <i>Gynecol Oncol</i> 2015; 137: 47 Moscicki AB, <i>JAMA</i> 2001; 285: 2995 Schiffman M, <i>Cancer Epidemiol Biomarkers Prev</i> 2011; 20: 1398 Sherman ME, <i>J Natl Cancer Inst</i> 2003; 95: 46 Smith EM, <i>Cancer Detect Prev</i> 2003; 27: 472 Smith EM, <i>Int J Gynaecol Obstet</i> 2004; 87: 131 Swan DC, <i>J Clin Microbiol</i> 1999; 37: 1030 Tarkowski TA, <i>J Infect Dis</i> 2004; 189: 46 Wheeler CM, <i>Int J Cancer</i> 2013; 132: 198 Winer RL, <i>Am J Epidemiol</i> 2003; 157: 218 Zhao C, <i>Cancer</i> 2007; 111: 292
Venezuela	Michelli E, <i>Invest Clin</i> 2013; 54: 392 Téllez L, <i>Ecancermedicallscience</i> 2015; 9: 579
Asia	
Bangladesh	Nahar Q, <i>PLoS ONE</i> 2014; 9: e107675

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Country	Study
Bahrain	Hajjaj AA, Saudi Med J 2006; 27: 487
Bhutan	Tshomo U, BMC Infect Dis 2014; 14: 408
China	Belinson J, Gynecol Oncol 2001; 83: 439 Belinson JL, Am J Clin Pathol 2011; 135: 790 Belinson JL, Int J Gynecol Cancer 2003; 13: 819 Bian ML, Exp Ther Med 2013; 6: 1332 Chan PK, J Infect Dis 2002; 185: 28 Chan PK, J Med Virol 2009; 81: 1635 Chen Q, PLoS ONE 2012; 7: e32149 Chen Z, Exp Ther Med 2013; 6: 85 Chui SH, Public Health 2012; 126: 600 Dai M, Br J Cancer 2006; 95: 96 Ding X, J Med Virol 2014; 86: 1937 DU H, Zhonghua Liu Xing Bing Xue Za Zhi 2012; 33: 799 He X, Eur J Epidemiol 2008; 23: 403 Hu SY, Chin J Cancer Res 2011; 23: 25 Jin Q, Chin Med J 2010; 123: 2004 Li C, Cancer Epidemiol Biomarkers Prev 2010; 19: 2655 Li H, Eur J Obstet Gynecol Reprod Biol 2013; 170: 202 Li LK, Br J Cancer 2006; 95: 1593 Lin M, Aust N Z J Obstet Gynaecol 2008; 48: 189 Lu S, J Med Virol 2015; 87: 504 Mai RQ, Asian Pac J Cancer Prev 2014; 15: 4945 Moy LM, Int J Cancer 2010; 127: 646 Qiao YL, Lancet Oncol 2008; 9: 929 Sui S, Asian Pac J Cancer Prev 2013; 14: 5861 Sun LL, Virol J 2012; 9: 153 Sun ZR, Int J Gynaecol Obstet 2010; 109: 105 Wang S, BMC Cancer 2012; 12: 160 Wang X, Int J Gynaecol Obstet 2013; 120: 37 Wang XC, Asian Pac J Cancer Prev 2014; 15: 7333 Wang YY, Asian Pac J Cancer Prev 2013; 14: 7483 Wei H, Int J Gynaecol Obstet 2014; 126: 28 Wu D, Eur J Obstet Gynecol Reprod Biol 2010; 151: 86 Wu EQ, Cancer Causes Control 2013; 24: 795 Wu R, Int J Gynecol Cancer 2010; 20: 1411 Wu RF, Int J Cancer 2007; 121: 1306 Ye J, Int J Gynecol Cancer 2010; 20: 1374 Ye J, Virol J 2010; 7: 66 Yeoh GP, Acta Cytol 2006; 50: 627 Yip YC, J Med Virol 2010; 82: 1724 Yu XW, J Low Genit Tract Dis 2013; 17: 17 Yuan X, Arch Gynecol Obstet 2011; 283: 1385 Zhang L, Arch Gynecol Obstet 2012; 286: 695 Zhang R, J Clin Virol 2013; 58: 144 Zhang WY, Chin Med J 2008; 121: 1578 Zhao FH, Cancer Prev Res (Phila) 2013; 6: 938 Zhao FH, Int J Cancer 2014; 135: 2604
Georgia	Alibegashvili T, Cancer Epidemiol 2011; 35: 465
Indonesia	de Boer MA, Int J Gynecol Cancer 2006; 16: 1809 Rachmadi L, Acta Cytol 2012; 56: 171 Vet JN, Br J Cancer 2008; 99: 214
India	Aggarwal R, Indian J Cancer 2006; 43: 110 Arora R, Eur J Obstet Gynecol Reprod Biol 2005; 121: 104 Basu P, Int J Cancer 2013; 132: 1693 Bhatla N, Int J Gynecol Pathol 2008; 27: 426 Datta P, Cancer Epidemiol 2010; 34: 157 Dutta S, Int J Gynecol Pathol 2012; 31: 178 Franceschi S, Br J Cancer 2005; 92: 601 Gravitt PE, PLoS ONE 2010; 5: e13711 Gupta S, Cytopathology 2009; 20: 249 Jeronimo J, Int J Gynecol Cancer 2014; 24: 576 Kashyap V, J Cytol 2013; 30: 190 Kerkar SC, Sex Reprod Healthc 2011; 2: 7 Laikangbam P, Int J Gynecol Cancer 2007; 17: 107 Mittal S, Int J Gynaecol Obstet 2014; 126: 227 Pandey S, Asian Pac J Cancer Prev 2012; 13: 2643 Sankaranarayanan R, Int J Cancer 2004; 112: 341 Sankaranarayanan R, Int J Cancer 2005; 116: 617 Sarkar K, BMC Infect Dis 2011; 11: 72 Singh A, Int J Gynecol Cancer 2009; 19: 1642 Srivastava S, J Biosci 2012; 37: 63 Vinodhini K, Int J Gynaecol Obstet 2012; 119: 253
Iran	Eghbali SS, Virol J 2012; 9: 194 Khodakarami N, Int J Cancer 2012; 131: E156 Moradi A, Iran J Cancer Prev 2011; 3: 135 Safaei A, Indian J Pathol Microbiol 2010; 53: 681 Shahramian I, Iran J Public Health 2011; 40: 113 Zandi K, Virol J 2010; 7: 65 Zavarei 2008: reported in Vaccarella S, Vaccine 2013; 31 Suppl 6: G32

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Country	Study
Japan	Asato T, J Infect Dis 2004; 189: 1829 Chen L, J Med Virol 2013; 85: 1229 Inoue M, Int J Gynecol Cancer 2006; 16: 1007 Ishi K, J Obstet Gynaecol Res 2004; 30: 380 Konno R, Cancer Sci 2011; 102: 877 Maehama T, Infect Dis Obstet Gynecol 2005; 13: 77 Masumoto N, Gynecol Oncol 2004; 94: 509 Nishiwaki M, J Clin Microbiol 2008; 46: 1161 Onuki M, Cancer Sci 2009; 100: 1312 Saito J, Int J Gynaecol Obstet 1995; 51: 43 Sasagawa T, Cancer Epidemiol Biomarkers Prev 2001; 10: 45 Sasagawa T, Jpn J Cancer Res 1997; 88: 376 Sasagawa T, Sex Transm Infect 2005; 81: 280 Satoh T, J Virol Methods 2013; 188: 83 Takehara K, Patholog Res Int 2011; 2011: 246936 Yoshikawa H, Br J Cancer 1999; 80: 621
Kazakhstan	Buleshov 2011: reported in De Vuyst H, Vaccine 2013; 31 Suppl 5: F32
Republic of Korea	An HJ, Cancer 2003; 97: 1672 Bae J, Gynecol Oncol 2009; 115: 75 Bae JH, J Microbiol Biotechnol 2009; 19: 1051 Bae JM, Arch Virol 2014; 159: 1909 Cho EJ, J Med Microbiol 2011; 60: 162 Cho NH, Am J Obstet Gynecol 2003; 188: 56 Hwang HS, Cancer Epidemiol Biomarkers Prev 2004; 13: 2153 Hwang Y, Ann Lab Med 2012; 32: 201 Kim J, Int J Gynecol Cancer 2012; 22: 1570 Kim JH, Oncol Rep 2013; 29: 1645 Kim JK, J Microbiol Biotechnol 2014; 24: 1143 Kim K, Asian Pac J Cancer Prev 2012; 13: 269 Kim MA, J Korean Med Sci 2012; 27: 922 Kim MA, Obstet Gynecol 2010; 116: 932 Kim MJ, Obstet Gynecol Sci 2013; 56: 110 Kim TE, Korean J Pathol 2014; 48: 24 Kim Y, J Infect Chemother 2014; 20: 74 Kim YJ, J Microbiol 2013; 51: 665 Lee EH, J Korean Med Sci 2012; 27: 1091 Lee H, Epidemiol Infect 2014; 142: 1579 Lee HP, J Med Virol 2011; 83: 471 Lee SA, Cancer Lett 2003; 198: 187 Lee SJ, Int J Med Sci 2012; 9: 103 Oh JK, Eur J Cancer Prev 2009; 18: 56 Oh YL, Cytopathology 2001; 12: 75 Park EK, J Korean Med Sci 2014; 29: 32 Shim HS, BMC Infect Dis 2010; 10: 284 Shin HR, Int J Cancer 2003; 103: 413 Shin HR, J Infect Dis 2004; 190: 468 Um TH, Ann Clin Lab Sci 2011; 41: 48
Kuwait	Al-Awadhi R, J Med Virol 2011; 83: 453
Laos	Phongsavan K, Int J Gynecol Cancer 2012; 22: 1398
Lebanon	Karam WG, Lebanese Medical Journal 2005; 53: 132 Mroueh AM, Eur J Gynaecol Oncol 2002; 23: 429
Mongolia	Chimeddorj B, Asian Pac J Cancer Prev 2008; 9: 563 Dondog B, Cancer Epidemiol Biomarkers Prev 2008; 17: 1731
Malaysia	Chong PP, Asian Pac J Cancer Prev 2010; 11: 1645 Othman N, Asian Pac J Cancer Prev 2014; 15: 2245 Tay SK, Aust N Z J Obstet Gynaecol 2009; 49: 323
Nepal	Johnson DC, PLoS ONE 2014; 9: e101255 Sherpa AT, Cancer Causes Control 2010; 21: 323
Pakistan	Raza SA, Br J Cancer 2010; 102: 1657
Philippines	Ngelangel C, J Natl Cancer Inst 1998; 90: 43
Saudi Arabia	Al-Ahdal MN, J Infect Dev Ctries 2014; 8: 320
Thailand	Chaiwongkot A, Asian Pac J Cancer Prev 2007; 8: 279 Chandeying V, Sex Health 2006; 3: 11 Chansaenroj J, Asian Pac J Cancer Prev 2010; 11: 117 Chichareon S, J Natl Cancer Inst 1998; 90: 50 Chopjitt P, Int J Infect Dis 2009; 13: 212 Ekalaksananan T, J Obstet Gynaecol Res 2010; 36: 1037 Laowahutanont P, Asian Pac J Cancer Prev 2014; 15: 5879 Marks M, Int J Cancer 2011; 128: 2962 Natphopsuk S, Asian Pac J Cancer Prev 2013; 14: 6961 Paengchit K, Asian Pac J Cancer Prev 2014; 15: 6151 Settheetham-Ishida W, Microbiol Immunol 2005; 49: 417 Siriaunkgul S, Asian Pac J Cancer Prev 2014; 15: 6837 Siritantikorn S, Southeast Asian J Trop Med Public Health 1997; 28: 707 Sriamporn S, Int J Gynecol Cancer 2006; 16: 266 Sukvirach S, J Infect Dis 2003; 187: 1246 Suwannarurk K, Cancer Epidemiol 2009; 33: 56 Swangvaree SS, Asian Pac J Cancer Prev 2010; 11: 1465 Thomas DB, Am J Epidemiol 2001; 153: 723 Wongworapat K, Sex Transm Dis 2008; 35: 172

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Country	Study
Turkey	Akcali S, Asian Pac J Cancer Prev 2013; 14: 503 Altun 2011: reported in Vaccarella S, Vaccine 2013; 31 Suppl 6: G32 Bayram A, J Med Virol 2011; 83: 1997 Demir ET, J Med Virol 2012; 84: 1242 Dursun P, BMC Infect Dis 2009; 9: 191 Eren F, Int J Gynaecol Obstet 2010; 109: 235 Inal MM, Int J Gynecol Cancer 2007; 17: 1266 Kasap B, Eur J Obstet Gynecol Reprod Biol 2011; 159: 168 Ozalp SS, J Turk Ger Gynecol Assoc 2012; 13: 8 Oztürk S, Mikrobiyol Bul 2004; 38: 223 Sahiner F, Diagn Microbiol Infect Dis 2014; 80: 43 Sahiner F, J Microbiol Methods 2014; 97: 44 Tezcan S, Asian Pac J Cancer Prev 2014; 15: 3997 Yuce K, Arch Gynecol Obstet 2012; 286: 203 Özcan ES, J Obstet Gynaecol 2011; 31: 656
Taiwan	Chen HC, Int J Cancer 2011; 128: 1192 Huang YK, Br J Cancer 2008; 98: 863 Jeng CJ, Clin Invest Med 2005; 28: 261 Lai CH, Epidemiol Infect 2012; 140: 466 Liaw KL, Int J Cancer 1995; 62: 565 Lin H, Gynecol Oncol 2005; 96: 84 Lin H, Gynecol Oncol 2006; 101: 40 Tsai HT, Cancer Epidemiol Biomarkers Prev 2005; 14: 2544 Wang CH, J Med Virol 2010; 82: 1416
Uzbekistan	Inamova 2009: reported in De Vuyst H, Vaccine 2013; 31 Suppl 5: F32
Viet Nam	Pham TH, Int J Cancer 2003; 104: 213 Vu LT, Asian Pac J Cancer Prev 2011; 12: 561 Vu LT, Asian Pac J Cancer Prev 2012; 13: 37 Vu LT, Western Pac Surveill Response J 2012; 3: 57
Europe	
Belgium	Arbyn M, Cancer Epidemiol Biomarkers Prev 2009; 18: 321 Baay MF, Eur J Cancer 2005; 41: 2704 Baay MF, Eur J Gynaecol Oncol 2001; 22: 204 Depuydt CE, Br J Cancer 2003; 88: 560 Depuydt CE, Gynecol Obstet Invest 2010; 70: 273 Depuydt CE, J Clin Microbiol 2012; 50: 4073 Merckx M, Eur J Cancer Prev 2014; 23: 288 Schmitt M, Int J Cancer 2013; 132: 2395 Weyn C, Cancer Epidemiol 2013; 37: 457
Bulgaria	Kovachev S, J Med Virol 2013; 85: 1577
Belarus	Rogovskaya SI, Vaccine 2013; 31 Suppl 7: H46
Switzerland	Bigras G, Br J Cancer 2005; 93: 575
Czech Republic	Tachezy R, PLoS ONE 2013; 8: e79156
Germany	de Jonge M, Acta Cytol 2013; 57: 591 Iftner T, J Med Virol 2010; 82: 1928 Luyten A, Int J Cancer 2014; 135: 1408 Petry KU, BMC Infect Dis 2013; 13: 135 Petry KU, Br J Cancer 2003; 88: 1570 Schneider A, Int J Cancer 2000; 89: 529
Denmark	Bonde J, BMC Infect Dis 2014; 14: 413 Kjær SK, Cancer Causes Control 2014; 25: 179 Nielsen A, Sex Transm Dis 2008; 35: 276 Svare EI, Eur J Cancer 1998; 34: 1230
Spain	Bernal M, Infect Agents Cancer 2008; 3: 8 Castellsagué X, J Med Virol 2012; 84: 947 de Sanjose S, Sex Transm Dis 2003; 30: 788 Dillner J, BMJ 2008; 337: a1754 González C, Sex Transm Infect 2006; 82: 260 Lloveras B, PLoS ONE 2013; 8: e58153 Martorell M, Scand J Infect Dis 2010; 42: 549 Muñoz N, Sex Transm Dis 1996; 23: 504 Ortiz M, J Clin Microbiol 2006; 44: 1428
Estonia	Uusküla A, BMC Infect Dis 2010; 10: 63
Finland	Auvinen E, Scand J Infect Dis 2005; 37: 873 Malila N, Int J Cancer 2013; 132: 2141
France	Baudu A, J Epidemiol Glob Health 2014; 4: 35 Beby-Defaux A, J Med Virol 2004; 73: 262 Boulanger JC, Gynecol Obstet Fertil 2004; 32: 218 Casalegno JS, Int J Gynaecol Obstet 2011; 114: 116 Clavel C, Br J Cancer 2001; 84: 1616 Dalstein V, Int J Cancer 2003; 106: 396 Haguenoer K, Gynecol Oncol 2014; 134: 302 Heard I, PLoS ONE 2013; 8: e79372 Monsonogo J, Gynecol Oncol 2005; 99: 160 Monsonogo J, Int J Cancer 2011; 129: 691 Pannier-Stockman C, J Clin Virol 2008; 42: 353 Riethmuller D, Diagn Mol Pathol 1999; 8: 157 Vaucel E, Arch Gynecol Obstet 2011; 284: 989

