Human Papillomavirus and Related Diseases Report

AMERICAS

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Abbreviations

Table 1: Abbreviations

Abbreviation	Full term
HPV	Human papillomavirus
HPV Information Centre	ICO/IARC Information Centre on HPV and 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 Americas 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.

Americas has a population of 415.36 million women aged 15 years and older who are at risk of developing cervical cancer. Current estimates indicate that every year 74,410 women are diagnosed with cervical cancer and 37,925 die from the disease. Cervical cancer ranks* as the 6th most frequent cancer among women in Americas.

* Ranking of cervical cancer incidence to other cancers among all women according to highest incidence rates (ranking 1st) excluding non-melanoma skin cancer. 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

Population	Americas	Caribbean	Central America	Northern America	South America
Women at risk for cervical cancer (Female population aged >=15 yrs) in millions	415.4	17.3	68.1	156.9	173.0
Burden of cervical cancer and other HPV-related cancer					
Annual number of new cervical cancer cases	74,410	3,857	13,848	14,971	41,734
Annual number of cervical cancer deaths	37,925	2,495	6,866	6,343	22,221
Standardized incidence rates per 100,000 population:					
Cervical cancer	11.3	13.7	13.8	6.15	15.4
Anal cancer					
Men	0.74	0.58	0.18	1.04	0.61
Women	1.25	0.69	0.27	1.83	1.01
Vulva cancer	1.30	0.68	0.62	1.91	0.93
Vaginal cancer	0.38	0.47	0.32	0.44	0.32
Penile cancer	0.97	1.43	1.03	0.51	1.46
Oropharyngeal cancer					
Men	2.93	3.42	0.43	4.01	2.48
Women	0.54	0.46	0.13	0.79	0.44
Oral cavity cancer					
Men	4.57	4.53	1.04	6.01	3.95
Women	1.86	1.43	1.09	2.56	1.44
Laryngeal cancer					
Men	3.56	7.26	1.57	3.34	4.18
Women	0.69	1.11	0.26	0.83	0.66
Burden of cervical HPV infection					
Prevalence (%) of HPV 16 and/or HPV 18 among women with:					
Normal cytology	4.5	15.8	4.1	4.4	5.8
Low-grade cervical lesions (LSIL/CIN-1)	26.7	7.6	15.0	27.1	35.6
High-grade cervical lesions (HSIL/ CIN-2 / CIN-3 / CIS)	56.9	32.6	40.8	58.6	56.3
Cervical cancer	68.2	60.2	63.1	71.4	62.6

LSIL, low-grade intraepithelial lesions; HSIL, high-grade intraepithelial lesions; CIN, cervical intraepithelial neoplasia; CIS, carcinoma in-situ.

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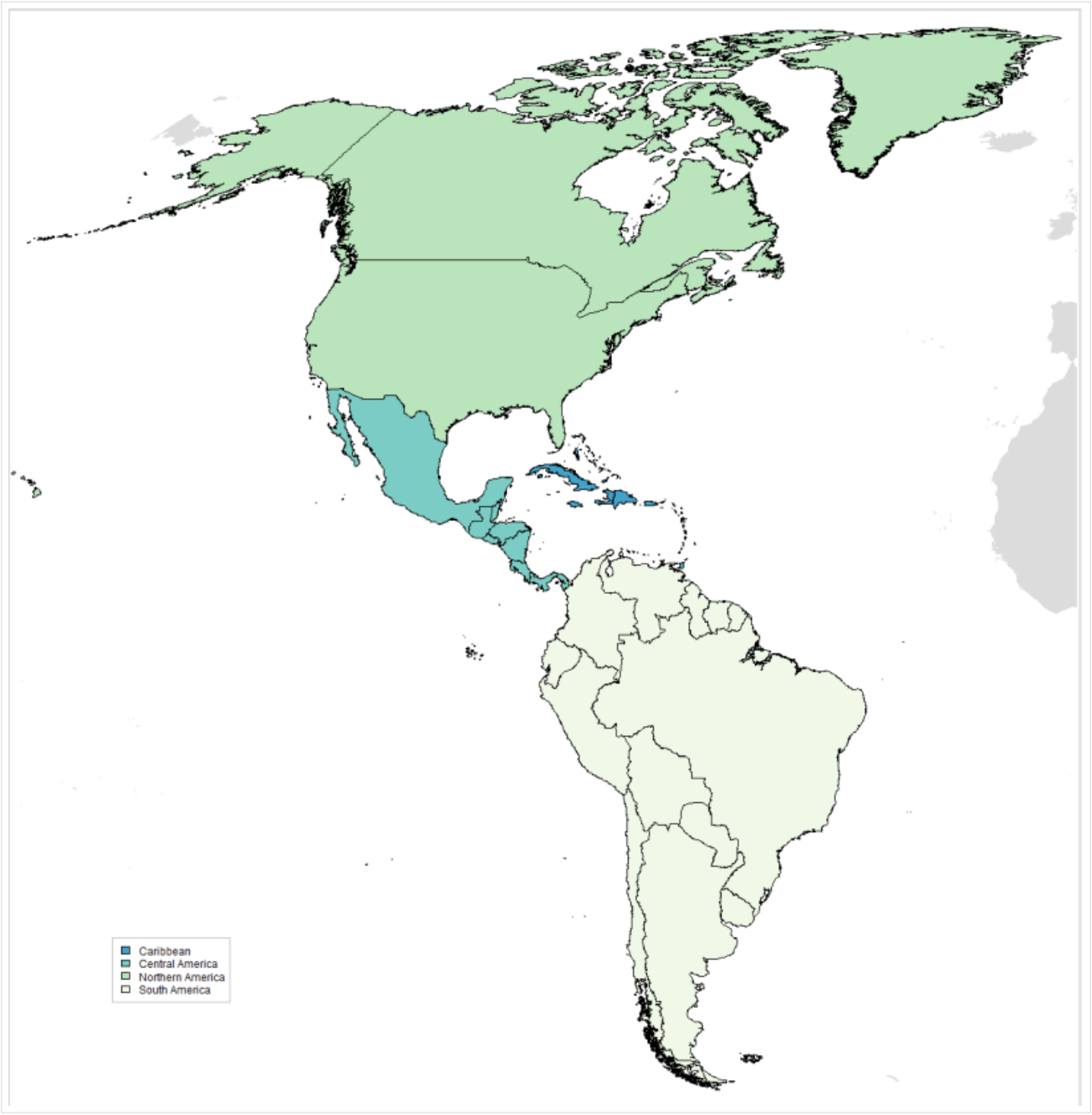
Figure 1: American regions



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 Americas 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 Americas. For analytical purposes, Americas is divided in these regions: Caribbean, Central America, Northern America, and South America

Section 3, Burden of HPV related cancers. This section describes the current burden of invasive cervical cancer and other HPV-related cancers in Americas with estimates of prevalence, incidence and mortality rates. Information in other HPV-related cancers includes other anogenital cancers (anus, vulva, vagina, and penis) and head and neck cancers (oral cavity, oropharyngeal, and larynx).

Section 4, HPV related statistics. This section reports on prevalence of HPV and HPV type-specific distribution in Americas, in women with normal cytology, precancerous lesions and invasive cervical cancer. In addition, the burden of HPV in other anogenital cancers (anus, vulva, vagina, and penis), head and neck cancers (oral cavity, oropharynx, and larynx) and men 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.

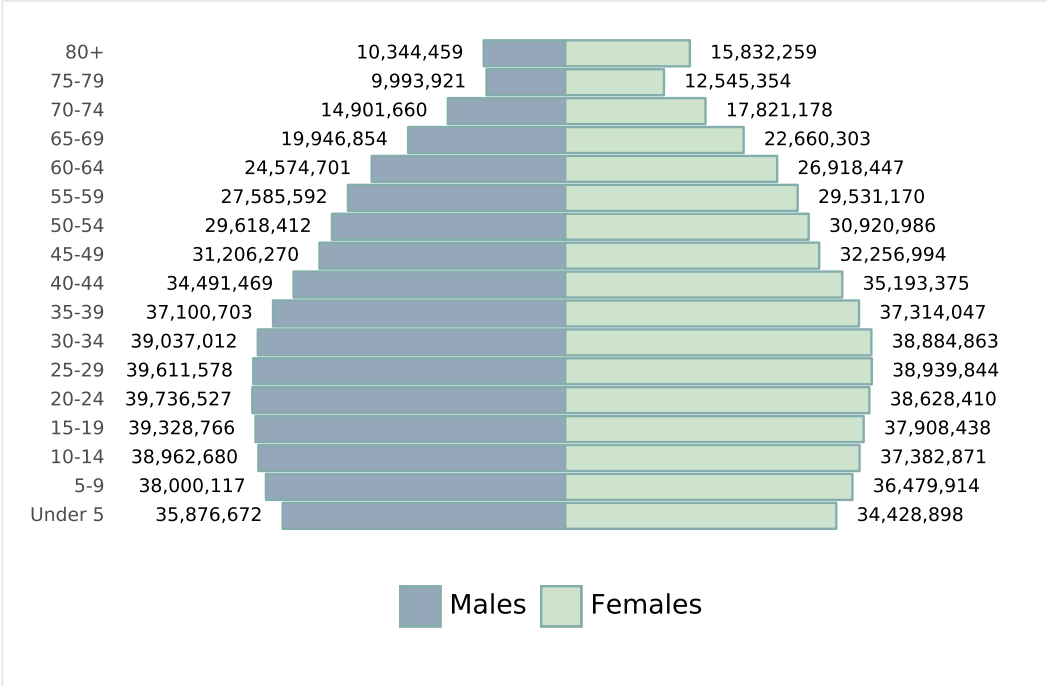
Section 6, Sexual and reproductive health behaviour indicators. This section presents sexual and reproductive behaviour indicators that may be used as proxy measures of risk for HPV infection and anogenital cancers, such as age at first sexual intercourse, average number of sexual partners, and anal intercourse among others.

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.

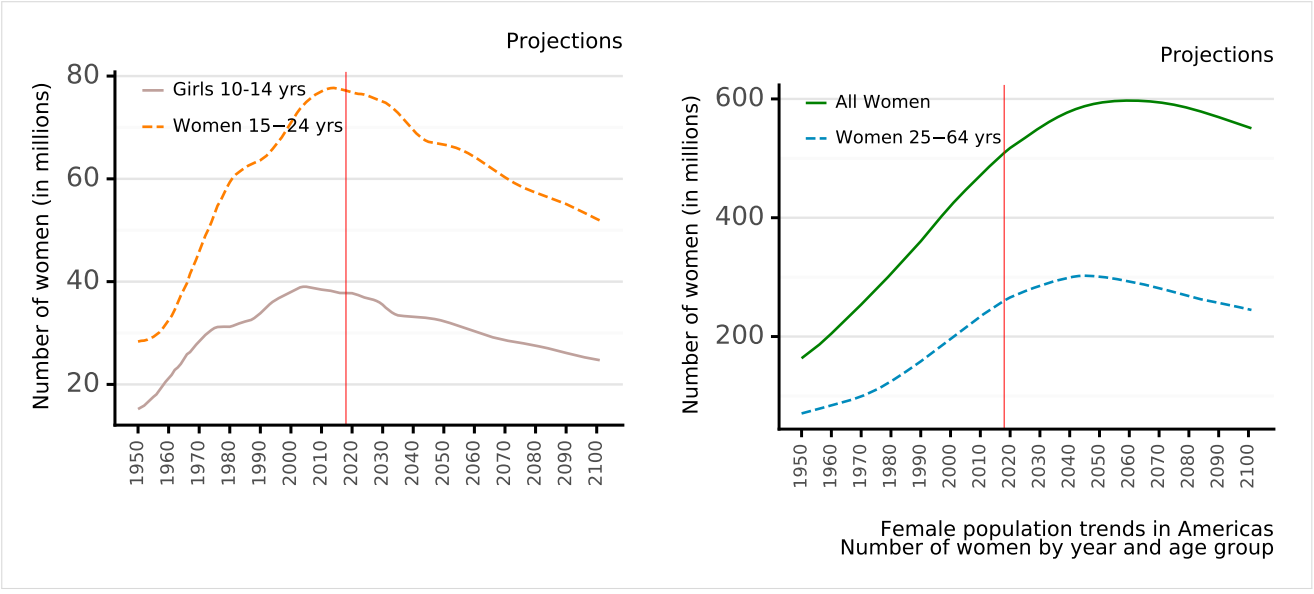
2 Demographic and socioeconomic factors

Figure 2: Population pyramid of Americas for 2022



Data accessed on 30 Jul 2022
Aggregated by the HPV Information Centre pooling its individual areas/countries.
Please refer to original source for methods of estimation.
Year of estimate: 2022
Data Sources:
United Nations, Department of Economic and Social Affairs, Population Division (2022). World Population Prospects 2022, Online Edition. [Accessed on July 30, 2022].

Figure 3: Population trends in four selected age groups in Americas



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Data Sources:
United Nations, Department of Economic and Social Affairs, Population Division (2022). World Population Prospects 2022, Online Edition. [Accessed on July 30, 2022].

Table 3: Population estimates in the Americas for 2022 (in millions)

	Males			Females		
Region Country	**10-14 years**	**15+ years**	**Total**	**10-14 years**	**15+ years**	**Total**
Americas	38.96	397.48	510.32	37.38	415.36	523.65
Caribbean	1.77	16.64	21.89	1.71	17.31	22.38
Antigua & Barbuda	0.0	0.04	0.04	0.0	0.04	0.05
Bahamas	0.02	0.16	0.2	0.02	0.17	0.21
Barbados	0.01	0.11	0.13	0.01	0.12	0.15
Cuba	0.32	4.65	5.57	0.3	4.8	5.65
Dominica	0.0	0.03	0.04	0.0	0.03	0.04
Dominican Republic	0.51	4.06	5.61	0.49	4.07	5.57
Grenada	0.0	0.05	0.06	0.0	0.05	0.06
Haiti	0.6	3.84	5.71	0.6	3.97	5.81
Jamaica	0.11	1.11	1.4	0.1	1.15	1.43
St Kitts & Nevis	0.0	0.02	0.02	0.0	0.02	0.02
St Lucia	0.01	0.07	0.09	0.01	0.07	0.09
St Vincent & The Grenadines	0.0	0.04	0.05	0.0	0.04	0.05
Trinidad & Tobago	0.05	0.61	0.75	0.05	0.63	0.77
Central America	8.09	63.79	87.36	7.83	68.11	90.92
Belize	0.02	0.14	0.2	0.02	0.15	0.2
Costa Rica	0.19	2.05	2.58	0.18	2.07	2.58
El Salvador	0.29	2.18	3.01	0.27	2.53	3.31
Guatemala	0.97	5.84	8.77	0.94	6.1	8.95
Honduras	0.54	3.62	5.23	0.51	3.59	5.13
Mexico	5.55	46.01	61.97	5.39	49.57	65.05
Nicaragua	0.34	2.35	3.4	0.33	2.48	3.5
Panama	0.19	1.6	2.19	0.18	1.63	2.19
Northern America	12.13	151.89	186.23	11.56	156.9	189.68
Canada	1.06	15.96	19.03	1.02	16.33	19.26
United States of America	11.06	135.87	167.14	10.53	140.51	170.36
South America	16.98	165.16	214.84	16.29	173.04	220.67
Argentina	1.84	17.06	22.47	1.74	17.79	22.92
Bolivia	0.63	4.17	6.09	0.61	4.21	6.06
Brazil	7.65	83.16	105.51	7.36	87.83	109.31
Chile	0.63	7.89	9.72	0.6	8.1	9.87
Colombia	1.91	19.88	25.54	1.84	20.81	26.25
Ecuador	0.82	6.57	8.94	0.79	6.7	8.97
Guyana	0.04	0.28	0.39	0.04	0.3	0.41
Paraguay	0.31	2.39	3.38	0.3	2.41	3.36
Peru	1.54	12.28	16.79	1.49	12.76	17.12
Suriname	0.03	0.2	0.29	0.03	0.21	0.29
Uruguay	0.12	1.32	1.66	0.11	1.44	1.76
Venezuela	1.44	9.84	13.88	1.37	10.35	14.17

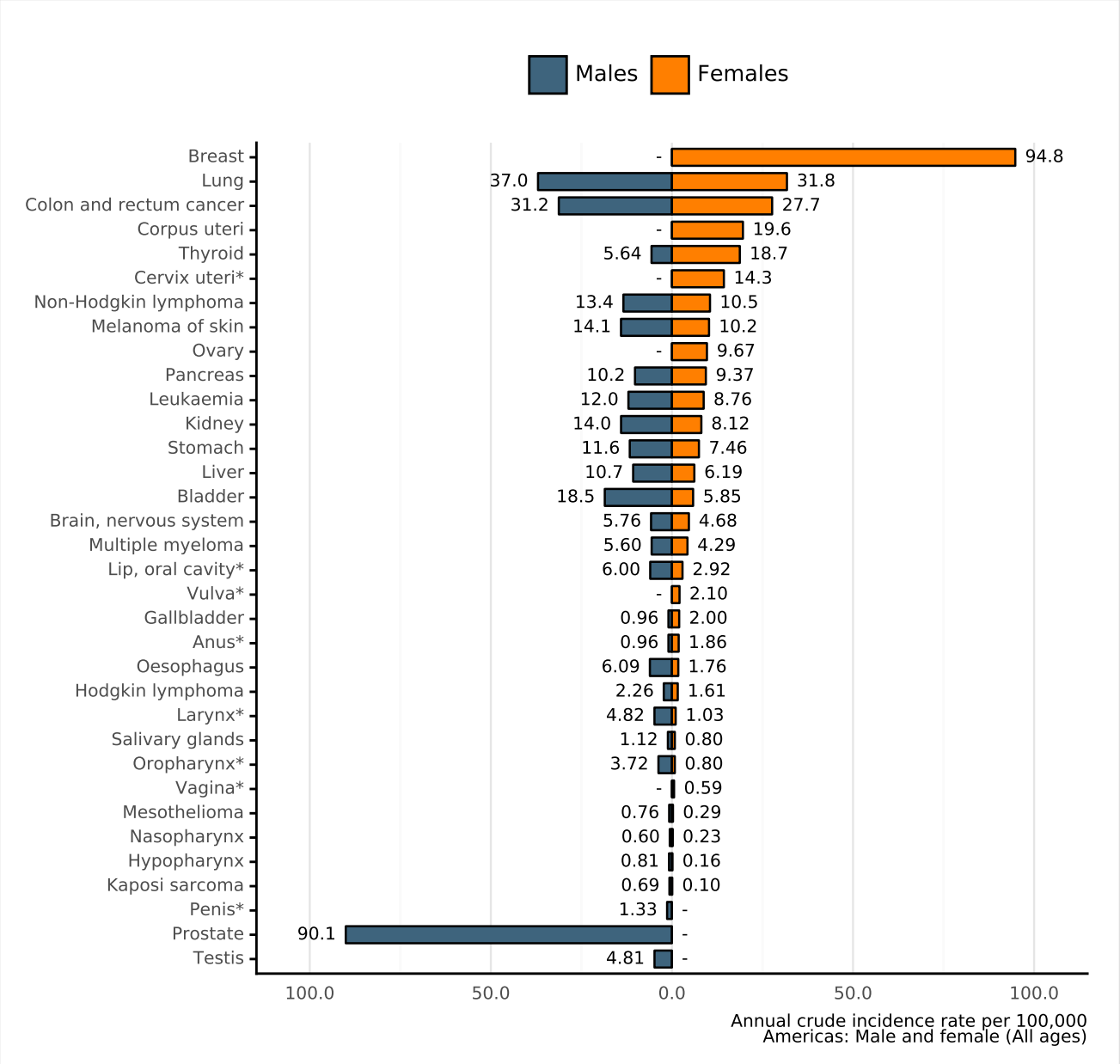
Data accessed on 30 Jul 2022

Aggregated by the HPV Information Centre pooling its individual areas/countries.
Please refer to original source for methods of estimation.
Year of estimate: 2022
Data Sources:
United Nations, Department of Economic and Social Affairs, Population Division (2022). World Population Prospects 2022, Online Edition. [Accessed on July 30, 2022].