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Country	Study
United Kingdom	Cuschieri KS, <i>J Clin Pathol</i> 2004; 57: 68 Cuzick J, <i>Br J Cancer</i> 1999; 81: 554 Cuzick J, <i>Lancet</i> 1995; 345: 1533 Cuzick J, <i>Lancet</i> 2003; 362: 1871 Geraets DT, <i>J Clin Microbiol</i> 2014; 52: 3996 Grainge MJ, <i>Emerging Infect Dis</i> 2005; 11: 1680 Herbert A, <i>J Fam Plann Reprod Health Care</i> 2007; 33: 171 Hibbitts S, <i>Br J Cancer</i> 2008; 99: 1929 Hibbitts S, <i>J Clin Virol</i> 2014; 59: 109 Howell-Jones R, <i>Br J Cancer</i> 2010; 103: 209 Kavanagh K, <i>Br J Cancer</i> 2014; 110: 2804 Kitchener HC, <i>Br J Cancer</i> 2006; 95: 56 Peto J, <i>Br J Cancer</i> 2004; 91: 942
Greece	Agorastos T, <i>Eur J Cancer Prev</i> 2004; 13: 145 Agorastos T, <i>Eur J Cancer Prev</i> 2014; 23: 425 Agorastos T, <i>PLoS ONE</i> 2015; 10: e0119755 Argyri E, <i>BMC Infect Dis</i> 2013; 13: 53 Panotopoulou E, <i>J Med Virol</i> 2007; 79: 1898 Paraskevaidis E, <i>Gynecol Oncol</i> 2001; 82: 355 Tsiodras S, <i>BMC Cancer</i> 2010; 10: 53 Tsiodras S, <i>Clin Microbiol Infect</i> 2011; 17: 1185
Croatia	Grahovac M, <i>Coll Antropol</i> 2007; 31 Suppl 2: 73 Kaliterna V, <i>Cent Eur J Public Health</i> 2013; 21: 26 Kaliterna V, <i>Coll Antropol</i> 2007; 31 Suppl 2: 79
Hungary	Nyári T, <i>Eur J Obstet Gynecol Reprod Biol</i> 2006; 126: 246
Ireland	Anderson L, <i>J Med Virol</i> 2013; 85: 295 Keegan H, <i>Br J Biomed Sci</i> 2007; 64: 18
Italy	Agarossi A, <i>J Med Virol</i> 2009; 81: 529 Ammatuna P, <i>Cancer Epidemiol Biomarkers Prev</i> 2008; 17: 2002 Astori G, <i>Virus Res</i> 1997; 50: 57 Barzon L, <i>J Med Virol</i> 2010; 82: 1424 Bellaminutti S, <i>J Med Virol</i> 2014; 86: 1920 Carozzi F, <i>Br J Cancer</i> 2000; 83: 1462 Carozzi F, <i>J Clin Virol</i> 2014; 60: 257 Centurioni MG, <i>BMC Infect Dis</i> 2005; 5: 77 Del Mistro A, <i>J Med Screen</i> 2014; 21: 30 Del Prete R, <i>J Clin Virol</i> 2008; 42: 211 Giambi C, <i>BMC Infect Dis</i> 2013; 13: 74 Giorgi Rossi P, <i>Infect Agents Cancer</i> 2011; 6: 2 Masia G, <i>Vaccine</i> 2009; 27 Suppl 1: A11 Panatto D, <i>BMC Infect Dis</i> 2013; 13: 575 Piana A, <i>BMC Public Health</i> 2011; 11: 785 Ronco G, <i>Eur J Cancer</i> 2005; 41: 297 Salfa MC, <i>Ig Sanita Pubbl</i> 2011; 67: 425 Sammarco ML, <i>Eur J Obstet Gynecol Reprod Biol</i> 2013; 168: 222 Tenti P, <i>J Infect Dis</i> 1997; 176: 277 Tornesello ML, <i>J Gen Virol</i> 2008; 89: 1380 Tornesello ML, <i>J Med Virol</i> 2006; 78: 1663 Verteramo R, <i>BMC Infect Dis</i> 2009; 9: 16 Zappacosta B, <i>New Microbiol</i> 2009; 32: 351
Lithuania	Bumbuliene Z, <i>Acta Obstet Gynecol Scand</i> 2012; 91: 511 Gudleviciene Z, <i>Medicina (Kaunas)</i> 2005; 41: 910 Kliucinskas M, <i>Gynecol Obstet Invest</i> 2006; 62: 173 Simanaviciene V, <i>J Med Virol</i> 2014
Latvia	Silins I, <i>Gynecol Oncol</i> 2004; 93: 484
Montenegro	Vujosevic D, <i>Acta Medica (Hradec Kralove)</i> 2012; 55: 130
Netherlands	Boers A, <i>PLoS ONE</i> 2014; 9: e101930 Bulkman NW, <i>Int J Cancer</i> 2004; 110: 94 Hesselink AT, <i>J Clin Microbiol</i> 2013; 51: 2409 Jacobs MV, <i>Int J Cancer</i> 2000; 87: 221 Lenselink CH, <i>PLoS ONE</i> 2008; 3: e3743 Rijkaart DC, <i>Br J Cancer</i> 2012; 106: 975 Rijkaart DC, <i>Lancet Oncol</i> 2012; 13: 78 Rozendaal L, <i>J Clin Pathol</i> 2000; 53: 606 Zielinski GD, <i>Br J Cancer</i> 2001; 85: 398
Norway	Gjøoen K, <i>APMIS</i> 1996; 104: 68 Molden T, <i>Cancer Epidemiol Biomarkers Prev</i> 2005; 14: 367 Molden T, <i>Gynecol Oncol</i> 2006; 100: 95 Skjeldestad FE, <i>Acta Obstet Gynecol Scand</i> 2008; 87: 81
Poland	Bardin A, <i>Eur J Cancer</i> 2008; 44: 557
Portugal	Dutra I, <i>Infect Agents Cancer</i> 2008; 3: 6 Pista A, <i>Clin Microbiol Infect</i> 2011; 17: 941 Pista A, <i>Int J Gynecol Cancer</i> 2011; 21: 1150 Vieira L, <i>Eur J Microbiol Immunol (Bp)</i> 2013; 3: 61
Romania	Moga MA, <i>Asian Pac J Cancer Prev</i> 2014; 15: 6887 Ursu RG, <i>Virol J</i> 2011; 8: 558

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Country	Study
Russian Federation	Alexandrova YN, Cancer Lett 1999; 145: 43 Bdaizieva 2010: reported in De Vuyst H, Vaccine 2013; 31 Suppl 5: F32 Goncharevskaya 2011: reported in De Vuyst H, Vaccine 2013; 31 Suppl 5: F32 Komarova 2010: reported in De Vuyst H, Vaccine 2013; 31 Suppl 5: F32 Kubanov 2005: reported in De Vuyst H, Vaccine 2013; 31 Suppl 5: F32 Rogovskaya SI, Vaccine 2013; 31 Suppl 7: H46 Shargorodskaya 2011: reported in De Vuyst H, Vaccine 2013; 31 Suppl 5: F32 Shipitsyna E, Cancer Epidemiol 2011; 35: 160 Shipulina 2011: reported in De Vuyst H, Vaccine 2013; 31 Suppl 5: F32
Slovenia	Ucakar V, J Med Virol 2014; 86: 1772 Ucakar V, Vaccine 2012; 30: 116
Sweden	Elfström KM, BMJ 2014; 348: g130 Gyllensten U, Gynecol Oncol 2012; 125: 343 Kjellberg L, Am J Obstet Gynecol 1998; 179: 1497 Naucner P, N Engl J Med 2007; 357: 1589 Stenvall H, Acta Derm Venereol 2007; 87: 243 Ylitalo N, Cancer Res 2000; 60: 6027
Oceania	
Australia	Bowden FJ, Sex Health 2005; 2: 229 Tabrizi SN, J Clin Virol 2014; 60: 250 Tabrizi SN, Lancet Infect Dis 2014; 14: 958
Fiji	Foliaki S, Infect Agents Cancer 2014; 9: 14
Vanuatu	Aruhuri B, Cancer Prev Res (Phila) 2012; 5: 746 McAdam M, PLoS ONE 2010; 5: e13266
HPV type distribution for invasive cervical cancer (ICC)	
General sources	Based on meta-analysis performed by IARC's Infections and Cancer Epidemiology Group up to November 2011, the ICO HPV Information Centre has updated data until June 2014. Reference publications: 1) Guan P, Int J Cancer 2012;131:2349 2) Li N, Int J Cancer 2011;128:927 3) Smith JS, Int J Cancer 2007;121:621 4) Clifford GM, Br J Cancer 2003;88:63 5) Clifford GM, Br J Cancer 2003;89:101.
Africa	
Botswana	Contributing studies: Ermel A, Infect Agents Cancer 2014; 9: 22
Algeria	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 Hammouda D, Int J Cancer 2005; 113: 483
Ethiopia	Contributing studies: Abate E, J Med Virol 2013; 85: 282 Fanta BE, Ethiop Med J 2005; 43: 151
Ghana	Contributing studies: Awua AK, Infect Agents Cancer 2016; 11: 4 Denny L, Int J Cancer 2014; 134: 1389
Guinea	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 Keita N, Br J Cancer 2009; 101: 202
Kenya	Contributing studies: De Vuyst H, Int J Cancer 2008; 122: 244 De Vuyst H, Int J Cancer 2012; 131: 949
Morocco	Contributing studies: Chaouki N, Int J Cancer 1998; 75: 546 El khair MM, Med Oncol 2010; 27: 861
Mali	Contributing studies: Bayo S, Int J Epidemiol 2002; 31: 202 Bosch FX, J Natl Cancer Inst 1995; 87: 796 Ndiaye C, Trop Med Int Health 2012; 17: 1432
Mozambique	Contributing studies: Castellsagué X, Int J Cancer 2008; 122: 1901 Naucner P, J Gen Virol 2004; 85: 2189
Nigeria	Contributing studies: Denny L, Int J Cancer 2014; 134: 1389
Sudan	Contributing studies: Abate E, J Med Virol 2013; 85: 282
Senegal	Contributing studies: Lin P, Cancer Epidemiol Biomarkers Prev 2001; 10: 1037 Ndiaye C, Trop Med Int Health 2012; 17: 1432 Xi LF, Int J Cancer 2003; 103: 803
Tunisia	Contributing studies: KrennHrubec K, J Med Virol 2011; 83: 651
Tanzania	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 ter Meulen J, Int J Cancer 1992; 51: 515
Uganda	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 Odida M, BMC Infect Dis 2008; 8: 85 Odida M, Infect Agent Cancer 2010; 5: 15

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Table 32 – Continued

Country	Study
South Africa	Contributing studies: De Vuyst H, Int J Cancer 2012; 131: 949 Denny L, Int J Cancer 2014; 134: 1389 Kay P, J Med Virol 2003; 71: 265 Pegoraro RJ, Int J Gynecol Cancer 2002; 12: 383 van Aardt MC, Int J Gynecol Cancer 2015; 25: 919 Williamson AL, J Med Virol 1994; 43: 231
Zimbabwe	Contributing studies: Stanczuk GA, Acta Obstet Gynecol Scand 2003; 82: 762
Americas	
Argentina	Contributing studies: Alonio LV, J Clin Virol 2003; 27: 263 Bosch FX, J Natl Cancer Inst 1995; 87: 796 Golijow CD, Gynecol Oncol 2005; 96: 181 Turazza E, Acta Obstet Gynecol Scand 1997; 76: 271
Bolivia	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796
Brazil	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 Cambruzzi E, Pathol Oncol Res 2005; 11: 114 de Oliveira CM, BMC Cancer 2013; 13: 357 Eluf-Neto J, Br J Cancer 1994; 69: 114 Lorenzato F, Int J Gynecol Cancer 2000; 10: 143 Rabelo-Santos SH, Mem Inst Oswaldo Cruz 2003; 98: 181 Serrano B, Cancer Epidemiol 2014 Tomita LY, Int J Cancer 2010; 126: 703
Canada	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 Duggan MA, Hum Pathol 1995; 26: 319 Tran-Thanh D, Am J Obstet Gynecol 2003; 188: 129
Chile	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 Roa JC, Int J Gynaecol Obstet 2009; 105: 150 Valdivia L IM, Rev Chilena Infectol 2010; 27: 11
Colombia	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 Moreno-Acosta P, Virus Genes 2008; 37: 22 Murillo R, Infect Dis Obstet Gynecol 2009; 2009: 653598 Muñoz N, Int J Cancer 1992; 52: 743
Costa Rica	Contributing studies: Herrero R, J Infect Dis 2005; 191: 1796
Cuba	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796
Ecuador	Contributing studies: Mejía L, J Med Virol 2016; 88: 144
Honduras	Contributing studies: Ferreira M, Mod Pathol 2008; 21: 968
Jamaica	Contributing studies: Strickler HD, J Med Virol 1999; 59: 60
Mexico	Contributing studies: Aguilar-Lemarroy A, J Med Virol 2015; 87: 871 Alarcón-Romero Ldel C, Salud Publica Mex 2009; 51: 134 Carrillo-García A, Gynecol Oncol 2014; 134: 534 Flores-Miramontes MG, Virol J 2015; 12: 161 González-Losa Mdel R, J Clin Virol 2004; 29: 202 Guardado-Estrada M, PLoS ONE 2014; 9: e109406 Illades-Aguir B, Cancer Detect Prev 2009; 32: 300 Meyer T, J Infect Dis 1998; 178: 252 Piña-Sánchez P, Int J Gynecol Cancer 2006; 16: 1041 Serrano B, Cancer Epidemiol 2014 Torroella-Kouri M, Gynecol Oncol 1998; 70: 115
Nicaragua	Contributing studies: Hindryckx P, Sex Transm Infect 2006; 82: 334
Panama	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796
Peru	Contributing studies: Martorell M, Genet Mol Res 2012; 11: 2099 Santos C, Br J Cancer 2001; 85: 966
Paraguay	Contributing studies: Kasamatsu E, J Med Virol 2012; 84: 1628 Rolón PA, Int J Cancer 2000; 85: 486
Suriname	Contributing studies: De Boer MA, Int J Cancer 2005; 114: 422
Trinidad & Tobago	Contributing studies: Hosein F, Rev Panam Salud Publica 2013; 33: 267

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Table 32 – Continued

Country	Study
USA	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 Bryan JT, J Med Virol 2006; 78: 117 Burger RA, J Natl Cancer Inst 1996; 88: 1361 Burnett AF, Gynecol Oncol 1992; 47: 343 de Sanjose S, Lancet Oncol 2010; 11: 1048 Ferguson AW, Mod Pathol 1998; 11: 11 Guo M, Mod Pathol 2007; 20: 256 Hariri S, PLoS ONE 2012; 7: e34044 Hopenhayn C, J Low Genit Tract Dis 2014; 18: 182 Joste NE, Cancer Epidemiol Biomarkers Prev 2015; 24: 230 Paquette RL, Cancer 1993; 72: 1272 Patel DA, J Virol Methods 2009; 160: 78 Pirog EC, Am J Pathol 2000; 157: 1055 Quint KD, Gynecol Oncol 2009; 114: 390 Resnick RM, J Natl Cancer Inst 1990; 82: 1477 Schwartz SM, J Clin Oncol 2001; 19: 1906 Sebbelov AM, Microbes Infect 2000; 2: 121 Wentzensen N, Int J Cancer 2009; 124: 964 Wheeler CM, J Natl Cancer Inst 2009; 101: 475 Wistuba II, Cancer Res 1997; 57: 3154 Zuna RE, Mod Pathol 2007; 20: 167
Venezuela	Contributing studies: Sánchez-Lander J, Cancer Epidemiol 2012; 36: e284
Asia	
China	Contributing studies: Cai HB, Eur J Gynaecol Oncol 2008; 29: 72 Cai HB, Oncology 2009; 76: 157 Chan PK, Int J Cancer 2009; 125: 1671 Chan PK, Int J Cancer 2012; 131: 692 Chen W, Cancer Causes Control 2009; 20: 1705 Ding X, J Med Virol 2014; 86: 1937 Gao YE, Sheng Wu Hua Xue Yu Sheng Wu Wu Li Xue Bao 2003; 35: 1029 Hong D, Int J Gynecol Cancer 2008; 18: 104 Huang S, Int J Cancer 1997; 70: 408 Li H, Eur J Obstet Gynecol Reprod Biol 2013; 170: 202 Lin QQ, Int J Cancer 1998; 75: 484 Liu GB, J First Mil Med Univ 2005; 25: 1236 Liu J, Gynecol Oncol 2004; 94: 803 Liu SS, Tumour Biol 2008; 29: 105 Liu X, Int J Gynecol Cancer 2010; 20: 147 Lo KW, Gynecol Obstet Invest 2001; 51: 202 Lo KW, Int J Cancer 2002; 100: 327 Peng HQ, Int J Cancer 1991; 47: 711 Qiu AD, Gynecol Oncol 2007; 104: 77 Serrano B, Cancer Epidemiol 2014 Shah W, Clin Oncol (R Coll Radiol) 2009; 21: 768 Stephen AL, Int J Cancer 2000; 86: 695 Tao PP, Zhonghua Fu Chan Ke Za Zhi 2006; 41: 43 Wang L, J Med Virol 2015; 87: 516 Wu EQ, BMC Cancer 2008; 8: 202 Wu EQ, Int J Gynecol Cancer 2009; 19: 919 Wu Y, J Med Virol 2008; 80: 1808 Yu MY, Int J Cancer 2003; 105: 204 Yuan X, Arch Gynecol Obstet 2011; 283: 1385 Zhao Y, Pathol Int 2008; 58: 643
Georgia	Contributing studies: Alibegashvili T, Cancer Epidemiol 2011; 35: 465
Indonesia	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 De Boer MA, Int J Cancer 2005; 114: 422 Schellekens MC, Gynecol Oncol 2004; 93: 49 Tobing MD, Asian Pac J Cancer Prev 2014; 15: 5781
India	Contributing studies: Basu P, Asian Pac J Cancer Prev 2009; 10: 27 Bhatla N, Int J Gynecol Pathol 2006; 25: 398 Deodhar K, J Med Virol 2012; 84: 1054 Franceschi S, Int J Cancer 2003; 107: 127 Gheit T, Vaccine 2009; 27: 636 Munagala R, Int J Oncol 2009; 34: 263 Munirajan AK, Gynecol Oncol 1998; 69: 205 Munjal K, Int J Gynecol Pathol 2014; 33: 531 Nagpal JK, Eur J Clin Invest 2002; 32: 943 Nair P, Pathol Oncol Res 1999; 5: 95 Nambaru L, Asian Pac J Cancer Prev 2009; 10: 355 Neyaz MK, Biomarkers 2008; 13: 597 Peedicayil A, Int J Gynecol Cancer 2006; 16: 1591 Peedicayil A, J Low Genit Tract Dis 2009; 13: 102 Serrano B, Cancer Epidemiol 2014 Sowjanya AP, BMC Infect Dis 2005; 5: 116
Iran	Contributing studies: Esmaeili M, Gynecol Obstet Invest 2008; 66: 68 Hamkar R, East Mediterr Health J 2002; 8: 805 Khodakarami N, Int J Cancer 2012; 131: E156 Mortazavi S, Asian Pac J Cancer Prev 2002; 3: 69 Salehi-Vaziri M, Arch Virol 2015; 160: 1181
Israel	Contributing studies: Bassal R, J Low Genit Tract Dis 2015; 19: 161 Laskov I, Int J Gynecol Cancer 2013; 23: 730
Jordan	Contributing studies: Sughayer MA, Int J Gynaecol Obstet 2010; 108: 74

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Table 32 – Continued

Country	Study
Japan	Contributing studies: Asato T, <i>J Infect Dis</i> 2004; 189: 1829 Azuma Y, <i>Jpn J Clin Oncol</i> 2014 Fujinaga Y, <i>J Gen Virol</i> 1991; 72 (Pt 5): 1039 Harima Y, <i>Int J Radiat Oncol Biol Phys</i> 2002; 52: 1345 Imajoh M, <i>Virol J</i> 2012; 9: 154 Inoue M, <i>Int J Gynecol Cancer</i> 2006; 16: 1007 Ishikawa H, <i>Cancer</i> 2001; 91: 80 Kanao H, <i>Cancer Lett</i> 2004; 213: 31 Kashiwabara K, <i>Acta Pathol Jpn</i> 1992; 42: 876 Maehama T, <i>Infect Dis Obstet Gynecol</i> 2005; 13: 77 Maki H, <i>Jpn J Cancer Res</i> 1991; 82: 411 Nakagawa H, <i>Anticancer Res</i> 2002; 22: 1655 Nakagawa S, <i>Cancer</i> 1996; 78: 1935 Nawa A, <i>Cancer</i> 1995; 75: 518 Onuki M, <i>Cancer Sci</i> 2009; 100: 1312 Saito J, <i>Gynecol Obstet Invest</i> 2000; 49: 190 Sasagawa T, <i>Cancer Epidemiol Biomarkers Prev</i> 2001; 10: 45 Takehara K, <i>Patholog Res Int</i> 2011; 2011: 246936 Tsuda H, <i>Gynecol Oncol</i> 2003; 91: 476 Watari H, <i>Pathobiology</i> 2011; 78: 220 Yamakawa Y, <i>Gynecol Oncol</i> 1994; 53: 190 Yamasaki K, <i>J Obstet Gynaecol Res</i> 2011; 37: 1666 Yoshida T, <i>Cancer</i> 2004; 102: 100 Yoshida T, <i>Virchows Arch</i> 2009; 455: 253
Republic of Korea	Contributing studies: An HJ, <i>Cancer</i> 2003; 97: 1672 An HJ, <i>Mod Pathol</i> 2005; 18: 528 Cho NH, <i>Am J Obstet Gynecol</i> 2003; 188: 56 Hwang T, <i>J Korean Med Sci</i> 1999; 14: 593 Hwang TS, <i>Gynecol Oncol</i> 2003; 90: 51 Kim JY, <i>J Clin Oncol</i> 2009; 27: 5088 Kim KH, <i>Yonsei Med J</i> 1995; 36: 412 Lee HS, <i>Int J Gynecol Cancer</i> 2007; 17: 497 Oh JK, <i>Asian Pac J Cancer Prev</i> 2010; 11: 993 Quek SC, <i>Int J Gynecol Cancer</i> 2013; 23: 148 Song ES, <i>J Korean Med Sci</i> 2007; 22: 99 Tong SY, <i>Int J Gynecol Cancer</i> 2007; 17: 1307
Sri Lanka	Contributing studies: Karunaratne K, <i>BMC Cancer</i> 2014; 14: 116 Samarawickrema NA, <i>Int J Gynaecol Obstet</i> 2011; 115: 180
Mongolia	Contributing studies: Chimeddorj B, <i>Asian Pac J Cancer Prev</i> 2008; 9: 563
Malaysia	Contributing studies: Cheah PL, <i>Malays J Pathol</i> 2008; 30: 37 Hamzi Abdul Raub S, <i>Asian Pac J Cancer Prev</i> 2014; 15: 651 Quek SC, <i>Int J Gynecol Cancer</i> 2013; 23: 148 Sharifah NA, <i>Asian Pac J Cancer Prev</i> 2009; 10: 303 Yadav M, <i>Med J Malaysia</i> 1995; 50: 64
Nepal	Contributing studies: Sherpa AT, <i>Cancer Causes Control</i> 2010; 21: 323
Pakistan	Contributing studies: Khan S, <i>Int J Infect Dis</i> 2007; 11: 313 Raza SA, <i>Br J Cancer</i> 2010; 102: 1657
Philippines	Contributing studies: Bosch FX, <i>J Natl Cancer Inst</i> 1995; 87: 796 de Sanjose S, <i>Lancet Oncol</i> 2010; 11: 1048 Ngelangel C, <i>J Natl Cancer Inst</i> 1998; 90: 43 Quek SC, <i>Int J Gynecol Cancer</i> 2013; 23: 148
Saudi Arabia	Contributing studies: Alsbeih G, <i>Gynecol Oncol</i> 2011; 121: 522
Singapore	Contributing studies: Quek SC, <i>Int J Gynecol Cancer</i> 2013; 23: 148
Syria	Contributing studies: Darnel AD, <i>Clin Microbiol Infect</i> 2010; 16: 262
Thailand	Contributing studies: Bhattarakosol P, <i>J Med Assoc Thai</i> 1996; 79 Suppl 1: S56 Bosch FX, <i>J Natl Cancer Inst</i> 1995; 87: 796 Chansaenroj J, <i>J Med Virol</i> 2014; 86: 601 Chichareon S, <i>J Natl Cancer Inst</i> 1998; 90: 50 Chopjitt P, <i>Int J Infect Dis</i> 2009; 13: 212 Natphopsuk S, <i>Asian Pac J Cancer Prev</i> 2013; 14: 6961 Settheetham-Ishida W, <i>Microbiol Immunol</i> 2005; 49: 417 Siriaunkgul S, <i>Gynecol Oncol</i> 2008; 108: 555 Siritantikorn S, <i>Southeast Asian J Trop Med Public Health</i> 1997; 28: 707
Turkey	Contributing studies: Ozgul N, <i>J Obstet Gynaecol Res</i> 2008; 34: 865 Usubütün A, <i>Int J Gynecol Pathol</i> 2009; 28: 541
Taiwan	Contributing studies: Chao A, <i>Int J Gynecol Pathol</i> 2009; 28: 279 Chen SL, <i>Cancer</i> 1993; 72: 1939 Chen TM, <i>Int J Cancer</i> 1994; 57: 181 Ding DC, <i>Eur J Obstet Gynecol Reprod Biol</i> 2008; 140: 245 Ho CM, <i>Gynecol Oncol</i> 2005; 99: 615 Huang HJ, <i>Int J Gynecol Cancer</i> 2004; 14: 639 Huang LW, <i>J Clin Virol</i> 2004; 29: 271 Lai CH, <i>Int J Cancer</i> 2007; 120: 1999 Lai HC, <i>Int J Cancer</i> 1999; 84: 553 Lin H, <i>Gynecol Oncol</i> 2005; 96: 84 Su TH, <i>Carcinogenesis</i> 2007; 28: 1237 Yang YC, <i>Gynecol Oncol</i> 1997; 64: 59 Yang YY, <i>J Microbiol Immunol Infect</i> 2004; 37: 282
Viet Nam	Contributing studies: Quek SC, <i>Int J Gynecol Cancer</i> 2013; 23: 148

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Table 32 – Continued

Country	Study
Europe	
Austria	Contributing studies: Bachtiary B, Int J Cancer 2002; 102: 237 Widschwendter A, Cancer Lett 2003; 202: 231
Belgium	Contributing studies: Baay MF, Eur J Gynaecol Oncol 2001; 22: 204
Bulgaria	Contributing studies: Todorova I, J Clin Pathol 2010; 63: 1121
Bosnia & Herzegovina	Contributing studies: Iljazovi? E, Cancer Epidemiol 2014; 38: 504
Belarus	Contributing studies: Kulmala SM, J Med Virol 2007; 79: 771
Czech Republic	Contributing studies: Slama J, Int J Gynecol Cancer 2009; 19: 703 Tachezy R, J Med Virol 1999; 58: 378 Tachezy R, PLoS ONE 2011; 6: e21913
Germany	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 Milde-Langosch K, Int J Cancer 1995; 63: 639
Denmark	Contributing studies: Hording U, APMIS 1997; 105: 313 Kirschner B, Acta Obstet Gynecol Scand 2013; 92: 1023 Kjær SK, Cancer Causes Control 2014; 25: 179 Sebbelov AM, Microbes Infect 2000; 2: 121
Spain	Contributing studies: Alemany L, Gynecol Oncol 2012; 124: 512 Bosch FX, J Natl Cancer Inst 1995; 87: 796 Darwich L, Int J Gynecol Cancer 2011; 21: 1486 González-Bosquet E, Gynecol Oncol 2008; 111: 9 Herraiz-Hernandez E, J Virol Methods 2013; 193: 9 Martró E, Enferm Infecc Microbiol Clin 2012; 30: 225 Mazarico E, Gynecol Oncol 2012; 125: 181 Muñoz N, Int J Cancer 1992; 52: 743 Rodriguez JA, Diagn Mol Pathol 1998; 7: 276
Finland	Contributing studies: Iwasawa A, Cancer 1996; 77: 2275
France	Contributing studies: de Cremoux P, Int J Cancer 2009; 124: 778 Lombard I, J Clin Oncol 1998; 16: 2613 Prétet JL, Int J Cancer 2008; 122: 424 Riou G, Lancet 1990; 335: 1171
United Kingdom	Contributing studies: Arends MJ, Hum Pathol 1993; 24: 432 Crook T, Lancet 1992; 339: 1070 Cuschieri K, Br J Cancer 2010; 102: 930 Cuschieri K, Int J Cancer 2014; 135: 2721 Cuzick J, Br J Cancer 2000; 82: 1348 Giannoudis A, Int J Cancer 1999; 83: 66 Howell-Jones R, Br J Cancer 2010; 103: 209 Mesher D, J Clin Pathol 2015; 68: 135 Powell N, Int J Cancer 2009; 125: 2425 Tawfik El-Mansi M, Int J Gynecol Cancer 2006; 16: 1025
Greece	Contributing studies: Adamopoulou M, Anticancer Res 2009; 29: 3401 Dokianakis DN, Oncol Rep 1999; 6: 1327 Koffa M, Int J Oncol 1994; 5: 189 Labropoulou V, Sex Transm Dis 1997; 24: 469 Panotopoulou E, J Med Virol 2007; 79: 1898
Croatia	Contributing studies: Dabic MM, Acta Obstet Gynecol Scand 2008; 87: 366 Hadzisejdic I, Coll Antropol 2006; 30: 879
Hungary	Contributing studies: Kónya J, J Med Virol 1995; 46: 1
Ireland	Contributing studies: Butler D, J Pathol 2000; 192: 502 Fay J, J Med Virol 2009; 81: 897 O'Leary JJ, J Clin Pathol 1998; 51: 576 Skyldberg BM, Mod Pathol 1999; 12: 675
Iceland	Contributing studies: Sigurdsson K, Int J Cancer 2007; 121: 2682
Italy	Contributing studies: Carozzi FM, Cancer Epidemiol Biomarkers Prev 2010; 19: 2389 Ciotti M, Oncol Rep 2006; 15: 143 Del Mistro A, Infect Agents Cancer 2006; 1: 9 Gargiulo F, Virus Res 2007; 125: 176 Garzetti GG, Cancer 1998; 82: 886 Mariani L, BMC Cancer 2010; 10: 259 Rolla M, Eur J Gynaecol Oncol 2009; 30: 557 Sideri M, Vaccine 2009; 27 Suppl 1: A30 Spinillo A, J Med Virol 2014; 86: 1145 Tornesello ML, Gynecol Oncol 2011; 121: 32 Tornesello ML, J Med Virol 2006; 78: 1663 Voglino G, Pathologica 2000; 92: 516
Lithuania	Contributing studies: Gudleviciene Z, Medicina (Kaunas) 2005; 41: 910 Simanaviciene V, J Med Virol 2014
Luxembourg	Contributing studies: Ressler S, Clin Cancer Res 2007; 13: 7067
Latvia	Contributing studies: Kulmala SM, J Med Virol 2007; 79: 771 Silins I, Gynecol Oncol 2004; 93: 484

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Table 32 – Continued

Country	Study
Netherlands	Contributing studies: Baalbergen A, Gynecol Oncol 2013; 128: 530 Baay MF, J Clin Microbiol 1996; 34: 745 Bulk S, Br J Cancer 2006; 94: 171 De Boer MA, Int J Cancer 2005; 114: 422 Krul EJ, Int J Gynecol Cancer 1999; 9: 206 Resnick RM, J Natl Cancer Inst 1990; 82: 1477 Tang N, J Clin Virol 2009; 45 Suppl 1: S25 Van Den Brule AJ, Int J Cancer 1991; 48: 404 Zielinski GD, J Pathol 2003; 201: 535
Norway	Contributing studies: Bertelsen BI, Virchows Arch 2006; 449: 141 Karlsen F, J Clin Microbiol 1996; 34: 2095
Poland	Contributing studies: Baay MF, Eur J Gynaecol Oncol 2009; 30: 162 Bardin A, Eur J Cancer 2008; 44: 557 Biesaga B, Folia Histochem Cytobiol 2012; 50: 239 Bosch FX, J Natl Cancer Inst 1995; 87: 796 Dybikowska A, Oncol Rep 2002; 9: 871 Kwasniewska A, Eur J Gynaecol Oncol 2009; 30: 65 Pirog EC, Am J Pathol 2000; 157: 1055
Portugal	Contributing studies: Medeiros R, Eur J Cancer Prev 2005; 14: 467 Nobre RJ, J Med Virol 2010; 82: 1024 Pista A, Int J Gynecol Cancer 2013; 23: 500
Russian Federation	Contributing studies: Kleter B, J Clin Microbiol 1999; 37: 2508 Kulmala SM, J Med Virol 2007; 79: 771
Slovenia	Contributing studies: Jancar N, Eur J Obstet Gynecol Reprod Biol 2009; 145: 184
Sweden	Contributing studies: Andersson S, Acta Obstet Gynecol Scand 2003; 82: 960 Andersson S, Cancer Detect Prev 2005; 29: 37 Andersson S, Eur J Cancer 2001; 37: 246 Du J, Acta Oncol 2011; 50: 1215 Graflund M, Int J Gynecol Cancer 2004; 14: 896 Hagmar B, Med Oncol Tumor Pharmacother 1992; 9: 113 Skyldberg BM, Mod Pathol 1999; 12: 675 Wallin KL, N Engl J Med 1999; 341: 1633 Zehbe I, J Pathol 1997; 181: 270
Oceania	
Australia	Contributing studies: Brestovac B, J Med Virol 2005; 76: 106 Chen S, Int J Gynaecol Obstet 1999; 67: 163 de Sanjose S, Lancet Oncol 2010; 11: 1048 Liu J, Gynecol Oncol 2004; 94: 803 Plunkett M, Pathology 2003; 35: 397 Stevens MP, Int J Gynecol Cancer 2006; 16: 1017 Thompson CH, Gynecol Oncol 1994; 54: 40
Papua New Guinea	Contributing studies: Tabone T, Int J Gynaecol Obstet 2012; 117: 30
HPV type distribution for cervical high grade squamous intraepithelial lesions	
General sources	Based on meta-analysis performed by IARC's Infections and Cancer Epidemiology Group up to November 2011, the ICO HPV Information Centre has updated data until June 2015. Reference publications: 1) Guan P, Int J Cancer 2012;131:2349 2) Smith JS, Int J Cancer 2007;121:621 3) Clifford GM, Br J Cancer 2003;89:101.
Africa	
Côte d'Ivoire	Contributing studies: La Ruche G, Int J Cancer 1998; 76: 480
Cameroon	Contributing studies: Untiet S, Int J Cancer 2014; 135: 1911
DR Congo	Contributing studies: Hovland S, Br J Cancer 2010; 102: 957
Algeria	Contributing studies: Hammouda D, Int J Cancer 2011; 128: 2224
Ethiopia	Contributing studies: Abate E, J Med Virol 2013; 85: 282
Guinea	Contributing studies: Keita N, Br J Cancer 2009; 101: 202
Equatorial Guinea	Contributing studies: García-Espinosa B, Diagn Pathol 2009; 4: 31
Kenya	Contributing studies: De Vuyst H, Cancer Causes Control 2010; 21: 2309 De Vuyst H, Int J Cancer 2012; 131: 949 De Vuyst H, Sex Transm Dis 2003; 30: 137
Morocco	Contributing studies: Alhamany Z, J Infect Dev Ctries 2010; 4: 732
Nigeria	Contributing studies: Gage JC, Int J Cancer 2012; 131: 2903 Haghshenas M, Infect Agents Cancer 2013; 8: 20
Rwanda	Contributing studies: Singh DK, J Infect Dis 2009; 199: 1851
Sudan	Contributing studies: Abate E, J Med Virol 2013; 85: 282

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Table 32 – Continued

Country	Study
Senegal	Contributing studies: Chabaud M, J Med Virol 1996; 49: 259 Xi LF, Int J Cancer 2003; 103: 803
Tanzania	Contributing studies: Dartell MA, Int J Cancer 2014; 135: 896
South Africa	Contributing studies: Allan B, J Clin Microbiol 2008; 46: 740 De Vuyst H, Int J Cancer 2012; 131: 949 Said HM, J Clin Virol 2009; 44: 318 van Aardt MC, Personal communication Unpublished
Zimbabwe	Contributing studies: Sawaya GF, Obstet Gynecol 2008; 112: 990
Americas	
Argentina	Contributing studies: Abba MC, Rev Argent Microbiol 2003; 35: 74 Alonio LV, J Clin Virol 2003; 27: 263 Chouhy D, Int J Mol Med 2006; 18: 995 Deluca GD, Rev Inst Med Trop Sao Paulo 2004; 46: 9 Venezuela RF, Rev Inst Med Trop Sao Paulo 2012; 54: 11
Belize	Contributing studies: Cathro HP, Hum Pathol 2009; 40: 942
Brazil	Contributing studies: Camara GN, Mem Inst Oswaldo Cruz 2003; 98: 879 Carestiato FN, Rev Soc Bras Med Trop 2006; 39: 428 Chagas BS, PLoS ONE 2015; 10: e0132570 Fernandes JV, BMC Res Notes 2010; 3: 96 Fernandes JV, Int J Gynaecol Obstet 2009; 105: 21 Freitas TP, Rev Inst Med Trop Sao Paulo 2007; 49: 297 Krambeck WM, Clin Exp Obstet Gynecol 2008; 35: 175 Lorenzato F, Int J Gynecol Cancer 2000; 10: 143 Pitta DR, Rev Bras Ginecol Obstet 2010; 32: 315 Resende LS, BMC Infect Dis 2014; 14: 214 Ribeiro AA, Int J Gynecol Pathol 2011; 30: 288 Terra AP, Tumori 2007; 93: 572 Tomita LY, Int J Cancer 2010; 126: 703
Canada	Contributing studies: Antonishyn NA, Arch Pathol Lab Med 2008; 132: 54 Coutlée F, J Med Virol 2011; 83: 1034 Jiang Y, J Infect Public Health 2011; 4: 219 Moore RA, Cancer Causes Control 2009; 20: 1387
Chile	Contributing studies: Ili CG, J Med Virol 2011; 83: 833
Colombia	Contributing studies: Bosch FX, Cancer Epidemiol Biomarkers Prev 1993; 2: 415 García DA, Open Virol J 2011; 5: 70 Muñoz N, Int J Cancer 1992; 52: 743
Costa Rica	Contributing studies: Herrero R, J Infect Dis 2005; 191: 1796
Cuba	Contributing studies: Soto Y, Sex Transm Dis 2007; 34: 974
Ecuador	Contributing studies: Mejía L, J Med Virol 2016; 88: 144
Honduras	Contributing studies: Ferreira M, Mod Pathol 2008; 21: 968
Jamaica	Contributing studies: Rattray C, J Infect Dis 1996; 173: 718 Strickler HD, J Med Virol 1999; 59: 60
Mexico	Contributing studies: Giuliano AR, Cancer Epidemiol Biomarkers Prev 2001; 10: 1129 Illades-Aguir B, Gynecol Oncol 2010; 117: 291 Piña-Sánchez P, Int J Gynecol Cancer 2006; 16: 1041 Torroella-Kouri M, Gynecol Oncol 1998; 70: 115 Velázquez-Márquez N, Int J Infect Dis 2009; 13: 690
Nicaragua	Contributing studies: Hindryckx P, Sex Transm Infect 2006; 82: 334
Peru	Contributing studies: Martorell M, Genet Mol Res 2012; 11: 2099
Paraguay	Contributing studies: Mendoza LP, J Med Virol 2011; 83: 1351
USA	Contributing studies: Adam E, Am J Obstet Gynecol 1998; 178: 1235 Bell MC, Gynecol Oncol 2007; 107: 236 Castle PE, Cancer Epidemiol Biomarkers Prev 2010; 19: 1675 Castle PE, Cancer Epidemiol Biomarkers Prev 2011; 20: 946 Einstein MH, Int J Cancer 2007; 120: 55 Evans MF, Cancer 2006; 106: 1054 Evans MF, Eur J Gynaecol Oncol 2003; 24: 373 Giuliano AR, Cancer Epidemiol Biomarkers Prev 2001; 10: 1129 Guo M, Mod Pathol 2007; 20: 256 Hariri S, J Infect Dis 2012; 206: 1878 Hariri S, PLoS ONE 2012; 7: e34044 Hu L, Mod Pathol 2005; 18: 267 Joste NE, Cancer Epidemiol Biomarkers Prev 2015; 24: 230 Kong CS, Am J Surg Pathol 2007; 31: 33 Lee SH, Int J Gynaecol Obstet 2009; 105: 210 Moscicki AB, Obstet Gynecol 2008; 112: 1335 Stoler MH, Am J Clin Pathol 2011; 135: 468 Vidal AC, Cancer Causes Control 2014; 25: 1055 Voss JS, Anal Quant Cytol Histol 2009; 31: 208 Wentzensen N, Int J Cancer 2009; 124: 964 Wheeler CM, J Infect Dis 2006; 194: 1291 Wheeler CM, J Natl Cancer Inst 2009; 101: 475 Zuna RE, Mod Pathol 2007; 20: 167