3 Burden of HPV related cancers

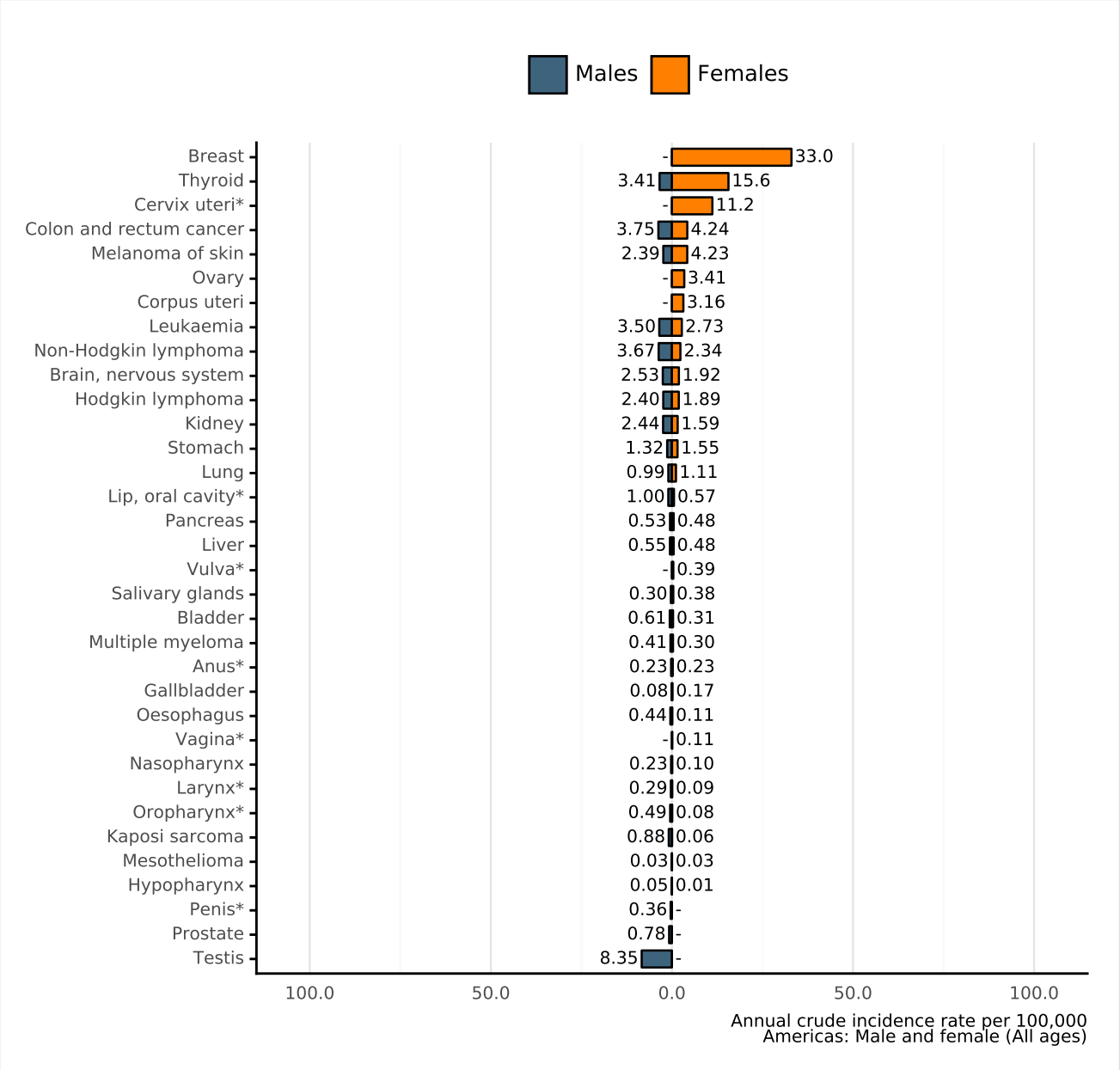
3.1 HPV related cancers incidence

Figure 4: Comparison of HPV related cancers incidence to other cancers in men and women of all ages in Americas (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
Non-melanoma skin cancer is not included
Rates per 100,000 men per year.
Rates per 100,000 women per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 5: Comparison of HPV related cancers incidence to other cancers among men and women 15-44 years of age in Americas (estimates for 2020)



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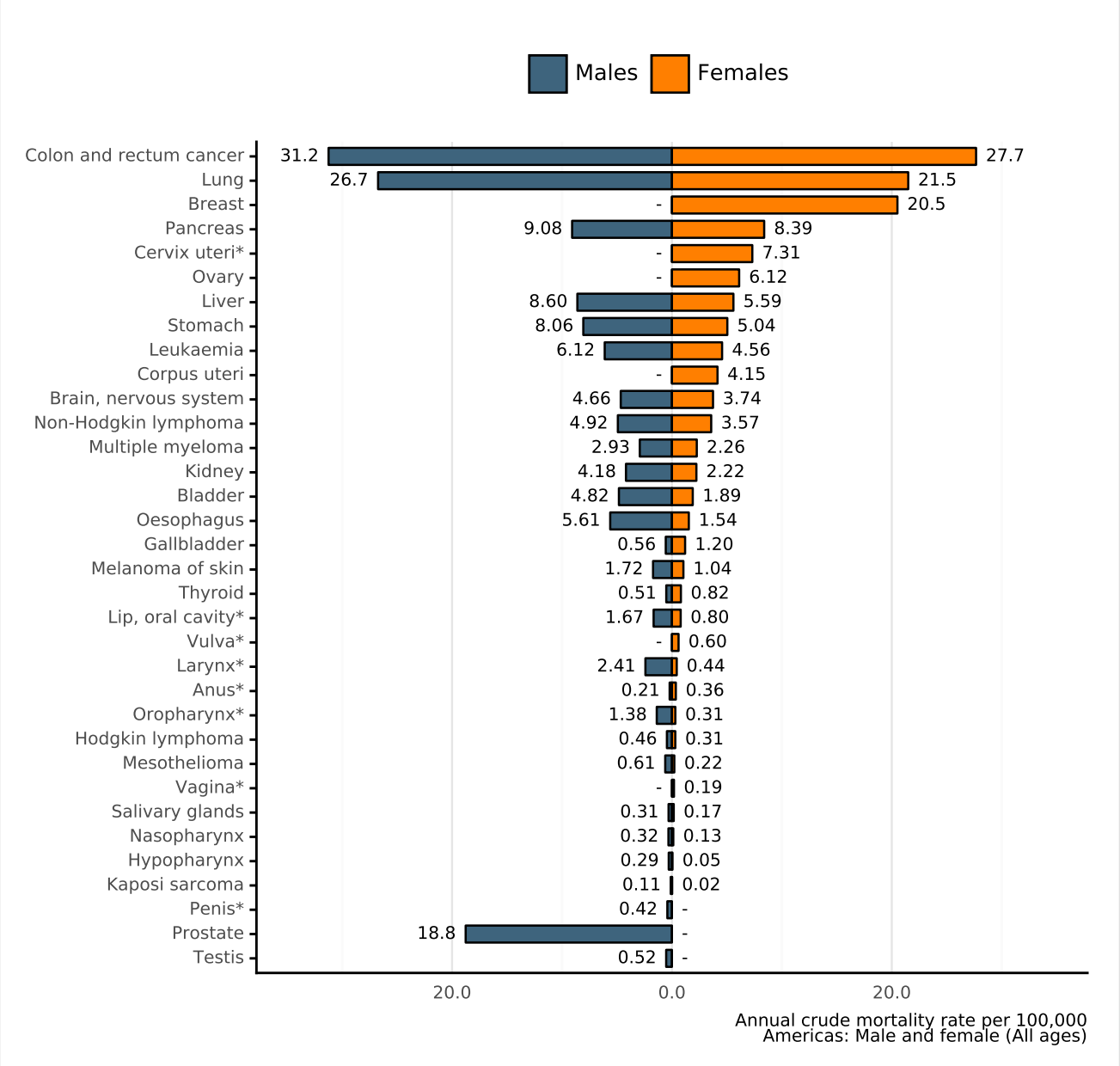
3.2 HPV related cancers mortality

Figure 6: Comparison of HPV related cancers mortality to other cancers in men and women of all ages in Americas (estimates for 2020)



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Non-melanoma skin cancer is not included
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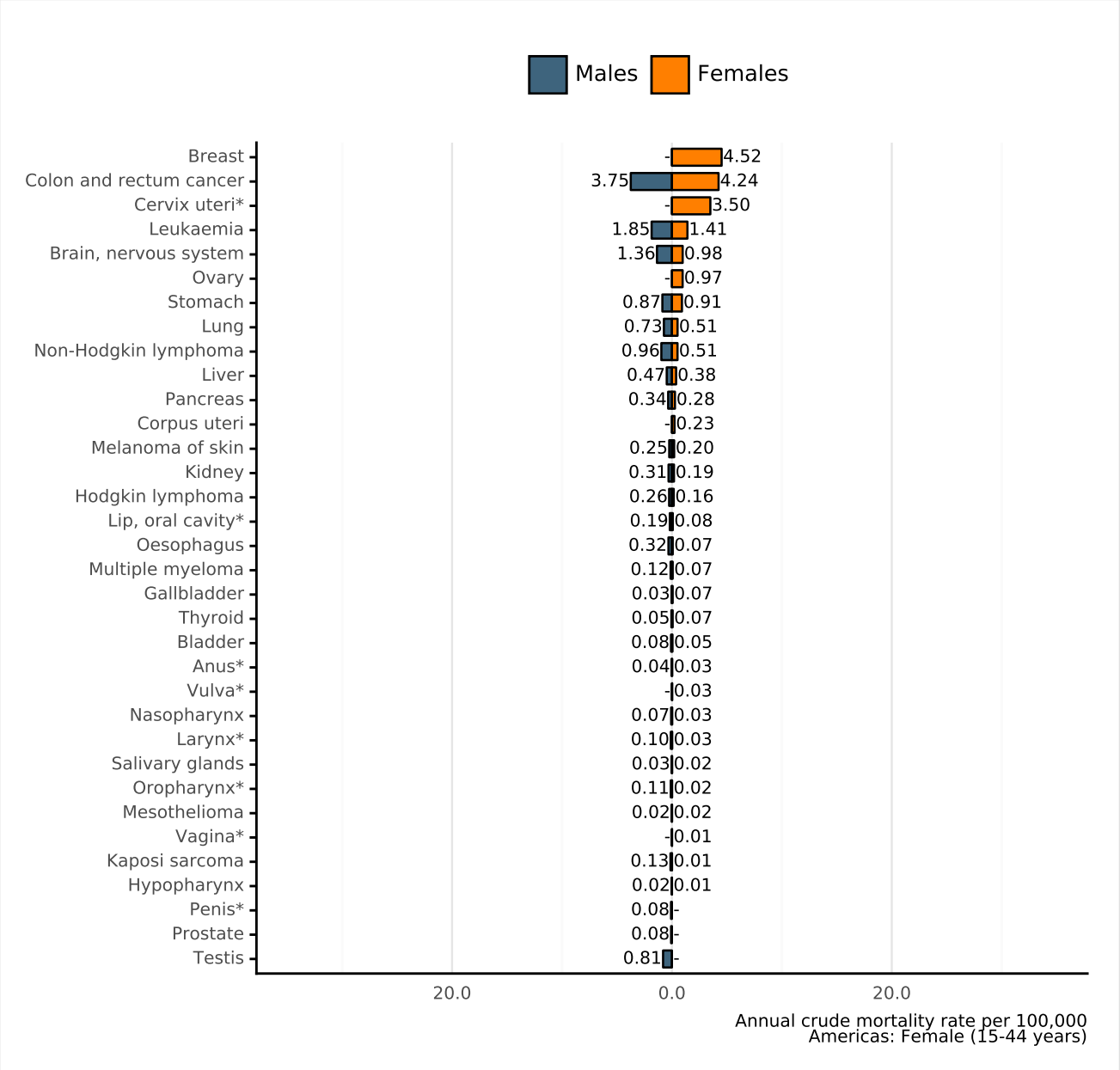
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today , accessed [27 January 2021].

Figure 7: Comparison of HPV related cancers mortality to other cancers among men and women 15-44 years of age in Americas (estimates for 2020)



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3.3 Cervical cancer

Cancer of the cervix uteri is the 4^{th} most common cancer among women worldwide, with an estimated 604,127 new cases and 341,831 deaths in 2020. Worldwide, mortality rates of cervical cancer are substantially lower than incidence with a ratio of mortality to incidence to 57% (GLOBOCAN 2020). 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 Americas and in comparison to geographic region, including estimates of the annual number of new cases, deaths, incidence, and mortality rates.

3.3.1 Cervical cancer incidence

Key Stats.

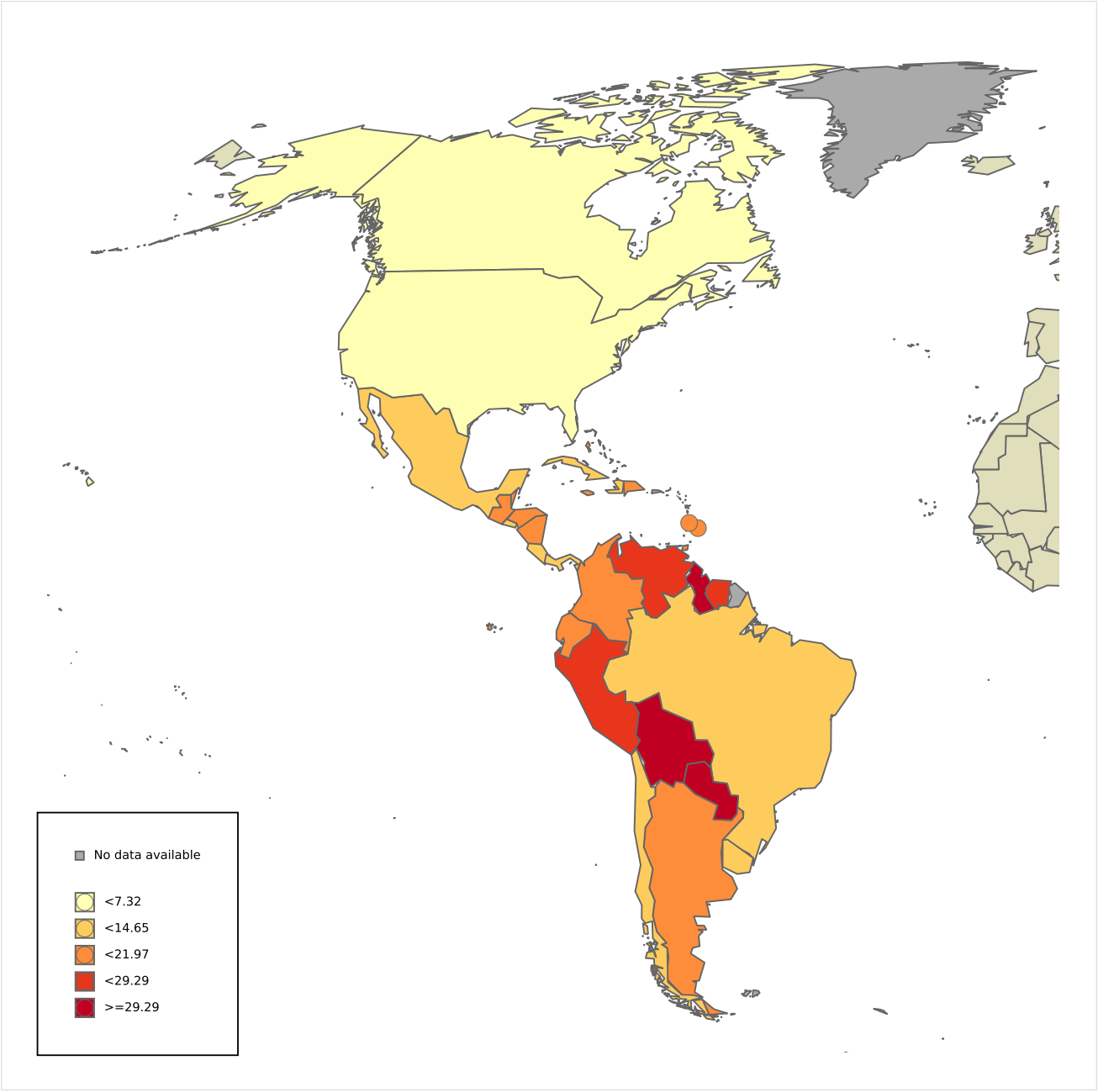
About **74,410 new cervical cancer cases** are diagnosed **annually** in **Americas** (estimations for 2020).

Cervical cancer **ranks* as the 6th leading cause** of female cancer in **Americas**.

Cervical cancer is the **3rd most common** female cancer in **women aged 15 to 44 years in Americas**.

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

Figure 8: Age-standardised incidence rates of cervical cancer in Americas (estimates for 2020)



Data accessed on 27 Jan 2021

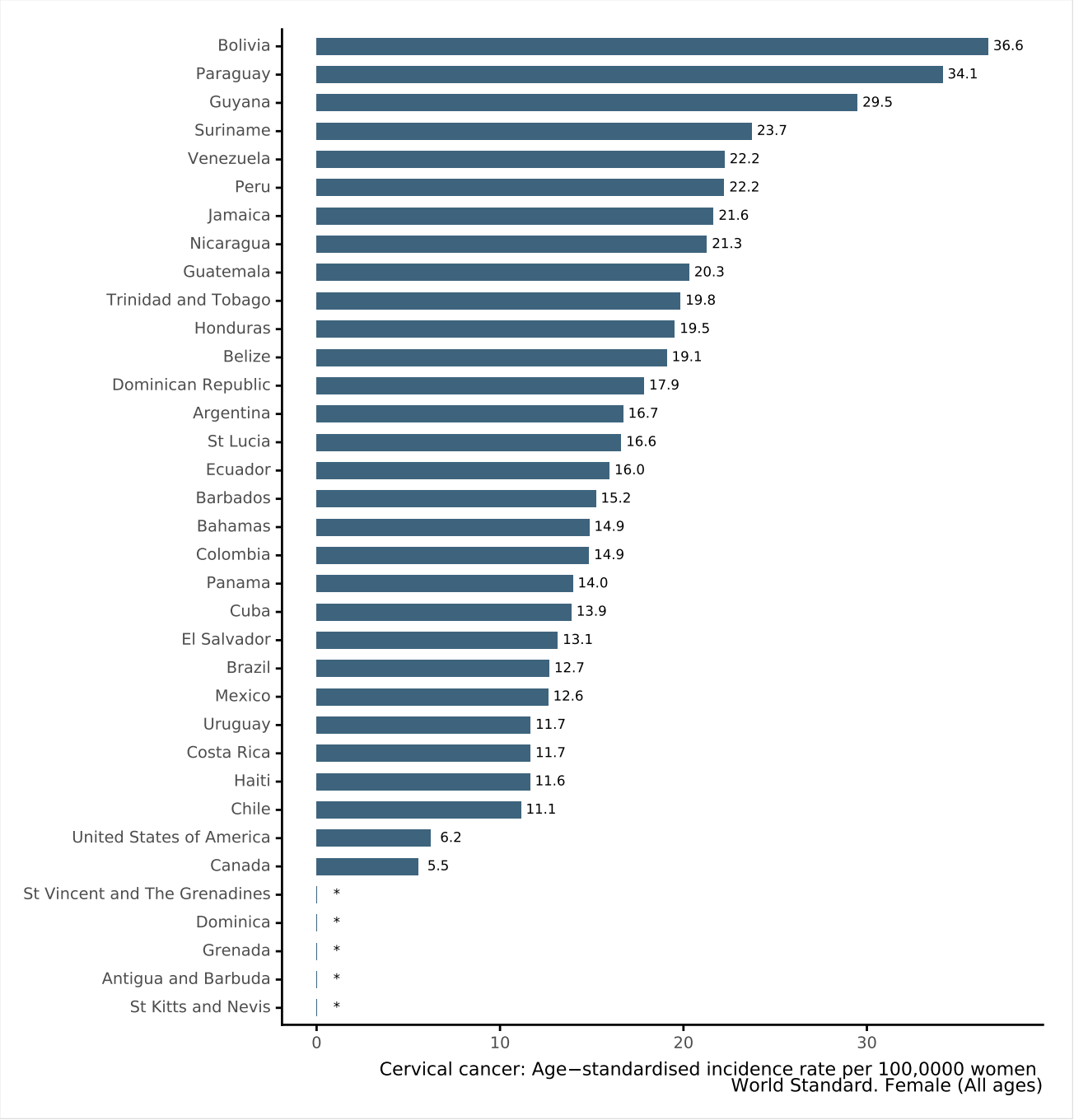
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 9: Age-standardised incidence rate of cervical cancer cases attributable to HPV by country in Americas (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 women per year.
* No rates are available
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Table 4: Incidence of cervical cancer in Americas (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
Americas	74,410	[56,232-62,828.9]	14.3	11.3	1.13	6	3
Caribbean	3,857	[3,427-4,341]	17.5	13.7	1.37	5	2
Trinidad & Tobago	202	[154.9-263.5]	28.5	19.8	2.02	3	2

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Table 4 – continued from previous page