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Table 32 – Continued

Country	Study
Venezuela	Contributing studies: Sánchez-Lander J, Cancer Epidemiol 2012; 36: e284
Asia	
Bangladesh	Contributing studies: Banik U, Cytojournal 2013; 10: 14
China	Contributing studies: Chan MK, Gynecol Oncol 1996; 60: 217 Chan PK, Int J Cancer 2006; 118: 243 Chan PK, Int J Cancer 2012; 131: 692 Chan PK, J Med Virol 1999; 59: 232 Ding X, J Med Virol 2014; 86: 1937 Guo J, Scand J Infect Dis 2010; 42: 72 Jin Q, Chin Med J 2010; 123: 2004 Li H, Eur J Obstet Gynecol Reprod Biol 2013; 170: 202 Li J, Int J Gynaecol Obstet 2011; 112: 131 Li J, J Clin Microbiol 2012; 50: 1079 Liu SS, Tumour Biol 2008; 29: 105 Singh S, Int J Clin Exp Pathol 2015; 8: 11901 Sun B, Arch Virol 2014; 159: 1027 Tao PP, Zhonghua Fu Chan Ke Za Zhi 2006; 41: 43 Wu CH, Sex Transm Dis 1994; 21: 309 Wu EQ, Cancer Causes Control 2013; 24: 795 Yuan X, Arch Gynecol Obstet 2011; 283: 1385 Zhang R, Cancer Epidemiol 2013; 37: 939 Zhao FH, Int J Cancer 2014; 135: 2604 Zhao Y, Pathol Int 2008; 58: 643
India	Contributing studies: Deodhar K, J Med Virol 2012; 84: 1054 Franceschi S, Br J Cancer 2005; 92: 601 Nagpal JK, Eur J Clin Invest 2002; 32: 943 Singh M, Tumour Biol 2009; 30: 276
Iran	Contributing studies: Esmaeili M, Gynecol Obstet Invest 2008; 66: 68 Ghaffari SR, Asian Pac J Cancer Prev 2006; 7: 529 Khodakarami N, Int J Cancer 2012; 131: E156
Israel	Contributing studies: Bassal R, J Low Genit Tract Dis 2015; 19: 161 Laskov I, Int J Gynecol Cancer 2013; 23: 730
Japan	Contributing studies: Azuma Y, Jpn J Clin Oncol 2014 Ichimura H, Int J Clin Oncol 2003; 8: 322 Inoue M, Int J Gynecol Cancer 2006; 16: 1007 Konno R, Cancer Sci 2011; 102: 877 Matsumoto K, Int J Cancer 2011; 128: 2898 Nagai Y, Gynecol Oncol 2000; 79: 294 Nakamura Y, Int J Clin Oncol 2015; 20: 974 Nishiwaki M, J Clin Microbiol 2008; 46: 1161 Niwa K, Oncol Rep 2003; 10: 1437 Okadome M, J Obstet Gynaecol Res 2014; 40: 561 Onuki M, Cancer Sci 2009; 100: 1312 Sasagawa T, Cancer Epidemiol Biomarkers Prev 2001; 10: 45 Takehara K, Patholog Res Int 2011; 2011: 246936 Tsuda H, Gynecol Oncol 2003; 91: 476 Yamasaki K, J Obstet Gynaecol Res 2011; 37: 1666 Yoshida T, Cancer 2004; 102: 100
Republic of Korea	Contributing studies: Cho NH, Am J Obstet Gynecol 2003; 188: 56 Hwang TS, Gynecol Oncol 2003; 90: 51 Kahng J, Ann Lab Med 2014; 34: 127 Kang WD, Int J Gynecol Cancer 2009; 19: 924 Oh YL, Cytopathology 2001; 12: 75 Quek SC, Int J Gynecol Cancer 2013; 23: 148
Kuwait	Contributing studies: Al-Awadhi R, Diagn Cytopathol 2013; 41: 107 Al-Awadhi R, J Med Virol 2011; 83: 453
Sri Lanka	Contributing studies: Karunaratne K, BMC Cancer 2014; 14: 116
Myanmar	Contributing studies: Mu-Mu-Shwe, Acta Med Okayama 2014; 68: 79
Malaysia	Contributing studies: Quek SC, Int J Gynecol Cancer 2013; 23: 148
Pakistan	Contributing studies: Raza SA, Br J Cancer 2010; 102: 1657
Philippines	Contributing studies: Quek SC, Int J Gynecol Cancer 2013; 23: 148
Singapore	Contributing studies: Quek SC, Int J Gynecol Cancer 2013; 23: 148
Thailand	Contributing studies: Chansaenroj J, Asian Pac J Cancer Prev 2010; 11: 117 Chansaenroj J, J Med Virol 2014; 86: 601 Limpaboon T, Southeast Asian J Trop Med Public Health 2000; 31: 66 Sukasem C, J Med Virol 2011; 83: 119 Suwannarurk K, Cancer Epidemiol 2009; 33: 56 Swangvaree SS, Asian Pac J Cancer Prev 2013; 14: 1023
Turkey	Contributing studies: Baser E, Int J Gynaecol Obstet 2014; 125: 275 Sahiner F, Mikrobiyol Bul 2012; 46: 624 Tezcan S, Asian Pac J Cancer Prev 2014; 15: 3997 Yuce K, Arch Gynecol Obstet 2012; 286: 203
Taiwan	Contributing studies: Chao A, Int J Cancer 2008; 122: 2835 Chao A, Int J Cancer 2010; 126: 191 Ho CM, Gynecol Oncol 2005; 99: 615 Lai HC, Int J Cancer 2003; 103: 221 Lin H, Gynecol Oncol 2005; 96: 84 Yang YY, J Microbiol Immunol Infect 2004; 37: 282

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Country	Study
Viet Nam	Contributing studies: Quek SC, Int J Gynecol Cancer 2013; 23: 148
Europe	
Austria	Contributing studies: Rössler L, Wien Klin Wochenschr 2013; 125: 591
Belgium	Contributing studies: Arbyn M, Cancer Epidemiol Biomarkers Prev 2009; 18: 321 Baay MF, Eur J Gynaecol Oncol 2001; 22: 204 Beerens E, Cytopathology 2005; 16: 199 Depuydt CE, Br J Cancer 2003; 88: 560
Belarus	Contributing studies: Kulmala SM, J Med Virol 2007; 79: 771
Switzerland	Contributing studies: Dobec M, J Med Virol 2011; 83: 1370
Czech Republic	Contributing studies: Tachezy R, PLoS ONE 2011; 6: e21913
Germany	Contributing studies: de Jonge M, Acta Cytol 2013; 57: 591 Klug SJ, J Med Virol 2007; 79: 616 Merkelbach-Bruse S, Diagn Mol Pathol 1999; 8: 32 Meyer T, Int J Gynecol Cancer 2001; 11: 198 Nindl I, Int J Gynecol Pathol 1997; 16: 197 Nindl I, J Clin Pathol 1999; 52: 17
Denmark	Contributing studies: Bonde J, BMC Infect Dis 2014; 14: 413 Hording U, Eur J Obstet Gynecol Reprod Biol 1995; 62: 49 Kirschner B, Acta Obstet Gynecol Scand 2013; 92: 1032 Kjaer SK, Int J Cancer 2008; 123: 1864 Kjær SK, Cancer Causes Control 2014; 25: 179 Sebbelov AM, Res Virol 1994; 145: 83 Thomsen LT, Int J Cancer 2015; 137: 193
Spain	Contributing studies: Bosch FX, Cancer Epidemiol Biomarkers Prev 1993; 2: 415 Conesa-Zamora P, BMC Infect Dis 2009; 9: 124 Darwich L, Int J Gynecol Cancer 2011; 21: 1486 de Méndez MT, Acta Cytol 2009; 53: 540 de Oña M, J Med Virol 2010; 82: 597 García-Sierra N, J Clin Microbiol 2009; 47: 2165 Herraiz-Hernandez E, J Virol Methods 2013; 193: 9 Martín P, BMC Infect Dis 2011; 11: 316 Muñoz N, Int J Cancer 1992; 52: 743
France	Contributing studies: Monsonogo J, Int J STD AIDS 2008; 19: 385 Prétet JL, Int J Cancer 2008; 122: 424 Vaucel E, Arch Gynecol Obstet 2011; 284: 989
United Kingdom	Contributing studies: Anderson L, J Med Virol 2013; 85: 295 Arends MJ, Hum Pathol 1993; 24: 432 Cuschieri KS, J Clin Pathol 2004; 57: 68 Cuzick J, Br J Cancer 1994; 69: 167 Cuzick J, J Clin Virol 2014; 60: 44 Geraets DT, J Clin Microbiol 2014; 52: 3996 Herrington CS, Br J Cancer 1995; 71: 206 Hibbitts S, Br J Cancer 2008; 99: 1929 Howell-Jones R, Br J Cancer 2010; 103: 209 Jamison J, Cytopathology 2009; 20: 242 Sargent A, Br J Cancer 2008; 98: 1704 Southern SA, Diagn Mol Pathol 1998; 7: 114
Greece	Contributing studies: Agorastos T, Eur J Obstet Gynecol Reprod Biol 2005; 121: 99 Argyri E, BMC Infect Dis 2013; 13: 53 Daponte A, J Clin Virol 2006; 36: 189 Kroupis C, Epidemiol Infect 2007; 135: 943 Labropoulou V, Sex Transm Dis 1997; 24: 469 Panotopoulou E, J Med Virol 2007; 79: 1898 Paraskevaidis E, Gynecol Oncol 2001; 82: 355 Tsiodras S, Clin Microbiol Infect 2011; 17: 1185
Croatia	Contributing studies: Grce M, Anticancer Res 2001; 21: 579 Grce M, J Clin Microbiol 2004; 42: 1341
Hungary	Contributing studies: Szoke K, J Med Virol 2003; 71: 585
Ireland	Contributing studies: Butler D, J Pathol 2000; 192: 502 Keegan H, J Virol Methods 2014; 201: 93 Murphy N, J Clin Pathol 2003; 56: 56 O'Leary JJ, J Clin Pathol 1998; 51: 576
Iceland	Contributing studies: Sigurdsson K, Int J Cancer 2007; 121: 2682
Italy	Contributing studies: Agarossi A, J Med Virol 2009; 81: 529 Capra G, Virus Res 2008; 133: 195 Carozzi F, J Clin Virol 2014; 60: 257 Carozzi FM, Cancer Epidemiol Biomarkers Prev 2010; 19: 2389 Gargiulo F, Virus Res 2007; 125: 176 Giorgi Rossi P, BMC Infect Dis 2010; 10: 214 Laconi S, Pathologica 2000; 92: 524 Sandri MT, J Med Virol 2009; 81: 271 Spinillo A, J Med Virol 2014; 86: 1145 Tornesello ML, J Med Virol 2006; 78: 1663 Venturoli S, J Med Virol 2008; 80: 1434 Zerbini M, J Clin Pathol 2001; 54: 377
Lithuania	Contributing studies: Gudleviciene Z, Medicina (Kaunas) 2005; 41: 910 Simanaviciene V, J Med Virol 2014
Latvia	Contributing studies: Kulmala SM, J Med Virol 2007; 79: 771

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Country	Study
Netherlands	Contributing studies: Bulkman NW, Int J Cancer 2005; 117: 177 Cornelissen MT, Virchows Arch, B, Cell Pathol 1992; 62: 167 Prinsen CF, BJOG 2007; 114: 951 Reesink-Peters N, Eur J Obstet Gynecol Reprod Biol 2001; 98: 199 Tang N, J Clin Virol 2009; 45 Suppl 1: S25 van Duin M, Int J Cancer 2003; 105: 577
Norway	Contributing studies: Kraus I, Br J Cancer 2004; 90: 1407 Molden T, Cancer Epidemiol Biomarkers Prev 2005; 14: 367 Roberts CC, J Clin Virol 2006; 36: 277 Sjoeborg KD, Gynecol Oncol 2010; 118: 29
Portugal	Contributing studies: Medeiros R, Eur J Cancer Prev 2005; 14: 467 Nobre RJ, J Med Virol 2010; 82: 1024 Pista A, Clin Microbiol Infect 2011; 17: 941 Pista A, Int J Gynecol Cancer 2013; 23: 500
Romania	Contributing studies: Anton G, APMIS 2011; 119: 1 Ursu RG, Virol J 2011; 8: 558
Russian Federation	Contributing studies: Kulmala SM, J Med Virol 2007; 79: 771
Slovenia	Contributing studies: Kovanda A, Acta Dermatovenereol Alp Pannonica Adriat 2009; 18: 47
Sweden	Contributing studies: Andersson S, Br J Cancer 2005; 92: 2195 Kalantari M, Hum Pathol 1997; 28: 899 Zehbe I, Virchows Arch 1996; 428: 151
Oceania	
Australia	Contributing studies: Brestovac B, J Med Virol 2005; 76: 106 Callegari ET, Vaccine 2014; 32: 4082 Garland SM, BMC Med 2011; 9: 104 Stevens MP, Int J Gynecol Cancer 2006; 16: 1017 Stevens MP, J Med Virol 2009; 81: 1283
Fiji	Contributing studies: Tabrizi SN, Sex Health 2011; 8: 338
New Zealand	Contributing studies: Kang YJ, BMC Infect Dis 2015; 15: 365
HPV type distribution for cervical low grade squamous intraepithelial lesions	
General sources	Based on meta-analysis performed by IARC's Infections and Cancer Epidemiology Group up to November 2011, the ICO HPV Information Centre has updated data until June 2015. Reference publications: 1) Guan P, Int J Cancer 2012;131:2349 2) Clifford GM, Cancer Epidemiol Biomarkers Prev 2005;14:1157
Africa	
Côte d'Ivoire	Contributing studies: La Ruche G, Int J Cancer 1998; 76: 480
Cameroon	Contributing studies: Untiet S, Int J Cancer 2014; 135: 1911
DR Congo	Contributing studies: Hovland S, Br J Cancer 2010; 102: 957
Algeria	Contributing studies: Hammouda D, Int J Cancer 2011; 128: 2224
Ethiopia	Contributing studies: Abate E, J Med Virol 2013; 85: 282
Guinea	Contributing studies: Keita N, Br J Cancer 2009; 101: 202
Kenya	Contributing studies: De Vuyst H, Cancer Causes Control 2010; 21: 2309 De Vuyst H, Int J Cancer 2012; 131: 949 De Vuyst H, Sex Transm Dis 2003; 30: 137
Morocco	Contributing studies: Alhamany Z, J Infect Dev Ctries 2010; 4: 732
Nigeria	Contributing studies: Gage JC, Int J Cancer 2012; 131: 2903 Thomas JO, Br J Cancer 2004; 90: 638
Senegal	Contributing studies: Chabaud M, J Med Virol 1996; 49: 259 Xi LF, Int J Cancer 2003; 103: 803
South Africa	Contributing studies: Allan B, J Clin Microbiol 2008; 46: 740 van Aardt MC, Personal communication Unpublished
Zimbabwe	Contributing studies: Sawaya GF, Obstet Gynecol 2008; 112: 990
Americas	
Argentina	Contributing studies: Abba MC, Rev Argent Microbiol 2003; 35: 74 Chouhy D, Int J Mol Med 2006; 18: 995 Deluca GD, Rev Inst Med Trop Sao Paulo 2004; 46: 9 Eiguchi K, J Low Genit Tract Dis 2008; 12: 262 Tonon SA, Infect Dis Obstet Gynecol 1999; 7: 237 Venezuela RF, Rev Inst Med Trop Sao Paulo 2012; 54: 11
Belize	Contributing studies: Cathro HP, Hum Pathol 2009; 40: 942