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
St Lucia	20	[9.30-43.1]	21.5	16.6	2.15	2	3
Jamaica	386	[322.7-461.7]	25.9	21.6	2.17	3	2
Haiti	588	[501.7-689.1]	10.2	11.6	1.15	3	2
Dominican Republic	1,074	[959.4-1,202.2]	19.8	17.9	1.77	2	2
Cuba	1,187	[1,011.3-1,393.3]	20.8	13.9	1.36	5	2
Bahamas	39	[22.7-67]	19.3	14.9	1.68	3	4
Barbados	39	[22.6-67.4]	26.3	15.2	1.41	4	2
Central America	13,848	[13,283.5-14,436.5]	15.1	13.8	1.39	2	2
El Salvador	530	[432.6-649.3]	15.4	13.1	1.26	2	2
Panama	346	[270.1-443.2]	16.1	14.0	1.37	2	2
Nicaragua	719	[593-871.8]	21.4	21.3	2.16	2	2
Mexico	9,439	[8,942.8-9,962.7]	14.3	12.6	1.29	2	3
Belize	34	[19.5-59.2]	17.0	19.1	1.80	2	2
Honduras	858	[668.5-1,101.2]	17.3	19.5	2.00	2	2
Guatemala	1,555	[1,382-1,749.6]	17.1	20.3	2.08	2	2
Costa Rica	367	[258.9-520.3]	14.4	11.7	1.07	5	3
Northern America	14,971	[14,703.2-15,243.7]	8.04	6.15	0.59	14	4
United States of America	13,545	[13,118.7-13,985.2]	8.10	6.23	0.60	14	4
Canada	1,422	[1,214.8-1,664.5]	7.48	5.53	0.52	14	4
South America	41,734	[38,925.2-44,745.5]	19.1	15.4	1.59	3	3
Uruguay	273	[211.1-353.1]	15.2	11.7	1.14	6	3
Venezuela	3,709	[3,220.3-4,271.9]	25.7	22.2	2.27	2	2
Argentina	4,583	[4,133.9-5,080.9]	19.8	16.7	1.68	3	2
Colombia	4,742	[4,311.2-5,215.8]	18.3	14.9	1.53	3	3
Chile	1,503	[1,271-1,777.4]	15.5	11.1	1.09	4	2
Ecuador	1,534	[1,332.6-1,765.9]	17.4	16.0	1.66	2	3
Guyana	121	[81-180.6]	30.9	29.5	3.23	2	2
Brazil	17,743	[16,977-18,543.6]	16.4	12.7	1.33	4	3
Bolivia	1,985	[1,757.8-2,241.6]	34.1	36.6	3.73	1	1
Peru	4,270	[3,779.3-4,824.4]	25.7	22.2	2.29	2	2
Paraguay	1,175	[942.8-1,464.3]	33.5	34.1	3.33	2	2
Suriname	78	[51.4-118.3]	26.7	23.7	2.45	2	2

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

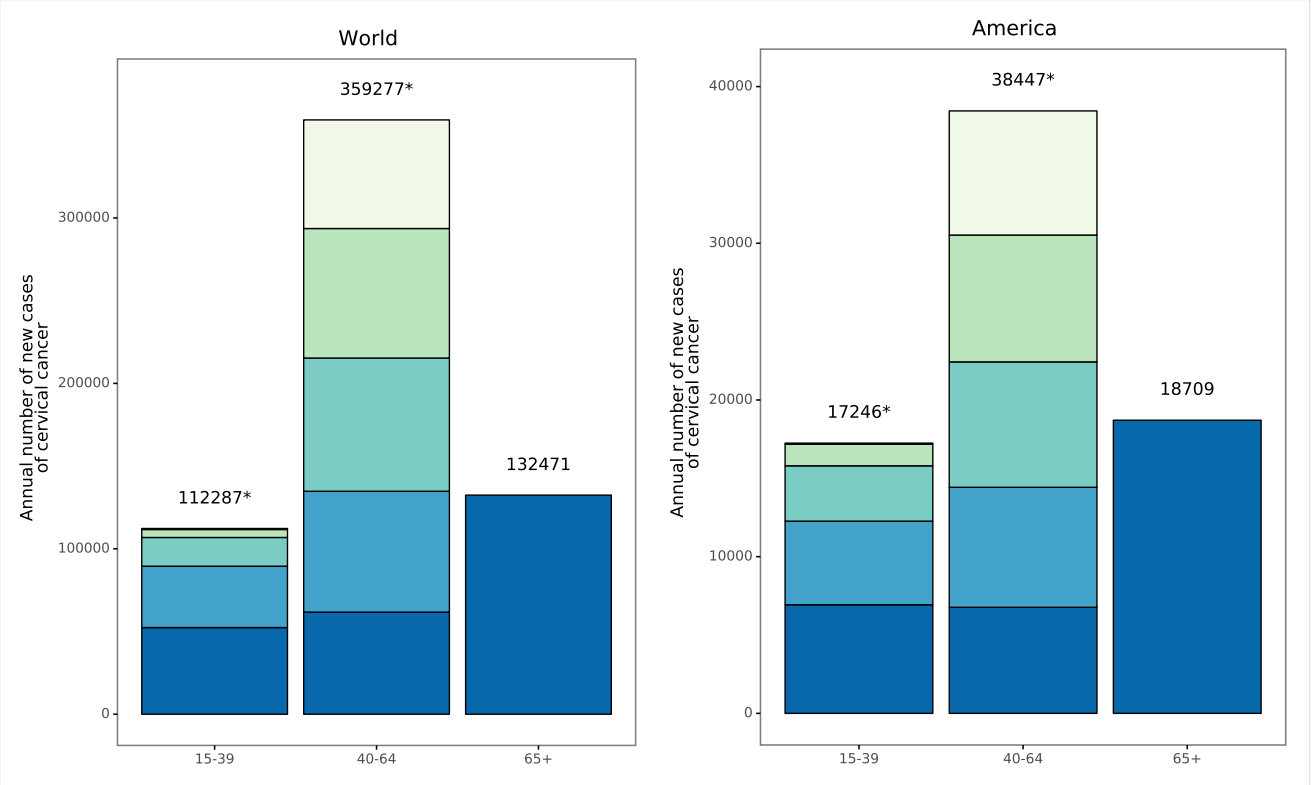
[a] Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed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

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 10: Annual number of new cases of cervical cancer in the World and Americas (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

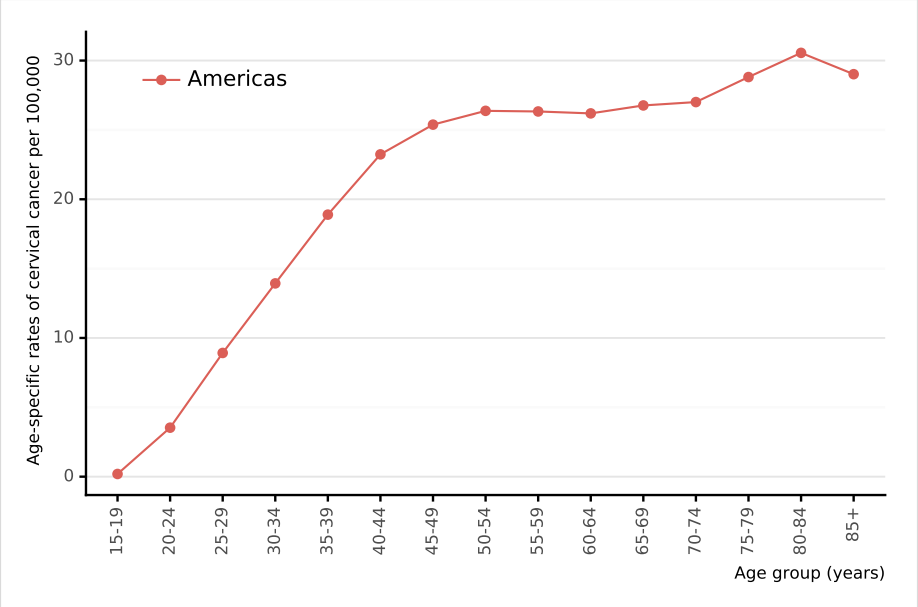
* World: 15-19 yrs: 616 cases. 20-24 yrs: 4819 cases. 25-29 yrs: 17357 cases. 30-34 yrs: 37106 cases. 35-39 yrs: 52389 cases. 40-44 yrs: 65657 cases. 45-49 yrs: 78299 cases. 50-54 yrs: 80544 cases. 55-59 yrs: 73053 cases. 60-64 yrs: 61724 cases.

* America: 15-19 yrs: 73 cases. 20-24 yrs: 1374 cases. 25-29 yrs: 3532 cases. 30-34 yrs: 5337 cases. 35-39 yrs: 6930 cases. 40-44 yrs: 7924 cases. 45-49 yrs: 8092 cases. 50-54 yrs: 8004 cases. 55-59 yrs: 7659 cases. 60-64 yrs: 6768 cases.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 11: Age-specific incidence rates of cervical cancer in Americas (estimates for 2020)



Data accessed on 27 Jan 2021

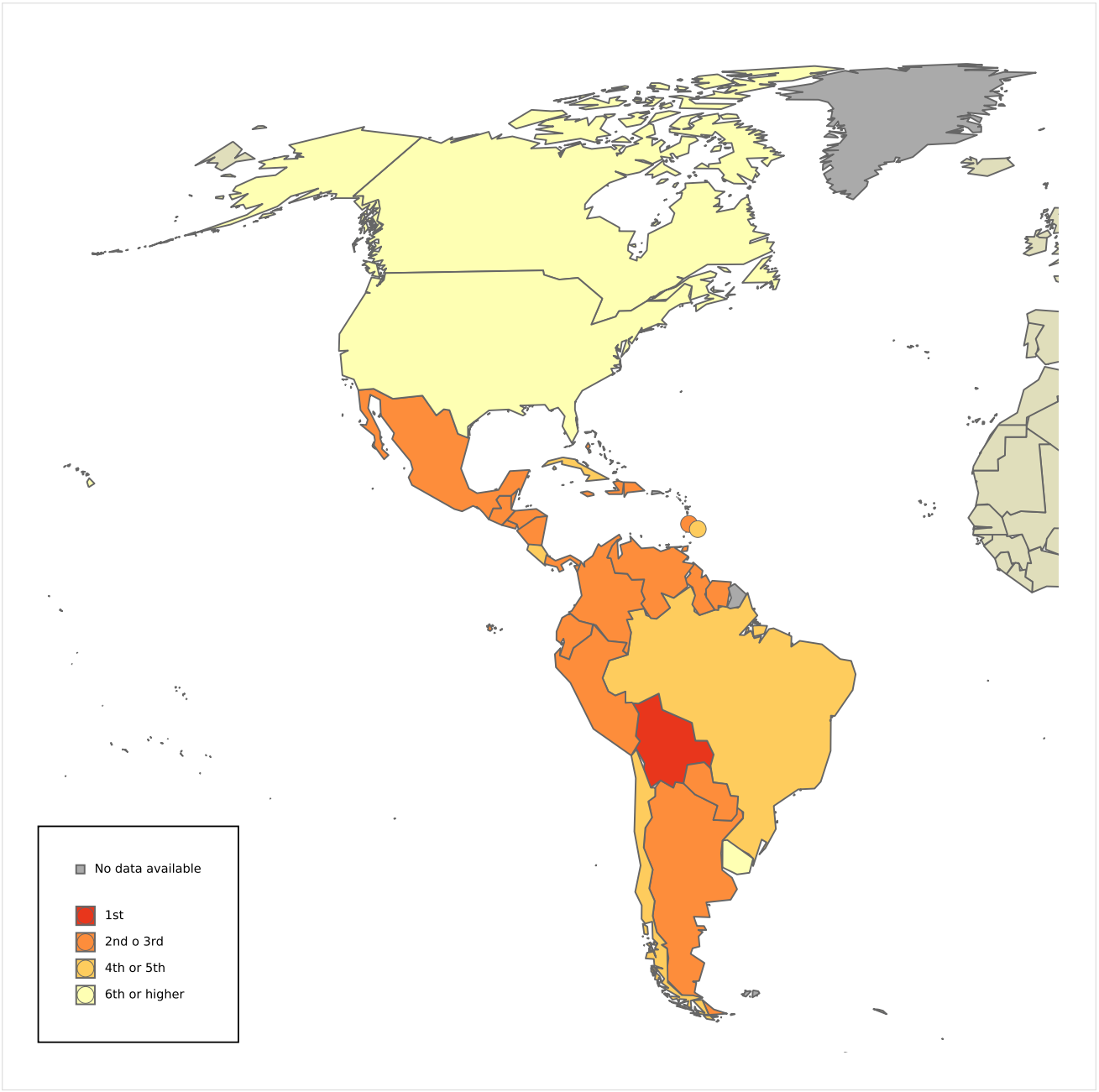
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 12: Ranking of cervical cancer versus other cancers among all women, according to incidence rates in Americas (estimates for 2020)



Data accessed on 27 Jan 2021

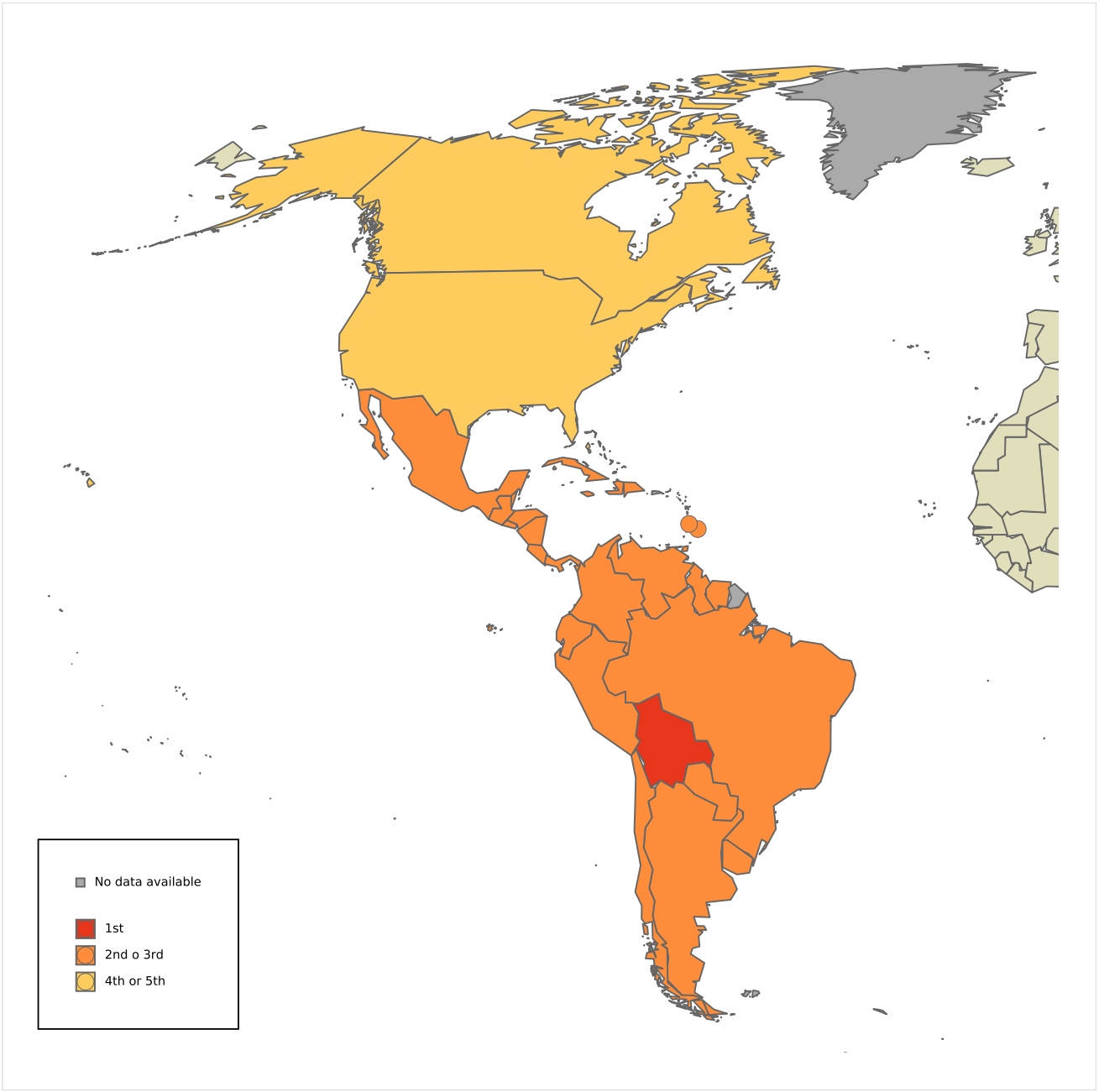
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Non-melanoma skin cancer is not included

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 13: Ranking of cervical cancer versus other cancers among women aged 15-44 years, according to incidence rates in Americas (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Non-melanoma skin cancer is not included

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.3.2 Cervical cancer mortality

Key Stats.

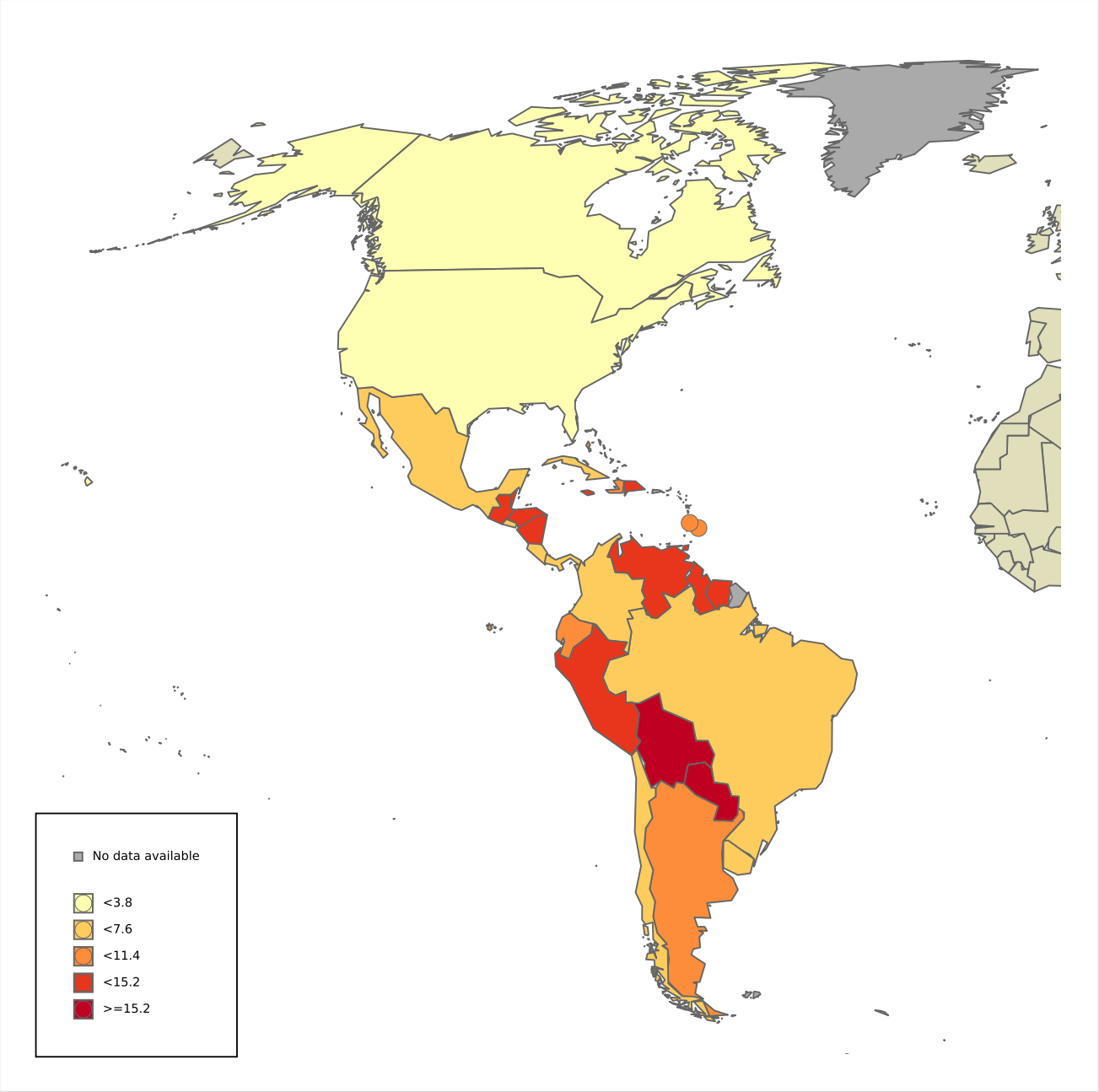
About **37,925 new cervical cancer cases** are diagnosed **annually** in **Americas** (estimations for 2020).

Cervical cancer **ranks* as the 5th leading cause** of female cancer in **Americas**.

Cervical cancer is the **3rd most common** female cancer in **women aged 15 to 44 years in Americas**.