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Country	Study
Brazil	Contributing studies: Carestiato FN, Rev Soc Bras Med Trop 2006; 39: 428 Fernandes JV, Int J Gynaecol Obstet 2009; 105: 21 Franco E, Rev Panam Salud Publica 1999; 6: 223 Freitas TP, Rev Inst Med Trop Sao Paulo 2007; 49: 297 Krambeck WM, Clin Exp Obstet Gynecol 2008; 35: 175 Lorenzato F, Int J Gynecol Cancer 2000; 10: 143 Pitta DR, Rev Bras Ginecol Obstet 2010; 32: 315 Resende LS, BMC Infect Dis 2014; 14: 214 Ribeiro AA, Int J Gynecol Pathol 2011; 30: 288 Tomita LY, Int J Cancer 2010; 126: 703
Canada	Contributing studies: Antonishyn NA, Arch Pathol Lab Med 2008; 132: 54 Coutlée F, J Med Virol 2011; 83: 1034 Jiang Y, J Infect Public Health 2011; 4: 219 Koushik A, Cancer Detect Prev 2005; 29: 307 Moore RA, Cancer Causes Control 2009; 20: 1387 Richardson H, Cancer Epidemiol Biomarkers Prev 2003; 12: 485 Sellors JW, CMAJ 2000; 163: 503 Sellors JW, CMAJ 2000; 163: 513 Tran-Thanh D, Am J Obstet Gynecol 2003; 188: 129
Chile	Contributing studies: Ili CG, J Med Virol 2011; 83: 833 López M J, Rev Med Chil 2010; 138: 1343
Colombia	Contributing studies: Del Río-Ospina L, BMC Cancer 2015; 15: 100 García DA, Open Virol J 2011; 5: 70 Molano M, Br J Cancer 2002; 87: 1417
Cuba	Contributing studies: Soto Y, Sex Transm Dis 2007; 34: 974
Ecuador	Contributing studies: Tornesello ML, J Med Virol 2008; 80: 1959
Honduras	Contributing studies: Ferreira M, Mod Pathol 2008; 21: 968
Jamaica	Contributing studies: Rattray C, J Infect Dis 1996; 173: 718 Strickler HD, J Med Virol 1999; 59: 60
Mexico	Contributing studies: Carrillo A, Salud Publica Mex 2004; 46: 7 Giuliano AR, Cancer Epidemiol Biomarkers Prev 2001; 10: 1129 González-Losa Mdel R, J Clin Virol 2004; 29: 202 Illades-Aguir B, Gynecol Oncol 2010; 117: 291 Piña-Sánchez P, Int J Gynecol Cancer 2006; 16: 1041 Torroella-Kouri M, Gynecol Oncol 1998; 70: 115 Velázquez-Márquez N, Int J Infect Dis 2009; 13: 690
Nicaragua	Contributing studies: Hindryckx P, Sex Transm Infect 2006; 82: 334
Peru	Contributing studies: Martorell M, Genet Mol Res 2012; 11: 2099
Paraguay	Contributing studies: Mendoza LP, J Med Virol 2011; 83: 1351 Tonon SA, Infect Dis Obstet Gynecol 1999; 7: 237
Uruguay	Contributing studies: Ramas V, J Med Virol 2013; 85: 845
USA	Contributing studies: Adam E, Am J Obstet Gynecol 2000; 182: 257 Bell MC, Gynecol Oncol 2007; 107: 236 Brown DR, Sex Transm Dis 2002; 29: 763 Castle PE, Cancer Epidemiol Biomarkers Prev 2011; 20: 946 Einstein MH, Int J Cancer 2007; 120: 55 Evans MF, Cancer 2006; 106: 1054 Evans MF, Mod Pathol 2002; 15: 1339 Giuliano AR, Cancer Epidemiol Biomarkers Prev 2001; 10: 1129 Guo M, Mod Pathol 2007; 20: 256 Hu L, Mod Pathol 2005; 18: 267 Jarboe EA, Hum Pathol 2004; 35: 396 Kong CS, Am J Surg Pathol 2007; 31: 33 Kulasingam SL, JAMA 2002; 288: 1749 Lee SH, Int J Gynaecol Obstet 2009; 105: 210 Liaw KL, J Natl Cancer Inst 1999; 91: 954 Moscicki AB, Obstet Gynecol 2008; 112: 1335 Park K, Int J Gynecol Pathol 2007; 26: 457 Schiff M, Am J Epidemiol 2000; 152: 716 Stoler MH, Am J Clin Pathol 2011; 135: 468 Swan DC, J Clin Microbiol 1999; 37: 1030 Tortolero-Luna G, Cad Saude Publica 1998; 14 Suppl 3: 149 Vidal AC, Cancer Causes Control 2014; 25: 1055 Voss JS, Anal Quant Cytol Histol 2009; 31: 208 Wentzensen N, Int J Cancer 2009; 124: 964 Wheeler CM, J Infect Dis 2006; 194: 1291 Wheeler CM, J Natl Cancer Inst 2009; 101: 475 Zuna RE, Mod Pathol 2007; 20: 167
Venezuela	Contributing studies: Correnti M, Gynecol Oncol 2011; 121: 527
Asia	
Bangladesh	Contributing studies: Banik U, Cytojournal 2013; 10: 14

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Country	Study
China	Contributing studies: Chan PK, Int J Cancer 2006; 118: 243 Chan PK, Int J Cancer 2012; 131: 692 Chan PK, J Med Virol 1999; 59: 232 Ding X, J Med Virol 2014; 86: 1937 Guo J, Scand J Infect Dis 2010; 42: 72 Hong D, Int J Gynecol Cancer 2008; 18: 104 Jin Q, Chin Med J 2010; 123: 2004 Li H, Eur J Obstet Gynecol Reprod Biol 2013; 170: 202 Li J, J Clin Microbiol 2012; 50: 1079 Liu SS, Tumour Biol 2008; 29: 105 Liu X, Int J Gynecol Cancer 2010; 20: 147 Sun B, Arch Virol 2014; 159: 1027 Tao PP, Zhonghua Fu Chan Ke Za Zhi 2006; 41: 43 Wu D, Eur J Obstet Gynecol Reprod Biol 2010; 151: 86 Wu EQ, Cancer Causes Control 2013; 24: 795 Yuan X, Arch Gynecol Obstet 2011; 283: 1385 Zhang R, Cancer Epidemiol 2013; 37: 939 Zhao FH, Int J Cancer 2014; 135: 2604 Zhao Y, Pathol Int 2008; 58: 643
India	Contributing studies: Berlin Grace VM, Indian J Cancer 2009; 46: 203 Franceschi S, Br J Cancer 2005; 92: 601 Nagpal JK, Eur J Clin Invest 2002; 32: 943 Nair P, Pathol Oncol Res 1999; 5: 95 Singh M, Tumour Biol 2009; 30: 276
Iran	Contributing studies: Esmaeili M, Gynecol Obstet Invest 2008; 66: 68 Ghaffari SR, Asian Pac J Cancer Prev 2006; 7: 529 Khodakarami N, Int J Cancer 2012; 131: E156
Japan	Contributing studies: Inoue M, Int J Gynecol Cancer 2006; 16: 1007 Konno R, Cancer Sci 2011; 102: 877 Matsumoto K, Int J Cancer 2011; 128: 2898 Nishiwaki M, J Clin Microbiol 2008; 46: 1161 Onuki M, Cancer Sci 2009; 100: 1312 Saito J, Jap J Obstet Gynecol Pract 2001; 50: 871 Sasagawa T, Cancer Epidemiol Biomarkers Prev 2001; 10: 45 Takehara K, Patholog Res Int 2011; 2011: 246936 Tsuda H, Gynecol Oncol 2003; 91: 476 Yamasaki K, J Obstet Gynaecol Res 2011; 37: 1666 Yoshida T, Cancer 2004; 102: 100
Republic of Korea	Contributing studies: An HJ, Cancer 2003; 97: 1672 Cho NH, Am J Obstet Gynecol 2003; 188: 56 Hwang TS, Gynecol Oncol 2003; 90: 51 Kang WD, Int J Gynecol Cancer 2009; 19: 924 Lee HS, Int J Gynecol Cancer 2007; 17: 497 Oh YL, Cytopathology 2001; 12: 75
Kuwait	Contributing studies: Al-Awadhi R, Diagn Cytopathol 2013; 41: 107 Al-Awadhi R, J Med Virol 2011; 83: 453
Myanmar	Contributing studies: Mu-Mu-Shwe, Acta Med Okayama 2014; 68: 79
Malaysia	Contributing studies: Sharifah NA, Asian Pac J Cancer Prev 2009; 10: 303
Pakistan	Contributing studies: Raza SA, Br J Cancer 2010; 102: 1657
Thailand	Contributing studies: Bhattarakosol P, J Med Assoc Thai 2002; 85 Suppl 1: S360 Chaiwongkot A, Asian Pac J Cancer Prev 2007; 8: 279 Chansaenroj J, Asian Pac J Cancer Prev 2010; 11: 117 Chansaenroj J, J Med Virol 2014; 86: 601 Ekalaksananan T, J Obstet Gynaecol Res 2001; 27: 117 Suwannarurk K, Cancer Epidemiol 2009; 33: 56
Turkey	Contributing studies: Ergünay K, Mikrobiyol Bul 2008; 42: 273 Ozgul N, J Obstet Gynaecol Res 2008; 34: 865 Sahiner F, Mikrobiyol Bul 2012; 46: 624 Tezcan S, Asian Pac J Cancer Prev 2014; 15: 3997 Yuce K, Arch Gynecol Obstet 2012; 286: 203
Taiwan	Contributing studies: Chao A, Int J Cancer 2008; 122: 2835 Ding DC, Eur J Obstet Gynecol Reprod Biol 2008; 140: 245 Huang YK, Br J Cancer 2008; 98: 863
Europe	
Belgium	Contributing studies: Arbyn M, Cancer Epidemiol Biomarkers Prev 2009; 18: 321 Baay MF, Eur J Gynaecol Oncol 2001; 22: 204 Beerens E, Cytopathology 2005; 16: 199 Depuydt CE, Br J Cancer 2003; 88: 560 Weyn C, Cancer Epidemiol 2013; 37: 457
Belarus	Contributing studies: Kulmala SM, J Med Virol 2007; 79: 771
Switzerland	Contributing studies: Dobec M, J Med Virol 2011; 83: 1370
Czech Republic	Contributing studies: Tachezy R, PLoS ONE 2011; 6: e21913
Germany	Contributing studies: de Jonge M, Acta Cytol 2013; 57: 591 Klug SJ, J Med Virol 2007; 79: 616 Merkelbach-Bruse S, Diagn Mol Pathol 1999; 8: 32 Meyer T, Int J Gynecol Cancer 2001; 11: 198 Nindl I, J Clin Pathol 1999; 52: 17

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Table 32 – Continued

Country	Study
Denmark	Contributing studies: Hording U, Eur J Obstet Gynecol Reprod Biol 1995; 62: 49 Kjaer SK, Int J Cancer 2008; 123: 1864 Kjær SK, Cancer Causes Control 2014; 25: 179
Spain	Contributing studies: Conesa-Zamora P, BMC Infect Dis 2009; 9: 124 de Méndez MT, Acta Cytol 2009; 53: 540 de Oña M, J Med Virol 2010; 82: 597 Doménech-Peris A, Gynecol Obstet Invest 2010; 70: 113 García-Sierra N, J Clin Microbiol 2009; 47: 2165 Herraiz-Hernandez E, J Virol Methods 2013; 193: 9 Martín P, BMC Infect Dis 2011; 11: 316
France	Contributing studies: Bergeron C, Am J Surg Pathol 1992; 16: 641 Humbey O, Eur J Obstet Gynecol Reprod Biol 2002; 103: 60 Monsonego J, Int J STD AIDS 2008; 19: 385 Prétet JL, Gynecol Oncol 2008; 110: 179 Vaucel E, Arch Gynecol Obstet 2011; 284: 989
United Kingdom	Contributing studies: Anderson L, J Med Virol 2013; 85: 295 Arends MJ, Hum Pathol 1993; 24: 432 Cuschieri KS, J Clin Pathol 2004; 57: 68 Cuzick J, Br J Cancer 1994; 69: 167 Cuzick J, Br J Cancer 1999; 81: 554 Giannoudis A, Int J Cancer 1999; 83: 66 Hibbitts S, Br J Cancer 2008; 99: 1929 Howell-Jones R, Br J Cancer 2010; 103: 209 Jamison J, Cytopathology 2009; 20: 242 Sargent A, Br J Cancer 2008; 98: 1704 Southern SA, Hum Pathol 2001; 32: 1351 Woo YL, Int J Cancer 2010; 126: 133
Greece	Contributing studies: Adamopoulou M, Anticancer Res 2009; 29: 3401 Argyri E, BMC Infect Dis 2013; 13: 53 Kroupis C, Epidemiol Infect 2007; 135: 943 Labropoulou V, Sex Transm Dis 1997; 24: 469 Mammas IN, Oncol Rep 2008; 20: 141 Panotopoulou E, J Med Virol 2007; 79: 1898 Tsiodras S, Clin Microbiol Infect 2011; 17: 1185
Croatia	Contributing studies: Grce M, Anticancer Res 2001; 21: 579 Grce M, Eur J Epidemiol 1997; 13: 645 Grce M, J Clin Microbiol 2004; 42: 1341
Ireland	Contributing studies: Butler D, J Pathol 2000; 192: 502 Keegan H, J Virol Methods 2014; 201: 93 Murphy N, J Clin Pathol 2003; 56: 56
Italy	Contributing studies: Agarossi A, J Med Virol 2009; 81: 529 Agodi A, Int J Gynecol Cancer 2009; 19: 1094 Astori G, Virus Res 1997; 50: 57 Capra G, Virus Res 2008; 133: 195 Chironna M, J Prev Med Hyg 2010; 51: 139 Gargiulo F, Virus Res 2007; 125: 176 Giorgi Rossi P, BMC Infect Dis 2010; 10: 214 Laconi S, Pathologica 2000; 92: 524 Menegazzi P, Infect Dis Obstet Gynecol 2009; 2009: 198425 Sandri MT, J Med Virol 2009; 81: 271 Spinillo A, Gynecol Oncol 2009; 113: 115 Spinillo A, J Med Virol 2014; 86: 1145 Tornosello ML, J Med Virol 2006; 78: 1663 Venturoli S, J Clin Virol 2002; 25: 177 Venturoli S, J Med Virol 2008; 80: 1434 Voglino G, Pathologica 2000; 92: 516 Zerbini M, J Clin Pathol 2001; 54: 377
Lithuania	Contributing studies: Gudleviciene Z, Medicina (Kaunas) 2005; 41: 910
Latvia	Contributing studies: Kulmala SM, J Med Virol 2007; 79: 771
Netherlands	Contributing studies: Bollen LJ, Am J Obstet Gynecol 1997; 177: 548 Prinsen CF, BJOG 2007; 114: 951 Reesink-Peters N, Eur J Obstet Gynecol Reprod Biol 2001; 98: 199
Norway	Contributing studies: Molden T, Cancer Epidemiol Biomarkers Prev 2005; 14: 367 Roberts CC, J Clin Virol 2006; 36: 277
Portugal	Contributing studies: Medeiros R, Eur J Cancer Prev 2005; 14: 467 Nobre RJ, J Med Virol 2010; 82: 1024
Romania	Contributing studies: Anton G, APMIS 2011; 119: 1 Ursu RG, Virol J 2011; 8: 558
Russian Federation	Contributing studies: Kulmala SM, J Med Virol 2007; 79: 771
Sweden	Contributing studies: Andersson S, Br J Cancer 2005; 92: 2195 Brismar-Wendel S, Br J Cancer 2009; 101: 511 Kalantari M, Hum Pathol 1997; 28: 899 Söderlund-Strand A, Am J Obstet Gynecol 2011; 205: 145.e1 Zehbe I, Virchows Arch 1996; 428: 151

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Table 32 – Continued

Country	Study
Oceania	
Australia	Contributing studies: Brestovac B, J Med Virol 2005; 76: 106 Garland SM, BMC Med 2011; 9: 104 Stevens MP, J Med Virol 2009; 81: 1283
HPV type distribution for invasive anal cancer	
General sources	Based on systematic reviews (up to 2008) performed by ICO for the IARC Monograph on the Evaluation of Carcinogenic Risks to Humans volume 100B and IARC's Infections and Cancer Epidemiology Group. The ICO HPV Information Centre has updated data until June 2015. Reference publications: 1) Bouvard V, Lancet Oncol 2009;10:321 2) De Vuyst H, Int J Cancer 2009;124:1626
Africa	
Mali	Aleman L, Int J Cancer 2015; 136: 98
Nigeria	Aleman L, Int J Cancer 2015; 136: 98
Senegal	Aleman L, Int J Cancer 2015; 136: 98
Americas	
Canada	Ouhoumane N, Cancer Epidemiol 2013; 37: 807
Chile	Aleman L, Int J Cancer 2015; 136: 98
Colombia	Aleman L, Int J Cancer 2015; 136: 98
Ecuador	Aleman L, Int J Cancer 2015; 136: 98
Guatemala	Aleman L, Int J Cancer 2015; 136: 98
Honduras	Aleman L, Int J Cancer 2015; 136: 98
Mexico	Aleman L, Int J Cancer 2015; 136: 98
Paraguay	Aleman L, Int J Cancer 2015; 136: 98
USA	Aleman L, Int J Cancer 2015; 136: 98 Daling JR, Cancer 2004; 101: 270 Palefsky JM, Cancer Res 1991; 51: 1014 Zaki SR, Am J Pathol 1992; 140: 1345
Asia	
Bangladesh	Aleman L, Int J Cancer 2015; 136: 98
India	Aleman L, Int J Cancer 2015; 136: 98
Republic of Korea	Aleman L, Int J Cancer 2015; 136: 98 Yhim HY, Int J Cancer 2011; 129: 1752 Youk EG, Dis Colon Rectum 2001; 44: 236
Europe	
Bosnia & Herzegovina	Aleman L, Int J Cancer 2015; 136: 98
Czech Republic	Aleman L, Int J Cancer 2015; 136: 98 Tachezy R, PLoS ONE 2011; 6: e21913
Germany	Aleman L, Int J Cancer 2015; 136: 98 Rödel F, Int J Cancer 2015; 136: 278 Varnai AD, Int J Colorectal Dis 2006; 21: 135
Denmark	Serup-Hansen E, J Clin Oncol 2014; 32: 1812
Spain	Aleman L, Int J Cancer 2015; 136: 98
France	Abramowitz L, Int J Cancer 2011; 129: 433 Aleman L, Int J Cancer 2015; 136: 98 Valmary-Degano S, Hum Pathol 2013; 44: 992 Vincent-Salomon A, Mod Pathol 1996; 9: 614
United Kingdom	Aleman L, Int J Cancer 2015; 136: 98 Baricevic I, Eur J Cancer 2015; 51: 776
Italy	Indinnimeo M, J Exp Clin Cancer Res 1999; 18: 47
Poland	Aleman L, Int J Cancer 2015; 136: 98
Portugal	Aleman L, Int J Cancer 2015; 136: 98
Slovenia	Aleman L, Int J Cancer 2015; 136: 98
Sweden	Laytragoon-Lewin N, Anticancer Res 2007; 27: 4473
Oceania	
Australia	Hillman RJ, Int J Cancer 2014; 135: 996
HPV type distribution for anal intraepithelial neoplasia (AIN)	
General sources	Based on systematic reviews (up to 2008) performed by ICO for the IARC Monograph on the Evaluation of Carcinogenic Risks to Humans volume 100B and IARC's Infections and Cancer Epidemiology Group. The ICO HPV Information Centre has updated data until June 2015. Reference publications: 1) Bouvard V, Lancet Oncol 2009;10:321 2) De Vuyst H, Int J Cancer 2009;124:1626

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Table 32 – Continued

Country	Study
Americas	
Canada	Gohy L, J Acquir Immune Defic Syndr 2008; 49: 32 Salit IE, Cancer Epidemiol Biomarkers Prev 2009; 18: 1986
Chile	Aleman L, Int J Cancer 2015; 136: 98
Colombia	Aleman L, Int J Cancer 2015; 136: 98
Ecuador	Aleman L, Int J Cancer 2015; 136: 98
Guatemala	Aleman L, Int J Cancer 2015; 136: 98
Honduras	Aleman L, Int J Cancer 2015; 136: 98
Mexico	Aleman L, Int J Cancer 2015; 136: 98
Paraguay	Aleman L, Int J Cancer 2015; 136: 98
USA	Sahasrabuddhe VV, J Infect Dis 2013; 207: 392
Asia	
Thailand	Phanuphak N, PLoS ONE 2013; 8: e78291
Europe	
Bosnia & Herzegovina	Aleman L, Int J Cancer 2015; 136: 98
Czech Republic	Aleman L, Int J Cancer 2015; 136: 98
Germany	Aleman L, Int J Cancer 2015; 136: 98 Hampl M, Obstet Gynecol 2006; 108: 1361 Silling S, J Clin Virol 2012; 53: 325 Varnai AD, Int J Colorectal Dis 2006; 21: 135 Wieland U, Arch Dermatol 2006; 142: 1438
Spain	Aleman L, Int J Cancer 2015; 136: 98 García-Espinoza B, Diagn Pathol 2013; 8: 204 Sirera G, AIDS 2013; 27: 951 Torres M, J Clin Microbiol 2013; 51: 3512
France	Aleman L, Int J Cancer 2015; 136: 98
United Kingdom	Aleman L, Int J Cancer 2015; 136: 98 Fox PA, Sex Transm Infect 2005; 81: 142
Italy	Tanzi E, Vaccine 2009; 27 Suppl 1: A17
Netherlands	Richel O, J Infect Dis 2014; 210: 111
Poland	Aleman L, Int J Cancer 2015; 136: 98
Portugal	Aleman L, Int J Cancer 2015; 136: 98
Slovenia	Aleman L, Int J Cancer 2015; 136: 98
Oceania	
Australia	Hillman RJ, Sex Health 2012; 9: 574
HPV type distribution for invasive vulvar cancer	
General sources	Based on systematic reviews (up to 2008) performed by ICO for the IARC Monograph on the Evaluation of Carcinogenic Risks to Humans volume 100B and IARC's Infections and Cancer Epidemiology Group. The ICO HPV Information Centre has updated data until June 2015. Reference publications: 1) Bouvard V, Lancet Oncol 2009;10:321 2) De Vuyst H, Int J Cancer 2009;124:1626
Africa	
Mali	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Mozambique	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Nigeria	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Senegal	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Americas	
Argentina	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Brazil	de Sanjosé S, Eur J Cancer 2013; 49: 3450 Pinto AP, Gynecol Oncol 1999; 74: 61
Chile	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Colombia	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Ecuador	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Guatemala	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Honduras	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Mexico	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Paraguay	de Sanjosé S, Eur J Cancer 2013; 49: 3450