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

Figure 14: Age-standardised mortality rates of cervical cancer in Americas (estimates for 2020)



Data accessed on 27 Jan 2021

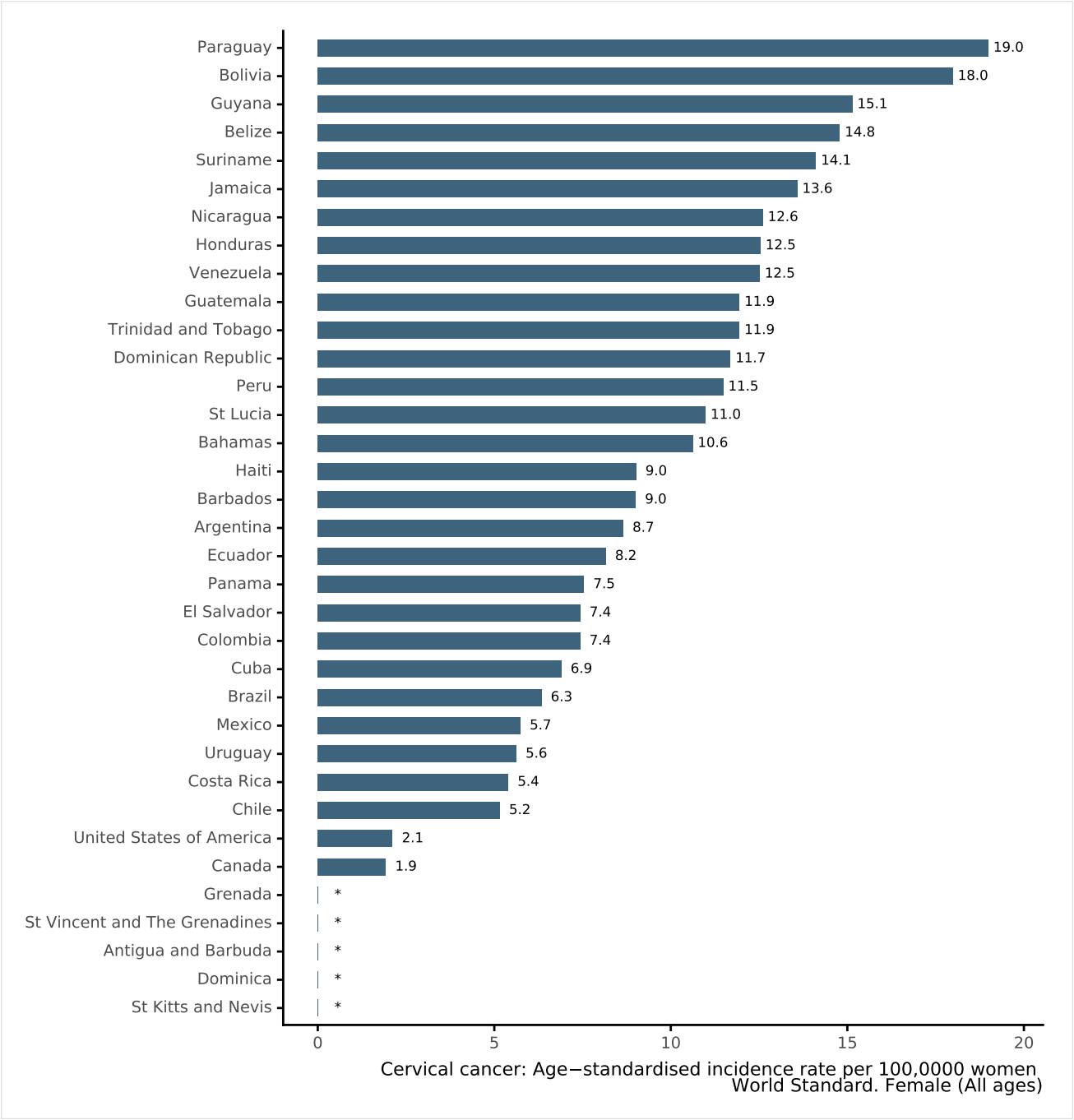
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 15: Age-standardised mortality rate of cervical cancer cases attributable to HPV by country in Americas (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 women per year.
* No rates are available
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Table 5: Mortality of cervical cancer Americas (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
Americas	37,925	[30,601.2-32,594.3]	7.31	5.27	0.55	5	3
Caribbean	2,495	[2,237.7-2,781.9]	11.3	8.22	0.89	4	2
Trinidad & Tobago	127	[100.8-160]	17.9	11.9	1.29	3	1

Continued on next page

Table 5 – continued from previous page

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
St Lucia	13	[6.60-25.7]	13.9	11.0	1.48	3	2
Jamaica	247	[211-289.1]	16.6	13.6	1.48	3	2
Haiti	439	[380.1-507]	7.60	9.02	0.91	3	2
Dominican Republic	714	[644.6-790.9]	13.1	11.7	1.25	3	2
Cuba	715	[624.6-818.5]	12.5	6.90	0.75	4	1
Bahamas	28	[17.4-45.1]	13.9	10.6	1.23	3	3
Barbados	26	[15.9-42.5]	17.5	9.00	0.89	3	6
Central America	6,866	[6,620.6-7,120.5]	7.49	6.80	0.74	3	2
Belize	25	[15.4-40.7]	12.5	14.8	1.43	1	2
El Salvador	317	[264.1-380.5]	9.19	7.43	0.74	3	2
Panama	194	[156.7-240.1]	9.00	7.54	0.80	3	1
Nicaragua	413	[350.4-486.8]	12.3	12.6	1.37	1	1
Mexico	4,335	[4,141.9-4,537.1]	6.58	5.74	0.63	3	2
Guatemala	872	[786.9-966.3]	9.59	11.9	1.29	2	1
Honduras	518	[449-597.6]	10.5	12.5	1.41	1	1
Costa Rica	192	[150.9-244.2]	7.53	5.40	0.53	4	1
Northern America	6,343	[6,162.8-6,528.4]	3.40	2.10	0.22	12	3
Canada	637	[572.7-708.5]	3.35	1.93	0.20	15	3
United States of America	5,706	[5,381.5-6,050]	3.41	2.12	0.22	12	3
South America	22,221	[21,594.3-22,865.9]	10.2	7.81	0.82	4	2
Venezuela	2,129	[1,910.2-2,372.8]	14.7	12.5	1.32	3	1
Colombia	2,490	[2,316.3-2,676.7]	9.61	7.43	0.80	4	2
Uruguay	159	[125.1-202.1]	8.86	5.62	0.59	6	3
Argentina	2,553	[2,350.5-2,772.9]	11.0	8.65	0.90	5	1
Chile	799	[702.5-908.7]	8.25	5.15	0.54	7	2
Ecuador	813	[728.1-907.9]	9.22	8.16	0.86	3	2
Guyana	63	[45.9-86.5]	16.1	15.1	1.79	2	2
Brazil	9,168	[8,852.8-9,494.4]	8.48	6.34	0.67	4	2
Bolivia	1,054	[938.2-1,184.1]	18.1	18.0	1.83	1	1
Peru	2,288	[2,079.2-2,517.7]	13.8	11.5	1.22	2	1
Paraguay	648	[545.3-770]	18.5	19.0	1.96	1	1
Suriname	48	[33.4-69.1]	16.4	14.1	1.62	3	1

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

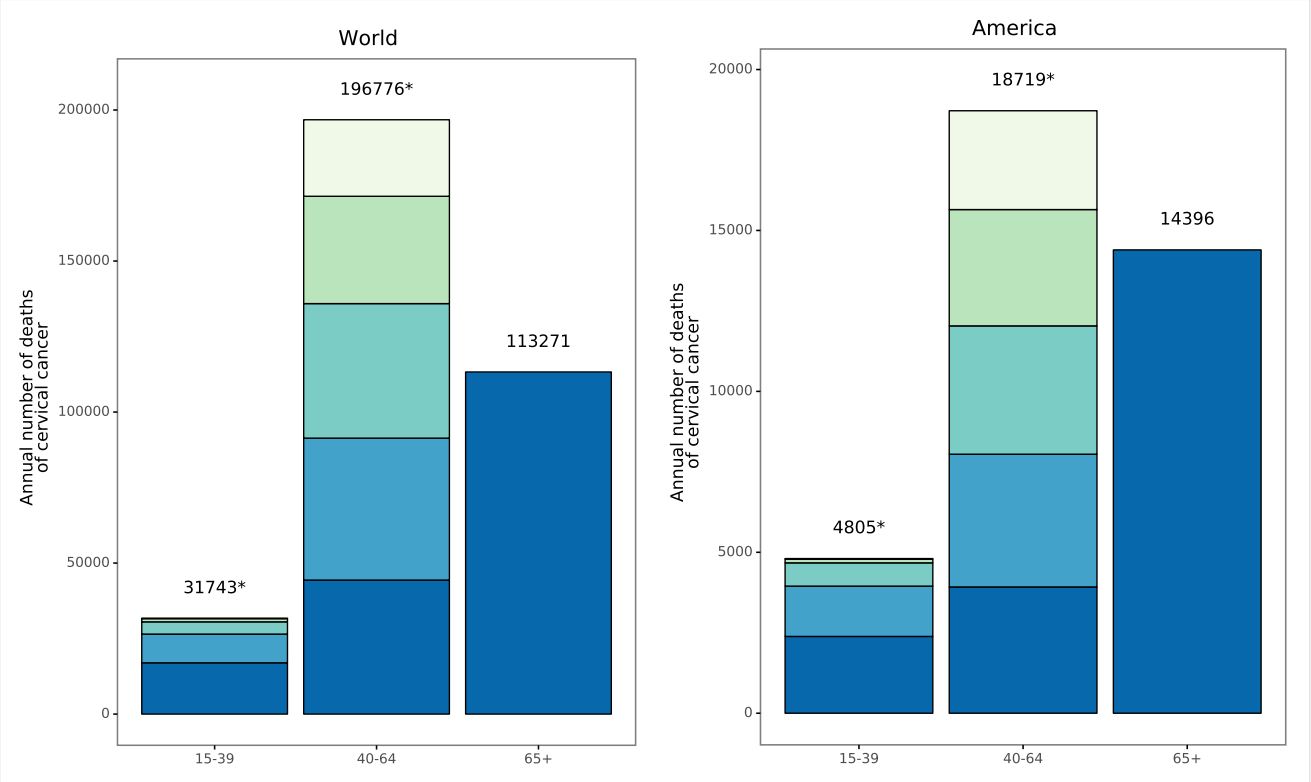
[a] Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the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

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 16: Annual number of deaths of cervical cancer in the World and Americas (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

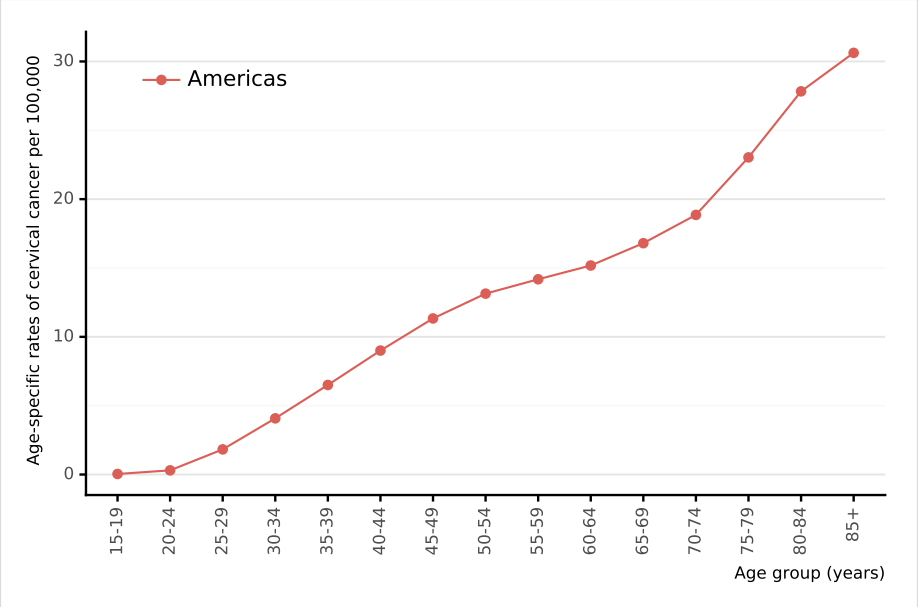
* World: 15-19 yrs: 144 cases. 20-24 yrs: 1055 cases. 25-29 yrs: 4057 cases. 30-34 yrs: 9506 cases. 35-39 yrs: 16981 cases. 40-44 yrs: 25334 cases. 45-49 yrs: 35535 cases. 50-54 yrs: 44540 cases. 55-59 yrs: 46997 cases. 60-64 yrs: 44370 cases.

* America: 15-19 yrs: 15 cases. 20-24 yrs: 118 cases. 25-29 yrs: 723 cases. 30-34 yrs: 1563 cases. 35-39 yrs: 2386 cases. 40-44 yrs: 3070 cases. 45-49 yrs: 3614 cases. 50-54 yrs: 3987 cases. 55-59 yrs: 4125 cases. 60-64 yrs: 3923 cases.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 17: Age-specific mortality rates of cervical cancer in Americas (estimates for 2020)



Data accessed on 27 Jan 2021

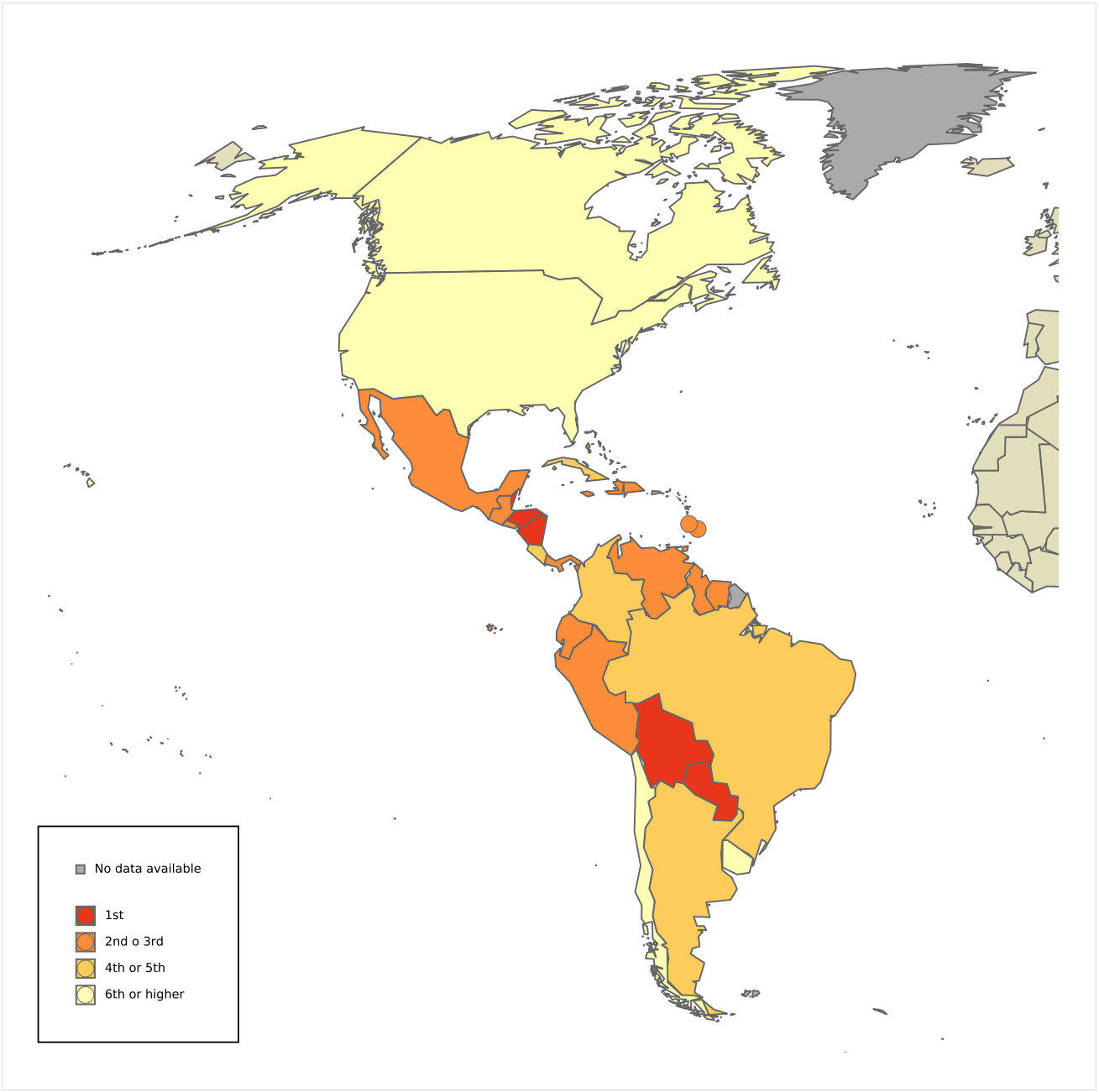
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 18: Ranking of cervical cancer versus other cancers among all women, according to mortality rates in Americas (estimates for 2020)



Data accessed on 27 Jan 2021

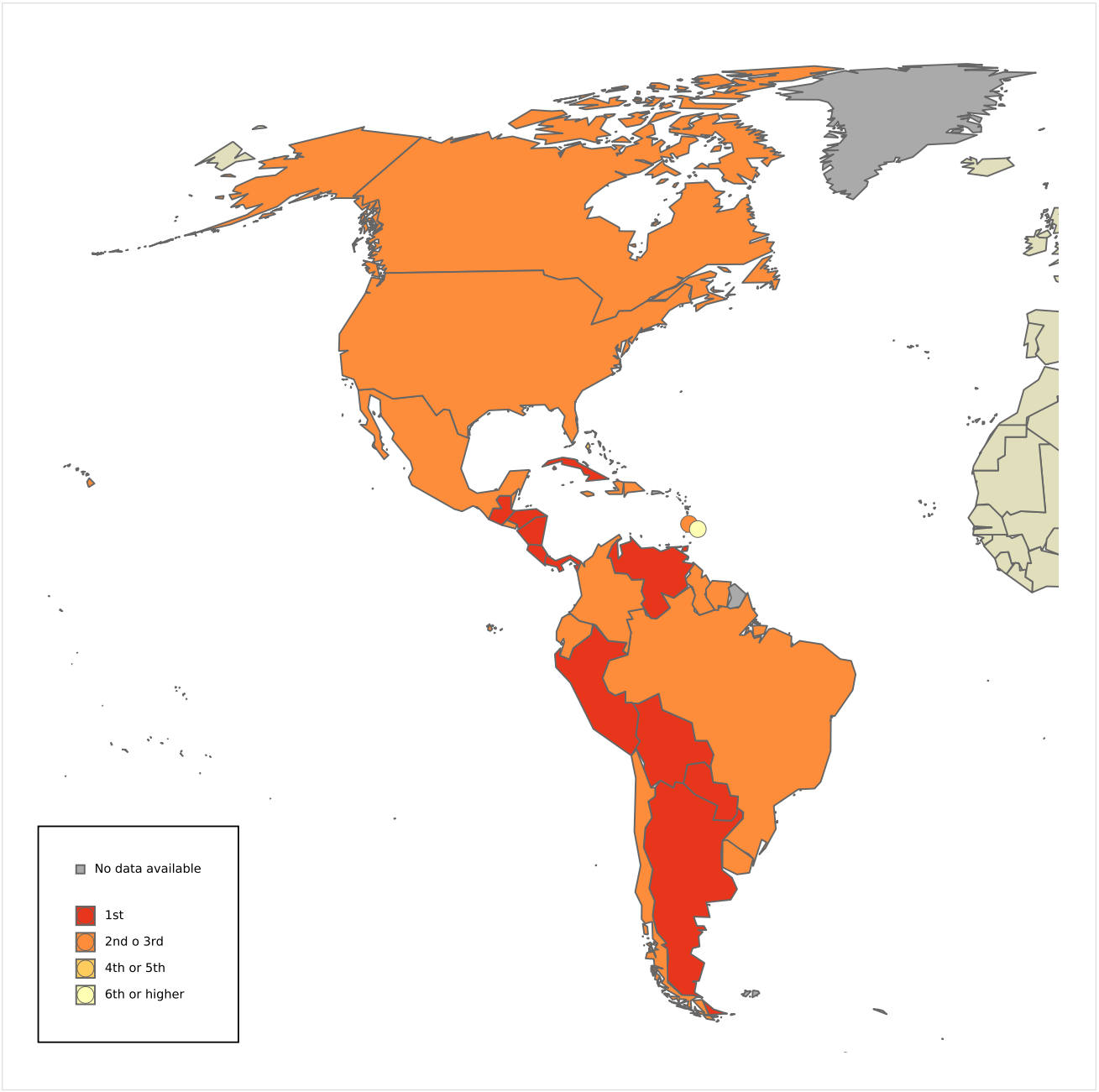
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Non-melanoma skin cancer is not included

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 19: Ranking of cervical cancer versus other cancers among women aged 15-44 years, according to mortality rates in Americas (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Non-melanoma skin cancer is not included

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.4 Anogenital cancers other than the cervix

3.4.1 Anal cancer

3.4.1.1 Anal cancer incidence

Table 6: Incidence of anal cancer in women by Americas and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
Americas	9,664	[2,906.3-4,292.4]	1.86	1.25	0.15	21	22
Caribbean	214	[104.1-439.7]	0.97	0.69	0.08	22	27
Trinidad & Tobago	9	[1.30-64.3]	1.27	0.75	0.10	19	24
St Lucia	0	[0-1.10]	0	0	0	26	21
Jamaica	12	[2.70-52.5]	0.80	0.62	0.07	20	23
Haiti	2	[0.30-15.5]	0.03	0.04	0.01	30	31
Dominican Republic	5	[0.60-38.8]	0.09	0.08	0.01	29	29
Cuba	120	[76.3-188.7]	2.10	1.16	0.13	21	20
Bahamas	2	[1.70-2.30]	0.99	0.79	0.07	19	9
Barbados	6	[5.20-6.90]	4.05	1.88	0.24	14	28
Central America	280	[179.1-437.7]	0.31	0.27	0.03	25	24
El Salvador	22	[6.90-70.4]	0.64	0.52	0.06	22	16
Panama	10	[2.80-36.2]	0.46	0.35	0.04	24	25
Nicaragua	14	[4.80-41]	0.42	0.40	0.04	23	23
Mexico	183	[123.6-271]	0.28	0.24	0.02	25	25
Belize	0	[0-1.20]	0	0	0	26	15
Honduras	40	[9.70-164.8]	0.81	0.86	0.07	19	13
Guatemala	4	[0.50-30.1]	0.04	0.07	0.01	28	29
Costa Rica	7	[3.50-13.8]	0.27	0.19	0.02	27	26
Northern America	6,132	[5,963.5-6,305.2]	3.29	1.83	0.22	20	22
United States of America	5,602	[5,276.9-5,947.1]	3.35	1.87	0.23	20	22
Canada	530	[401.3-700]	2.79	1.45	0.18	21	21
South America	3,038	[2,372.4-3,890.3]	1.39	1.01	0.12	21	21
Venezuela	214	[146.7-312.2]	1.48	1.24	0.17	19	31
Uruguay	30	[20.3-44.3]	1.67	0.94	0.11	23	21
Argentina	183	[126-265.7]	0.79	0.55	0.07	23	22
Colombia	307	[214.8-438.8]	1.19	0.87	0.11	22	26
Chile	85	[48.7-148.3]	0.88	0.48	0.06	23	31
Ecuador	80	[41.9-152.6]	0.91	0.81	0.11	21	24
Guyana	1	[0.10-17.8]	0.26	0.26	0.03	22	10
Bolivia	6	[0.50-68.7]	0.10	0.12	0.02	27	28
Brazil	1,923	[1,587.7-2,329]	1.78	1.25	0.14	20	19
Peru	171	[114-256.5]	1.03	0.83	0.11	22	26
Paraguay	35	[13.5-90.6]	1.00	1.07	0.14	19	31
Suriname	2	[1.60-2.50]	0.69	0.59	0.05	18	9

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

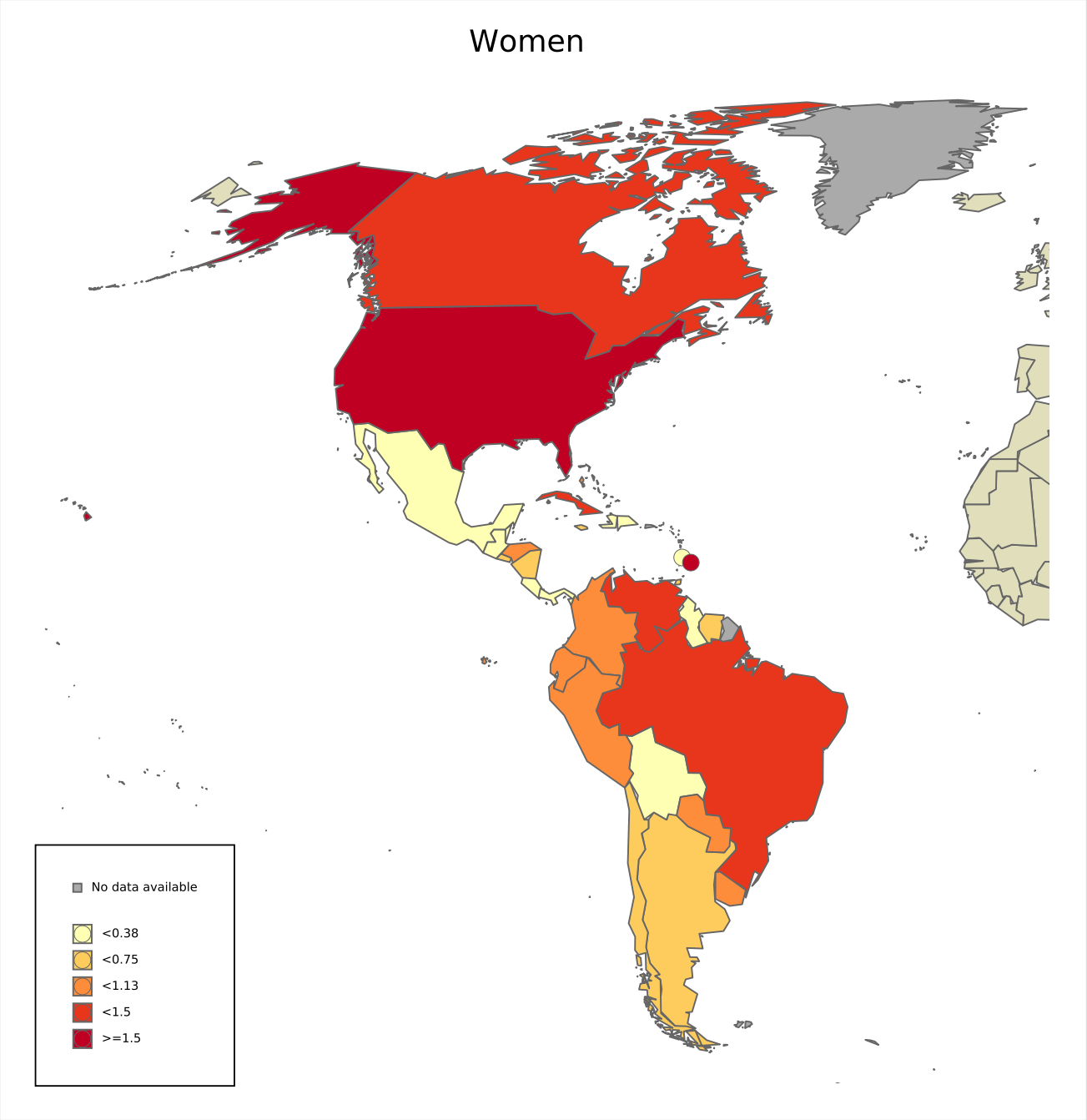
[a] Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed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

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 20: Age-standardised incidence rates of anal cancer among women in Americas (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 women per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Table 7: Incidence of anal cancer in men by Americas and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All men	Men 15-44 years
Americas	4,860	[1,372.9-2,399.5]	0.96	0.74	0.09	23	24
Caribbean	174	[80.3-377.3]	0.81	0.58	0.06	25	25
Jamaica	12	[2.80-51.5]	0.82	0.68	0.07	20	21
Trinidad & Tobago	9	[1.10-71.5]	1.30	0.99	0.11	19	19
St Lucia	0	[0-1.20]	0	0	0	25	17
Haiti	76	[40-144.3]	1.35	1.99	0.17	15	25
Dominican Republic	11	[1.30-90.6]	0.20	0.18	0.01	24	26
Cuba	35	[14.8-82.8]	0.62	0.33	0.04	25	26
Bahamas	4	[3.50-4.60]	2.09	1.95	0.25	16	5
Barbados	2	[1.70-2.30]	1.44	0.98	0.14	20	14
Central America	157	[91.7-268.7]	0.18	0.18	0.02	27	25
El Salvador	0	[0-1.30]	0	0	0	27	24
Panama	6	[1.30-26.7]	0.28	0.26	0.03	27	22
Nicaragua	3	[0.60-15.3]	0.09	0.13	0.02	27	27
Mexico	125	[78.3-199.6]	0.20	0.19	0.02	27	23
Belize	0	[0-1.30]	0	0	0	19	22
Guatemala	0	[0-1.30]	0	0	0	28	19
Honduras	21	[1.80-243.9]	0.42	0.56	0.05	24	16
Costa Rica	2	[0.90-4.30]	0.08	0.06	0.01	28	26
Northern America	3,045	[2,928.5-3,166.1]	1.67	1.04	0.12	23	23
Canada	228	[180.6-287.9]	1.22	0.64	0.08	23	25
United States of America	2,817	[2,574.7-3,082.1]	1.72	1.09	0.13	22	21
South America	1,484	[1,014.6-2,170.7]	0.70	0.61	0.07	26	24
Venezuela	54	[26.3-110.8]	0.39	0.38	0.05	26	28
Uruguay	23	[14.6-36.2]	1.37	1.01	0.12	24	21
Argentina	107	[68.4-167.5]	0.49	0.42	0.05	26	22
Colombia	176	[111.7-277.3]	0.70	0.64	0.08	25	26
Chile	49	[23.9-100.5]	0.52	0.39	0.04	25	12
Ecuador	35	[12.2-100.5]	0.40	0.39	0.04	25	24
Guyana	0	[0-17.8]	0	0	0	26	14
Brazil	920	[662.1-1,278.3]	0.88	0.73	0.08	24	22
Bolivia	4	[0.30-45.8]	0.07	0.05	0	25	25
Peru	87	[46.7-162.1]	0.53	0.47	0.05	25	24
Paraguay	28	[8.90-88.1]	0.77	0.90	0.10	24	22
Suriname	0	[0-1.50]	0	0	0	26	22

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

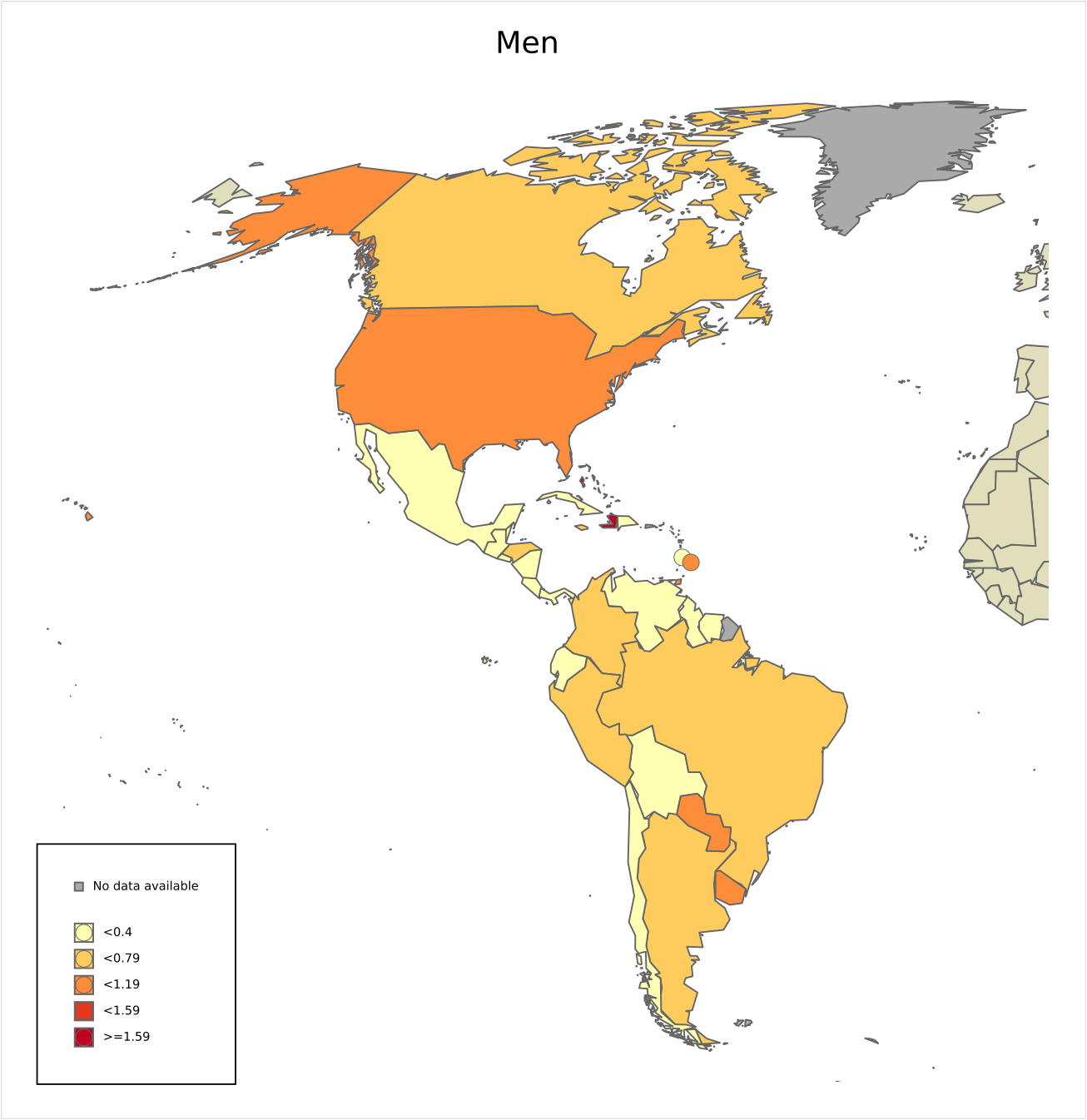
[a] Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed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

[b] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 21: Age-standardised incidence rates of anal cancer among men in Americas (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.4.1.2 Anal cancer mortality

Table 8: Mortality of anal cancer in women by Americas and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
Americas	1,843	[731.5-1,032.4]	0.36	0.22	0.03	23	22
Caribbean	55	[26.3-114.8]	0.25	0.17	0.02	26	27
Trinidad & Tobago	2	[0.40-10.7]	0.28	0.17	0.02	22	24
St Lucia	0	[0-10.4]	0	0	0	22	5
Jamaica	3	[0.80-10.7]	0.20	0.15	0.02	25	23
Haiti	1	[0.20-6.20]	0.02	0.02	0.00	30	29
Dominican Republic	1	[0.20-6.20]	0.02	0.02	0.00	30	28
Cuba	33	[22.6-48.2]	0.58	0.30	0.03	24	20
Bahamas	0	[0-10.4]	0	0	0	22	8
Barbados	0	[0-11.2]	0	0	0	25	13
Central America	82	[55.4-121.3]	0.09	0.08	0.01	28	24
Belize	0	[0-9.90]	0	0	0	18	24
El Salvador	6	[2.10-17.3]	0.17	0.12	0.01	22	22
Panama	3	[1-9.10]	0.14	0.09	0.01	25	22
Nicaragua	7	[2.70-17.8]	0.21	0.22	0.03	22	27
Mexico	47	[34-65]	0.07	0.06	0.01	28	29
Guatemala	1	[0.20-5.80]	0.01	0.02	0.00	28	31
Costa Rica	3	[0.80-11.6]	0.12	0.06	0.01	27	29
Honduras	15	[5.40-41.6]	0.30	0.33	0.03	21	16
Northern America	974	[905.6-1,047.6]	0.52	0.26	0.03	22	19
United States of America	880	[782.8-989.2]	0.53	0.27	0.03	22	20
Canada	94	[75-117.8]	0.49	0.22	0.03	24	19
South America	732	[635.8-842.7]	0.33	0.23	0.03	24	24
Venezuela	60	[43.7-82.3]	0.42	0.33	0.04	21	30
Uruguay	11	[5.70-21.3]	0.61	0.25	0.02	22	24
Argentina	53	[38.9-72.2]	0.23	0.14	0.02	25	29
Colombia	65	[48.8-86.6]	0.25	0.17	0.02	24	27
Chile	26	[16.7-40.5]	0.27	0.13	0.01	23	27
Ecuador	19	[11.1-32.4]	0.22	0.18	0.02	23	22
Guyana	0	[0-10.1]	0	0	0	26	16
Brazil	437	[376.6-507.1]	0.40	0.27	0.03	24	22
Bolivia	0	[0-16.9]	0	0	0	30	25
Peru	52	[37-73]	0.31	0.24	0.02	23	25
Paraguay	9	[4.10-19.9]	0.26	0.24	0.03	22	23
Suriname	0	[0-10.9]	0	0	0	24	14

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

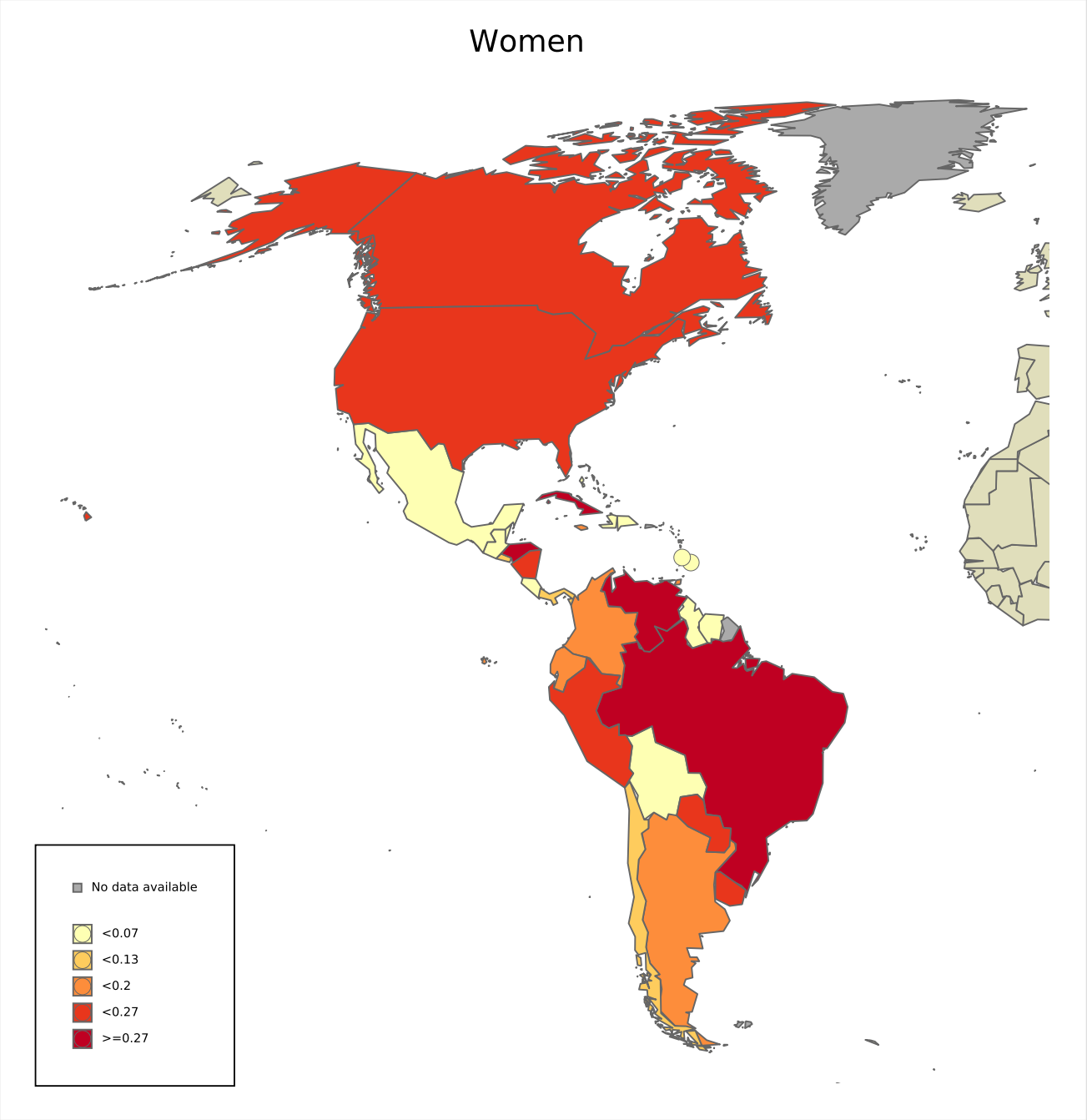
[a] Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the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