(Continued)

Table 32 – Continued

Country	Study
Uruguay	de Sanjosé S, Eur J Cancer 2013; 49: 3450
USA	de Sanjosé S, Eur J Cancer 2013; 49: 3450 Gargano JW, J Low Genit Tract Dis 2012; 16: 471 Kim YT, Hum Pathol 1996; 27: 389 Madeleine MM, J Natl Cancer Inst 1997; 89: 1516 Riethdorf S, Hum Pathol 2004; 35: 1477 Sutton BC, Mod Pathol 2008; 21: 345 Tate JE, Gynecol Oncol 1994; 53: 78
Venezuela	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Asia	
Bangladesh	de Sanjosé S, Eur J Cancer 2013; 49: 3450
India	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Israel	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Japan	Nagano H, J Obstet Gynaecol Res 1996; 22: 1 Osakabe M, Pathol Int 2007; 57: 322
Republic of Korea	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Kuwait	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Lebanon	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Philippines	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Thailand	Ngamkham J, Asian Pac J Cancer Prev 2013; 14: 2355
Turkey	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Taiwan	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Europe	
Austria	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Bosnia & Herzegovina	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Belarus	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Czech Republic	de Sanjosé S, Eur J Cancer 2013; 49: 3450 Tachezy R, PLoS ONE 2011; 6: e21913
Germany	Choschzick M, Int J Gynecol Pathol 2011; 30: 497 de Sanjosé S, Eur J Cancer 2013; 49: 3450 Hampl M, Obstet Gynecol 2006; 108: 1361 Milde-Langosch K, Int J Cancer 1995; 63: 639 Reuschenbach M, J Low Genit Tract Dis 2013; 17: 289 Riethdorf S, Hum Pathol 2004; 35: 1477
Denmark	Bryndorf T, Cytogenet Genome Res 2004; 106: 43 Hørding U, Gynecol Oncol 1994; 52: 241 Hørding U, Int J Cancer 1993; 55: 394 Madsen BS, Int J Cancer 2008; 122: 2827
Spain	Alonso I, Gynecol Oncol 2011; 122: 509 de Sanjosé S, Eur J Cancer 2013; 49: 3450 Guerrero D, Int J Cancer 2011; 128: 2853 Lerma E, Int J Gynecol Pathol 1999; 18: 191
Finland	Iwasawa A, Obstet Gynecol 1997; 89: 81
France	de Sanjosé S, Eur J Cancer 2013; 49: 3450
United Kingdom	Abdel-Hady ES, Cancer Res 2001; 61: 192 de Sanjosé S, Eur J Cancer 2013; 49: 3450
Greece	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Italy	Bonvicini F, J Med Virol 2005; 77: 102 de Sanjosé S, Eur J Cancer 2013; 49: 3450
Netherlands	Kagie MJ, Gynecol Oncol 1997; 67: 178 Trietsch MD, Br J Cancer 2013; 109: 2259 van de Nieuwenhof HP, Cancer Epidemiol Biomarkers Prev 2009; 18: 2061 van der Avoort IA, Int J Gynecol Pathol 2006; 25: 22
Poland	Bujko M, Acta Obstet Gynecol Scand 2012; 91: 391 de Sanjosé S, Eur J Cancer 2013; 49: 3450 Liss J, Ginekol Pol 1998; 69: 330
Portugal	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Sweden	Larsson GL, Int J Gynecol Cancer 2012; 22: 1413 Lindell G, Gynecol Oncol 2010; 117: 312
Oceania	
Australia	de Sanjosé S, Eur J Cancer 2013; 49: 3450 Tan SE, Sex Health 2013; 10: 18
New Zealand	de Sanjosé S, Eur J Cancer 2013; 49: 3450

(Continued)

Table 32 – Continued

Country	Study
HPV type distribution for vulvar intraepithelial neoplasia (VIN)	
General sources	Based on systematic reviews (up to 2008) performed by ICO for the IARC Monograph on the Evaluation of Carcinogenic Risks to Humans volume 100B and IARC's Infections and Cancer Epidemiology Group. The ICO HPV Information Centre has updated data until June 2015. Reference publications: 1) Bouvard V, Lancet Oncol 2009;10:321 2) De Vuyst H, Int J Cancer 2009;124:1626
Americas	
Argentina	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Brazil	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Chile	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Colombia	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Ecuador	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Guatemala	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Honduras	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Mexico	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Paraguay	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Uruguay	de Sanjosé S, Eur J Cancer 2013; 49: 3450
USA	Gargano JW, J Low Genit Tract Dis 2012; 16: 471 Madeleine MM, J Natl Cancer Inst 1997; 89: 1516 Riethdorf S, Hum Pathol 2004; 35: 1477 Srodon M, Am J Surg Pathol 2006; 30: 1513
Venezuela	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Asia	
Bangladesh	de Sanjosé S, Eur J Cancer 2013; 49: 3450
India	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Israel	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Republic of Korea	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Kuwait	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Lebanon	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Philippines	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Turkey	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Taiwan	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Europe	
Austria	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Bosnia & Herzegovina	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Belarus	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Czech Republic	de Sanjosé S, Eur J Cancer 2013; 49: 3450 Tachezy R, PLoS ONE 2011; 6: e21913
Germany	de Sanjosé S, Eur J Cancer 2013; 49: 3450 Hampl M, Obstet Gynecol 2006; 108: 1361 Riethdorf S, Hum Pathol 2004; 35: 1477
Denmark	Junge J, APMIS 1995; 103: 501
Spain	de Sanjosé S, Eur J Cancer 2013; 49: 3450 Lerma E, Int J Gynecol Pathol 1999; 18: 191
France	de Sanjosé S, Eur J Cancer 2013; 49: 3450
United Kingdom	Abdel-Hady ES, Cancer Res 2001; 61: 192 Baldwin PJ, Clin Cancer Res 2003; 9: 5205 Bryant D, J Med Virol 2011; 83: 1358 Daayana S, Br J Cancer 2010; 102: 1129 de Sanjosé S, Eur J Cancer 2013; 49: 3450 Winters U, Clin Cancer Res 2008; 14: 5292
Greece	de Sanjosé S, Eur J Cancer 2013; 49: 3450 Tsimplaki E, J Oncol 2012; 2012: 893275
Italy	Bonvicini F, J Med Virol 2005; 77: 102 de Sanjosé S, Eur J Cancer 2013; 49: 3450
Netherlands	van Beurden M, Cancer 1995; 75: 2879 van der Avoort IA, Int J Gynecol Pathol 2006; 25: 22 van Esch EM, Int J Cancer 2014; 135: 830
Poland	de Sanjosé S, Eur J Cancer 2013; 49: 3450

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Table 32 – Continued

Country	Study
Portugal	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Oceania	
Australia	de Sanjosé S, Eur J Cancer 2013; 49: 3450 Tan SE, Sex Health 2013; 10: 18
New Zealand	de Sanjosé S, Eur J Cancer 2013; 49: 3450
HPV type distribution for invasive vaginal cancer	
General sources	Based on systematic reviews (up to 2008) performed by ICO for the IARC Monograph on the Evaluation of Carcinogenic Risks to Humans volume 100B and IARC's Infections and Cancer Epidemiology Group. The ICO HPV Information Centre has updated data until June 2015. Reference publications: 1) Bouvard V, Lancet Oncol 2009;10:321 2) De Vuyst H, Int J Cancer 2009;124:1626
Africa	
Mozambique	Aleman L, Eur J Cancer 2014; 50: 2846
Nigeria	Aleman L, Eur J Cancer 2014; 50: 2846
Americas	
Argentina	Aleman L, Eur J Cancer 2014; 50: 2846
Brazil	Aleman L, Eur J Cancer 2014; 50: 2846
Chile	Aleman L, Eur J Cancer 2014; 50: 2846
Colombia	Aleman L, Eur J Cancer 2014; 50: 2846
Ecuador	Aleman L, Eur J Cancer 2014; 50: 2846
Guatemala	Aleman L, Eur J Cancer 2014; 50: 2846
Mexico	Aleman L, Eur J Cancer 2014; 50: 2846
Paraguay	Aleman L, Eur J Cancer 2014; 50: 2846
Uruguay	Aleman L, Eur J Cancer 2014; 50: 2846
USA	Aleman L, Eur J Cancer 2014; 50: 2846
Venezuela	Aleman L, Eur J Cancer 2014; 50: 2846
Asia	
Bangladesh	Aleman L, Eur J Cancer 2014; 50: 2846
India	Aleman L, Eur J Cancer 2014; 50: 2846
Israel	Aleman L, Eur J Cancer 2014; 50: 2846
Republic of Korea	Aleman L, Eur J Cancer 2014; 50: 2846
Kuwait	Aleman L, Eur J Cancer 2014; 50: 2846
Lebanon	Aleman L, Eur J Cancer 2014; 50: 2846
Philippines	Aleman L, Eur J Cancer 2014; 50: 2846
Turkey	Aleman L, Eur J Cancer 2014; 50: 2846
Taiwan	Aleman L, Eur J Cancer 2014; 50: 2846
Europe	
Austria	Aleman L, Eur J Cancer 2014; 50: 2846
Belarus	Aleman L, Eur J Cancer 2014; 50: 2846
Czech Republic	Aleman L, Eur J Cancer 2014; 50: 2846
Germany	Aleman L, Eur J Cancer 2014; 50: 2846
Denmark	Madsen BS, Int J Cancer 2008; 122: 2827
Spain	Aleman L, Eur J Cancer 2014; 50: 2846 Fuste V, Histopathology 2010; 57: 907
France	Aleman L, Eur J Cancer 2014; 50: 2846
United Kingdom	Aleman L, Eur J Cancer 2014; 50: 2846
Greece	Aleman L, Eur J Cancer 2014; 50: 2846
Poland	Aleman L, Eur J Cancer 2014; 50: 2846
Portugal	Ferreira M, Mod Pathol 2008; 21: 968
Sweden	Larsson GL, Gynecol Oncol 2013; 129: 406
Oceania	
Australia	Aleman L, Eur J Cancer 2014; 50: 2846

(Continued)

Table 32 – Continued

Country	Study
HPV type distribution for vaginal intraepithelial neoplasia (VAIN)	
General sources	Based on systematic reviews (up to 2008) performed by ICO for the IARC Monograph on the Evaluation of Carcinogenic Risks to Humans volume 100B and IARC's Infections and Cancer Epidemiology Group. The ICO HPV Information Centre has updated data until June 2015. Reference publications: 1) Bouvard V, Lancet Oncol 2009;10:321 2) De Vuyst H, Int J Cancer 2009;124:1626
Americas	
Argentina	Aleman L, Eur J Cancer 2014; 50: 2846
Brazil	Aleman L, Eur J Cancer 2014; 50: 2846
Chile	Aleman L, Eur J Cancer 2014; 50: 2846
Colombia	Aleman L, Eur J Cancer 2014; 50: 2846
Ecuador	Aleman L, Eur J Cancer 2014; 50: 2846
Guatemala	Aleman L, Eur J Cancer 2014; 50: 2846
Mexico	Aleman L, Eur J Cancer 2014; 50: 2846
Paraguay	Aleman L, Eur J Cancer 2014; 50: 2846
Uruguay	Aleman L, Eur J Cancer 2014; 50: 2846
USA	Aleman L, Eur J Cancer 2014; 50: 2846 Daling JR, Gynecol Oncol 2002; 84: 263 Srodon M, Am J Surg Pathol 2006; 30: 1513
Venezuela	Aleman L, Eur J Cancer 2014; 50: 2846
Asia	
Bangladesh	Aleman L, Eur J Cancer 2014; 50: 2846
India	Aleman L, Eur J Cancer 2014; 50: 2846
Israel	Aleman L, Eur J Cancer 2014; 50: 2846
Japan	Sugase M, Int J Cancer 1997; 72: 412
Republic of Korea	Aleman L, Eur J Cancer 2014; 50: 2846
Kuwait	Aleman L, Eur J Cancer 2014; 50: 2846
Lebanon	Aleman L, Eur J Cancer 2014; 50: 2846
Philippines	Aleman L, Eur J Cancer 2014; 50: 2846
Turkey	Aleman L, Eur J Cancer 2014; 50: 2846
Taiwan	Aleman L, Eur J Cancer 2014; 50: 2846
Europe	
Austria	Aleman L, Eur J Cancer 2014; 50: 2846
Belarus	Aleman L, Eur J Cancer 2014; 50: 2846
Czech Republic	Aleman L, Eur J Cancer 2014; 50: 2846
Germany	Aleman L, Eur J Cancer 2014; 50: 2846 Hampl M, Obstet Gynecol 2006; 108: 1361
Spain	Aleman L, Eur J Cancer 2014; 50: 2846
France	Aleman L, Eur J Cancer 2014; 50: 2846
United Kingdom	Aleman L, Eur J Cancer 2014; 50: 2846
Greece	Aleman L, Eur J Cancer 2014; 50: 2846 Tsimplaki E, J Oncol 2012; 2012: 893275
Italy	Frega A, Cancer Lett 2007; 249: 235
Poland	Aleman L, Eur J Cancer 2014; 50: 2846
Oceania	
Australia	Aleman L, Eur J Cancer 2014; 50: 2846
HPV type distribution for invasive penile cancer	
General sources	The ICO HPV Information Centre has updated data until June 2015. Reference publications (up to 2008): 1) Bouvard V, Lancet Oncol 2009;10:321 2) Miralles-Guri C, J Clin Pathol 2009;62:870
Africa	
Uganda	Tornesello ML, Cancer Lett 2008; 269: 159
South Africa	Lebelo RL, J Med Virol 2014; 86: 257
Americas	
Argentina	Picconi MA, J Med Virol 2000; 61: 65

(Continued)

Table 32 – Continued

Country	Study
Brazil	Afonso LA, Mem Inst Oswaldo Cruz 2012; 107: 18 Calmon MF, PLoS ONE 2013; 8: e53260 de Sousa ID, BMC Urol 2015; 15: 13 Fonseca AG, Int Braz J Urol 2013; 39: 542 Scheiner MA, Int Braz J Urol 2008; 34: 467
Canada	Maden C, J Natl Cancer Inst 1993; 85: 19
Mexico	López-Romero R, Int J Clin Exp Pathol 2013; 6: 1409
Paraguay	Cubilla AL, Am J Surg Pathol 2010; 34: 104 Rubin MA, Am J Pathol 2001; 159: 1211
USA	Aleman L, Eur Urol 2016; 69: 953 Cupp MR, J Urol 1995; 154: 1024 Daling JR, Int J Cancer 2005; 116: 606 Hernandez BY, Front Oncol 2014; 4: 9 Rubin MA, Am J Pathol 2001; 159: 1211
Asia	
China	Chan KW, J Clin Pathol 1994; 47: 823
Japan	Iwasawa A, J Urol 1993; 149: 59 Suzuki H, Jpn J Clin Oncol 1994; 24: 1 Yanagawa N, Pathol Int 2008; 58: 477
Thailand	Senba M, J Med Virol 2006; 78: 1341
Viet Nam	Do HT, Br J Cancer 2013; 108: 229
Europe	
Austria	Mannweiler S, J Am Acad Dermatol 2013; 69: 73
Belgium	D'Hauwers KW, Vaccine 2012; 30: 6573
Germany	Poetsch M, Virchows Arch 2011; 458: 221
Spain	Ferrándiz-Pulido C, J Am Acad Dermatol 2013; 68: 73 Guerrero D, BJU Int 2008; 102: 747 Pascual A, Histol Histopathol 2007; 22: 177
France	Humbey O, Eur J Cancer 2003; 39: 684 Perceau G, Br J Dermatol 2003; 148: 934
United Kingdom	Stankiewicz E, Histopathology 2011; 58: 433
Italy	Barzon L, Am J Pathol 2014; 184: 3376 Gentile V, Int J Immunopathol Pharmacol 2006; 19: 209 Tornesello ML, Cancer Lett 2008; 269: 159
Netherlands	Heideman DA, J Clin Oncol 2007; 25: 4550
HPV type distribution for penile intraepithelial neoplasia (PEIN)	
General sources	The ICO HPV Information Centre has updated data until June 2014. Reference publication (up to 2008): Bouvard V, Lancet Oncol 2009;10:321
Americas	
Mexico	López-Romero R, Int J Clin Exp Pathol 2013; 6: 1409
USA	Cupp MR, J Urol 1995; 154: 1024
Europe	
Austria	Mannweiler S, J Am Acad Dermatol 2013; 69: 73
Belgium	D'Hauwers KW, Vaccine 2012; 30: 6573
Sweden	Wikström A, J Eur Acad Dermatol Venereol 2012; 26: 325
The anogenital prevalence of HPV-DNA in men: HPV in men	
General sources	Based on published systematic reviews, the ICO HPV Information Centre has updated data until October 2015. Reference publications: 1) Dunne EF, J Infect Dis 2006; 194: 1044 2) Smith JS, J Adolesc Health 2011; 48: 540 3) Olesen TB, Sex Transm Infect 2014; 90: 455 4) Hebnes JB, J Sex Med 2014; 11: 2630.
Africa	
Kenya	Ng'ayo MO, Sex Transm Infect 2008; 84: 62 Smith JS, Int J Cancer 2010; 126: 572
Rwanda	Veldhuijzen NJ, Sex Transm Dis 2012; 39: 128
Tanzania	Olesen TB, Sex Transm Dis 2013; 40: 592
Uganda	Tobian AA, Sex Transm Infect 2013; 89: 122
South Africa	Auvert B, J Acquir Immune Defic Syndr 2010; 53: 111 Mbulawa ZZ, J Gen Virol 2010; 91: 3023

(Continued)