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 22: Age-standardised mortality rates of anal cancer among women in Americas (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 women per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Table 9: Mortality of anal cancer in men by Americas and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All men	Men 15-44 years
Americas	1,055	[404.5-635.4]	0.21	0.15	0.02	27	24
Caribbean	53	[23.2-121.3]	0.25	0.17	0.01	26	27
Trinidad & Tobago	2	[0.30-11.7]	0.29	0.18	0.02	18	21
St Lucia	0	[0-10.4]	0	0	0	16	9
Jamaica	3	[0.90-10.5]	0.20	0.17	0.02	23	19
Haiti	30	[17-53]	0.53	0.79	0.03	16	25
Dominican Republic	3	[0.50-19.5]	0.06	0.05	0.00	25	23
Cuba	9	[4.40-18.5]	0.16	0.08	0.01	28	26
Bahamas	0	[0-10.4]	0	0	0	22	11
Barbados	0	[0-11.2]	0	0	0	26	5
Central America	46	[28.7-73.8]	0.05	0.05	0.01	28	27
Belize	0	[0-9.90]	0	0	0	24	13
El Salvador	0	[0-11.5]	0	0	0	26	25
Panama	2	[0.60-7.20]	0.09	0.08	0.01	27	21
Nicaragua	1	[0.20-4.10]	0.03	0.04	0.01	27	26
Mexico	34	[23.1-50.1]	0.05	0.05	0.01	28	27
Guatemala	0	[0-9.90]	0	0	0	26	19
Costa Rica	1	[0.20-5.20]	0.04	0.03	0.00	28	22
Honduras	8	[0.80-85.1]	0.16	0.21	0.02	25	18
Northern America	548	[497.9-603.2]	0.30	0.17	0.02	25	19
United States of America	494	[425.5-573.5]	0.30	0.18	0.02	24	19
Canada	54	[40.1-72.8]	0.29	0.14	0.02	26	26
South America	408	[338.9-491.3]	0.19	0.16	0.02	27	25
Venezuela	15	[8.20-27.4]	0.11	0.10	0.01	27	28
Colombia	39	[27.1-56.2]	0.16	0.14	0.02	27	27
Uruguay	6	[2.40-14.8]	0.36	0.22	0.03	26	23
Argentina	38	[26.2-55.1]	0.17	0.15	0.02	26	25
Chile	16	[9-28.3]	0.17	0.12	0.01	26	15
Ecuador	9	[3.70-21.7]	0.10	0.10	0.01	26	26
Guyana	0	[0-10.1]	0	0	0	24	15
Brazil	254	[196.8-327.9]	0.24	0.20	0.02	26	23
Bolivia	0	[0-16.9]	0	0	0	27	24
Peru	24	[14.3-40.4]	0.15	0.13	0.01	27	22
Paraguay	7	[2.70-18.4]	0.19	0.21	0.02	25	22
Suriname	0	[0-10.9]	0	0	0	22	12

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

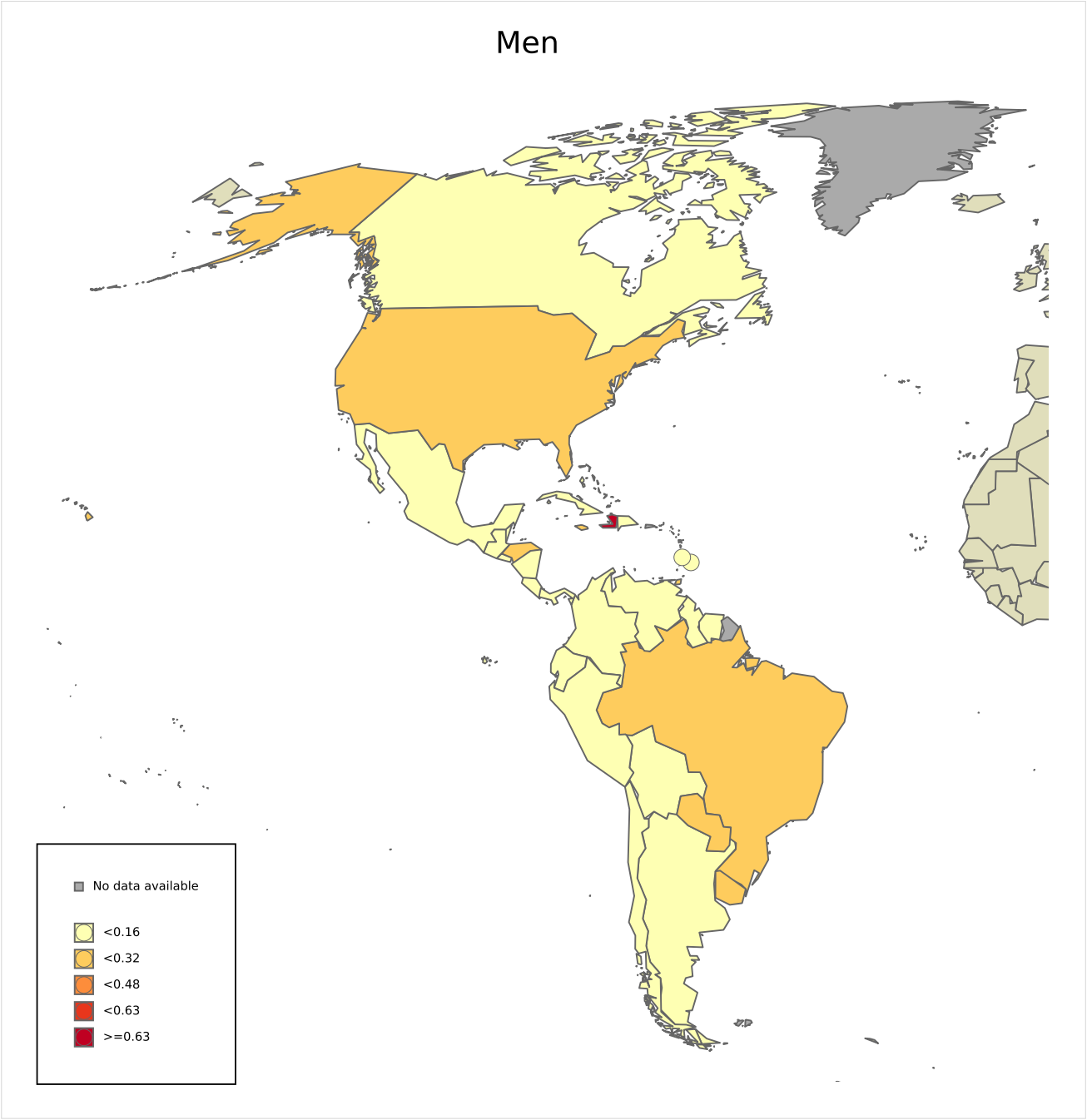
[a] Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the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

[b] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 23: Age-standardised mortality rates of anal cancer among men in Americas (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 men per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.4.2 Vulvar cancer

3.4.2.1 Vulvar cancer incidence

Table 10: Incidence of vulvar cancer in women by Americas and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
Americas	10,870	[3,141.7-4,654.5]	2.10	1.30	0.14	19	18
Caribbean	211	[107.3-414.9]	0.96	0.68	0.08	23	24
Trinidad & Tobago	5	[0.60-42.2]	0.71	0.41	0.03	24	28
St Lucia	1	[0.90-1.10]	1.07	0.91	0.08	18	30
Jamaica	10	[2.70-36.8]	0.67	0.55	0.06	22	29
Haiti	3	[0.50-16.7]	0.05	0.06	0.01	29	28
Dominican Republic	5	[0.90-27.9]	0.09	0.09	0.01	30	30
Cuba	143	[93.9-217.7]	2.51	1.32	0.14	20	15
Bahamas	0	[0-1.10]	0	0	0	23	26
Barbados	3	[2.60-3.40]	2.02	1.50	0.15	18	8
Central America	667	[539.1-825.3]	0.73	0.62	0.07	21	19
Belize	0	[0-1.20]	0	0	0	30	11
El Salvador	32	[15.5-66.2]	0.93	0.60	0.05	20	19
Panama	13	[4.30-39.5]	0.60	0.39	0.04	22	30
Nicaragua	18	[6.10-52.7]	0.54	0.54	0.06	19	18
Mexico	548	[403.3-744.6]	0.83	0.69	0.07	21	19
Guatemala	11	[3.50-34.4]	0.12	0.17	0.02	26	24
Costa Rica	26	[15.3-44.3]	1.02	0.67	0.09	21	30
Honduras	19	[4.20-86.9]	0.38	0.45	0.05	25	23
Northern America	7,046	[6,861.7-7,235.2]	3.78	1.91	0.21	19	17
Canada	934	[789.6-1,104.8]	4.91	2.28	0.24	18	14
United States of America	6,112	[5,813.8-6,425.5]	3.66	1.86	0.21	19	17
South America	2,946	[2,286-3,796.5]	1.35	0.93	0.10	22	19
Venezuela	107	[67.2-170.5]	0.74	0.59	0.06	22	19
Colombia	447	[292.6-683]	1.73	1.30	0.14	20	14
Uruguay	50	[34.4-72.8]	2.78	1.15	0.12	20	16
Argentina	323	[237.3-439.7]	1.40	0.79	0.09	22	24
Chile	128	[89-184.1]	1.32	0.61	0.05	20	27
Ecuador	69	[38.4-124.1]	0.78	0.65	0.07	22	23
Guyana	3	[0.60-14.3]	0.77	0.64	0.04	15	7
Bolivia	26	[7.30-92.9]	0.45	0.49	0.07	23	29
Brazil	1,519	[1,266.3-1,822.2]	1.40	0.96	0.10	21	21
Peru	243	[169.8-347.7]	1.46	1.11	0.11	20	19
Paraguay	27	[12-60.7]	0.77	0.72	0.06	20	25
Suriname	4	[3.10-5.20]	1.37	1.20	0.14	14	10

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

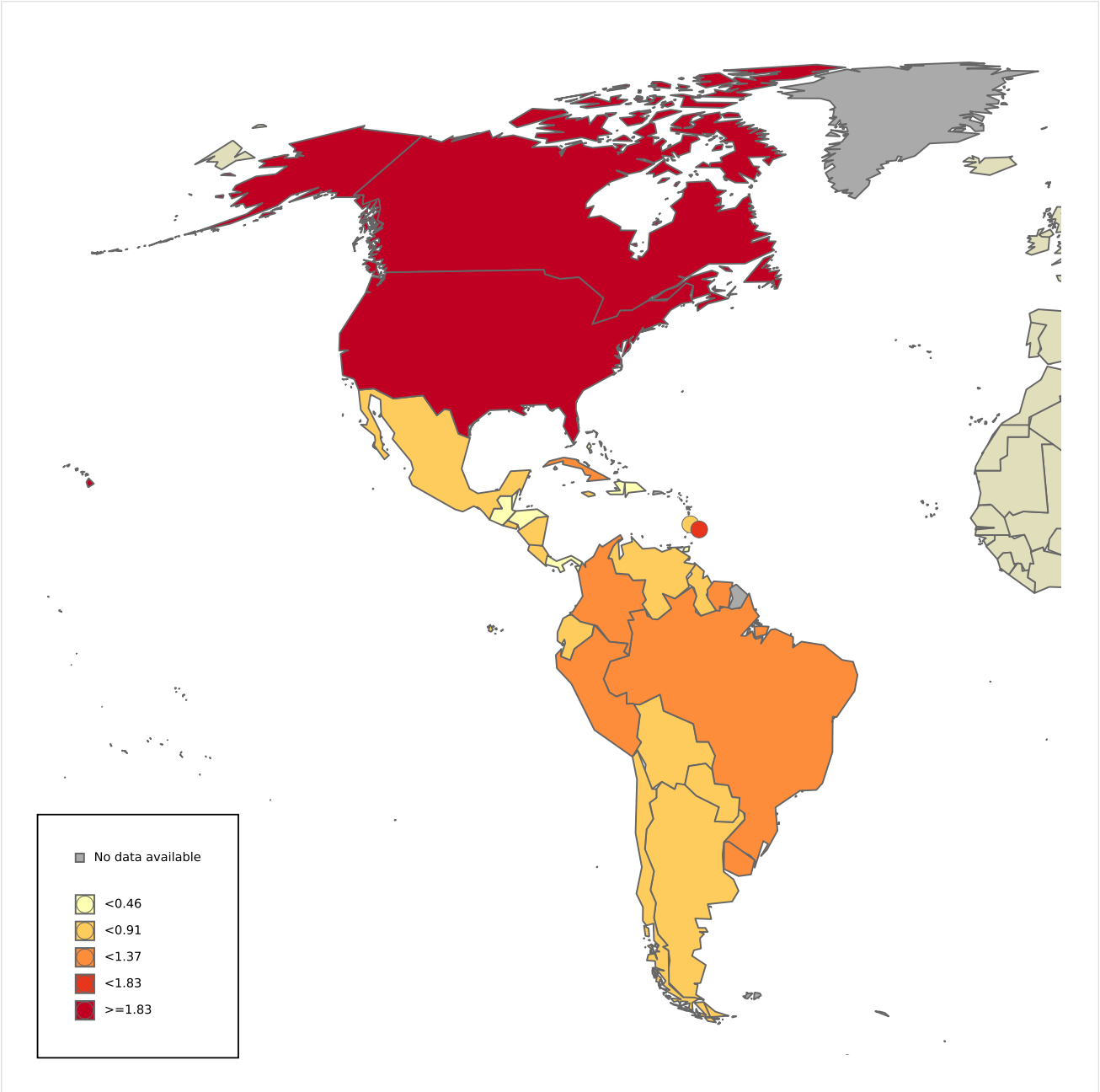
[a] Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed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

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 24: Age-standardised incidence rates of vulvar cancer among women in Americas (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.4.2.2 Vulvar cancer mortality

Table 11: Mortality of vulvar cancer in women by Americas and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
Americas	3,127	[1,204.7-1,585.4]	0.60	0.31	0.03	21	23
Caribbean	57	[29.2-111.3]	0.26	0.15	0.01	25	28
Jamaica	3	[1-9.20]	0.20	0.15	0.02	23	28
Trinidad & Tobago	2	[0.30-12.3]	0.28	0.13	0	23	21
St Lucia	0	[0-10.4]	0	0	0	14	14
Haiti	2	[0.40-9.20]	0.03	0.04	0.00	28	31
Dominican Republic	2	[0.40-9.20]	0.04	0.03	0.00	29	26
Cuba	40	[28.2-56.8]	0.70	0.30	0.03	22	23
Bahamas	0	[0-10.4]	0	0	0	27	26
Barbados	0	[0-11.2]	0	0	0	29	31
Central America	226	[187.6-272.3]	0.25	0.20	0.02	22	27
El Salvador	15	[7.80-29]	0.43	0.27	0.02	20	28
Panama	7	[2.70-18.2]	0.32	0.22	0.02	22	30
Nicaragua	8	[3.10-20.4]	0.24	0.23	0.03	21	19
Mexico	174	[135.1-224.2]	0.26	0.20	0.02	22	25
Belize	0	[0-9.90]	0	0	0	24	10
Honduras	6	[1.90-18.9]	0.12	0.14	0.01	29	29
Guatemala	6	[2.20-16.2]	0.07	0.09	0.01	25	27
Costa Rica	10	[5-20.1]	0.39	0.22	0.02	22	22
Northern America	1,745	[1,651.1-1,844.2]	0.94	0.36	0.04	19	21
United States of America	1,487	[1,351.2-1,636.5]	0.89	0.35	0.03	20	19
Canada	258	[209.4-317.9]	1.36	0.47	0.05	18	22
South America	1,099	[976-1,237.5]	0.50	0.31	0.03	21	25
Venezuela	41	[27.8-60.6]	0.28	0.21	0.02	24	27
Colombia	134	[97.8-183.7]	0.52	0.34	0.03	21	22
Uruguay	25	[16.2-38.5]	1.39	0.54	0.05	20	15
Argentina	146	[114.6-185.9]	0.63	0.32	0.03	21	23
Chile	62	[46.4-82.8]	0.64	0.28	0.02	20	31
Ecuador	25	[15.4-40.6]	0.28	0.22	0.02	22	28
Guyana	0	[0-10.1]	0	0	0	24	29
Bolivia	9	[2.70-30.1]	0.15	0.17	0.02	25	24
Brazil	577	[501-664.6]	0.53	0.33	0.03	22	25
Peru	68	[50.4-91.8]	0.41	0.28	0.02	21	28
Paraguay	12	[6.10-23.7]	0.34	0.29	0.02	21	31
Suriname	0	[0-10.9]	0	0	0	19	22

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

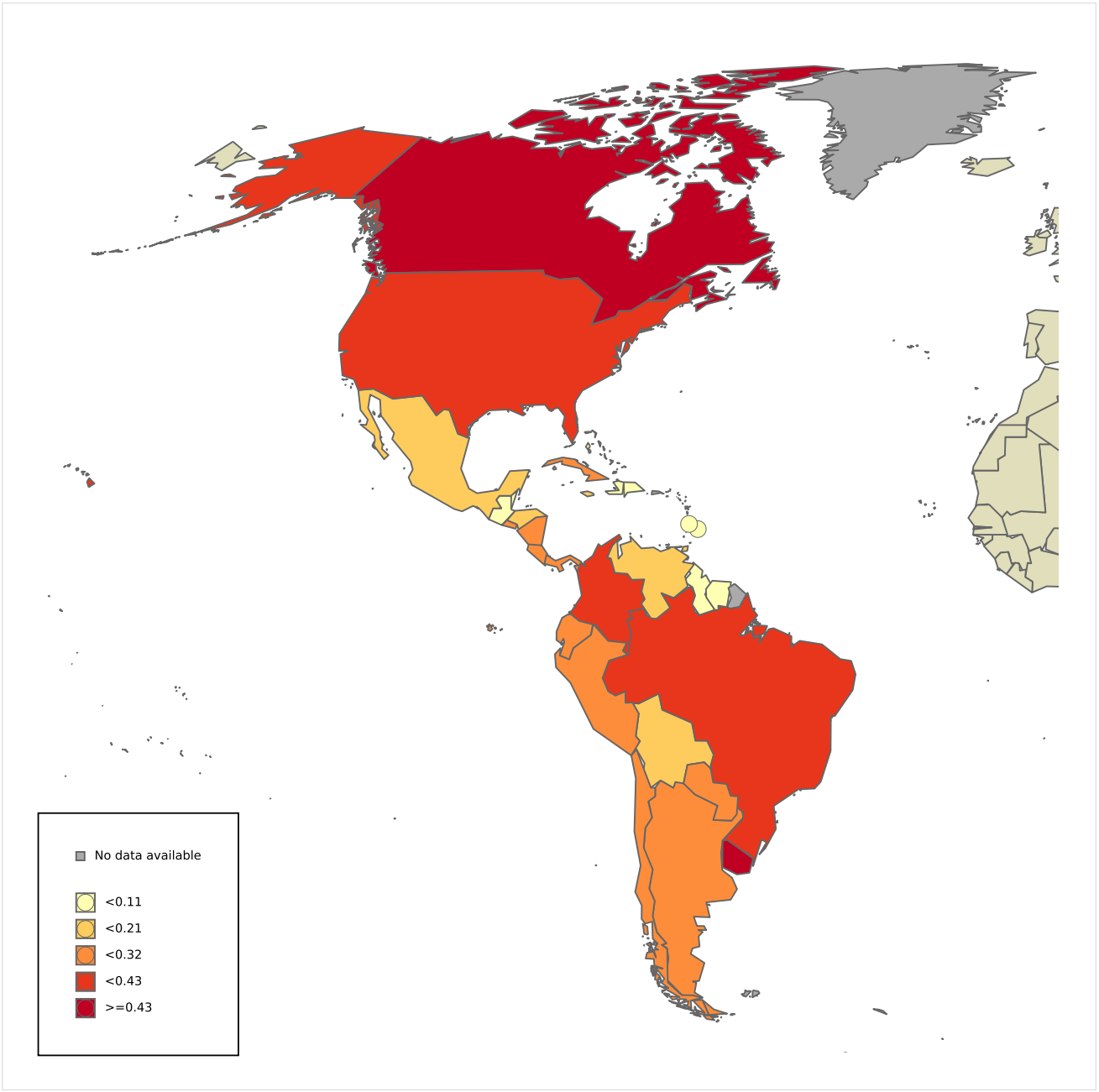
[a] Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the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

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 25: Age-standardised mortality rates of vulvar cancer among women in Americas (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.4.3 Vaginal cancer

3.4.3.1 Vaginal cancer incidence

Table 12: Incidence of vaginal cancer in women by Americas and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
Americas	3,061	[1,047-1,964]	0.59	0.38	0.04	27	25
Caribbean	143	[77.1-265.4]	0.65	0.47	0.06	27	26
Trinidad & Tobago	7	[0.70-67.8]	0.99	0.65	0.09	20	18
St Lucia	1	[0.80-1.20]	1.07	0.96	0.16	20	31
Jamaica	6	[0.80-45.5]	0.40	0.33	0.03	24	20
Haiti	18	[10.5-31]	0.31	0.40	0.05	24	23
Dominican Republic	28	[12-65.5]	0.52	0.48	0.06	24	23
Cuba	55	[31.8-95.2]	0.96	0.47	0.06	26	29
Bahamas	2	[1.70-2.40]	0.99	0.84	0.14	20	25
Barbados	0	[0-1.20]	0	0	0	29	18
Central America	320	[223.2-458.9]	0.35	0.32	0.04	24	23
El Salvador	11	[3.20-38]	0.32	0.19	0.02	24	31
Panama	13	[3.90-42.9]	0.60	0.48	0.05	21	16
Nicaragua	14	[4.70-42.1]	0.42	0.42	0.04	22	27
Mexico	233	[169.6-320.1]	0.35	0.31	0.04	24	23
Belize	0	[0-1.30]	0	0	0	31	10
Honduras	18	[3.20-101.9]	0.36	0.46	0.06	26	25
Guatemala	16	[5.50-46.3]	0.18	0.23	0.03	25	25
Costa Rica	15	[8-28.1]	0.59	0.41	0.05	23	21
Northern America	1,627	[1,540.6-1,718.2]	0.87	0.44	0.05	27	24
Canada	181	[123.5-265.2]	0.95	0.45	0.05	26	24
United States of America	1,446	[1,314.7-1,590.4]	0.86	0.44	0.05	27	24
South America	971	[632.7-1,490.2]	0.44	0.32	0.04	27	25
Venezuela	102	[61.6-169]	0.71	0.60	0.08	23	25
Colombia	150	[98.2-229.1]	0.58	0.44	0.05	26	22
Uruguay	14	[7.70-25.3]	0.78	0.37	0.05	26	26
Argentina	118	[76.4-182.2]	0.51	0.30	0.03	27	26
Chile	49	[26-92.3]	0.51	0.28	0.04	25	28
Ecuador	34	[14.3-80.7]	0.39	0.34	0.03	25	25
Guyana	0	[0-8.60]	0	0	0	30	27
Brazil	377	[263.3-539.7]	0.35	0.25	0.03	27	27
Bolivia	28	[9.10-86]	0.48	0.51	0.04	22	15
Peru	97	[56.2-167.3]	0.58	0.47	0.05	24	27
Paraguay	1	[0.70-1.50]	0.03	0.03	0.01	29	24
Suriname	1	[0.70-1.50]	0.34	0.22	0	23	19

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

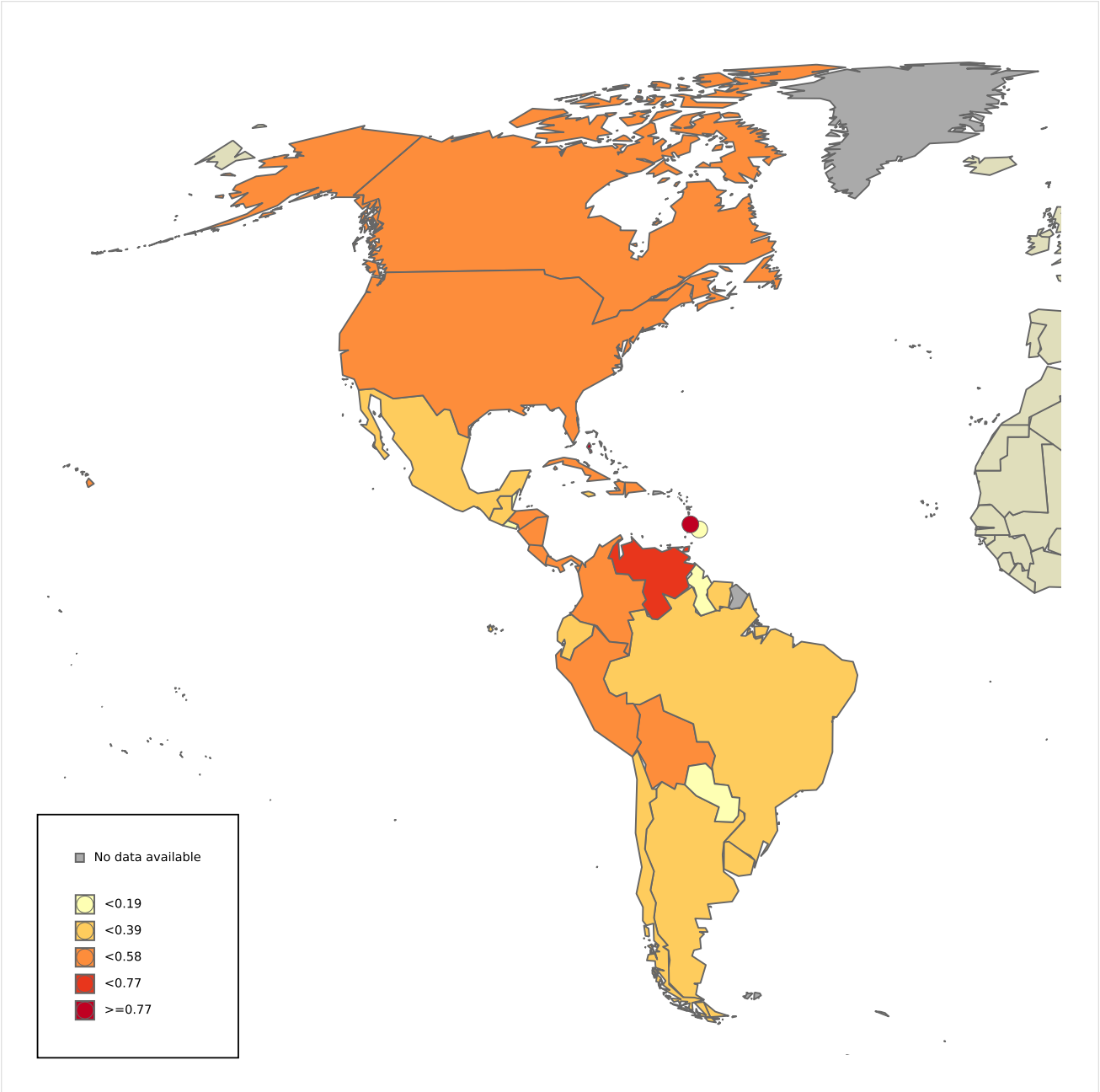
[a] Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed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

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 26: Age-standardised incidence rates of vaginal cancer among women in Americas (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.4.3.2 Vaginal cancer mortality

Table 13: Mortality of vaginal cancer in women by Americas and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
Americas	965	[376.9-647.5]	0.19	0.10	0.01	27	29
Caribbean	59	[32.9-105.9]	0.27	0.18	0.02	24	25
Trinidad & Tobago	2	[0.30-13.8]	0.28	0.17	0.02	20	20
St Lucia	0	[0-10.4]	0	0	0	13	15
Jamaica	2	[0.30-11.4]	0.13	0.12	0.02	26	29
Haiti	11	[6.80-17.8]	0.19	0.24	0.03	24	23
Dominican Republic	13	[6.10-27.7]	0.24	0.21	0.02	23	24
Cuba	23	[14.5-36.4]	0.40	0.18	0.02	27	30
Bahamas	0	[0-10.4]	0	0	0	26	25
Barbados	0	[0-11.2]	0	0	0	30	20
Central America	107	[77.9-146.9]	0.12	0.10	0.01	25	29
El Salvador	5	[1.60-15.4]	0.14	0.08	0.01	24	29
Panama	4	[1.40-11.2]	0.19	0.13	0.02	24	31
Nicaragua	7	[2.70-18.2]	0.21	0.21	0.02	23	30
Mexico	72	[55.4-93.6]	0.11	0.09	0.01	25	28
Belize	0	[0-2.90]	0	0	0	23	22
Honduras	8	[2.60-24.4]	0.16	0.20	0.03	25	22
Guatemala	6	[2.40-15.1]	0.07	0.08	0.01	26	26
Costa Rica	5	[1.80-13.7]	0.20	0.11	0.01	25	23
Northern America	471	[423.8-523.5]	0.25	0.10	0.01	26	28
Canada	57	[42.7-76.1]	0.30	0.11	0.01	26	26
United States of America	414	[358.7-477.9]	0.25	0.10	0.01	26	28
South America	328	[257.5-417.8]	0.15	0.10	0.01	27	28
Uruguay	5	[1.90-12.9]	0.28	0.08	0.01	26	30
Venezuela	34	[22.3-51.9]	0.24	0.19	0.02	25	28
Argentina	40	[27.9-57.3]	0.17	0.09	0.01	28	25
Colombia	46	[32.7-64.6]	0.18	0.12	0.01	26	25
Chile	19	[11.5-31.4]	0.20	0.10	0.01	26	30
Ecuador	10	[4.90-20.5]	0.11	0.09	0.01	27	29
Guyana	0	[0-10.1]	0	0	0	25	28
Brazil	134	[101.4-177]	0.12	0.08	0.01	28	29
Bolivia	11	[3.80-31.8]	0.19	0.21	0.02	24	14
Peru	29	[18.4-45.8]	0.17	0.12	0.01	25	30
Paraguay	0	[0-10.3]	0	0	0	30	30
Suriname	0	[0-10.9]	0	0	0	18	23

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

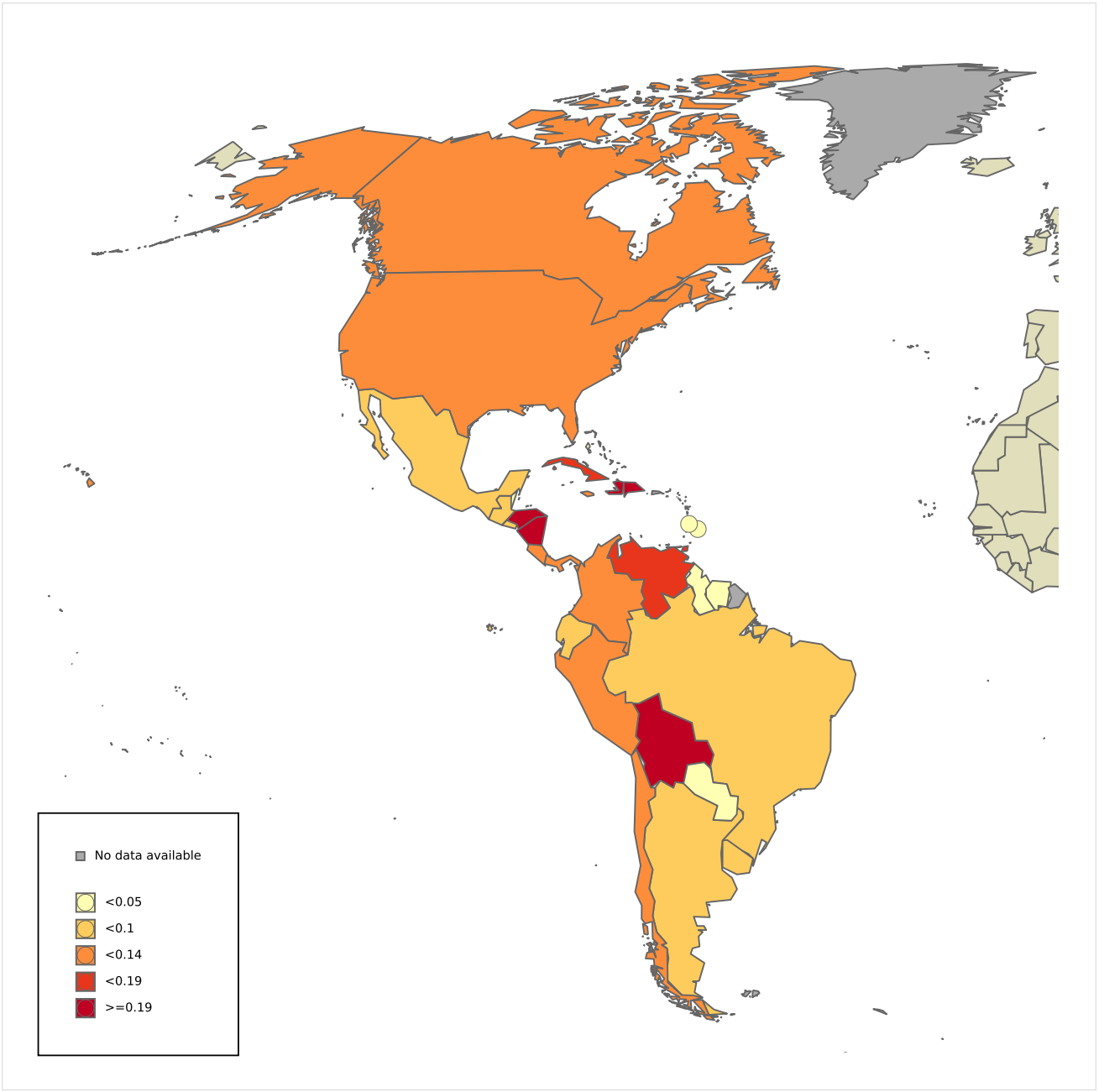
[a] Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the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

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 27: Age-standardised mortality rates of vaginal cancer among women in Americas (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.4.4 Penile cancer

3.4.4.1 Penile cancer incidence

Table 14: Incidence of penile cancer in men by Americas and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All men	Men 15-44 years
Americas	6,729	[4,039.3-6,159.5]	1.33	0.97	0.10	21	21
Caribbean	392	[248.7-617.9]	1.82	1.43	0.16	18	17
Jamaica	17	[6.30-45.7]	1.16	0.93	0.11	17	15
Trinidad & Tobago	9	[1.40-57.5]	1.30	0.95	0.10	20	17
St Lucia	5	[0.40-64.9]	5.53	3.90	0.46	7	4
Haiti	52	[30.3-89.2]	0.92	1.21	0.14	16	14
Dominican Republic	101	[58.9-173.3]	1.86	1.84	0.21	14	12
Cuba	154	[108.9-217.9]	2.74	1.44	0.16	18	21
Bahamas	2	[1.70-2.40]	1.05	0.72	0.09	21	17
Barbados	1	[0.80-1.20]	0.72	0.43	0.07	21	24
Central America	908	[751.7-1,096.8]	1.03	1.03	0.10	19	15
El Salvador	27	[11.7-62.1]	0.89	0.84	0.07	19	10
Panama	25	[11.1-56.5]	1.16	0.98	0.08	22	14
Nicaragua	34	[17.5-65.9]	1.04	1.27	0.14	16	10
Mexico	696	[549.7-881.2]	1.10	1.05	0.10	19	16
Belize	0	[0-1.20]	0	0	0	27	6
Guatemala	19	[7.30-49.5]	0.22	0.29	0.02	21	17
Honduras	70	[28.4-172.4]	1.41	1.90	0.22	15	11
Costa Rica	37	[24.2-56.6]	1.45	1.11	0.11	20	16
Northern America	1,741	[1,651.8-1,835.1]	0.95	0.51	0.05	26	25
Canada	226	[152.1-335.7]	1.21	0.57	0.06	25	24
United States of America	1,515	[1,338.7-1,714.5]	0.92	0.50	0.05	26	25
South America	3,688	[2,830.3-4,805.6]	1.74	1.46	0.14	21	17
Venezuela	270	[160.7-453.6]	1.93	1.81	0.17	20	11
Colombia	550	[381.7-792.5]	2.20	1.88	0.19	18	13
Uruguay	29	[19.5-43.2]	1.73	1.13	0.12	22	23
Argentina	407	[302.2-548.1]	1.85	1.56	0.18	20	17
Chile	93	[59.7-145]	0.99	0.67	0.08	21	26
Ecuador	113	[69.5-183.6]	1.28	1.25	0.12	18	13
Guyana	4	[0.40-45.6]	1.01	1.00	0.14	14	21
Bolivia	159	[82.3-307.1]	2.71	2.05	0.04	9	14
Brazil	1,658	[1,417.1-1,939.9]	1.59	1.33	0.12	21	18
Peru	285	[203.7-398.8]	1.74	1.44	0.12	17	17
Paraguay	115	[72.5-182.4]	3.17	3.41	0.34	13	8
Suriname	4	[0.50-34.3]	1.36	1.48	0.22	16	9

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

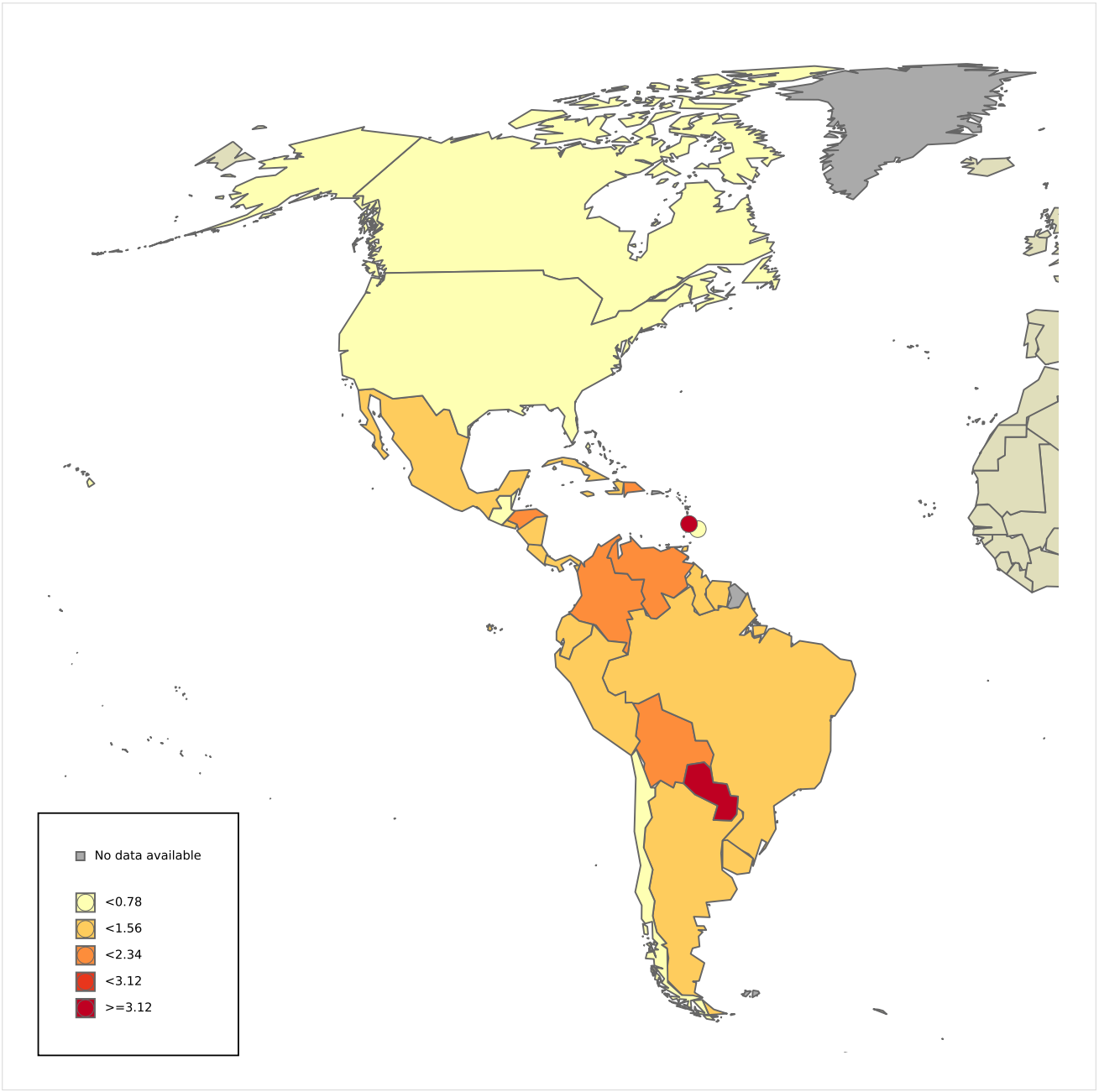
[a] Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed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

[b] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 28: Age-standardised incidence rates of penile cancer among men in Americas (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.4.4.2 Penile cancer mortality

Table 15: Mortality of penile cancer in men by Americas and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All men	Men 15-44 years
Americas	2,104	[1,420.3-1,863.8]	0.42	0.30	0.03	23	19
Caribbean	129	[84.1-197.9]	0.60	0.45	0.05	19	17
Trinidad & Tobago	0	[0-4.90]	0	0	0	27	23
St Lucia	0	[0-9.30]	0	0	0	14	17
Jamaica	6	[2.60-14.1]	0.41	0.30	0.04	18	17
Haiti	23	[14.2-37.1]	0.41	0.55	0.05	17	14
Dominican Republic	32	[19.8-51.7]	0.59	0.57	0.06	16	14
Cuba	57	[42.7-76.2]	1.01	0.49	0.05	20	19
Bahamas	1	[0.10-10.4]	0.52	0.36	0.04	16	4
Barbados	0	[0-11.2]	0	0	0	19	26
Central America	300	[254.4-353.8]	0.34	0.35	0.04	20	17
Belize	0	[0-9.90]	0	0	0	15	17
El Salvador	9	[4.20-19.2]	0.30	0.26	0.03	17	14
Panama	12	[5.90-24.2]	0.56	0.49	0.05	18	11
Nicaragua	16	[9-28.5]	0.49	0.66	0.08	17	21
Mexico	219	[180.2-266.2]	0.35	0.33	0.04	20	17
Guatemala	8	[3.50-18.4]	0.09	0.13	0.01	22	16
Costa Rica	11	[5.30-22.7]	0.43	0.34	0.03	21	17
Honduras	25	[14.1-44.4]	0.51	0.70	0.06	18	17
Northern America	477	[429.6-529.6]	0.26	0.13	0.01	27	24
United States of America	414	[350.2-489.4]	0.25	0.13	0.01	27	24
Canada	63	[47.7-83.1]	0.34	0.14	0.01	25	22
South America	1,198	[1,062.3-1,351.1]	0.56	0.47	0.05	20	19
Venezuela	88	[59.6-130]	0.63	0.60	0.06	18	14
Uruguay	10	[5-20]	0.60	0.31	0.03	20	21
Colombia	162	[123.5-212.6]	0.65	0.56	0.06	17	15
Argentina	148	[117.2-186.9]	0.67	0.53	0.06	21	18
Chile	41	[28.8-58.4]	0.43	0.28	0.03	22	28
Ecuador	36	[24.1-53.8]	0.41	0.40	0.04	20	13
Guyana	0	[0-7.10]	0	0	0	19	11
Brazil	539	[477.2-608.9]	0.52	0.42	0.04	19	18
Bolivia	53	[28.4-98.9]	0.90	0.69	0.02	14	17
Peru	80	[60.4-106]	0.49	0.41	0.04	21	24
Paraguay	38	[25.8-55.9]	1.05	1.20	0.12	16	12
Suriname	3	[0.50-19.8]	1.02	1.14	0.20	14	27