Table 32 – Continued

Country	Study
Americas	
Brazil	Franceschi S, Br J Cancer 2002; 86: 705 Giuliano AR, Cancer Epidemiol Biomarkers Prev 2008; 17: 2036 Nyitray AG, J Infect Dis 2011; 203: 49 Rosenblatt C, Int J Gynaecol Obstet 2004; 84: 156 Vardas E, J Infect Dis 2011; 203: 58
Canada	Vardas E, J Infect Dis 2011; 203: 58
Chile	Guzmán P, Rev Med Chil 2008; 136: 1381
Colombia	Franceschi S, Br J Cancer 2002; 86: 705
Mexico	Giuliano AR, Cancer Epidemiol Biomarkers Prev 2008; 17: 2036 Lajous M, Cancer Epidemiol Biomarkers Prev 2005; 14: 1710 Lazcano-Ponce E, Sex Transm Dis 2001; 28: 277 Nyitray AG, J Infect Dis 2011; 203: 49 Sánchez-Alemán MA, Salud Publica Mex 2002; 44: 442 Vaccarella S, Int J Cancer 2006; 119: 1934 Vardas E, J Infect Dis 2011; 203: 58
USA	Giuliano AR, J Infect Dis 2008; 198: 827 Giuliano AR, Cancer Epidemiol Biomarkers Prev 2008; 17: 2036 Hernandez BY, J Infect Dis 2008; 197: 787 Nielson CM, Cancer Epidemiol Biomarkers Prev 2007; 16: 1107 Nyitray AG, J Infect Dis 2011; 203: 49 Partridge JM, J Infect Dis 2007; 196: 1128 Vardas E, J Infect Dis 2011; 203: 58 Weaver BA, J Infect Dis 2004; 189: 677
Asia	
China	Liu F, Sci Rep 2015; 5: 27
India	Gupta A, J Clin Virol 2006; 37: 190
Japan	Takahashi S, Sex Transm Dis 2003; 30: 629
Republic of Korea	Shin HR, J Infect Dis 2004; 190: 468
Philippines	Franceschi S, Br J Cancer 2002; 86: 705
Thailand	Franceschi S, Br J Cancer 2002; 86: 705
Europe	
Germany	Grussendorf-Conen EI, Arch Dermatol Res 1987; 279 Suppl: S73 Vardas E, J Infect Dis 2011; 203: 58
Denmark	Hebnes JB, Sex Transm Dis 2015; 42: 463 Kjaer SK, Cancer Epidemiol Biomarkers Prev 2005; 14: 1528
Spain	Franceschi S, Br J Cancer 2002; 86: 705 Vardas E, J Infect Dis 2011; 203: 58
Finland	Hippeläinen M, Sex Transm Dis 1993; 20: 321 Kero K, J Sex Med 2011; 8: 2522
Croatia	Grce M, Anticancer Res 1996; 16: 1039 Vardas E, J Infect Dis 2011; 203: 58
Italy	Lorenzon L, J Clin Virol 2014; 60: 264 Nasca MR, Int J Dermatol 2006; 45: 681
Sweden	Forslund O, J Clin Microbiol 1993; 31: 1975 Kataoka A, J Med Virol 1991; 33: 159
Oceania	
Australia	Vardas E, J Infect Dis 2011; 203: 58
The anogenital prevalence of HPV-DNA in men: HPV in special subgroups (HIV, MSM, etc)	
General sources	Based on published systematic reviews, the ICO HPV Information Centre has updated data until October 2015. Reference publications: 1) Dunne EF, J Infect Dis 2006; 194: 1044 2) Smith JS, J Adolesc Health 2011; 48: 540 3) Olesen TB, Sex Transm Infect 2014; 90: 455 4) Hebnes JB, J Sex Med 2014; 11: 2630.
Africa	
Uganda	Tobian AA, Sex Transm Infect 2013; 89: 122
South Africa	Firnhaber C, Int J STD AIDS 2011; 22: 107 Mbulawa ZZ, J Gen Virol 2010; 91: 3023 Müller EE, Sex Transm Infect 2010; 86: 175 Vogt SL, Front Oncol 2013; 3: 68
Americas	
Argentina	Pando MA, PLoS One 2012; 7: 127

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Table 32 – Continued

Country	Study
Brazil	de Lima Rocha MG, PLoS ONE 2012; 7: 128 Franceschi S, Br J Cancer 2002; 86: 705 Freire MP, Int Braz J Urol 2014; 40: 67 Goldstone S, J Infect Dis 2011; 203: 66 Guimarães MD, J Acquir Immune Defic Syndr 2011; 57 Suppl 3: S217 Nicolau SM, Urology 2005; 65: 251 Nyitray AG, J Infect Dis 2011; 203: 49 Rombaldi RL, Braz J Med Biol Res 2006; 39: 177 Rosenblatt C, Int J Gynaecol Obstet 2004; 84: 156
Canada	de Pokomandy A, J Infect Dis 2009; 199: 965 Goldstone S, J Infect Dis 2011; 203: 66 Ogilvie GS, Sex Transm Infect 2009; 85: 221 Salit IE, Cancer Epidemiol Biomarkers Prev 2009; 18: 1986 Salit IE, AIDS 2010; 24: 1307
Colombia	Franceschi S, Br J Cancer 2002; 86: 705
Mexico	Goldstone S, J Infect Dis 2011; 203: 66 Leyva-López AG, Salud Publica Mex 2003; 45 Supp 5: S589 Mendez-Martinez R, BMC Infect Dis 2014; 14: 104 Nyitray AG, J Infect Dis 2011; 203: 49 Torres-Ibarra L, Prev Med 2014; 69C: 157
Peru	Blas MM, PLoS One 2015; 10: 124 Quinn R, AIDS Res Hum Retroviruses 2012; 28: 1734
USA	Baken LA, J Infect Dis 1995; 171: 429 Baldwin SB, J Infect Dis 2003; 187: 1064 Berry JM, Dis Colon Rectum 2009; 52: 239 Caussy D, Int J Cancer 1990; 46: 214 Chin-Hong PV, J Infect Dis 2004; 190: 2070 Chin-Hong PV, Ann Intern Med 2008; 149: 300 Colón-López V, PLoS ONE 2014; 9: 132 Conley L, J Infect Dis 2010; 202: 1567 Critchlow CW, AIDS 1998; 12: 1177 Fife KH, Sex Transm Dis 2003; 30: 246 Friedman HB, J Infect Dis 1998; 178: 45 Gandra S, HIV AIDS Auckl 2015; 7: 29 Goldstone S, J Infect Dis 2011; 203: 66 Hood JE, Int J STD AIDS 2016; 27: 353 Kiviat NB, AIDS 1993; 7: 43 Moscicki AB, AIDS 2003; 17: 311 Nyitray AG, J Infect Dis 2011; 203: 49 Palefsky JM, Genitourin Med 1997; 73: 174 Palefsky JM, J Infect Dis 1998; 177: 361 Palefsky JM, AIDS 2005; 19: 1407 Wiley DJ, PLoS ONE 2013; 8: 131 Wilkin TJ, J Infect Dis 2004; 190: 1685
Asia	
China	Gao L, PLoS ONE 2010; 5: 125 Li Z, PLoS One 2015; 10: 122 Tang X, Biomed Environ Sci 2006; 19: 153 Yang Y, PLoS ONE 2012; 7: 126 Zhang DY, PLoS ONE 2014; 9: 134
India	Gupta A, J Clin Virol 2006; 37: 190
Japan	Nagata N, PLoS One 2015; 10: 123 Shigehara K, Int J Urol 2010; 17: 563 Takahashi S, Sex Transm Dis 2003; 30: 629 Takahashi S, J Infect Chemother 2005; 11: 270
Philippines	Franceschi S, Br J Cancer 2002; 86: 705
Thailand	Franceschi S, Br J Cancer 2002; 86: 705 Leaungwutiwong P, Sex Transm Dis 2015; 42: 208 Phanuphak N, J Acquir Immune Defic Syndr 2013; 63: 472 Supindham T, PLoS One 2015; 10: 121
Europe	
Germany	Goldstone S, J Infect Dis 2011; 203: 66 Schneider A, J Urol 1988; 140: 1431 Wieland U, Int J Med Microbiol 2015; 305: 689
Denmark	Svare EI, Sex Transm Infect 2002; 78: 215
Spain	Álvarez-Argüelles ME, PLoS ONE 2013; 8: 129 Franceschi S, Br J Cancer 2002; 86: 705 Goldstone S, J Infect Dis 2011; 203: 66 Hidalgo-Tenorio C, PLoS One 2015; 10: 120 Sendagorta E, Dis Colon Rectum 2014; 57: 475 Sendagorta E, J Med Virol 2015; 87: 1397 Torres M, J Clin Microbiol 2013; 51: 3512 Videla S, Sex Transm Dis 2013; 40: 03
France	Aynaud O, Urology 2003; 61: 1098 Damay A, J Med Virol 2010; 82: 592 Philibert P, J Clin Med 2014; 3: 1386 Piketty C, Sex Transm Dis 2004; 31: 96
United Kingdom	Bissett SL, J Med Virol 2011; 83: 1744 Cuschieri K, J Med Virol 2011; 83: 1983 Hillman RJ, Genitourin Med 1993; 69: 187 Jalal H, Int J STD AIDS 2007; 18: 617 King EM, Br J Cancer 2015; 112: 1585 Lacey HB, Sex Transm Infect 1999; 75: 172

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Table 32 – Continued

Country	Study
Greece	Hadjivassiliou M, Int J STD AIDS 2007; 18: 329
Croatia	Goldstone S, J Infect Dis 2011; 203: 66
Ireland	Sadler C, HIV Med 2014; 15: 499
Italy	Barzon L, J Med Virol 2010; 82: 1424 Benevolo M, J Med Virol 2008; 80: 1275 Chiarini F, Minerva Urol Nefrol 1998; 50: 225 Della Torre G, Am J Pathol 1992; 141: 1181 Dona MG, J Infect 2015; 71: 74 Garbuglia A, J Clin Virol 2015; 72: 49 Giovannelli L, J Clin Microbiol 2007; 45: 248 Orlando G, J Acquir Immune Defic Syndr 2008; 47: 129 Pierangeli A, AIDS 2008; 22: 1929 Sammarco ML, J Med Virol 2016; 88: 911
Netherlands	Bleeker MC, J Am Acad Dermatol 2002; 47: 351 Bleeker MC, Int J Cancer 2005; 113: 36 Bleeker MC, Clin Infect Dis 2005; 41: 612 van der Snoek EM, Sex Transm Dis 2003; 30: 639 Van Doornum GJ, Genitourin Med 1994; 70: 240 van Rijn VM, PLoS ONE 2014; 9: 133 Vriend HJ, PLoS ONE 2013; 8: 130 Welling CA, Sex Transm Dis 2015; 42: 297
Russian Federation	Wirtz AL, Euro Surveill 2015; 20: 23
Slovenia	Golob B, Biomed Res Int 2014; 2014: 117 Milosevic M, Cent Eur J Med 2010; 5: 698
Sweden	Kataoka A, J Med Virol 1991; 33: 159 Löwhagen GB, Int J STD AIDS 1999; 10: 615 Strand A, Genitourin Med 1993; 69: 446 Voog E, Int J STD AIDS 1997; 8: 772 Wikström A, Int J STD AIDS 1991; 2: 105 Wikström A, Int J STD AIDS 2000; 11: 80
Oceania	
Australia	Anderson J, Sex Transm Infect 2008; 84: 94 Goldstone S, J Infect Dis 2011; 203: 66 Ong JJ, Sex Transm Infect 2016; 92: 368 Vajdic CM, Sex Transm Infect 2009; 85: 330
HPV prevalence and type distribution in oral specimens collected from healthy population	
General sources	Systematic review and meta-analysis was performed by ICO HPV Information Centre until July 2012. Pubmed was searched using the keywords oral and papillomavirus. Inclusion criteria: studies reporting oral HPV prevalence in healthy population in Europe; n > 50. Exclusion criteria: focused only in children or immunosuppressed population; not written in English; case-control studies; commentaries and systematic reviews and studies that did not use HPV DNA detection methods.
Europe	
Denmark	Eike A, Clin Otolaryngol 1995;20:171
Spain	Cañadas MP, J Clin Microbiol 2004;42:1330
Finland	Kero K, J Sex Med 2011;8:2522
Finland	Kero K, Eur Urol 2012;62(6):1063-70
Finland	Leimola-Virtanen R, Clin Infect Dis 1996;22:593
United Kingdom	Kujan O, Oral Oncol 2006;42:810
Greece	Lambropoulos AF, Eur J Oral Sci 1997;105:294
Italy	Migaldi M, J Oral Pathol Med 2012;41:16
Italy	Montaldo C, J Oral Pathol Med 2007;36:482
HPV prevalence and type distribution in invasive oral cavity squamous cell carcinoma	
General sources	Based on systematic reviews and meta-analysis performed by ICO. Reference publications: 1) Ndiaye C, Lancet Oncol 2014; 15: 1319 2) Kreimer AR, Cancer Epidemiol Biomarkers Prev 2005; 14: 467
Africa	
Sudan	Herrero R, J Natl Cancer Inst 2003; 95: 1772
South Africa	Boy S, J Oral Pathol Med 2006; 35: 86 Van Rensburg EJ, Anticancer Res 1996; 16: 969
Americas	
Argentina	González JV, Medicina (B Aires) 2007; 67: 363 Ribeiro KB, Int J Epidemiol 2011; 40: 489

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Table 32 – Continued

Country	Study
Brazil	Oliveira MC, <i>Auris Nasus Larynx</i> 2009; 36: 450 Ribeiro KB, <i>Int J Epidemiol</i> 2011; 40: 489 Rivero ER, <i>Braz Oral Res</i> 2006; 20: 21
Canada	Herrero R, <i>J Natl Cancer Inst</i> 2003; 95: 1772 Lingen MW, <i>Oral Oncol</i> 2013; 49: 1 Noble-Topham SE, <i>Arch Otolaryngol Head Neck Surg</i> 1993; 119: 1299
Cuba	Herrero R, <i>J Natl Cancer Inst</i> 2003; 95: 1772 Ribeiro KB, <i>Int J Epidemiol</i> 2011; 40: 489
Mexico	Anaya-Saavedra G, <i>Arch Med Res</i> 2008; 39: 189 Ibieta BR, <i>Oral Surg Oral Med Oral Pathol Oral Radiol Endod</i> 2005; 99: 311
USA	Chuang AY, <i>Oral Oncol</i> 2008; 44: 915 Furniss CS, <i>Int J Cancer</i> 2007; 120: 2386 Ha PK, <i>Clin Cancer Res</i> 2002; 8: 1203 Harris SL, <i>Head Neck</i> 2011; 33: 1622 Holladay EB, <i>Am J Clin Pathol</i> 1993; 100: 36 Hooper JE, <i>Appl Immunohistochem Mol Morphol</i> 2015; 23: 266 Liang XH, <i>J Oral Maxillofac Surg</i> 2008; 66: 1875 Lingen MW, <i>Oral Oncol</i> 2013; 49: 1 Lohavanichbutr P, <i>Arch Otolaryngol Head Neck Surg</i> 2009; 135: 180 Paz IB, <i>Cancer</i> 1997; 79: 595 Schlecht NF, <i>Mod Pathol</i> 2011; 24: 1295 Schwartz SM, <i>J Natl Cancer Inst</i> 1998; 90: 1626 Smith EM, <i>Int J Cancer</i> 2004; 108: 766 Walline HM, <i>JAMA Otolaryngol Head Neck Surg</i> 2013; 139: 1320 Zhao M, <i>Int J Cancer</i> 2005; 117: 605
Venezuela	Miller CS, <i>Oral Surg Oral Med Oral Pathol</i> 1994; 77: 480 Premoli-De-Percoco G, <i>J Oral Pathol Med</i> 2001; 30: 355
Asia	
China	Gan LL, <i>Asian Pac J Cancer Prev</i> 2014; 15: 5861 Lee LA, <i>Medicine (Baltimore)</i> 2015; 94: e2069 Tang X, <i>J Oral Pathol Med</i> 2003; 32: 393 Wen S, <i>Anticancer Res</i> 1997; 17: 307 Zhang ZY, <i>Int J Oral Maxillofac Surg</i> 2004; 33: 71
India	Balaram P, <i>Int J Cancer</i> 1995; 61: 450 Bhattacharya N, <i>J Oral Pathol Med</i> 2009; 38: 759 Chaudhary AK, <i>Virol J</i> 2010; 7: 253 D'Costa J, <i>Oral Oncol</i> 1998; 34: 413 Herrero R, <i>J Natl Cancer Inst</i> 2003; 95: 1772 Laprise C, <i>Int J Cancer</i> 2016; 138: 912 Mishra A, <i>Int J Cancer</i> 2006; 119: 2840 Sebastian P, <i>J Oral Pathol Med</i> 2014; 43: 593
Iran	Saghravanian N, <i>Acta Odontol Scand</i> 2011; 69: 406
Japan	Bhawal UK, <i>Arch Otolaryngol Head Neck Surg</i> 2008; 134: 1055 Chiba I, <i>Oncogene</i> 1996; 12: 1663 Deng Z, <i>Head Neck</i> 2013; 35: 800 Higa M, <i>Oral Oncol</i> 2003; 39: 405 Kojima A, <i>Oral Oncol</i> 2002; 38: 591 Shima K, <i>Br J Oral Maxillofac Surg</i> 2000; 38: 445 Shimizu M, <i>J Dermatol Sci</i> 2004; 36: 33 Sugiyama M, <i>Oral Surg Oral Med Oral Pathol Oral Radiol Endod</i> 2003; 95: 594 Tang X, <i>J Oral Pathol Med</i> 2003; 32: 393 Tsuhako K, <i>J Oral Pathol Med</i> 2000; 29: 70
Republic of Korea	Shin KH, <i>Int J Oncol</i> 2002; 21: 297
Malaysia	Lim KP, <i>Oncol Rep</i> 2007; 17: 1321
Taiwan	Chang JY, <i>Am J Clin Pathol</i> 2003; 120: 909 Chen PC, <i>J Oral Pathol Med</i> 2002; 31: 317 Yang YY, <i>Jpn J Clin Oncol</i> 2004; 34: 176
Europe	
Belgium	Duray A, <i>Laryngoscope</i> 2012; 122: 1558
Belarus	Gudleviciene Z, <i>J Med Virol</i> 2014; 86: 531
Czech Republic	Ribeiro KB, <i>Int J Epidemiol</i> 2011; 40: 489
Germany	Klussmann JP, <i>Cancer</i> 2001; 92: 2875 Krüger M, <i>J Craniomaxillofac Surg</i> 2014; 42: 1506 Ostwald C, <i>Med Microbiol Immunol</i> 2003; 192: 145 Weiss D, <i>Head Neck</i> 2011; 33: 856
Spain	García-de Marcos JA, <i>Int J Oral Maxillofac Surg</i> 2014; 43: 274 Herrero R, <i>J Natl Cancer Inst</i> 2003; 95: 1772 Llamas-Martínez S, <i>Anticancer Res</i> 2008; 28: 3733
Finland	Koskinen WJ, <i>Int J Cancer</i> 2003; 107: 401 Mork J, <i>N Engl J Med</i> 2001; 344: 1125
United Kingdom	Lopes V, <i>Oral Oncol</i> 2011; 47: 698 Snijders PJ, <i>Int J Cancer</i> 1996; 66: 464 Yeudall WA, <i>J Gen Virol</i> 1991; 72 (Pt 1): 173

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Table 32 – Continued

Country	Study
Greece	Aggelopoulou EP, Anticancer Res 1999; 19: 1391 Blioumi E, Oral Oncol 2014; 50: 840 Romanitan M, Anticancer Res 2008; 28: 2077
Hungary	Nemes JA, Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2006; 102: 344 Szarka K, Oral Microbiol Immunol 2009; 24: 314
Ireland	Herrero R, J Natl Cancer Inst 2003; 95: 1772
Italy	Badaracco G, Anticancer Res 2000; 20: 1301 Badaracco G, Oncol Rep 2007; 17: 931 Herrero R, J Natl Cancer Inst 2003; 95: 1772 Rittà M, Head Neck 2009; 31: 318 Scapoli L, Mod Pathol 2009; 22: 366
Netherlands	Braakhuis BJ, J Natl Cancer Inst 2004; 96: 998 Cruz IB, Eur J Cancer, B, Oral Oncol 1996; 32B: 55 van Monsjou HS, Int J Cancer 2012; 130: 1806
Norway	Matzow T, Acta Oncol 1998; 37: 73 Mork J, N Engl J Med 2001; 344: 1125
Poland	Herrero R, J Natl Cancer Inst 2003; 95: 1772 Ribeiro KB, Int J Epidemiol 2011; 40: 489 Snietura M, Pol J Pathol 2010; 61: 133
Romania	Ribeiro KB, Int J Epidemiol 2011; 40: 489
Russian Federation	Ribeiro KB, Int J Epidemiol 2011; 40: 489
Serbia	Kozomara R, J Craniomaxillofac Surg 2005; 33: 342
Slovakia	Ribeiro KB, Int J Epidemiol 2011; 40: 489
Slovenia	Kansky AA, Acta Virol 2003; 47: 11
Sweden	Dahlgren L, Int J Cancer 2004; 112: 1015 Mork J, N Engl J Med 2001; 344: 1125 Sand L, Anticancer Res 2000; 20: 1183
HPV prevalence and type distribution in invasive oropharyngeal squamous cell carcinoma	
General sources	Based on systematic reviews and meta-analysis performed by ICO. Reference publications: 1) Ndiaye C, Lancet Oncol 2014; 15: 1319 2) Kreimer AR, Cancer Epidemiol Biomarkers Prev 2005; 14: 467
Africa	
South Africa	Paquette C, Head Neck Pathol 2013; 7: 361
Americas	
Argentina	Ribeiro KB, Int J Epidemiol 2011; 40: 489
Brazil	Cortezzi SS, Cancer Genet Cytogenet 2004; 150: 44 Ribeiro KB, Int J Epidemiol 2011; 40: 489
Canada	Nichols AC, J Otolaryngol Head Neck Surg 2013; 42: 9
Cuba	Herrero R, J Natl Cancer Inst 2003; 95: 1772 Ribeiro KB, Int J Epidemiol 2011; 40: 489
USA	Agoston ES, Am J Clin Pathol 2010; 134: 36 Chaturvedi AK, J Clin Oncol 2011; 29: 4294 Cohen MA, Acta Otolaryngol 2008; 128: 583 D'Souza G, J Clin Oncol 2014; 32: 2408 D'Souza G, N Engl J Med 2007; 356: 1944 Ernster JA, Laryngoscope 2007; 117: 2115 Furniss CS, Int J Cancer 2007; 120: 2386 Hooper JE, Appl Immunohistochem Mol Morphol 2015; 23: 266 Isayeva T, Hum Pathol 2014; 45: 310 Jordan RC, Am J Surg Pathol 2012; 36: 945 Kerr DA, Am J Surg Pathol 2015; 39: 1643 Kingma DW, Anticancer Res 2010; 30: 5099 Kong CS, Int J Radiat Oncol Biol Phys 2009; 74: 553 Lohavanichbutr P, Arch Otolaryngol Head Neck Surg 2009; 135: 180 Posner MR, Ann Oncol 2011; 22: 1071 Schlecht NF, Mod Pathol 2011; 24: 1295 Schwartz SM, J Natl Cancer Inst 1998; 90: 1626 Sethi S, Int J Cancer 2012; 131: 1179 Smith EM, Int J Cancer 2004; 108: 766 Steinau M, Emerging Infect Dis 2014; 20: 822 Strome SE, Clin Cancer Res 2002; 8: 1093 Tezal M, Arch Otolaryngol Head Neck Surg 2009; 135: 391 Walline HM, JAMA Otolaryngol Head Neck Surg 2013; 139: 1320 Zhao M, Int J Cancer 2005; 117: 605
Asia	
China	Li W, Pathology 2007; 39: 217
India	Bahl A, Head Neck 2014; 36: 505
Japan	Deng Z, Head Neck 2013; 35: 800 Hama T, Oncology 2014; 87: 173 Hatakeyama H, Oncol Rep 2014; 32: 2673
Republic of Korea	Kim SH, Int J Cancer 2007; 120: 1418 Oh TJ, J Clin Microbiol 2004; 42: 3272
Turkey	Tural D, Asian Pac J Cancer Prev 2013; 14: 6065

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Table 32 – Continued

Country	Study
Taiwan	Al-Swiahb JN, Arch Otolaryngol Head Neck Surg 2010; 136: 502 Kuo KT, Mod Pathol 2008; 21: 376
Europe	
Switzerland	Lindel K, Cancer 2001; 92: 805
Czech Republic	Klozar J, Eur Arch Otorhinolaryngol 2008; 265 Suppl 1: S75 Ribeiro KB, Int J Epidemiol 2011; 40: 489 Rotnáglová E, Int J Cancer 2011; 129: 101
Germany	Andl T, Cancer Res 1998; 58: 5 Hoffmann M, Acta Otolaryngol 1998; 118: 138 Hoffmann M, Int J Cancer 2010; 127: 1595 Holzinger D, Cancer Res 2012; 72: 4993 Klusmann JP, Cancer 2001; 92: 2875 Krupar R, Eur Arch Otorhinolaryngol 2014; 271: 1737 Reimers N, Int J Cancer 2007; 120: 1731 Weiss D, Head Neck 2011; 33: 856 Wittekindt C, Adv Otorhinolaryngol 2005; 62: 72
Spain	Herrero R, J Natl Cancer Inst 2003; 95: 1772
Finland	Jouhi L, Tumour Biol 2015; 36: 7755
France	Charfi L, Cancer Lett 2008; 260: 72 Fonmarty D, Eur Ann Otorhinolaryngol Head Neck Dis 2015; 132: 135 Fouret P, Arch Otolaryngol Head Neck Surg 1997; 123: 513
United Kingdom	Anderson CE, J Clin Pathol 2007; 60: 439 Conway C, J Mol Diagn 2012; 14: 104 Evans M, BMC Cancer 2013; 13: 220 Schache AG, Clin Cancer Res 2011; 17: 6262 Thavaraj S, J Clin Pathol 2011; 64: 308 Wells LA, J Clin Pathol 2015; 68: 849
Greece	Romanitan M, Anticancer Res 2008; 28: 2077
Italy	Boscolo-Rizzo P, J Cancer Res Clin Oncol 2009; 135: 559 Herrero R, J Natl Cancer Inst 2003; 95: 1772 Licitra L, J Clin Oncol 2006; 24: 5630 Rittà M, Head Neck 2009; 31: 318
Netherlands	Braakhuis BJ, J Natl Cancer Inst 2004; 96: 998 Henneman R, Anticancer Res 2015; 35: 4015 van Monsjou HS, Int J Cancer 2012; 130: 1806
Norway	Hannisdal K, Acta Otolaryngol 2010; 130: 293
Poland	Ribeiro KB, Int J Epidemiol 2011; 40: 489 Snietura M, Pol J Pathol 2010; 61: 133 Szkaradkiewicz A, Clin Exp Med 2002; 2: 137
Romania	Ribeiro KB, Int J Epidemiol 2011; 40: 489
Russian Federation	Ribeiro KB, Int J Epidemiol 2011; 40: 489
Slovakia	Ribeiro KB, Int J Epidemiol 2011; 40: 489
Sweden	Attner P, Int J Cancer 2010; 126: 2879 Dahlgren L, Int J Cancer 2004; 112: 1015 Hammarstedt L, Int J Cancer 2006; 119: 2620 Lindquist D, Anticancer Res 2012; 32: 153 Näsman A, Int J Cancer 2009; 125: 362
Oceania	
Australia	Hong A, Ann Surg Oncol 2013; 20 Suppl 3: S450 Hong AM, Vaccine 2010; 28: 3269
HPV prevalence and type distribution in invasive hypopharyngeal squamous cell carcinoma	
General sources	Based on systematic reviews and meta-analysis performed by ICO. Reference publications: 1) Ndiaye C, Lancet Oncol 2014; 15: 1319 2) Kreimer AR, Cancer Epidemiol Biomarkers Prev 2005; 14: 467
Americas	
Argentina	Ribeiro KB, Int J Epidemiol 2011; 40: 489
Brazil	Miranda FA, J Histochem Cytochem 2009; 57: 665 Ribeiro KB, Int J Epidemiol 2011; 40: 489
Canada	Fliss DM, Laryngoscope 1994; 104: 146
Chile	Gheit T, J Med Virol 2014; 86: 642 Torrente MC, Acta Otolaryngol 2005; 125: 888
Cuba	García-Milián R, Acta Otolaryngol 1998; 118: 754 Ribeiro KB, Int J Epidemiol 2011; 40: 489

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Table 32 – Continued

Country	Study
USA	Brandwein MS, Ann Otol Rhinol Laryngol 1993; 102: 309 Chernock RD, Mod Pathol 2013; 26: 223 Furniss CS, Int J Cancer 2007; 120: 2386 Paz IB, Cancer 1997; 79: 595 Schlecht NF, Mod Pathol 2011; 24: 1295 Shen J, Mod Pathol 1996; 9: 15 Zhao M, Int J Cancer 2005; 117: 605
Asia	
China	Liu B, Neoplasma 2010; 57: 594 Ma XL, J Med Virol 1998; 54: 186
India	Jacob SE, J Surg Oncol 2002; 79: 142
Japan	Anwar K, Int J Cancer 1993; 53: 22 Deng Z, Head Neck 2013; 35: 800 Mineta H, Anticancer Res 1998; 18: 4765 Ogura H, Jpn J Cancer Res 1991; 82: 1184 Shidara K, Laryngoscope 1994; 104: 1008
Turkey	Bozdayi G, J Otolaryngol Head Neck Surg 2009; 38: 119 Dönmez M, Kuwait Med J 2000 Gungor A, J Laryngol Otol 2007; 121: 772
Europe	
Belgium	Duray A, Int J Oncol 2011; 39: 51
Belarus	Gudleviciene Z, J Med Virol 2014; 86: 531
Switzerland	Adams V, Anticancer Res 1999; 19: 1
Czech Republic	Ribeiro KB, Int J Epidemiol 2011; 40: 489
Germany	Fischer M, Acta Otolaryngol 2003; 123: 752 Hoffmann M, Acta Otolaryngol 1998; 118: 138 Hoffmann M, Anticancer Res 2006; 26: 663 Hoffmann M, Oncol Rep 2009; 21: 809 Kleist B, J Oral Pathol Med 2000; 29: 432 Klussmann JP, Cancer 2001; 92: 2875 Krupar R, Eur Arch Otorhinolaryngol 2014; 271: 1737
Denmark	Lindeberg H, Cancer Lett 1999; 146: 9
Spain	Alvarez Alvarez I, Am J Otolaryngol 1997; 18: 375 Pérez-Ayala M, Int J Cancer 1990; 46: 8
Finland	Koskinen WJ, Int J Cancer 2003; 107: 401 Koskinen WJ, J Cancer Res Clin Oncol 2007; 133: 673 Mork J, N Engl J Med 2001; 344: 1125
France	Fouret P, Arch Otolaryngol Head Neck Surg 1997; 123: 513
United Kingdom	Anderson CE, J Clin Pathol 2007; 60: 439 Conway C, J Mol Diagn 2012; 14: 104 Salam M, Eur J Surg Oncol 1995; 21: 290 Snijders PJ, Int J Cancer 1996; 66: 464
Greece	Gorgoulis VG, Hum Pathol 1999; 30: 274 Vlachtsis K, Eur Arch Otorhinolaryngol 2005; 262: 890
Hungary	Major T, J Clin Pathol 2005; 58: 51
Italy	Azzimonti B, Histopathology 2004; 45: 560 Badaracco G, Anticancer Res 2000; 20: 1301 Badaracco G, Oncol Rep 2007; 17: 931 Boscolo-Rizzo P, J Cancer Res Clin Oncol 2009; 135: 559 Cattani P, Clin Cancer Res 1998; 4: 2585 Gallo A, Otolaryngol Head Neck Surg 2009; 141: 276
Lithuania	Gudleviciene Z, J Med Virol 2014; 86: 531 Gudleviciene Z, Oncology 2009; 76: 205
Norway	Koskinen WJ, J Cancer Res Clin Oncol 2007; 133: 673 Lie ES, Acta Otolaryngol 1996; 116: 900 Mork J, N Engl J Med 2001; 344: 1125
Poland	Morshed K, Eur Arch Otorhinolaryngol 2008; 265 Suppl 1: S89 Ribeiro KB, Int J Epidemiol 2011; 40: 489 Snietura M, Eur Arch Otorhinolaryngol 2011; 268: 721
Romania	Ribeiro KB, Int J Epidemiol 2011; 40: 489
Russian Federation	Ribeiro KB, Int J Epidemiol 2011; 40: 489
Slovakia	Ribeiro KB, Int J Epidemiol 2011; 40: 489
Slovenia	Poljak M, Acta Otolaryngol Suppl 1997; 527: 66
Sweden	Koskinen WJ, J Cancer Res Clin Oncol 2007; 133: 673 Mork J, N Engl J Med 2001; 344: 1125

10 Glossary

Table 33: Glossary

Term	Definition
Incidence	Incidence is the number of new cases arising in a given period in a specified population. This information is collected routinely by cancer registries. It can be expressed as an absolute number of cases per year or as a rate per 100,000 persons per year (see Crude rate and ASR below). The rate provides an approximation of the average risk of developing a cancer.
Mortality	Mortality is the number of deaths occurring in a given period in a specified population. It can be expressed as an absolute number of deaths per year or as a rate per 100,000 persons per year.
Prevalence	The prevalence of a particular cancer can be defined as the number of persons in a defined population who have been diagnosed with that type of cancer, and who are still alive at the end of a given year, the survivors. Complete prevalence represents the number of persons alive at certain point in time who previously had a diagnosis of the disease, regardless of how long ago the diagnosis was, or if the patient is still under treatment or is considered cured. Partial prevalence, which limits the number of patients to those diagnosed during a fixed time in the past, is a particularly useful measure of cancer burden. Prevalence of cancers based on cases diagnosed within one, three and five years are presented as they are likely to be of relevance to the different stages of cancer therapy, namely, initial treatment (one year), clinical follow-up (three years) and cure (five years). Patients who are still alive five years after diagnosis are usually considered cured since the death rates of such patients are similar to those in the general population. There are exceptions, particularly breast cancer. Prevalence is presented for the adult population only (ages 15 and over), and is available both as numbers and as proportions per 100,000 persons.
Crude rate	Data on incidence or mortality are often presented as rates. For a specific tumour and population, a crude rate is calculated simply by dividing the number of new cancers or cancer deaths observed during a given time period by the corresponding number of person years in the population at risk. For cancer, the result is usually expressed as an annual rate per 100,000 persons at risk.
ASR (age-standardised rate)	An age-standardised rate (ASR) is a summary measure of the rate that a population would have if it had a standard age structure. Standardization is necessary when comparing several populations that differ with respect to age because age has a powerful influence on the risk of cancer. The ASR is a weighted mean of the age-specific rates; the weights are taken from population distribution of the standard population. The most frequently used standard population is the World Standard Population. The calculated incidence or mortality rate is then called age-standardised incidence or mortality rate (world). It is also expressed per 100,000. The world standard population used in GLOBOCAN is as proposed by Segi [1] and modified by Doll and al. [2]. The age-standardised rate is calculated using 10 age-groups. The result may be slightly different from that computed using the same data categorised using the traditional 5 year age bands.
Cumulative risk	Cumulative incidence/mortality is the probability or risk of individuals getting/dying from the disease during a specified period. For cancer, it is expressed as the number of new born children (out of 100, or 1000) who would be expected to develop/die from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.
Cytologically normal women	No abnormal cells are observed on the surface of their cervix upon cytology.

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Table 33 – Continued

Term	Definition
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. The condition is graded as CIN 1, 2 or 3, according to the thickness of the abnormal epithelium (1/3, 2/3 or the entire thickness).
Low-grade cervical lesions (LSIL/CIN-1)	Low-grade cervical lesions are defined by early changes in size, shape, and number of ab-normal 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 sur-face 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)	Preinvasive malignancy limited to the epithelium without invasion of the basement membrane. CIN 3 encompasses the squamous carcinoma in situ.
Invasive cervical cancer (ICC) / Cervical cancer	If the high-grade precancerous cells invade the basement membrane is called ICC. ICC stages range from stage I (cancer is in the cervix or uterus only) to stage IV (the cancer has spread to distant organs, such as the liver).
Invasive squamous cell carcinoma	Invasive carcinoma composed of cells resembling those of squamous epithelium
Adenocarcinoma	Invasive tumour with glandular and squamous elements intermingled.
Eastern Europe	References included in Belarus, Bulgaria, Czech Republic, Hungary, Poland, Republic of Moldova, Romania, Russian Federation, Slovakia, and Ukraine.
Northern Europe	References included in Denmark, Estonia, Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, and United Kingdom of Great Britain and Northern Ireland.
Southern Europe	References included in Albania, Bosnia and Herzegovina, Croatia, Greece, Italy, Malta, Montenegro, Portugal, Serbia, Slovenia, Spain, The former Yugoslav Republic of Macedonia.
Western Europe	References included in Austria, Belgium, France, Germany, Liechtenstein, Luxembourg, Netherlands, and Switzerland.
Europe PREHDICT	References included in Albania, Austria, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Montenegro, Netherlands, Norway, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, The former Yugoslav Republic of Macedonia, Turkey, Ukraine, and United Kingdom of Great Britain and Northern Ireland.

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Institut Català d'Oncologia (ICO), in alphabetic order

Albero G, Barrionuevo-Rosas L, Bosch FX, Bruni L, de Sanjosé S, Gómez D, Mena M, Muñoz J, Serrano B.

7th Framework Programme grant PREHDICT project: health-economic modelling of PREvention strategies for Hpv-related Diseases in European Countries. Coordinated by Drs. Johannes Berkhof and Chris Meijer at VUMC, Vereniging Voor Christelijk Hoger Onderwijs Wetenschappelijk Onderzoek En Patientenzorg, the Netherlands.

(http://cordis.europa.eu/projects/rcn/94423_en.html)

7th Framework Programme grant HPV AHEAD project: Role of human papillomavirus infection and other co-factors in the aetiology of head and neck cancer in India and Europe. Coordinated by Dr. Massimo Tommasino at IARC, International Agency of Research on Cancer, Lyon, France.

(http://cordis.europa.eu/project/rcn/100268_en.html)

International Agency for Research on Cancer (IARC)

Note to the reader

Anyone who is aware of relevant published data that may not have been included in the present report is encouraged to contact the HPV Information Centre for potential contributions.

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