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

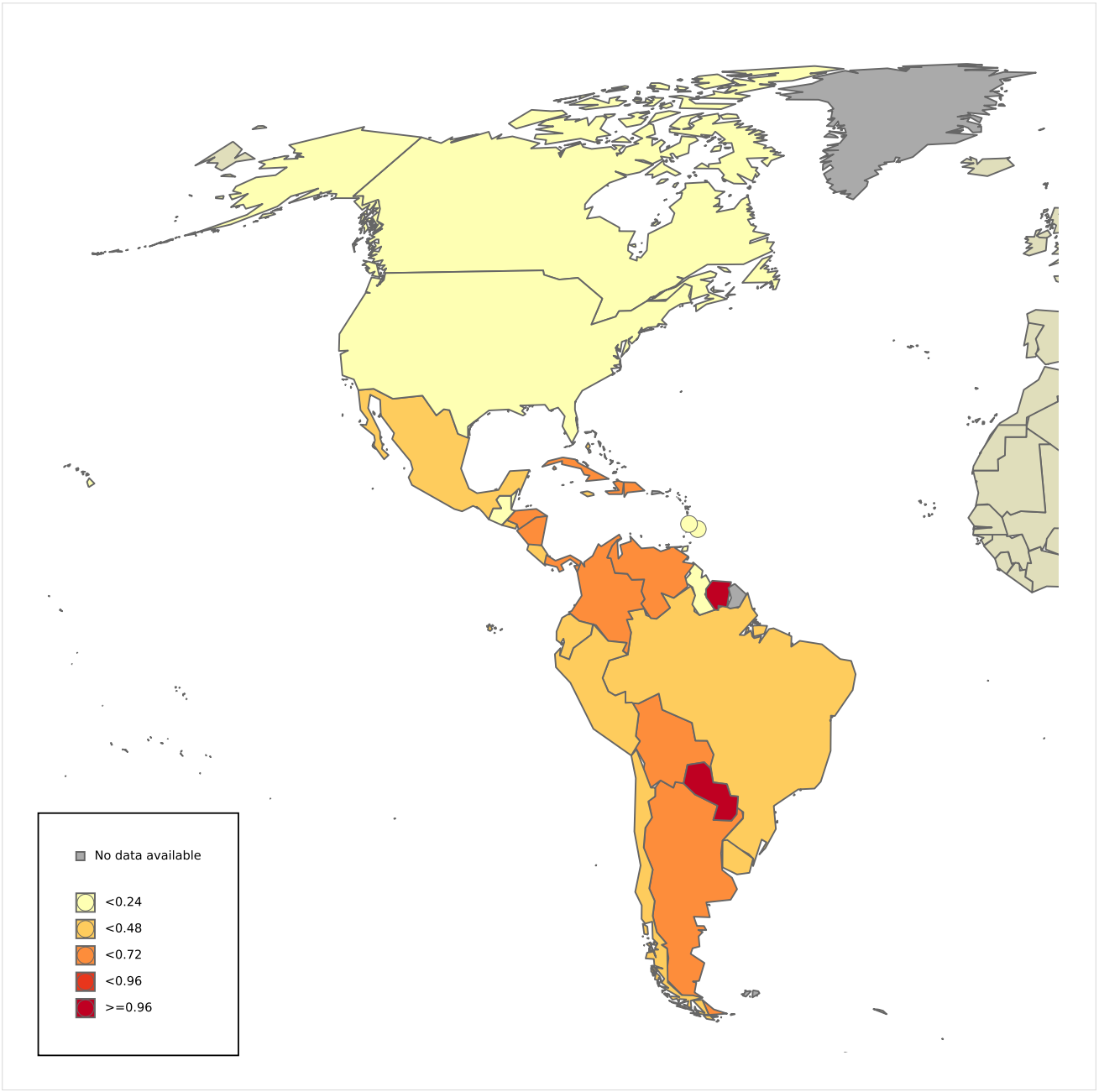
[a] Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the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

[b] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 29: Age-standardised mortality rates of penile cancer among men in Americas (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.5 Head and neck cancers

3.5.1 Oropharyngeal cancer

3.5.1.1 Oropharyngeal cancer incidence

Table 16: Incidence of oropharyngeal cancer in women by Americas and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
Americas	4,139	[1,225.2-2,171.2]	0.80	0.54	0.06	26	28
Caribbean	165	[83.7-325.4]	0.75	0.46	0.05	26	30
Jamaica	2	[0.20-19.9]	0.13	0.13	0.02	29	24
Trinidad & Tobago	3	[2.50-3.70]	0.42	0.33	0.03	25	19
St Lucia	1	[0.80-1.20]	1.07	0.79	0.08	17	16
Haiti	33	[13.9-78.4]	0.57	0.67	0.07	20	27
Dominican Republic	63	[26.5-149.7]	1.16	0.93	0.09	19	28
Cuba	53	[33-85.1]	0.93	0.40	0.04	27	25
Bahamas	0	[0-1.20]	0	0	0	31	23
Barbados	0	[0-1.20]	0	0	0	23	25
Central America	145	[96.8-217.1]	0.16	0.13	0.01	27	30
El Salvador	1	[0.10-7.90]	0.03	0.03	0.00	27	26
Panama	3	[0.60-14.9]	0.14	0.06	0	26	21
Nicaragua	0	[0-5.70]	0	0	0	31	26
Mexico	103	[72.2-147]	0.16	0.13	0.01	28	30
Belize	0	[0-1.30]	0	0	0	22	29
Guatemala	18	[8.20-39.6]	0.20	0.20	0.01	24	20
Honduras	13	[1.60-103.3]	0.26	0.31	0.03	27	27
Costa Rica	7	[2-24.7]	0.27	0.15	0.02	26	25
Northern America	2,508	[2,400.8-2,619.9]	1.35	0.79	0.10	25	25
Canada	232	[167.1-322.1]	1.22	0.66	0.08	25	25
United States of America	2,276	[2,047-2,530.7]	1.36	0.80	0.10	25	25
South America	1,321	[930.9-1,874.7]	0.60	0.44	0.05	25	27
Venezuela	63	[35.5-111.8]	0.44	0.36	0.04	27	28
Uruguay	6	[2.90-12.4]	0.33	0.17	0.02	27	27
Argentina	98	[63.8-150.5]	0.42	0.29	0.03	28	29
Colombia	154	[106.2-223.3]	0.59	0.44	0.04	25	25
Chile	52	[26.7-101.1]	0.54	0.32	0.04	24	21
Ecuador	23	[9.50-55.5]	0.26	0.21	0.02	26	20
Guyana	0	[0-17.8]	0	0	0	25	31
Bolivia	24	[8.20-70.1]	0.41	0.44	0.05	24	22
Brazil	848	[714.9-1,005.9]	0.78	0.56	0.06	25	24
Peru	50	[24.4-102.6]	0.30	0.26	0.03	28	31
Paraguay	3	[0.50-18.2]	0.09	0.08	0.02	26	26
Suriname	0	[0-1.70]	0	0	0	24	30

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

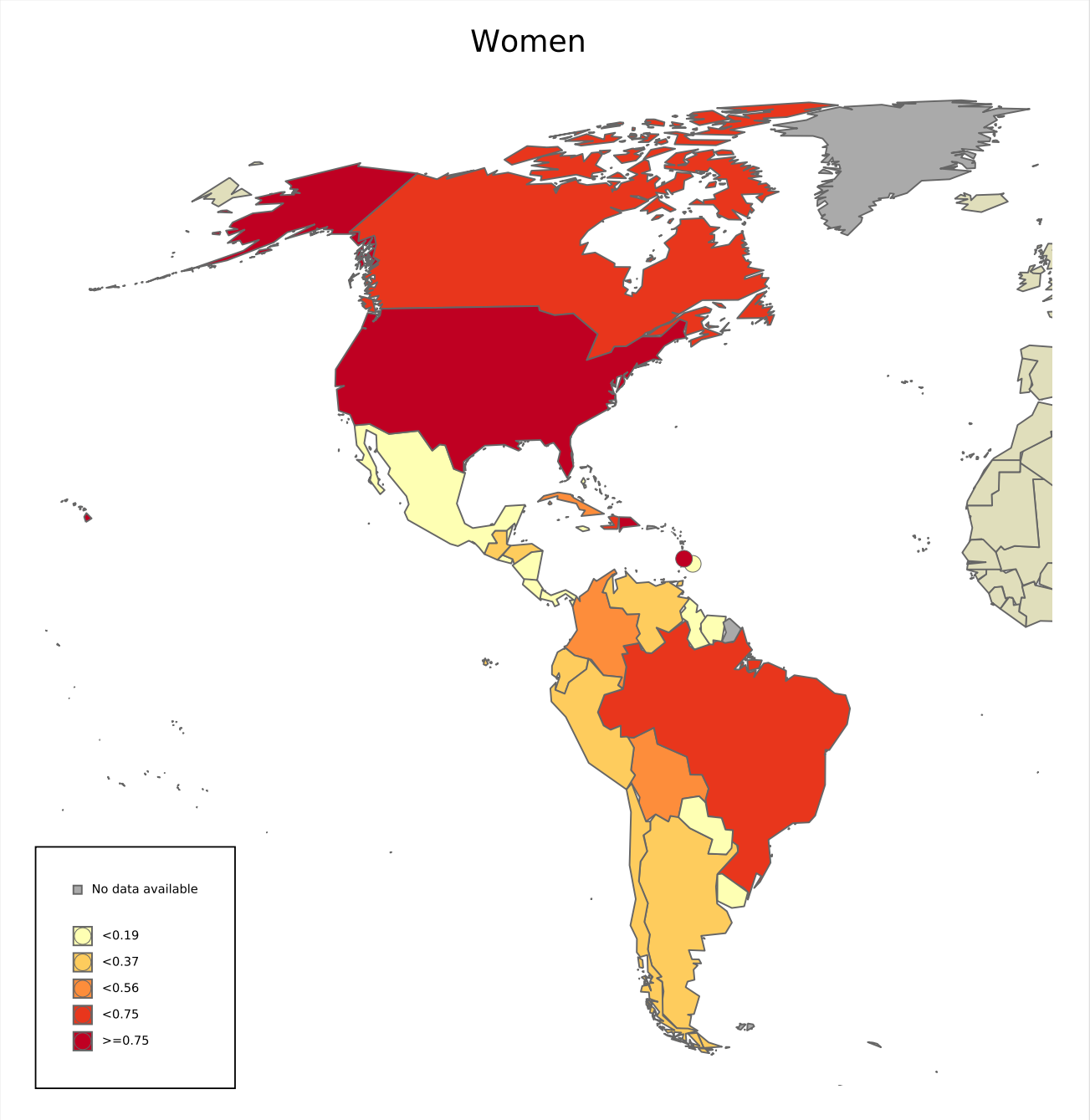
[a] Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed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

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 30: Age-standardised incidence rates of oropharyngeal cancer among women in Americas (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 women per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Table 17: Incidence of oropharyngeal cancer in men by Americas and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All men	Men 15-44 years
Americas	18,771	[6,266.7-8,394.5]	3.72	2.93	0.36	19	18
Caribbean	912	[703.8-1,181.8]	4.24	3.42	0.41	14	20
Jamaica	18	[8.10-40.1]	1.22	1.06	0.14	16	22
Trinidad & Tobago	9	[2.80-29.1]	1.30	1.03	0.11	18	22
St Lucia	1	[0.90-1.10]	1.11	0.95	0.08	17	5
Haiti	50	[32.2-77.5]	0.89	1.25	0.15	17	27
Dominican Republic	105	[67.7-162.8]	1.94	1.94	0.23	13	24
Cuba	565	[430.2-742.1]	10.0	5.81	0.69	10	12
Bahamas	2	[0.20-18.4]	1.05	1.12	0.19	23	14
Barbados	4	[0.60-25]	2.88	1.76	0.26	17	15
Central America	370	[295.7-463]	0.42	0.43	0.05	24	24
Belize	0	[0-1.20]	0	0	0	21	26
El Salvador	11	[4.10-29.3]	0.36	0.31	0.02	23	20
Panama	29	[16.1-52.1]	1.34	1.17	0.12	19	18
Nicaragua	20	[9.80-40.8]	0.61	0.73	0.08	20	16
Mexico	225	[172.2-293.9]	0.36	0.35	0.04	25	25
Honduras	32	[8.10-126]	0.65	0.92	0.09	20	17
Guatemala	23	[12.7-41.8]	0.26	0.37	0.03	20	27
Costa Rica	30	[15.8-57.1]	1.18	0.91	0.11	21	28
Northern America	11,518	[11,287.3-11,753.4]	6.31	4.01	0.50	17	16
Canada	1,015	[818.6-1,258.5]	5.42	3.20	0.40	18	15
United States of America	10,499	[9,891.9-11,143.4]	6.41	4.11	0.51	17	16
South America	5,971	[5,016.6-7,107.1]	2.82	2.48	0.29	19	16
Venezuela	371	[246.5-558.4]	2.65	2.49	0.29	15	24
Uruguay	46	[32.8-64.6]	2.74	2.01	0.27	19	28
Argentina	282	[206.7-384.7]	1.28	1.12	0.15	21	26
Colombia	376	[249.7-566.1]	1.50	1.36	0.15	20	24
Chile	67	[42.7-105.1]	0.71	0.51	0.07	22	27
Ecuador	47	[23.1-95.6]	0.53	0.55	0.06	23	21
Guyana	2	[0.20-19.5]	0.51	0.58	0.09	16	11
Bolivia	47	[15.5-142.5]	0.80	0.90	0.09	22	28
Brazil	4,460	[4,072.1-4,884.8]	4.27	3.63	0.41	16	14
Peru	145	[93-226]	0.89	0.77	0.08	23	25
Paraguay	120	[74.8-192.5]	3.31	3.91	0.45	12	13
Suriname	2	[1.50-2.70]	0.68	0.75	0.03	22	17

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

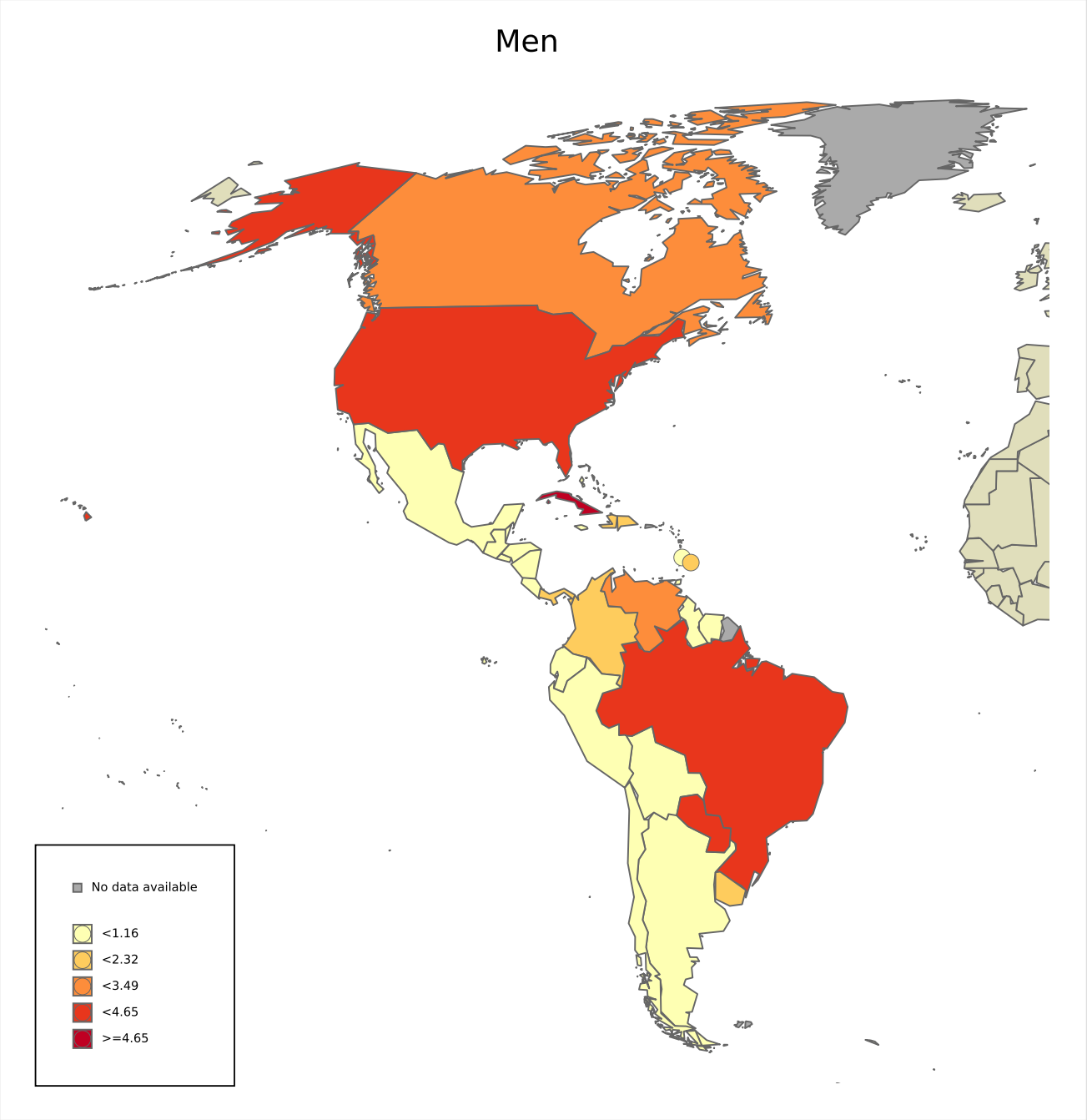
[a] Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed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

[b] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 31: Age-standardised incidence rates of oropharyngeal cancer among men in Americas (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 men per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.5.1.2 Oropharyngeal cancer mortality

Table 18: Mortality of oropharyngeal cancer in women by Americas and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
Americas	1,613	[683-965.3]	0.31	0.18	0.02	24	27
Caribbean	97	[51.3-183.5]	0.44	0.25	0.02	21	30
Jamaica	0	[0-7.20]	0	0	0	31	21
Trinidad & Tobago	0	[0-10.7]	0	0	0	28	29
St Lucia	0	[0-10.4]	0	0	0	29	29
Haiti	25	[11.6-53.9]	0.43	0.49	0.05	18	26
Dominican Republic	35	[16.2-75.5]	0.64	0.50	0.05	17	29
Cuba	31	[20.9-46]	0.54	0.22	0.02	25	26
Bahamas	0	[0-10.4]	0	0	0	19	18
Barbados	0	[0-11.2]	0	0	0	20	9
Central America	83	[58.3-118.2]	0.09	0.08	0.01	27	30
Belize	0	[0-8.30]	0	0	0	27	28
El Salvador	0	[0-6.50]	0	0	0	28	19
Panama	2	[0.50-8]	0.09	0.04	0	26	18
Nicaragua	0	[0-4.50]	0	0	0	30	24
Mexico	57	[42.5-76.5]	0.09	0.07	0.01	27	30
Guatemala	12	[6-23.8]	0.13	0.13	0.01	22	19
Honduras	8	[0.90-71.4]	0.16	0.25	0.03	26	24
Costa Rica	4	[1.30-12.4]	0.16	0.09	0.01	26	21
Northern America	801	[738.4-868.9]	0.43	0.20	0.02	24	27
United States of America	687	[611.5-771.8]	0.41	0.19	0.02	24	27
Canada	114	[87.4-148.6]	0.60	0.24	0.03	23	30
South America	632	[548-728.8]	0.29	0.20	0.02	25	26
Venezuela	27	[16.7-43.6]	0.19	0.15	0.02	26	25
Uruguay	3	[0.80-11.1]	0.17	0.08	0.01	27	20
Argentina	41	[28.7-58.5]	0.18	0.11	0.01	27	30
Colombia	60	[44.5-80.9]	0.23	0.15	0.01	25	24
Chile	19	[11.2-32.2]	0.20	0.10	0.01	25	22
Ecuador	12	[5.80-24.9]	0.14	0.11	0.01	25	20
Guyana	0	[0-10.1]	0	0	0	30	25
Brazil	439	[384.5-501.2]	0.41	0.27	0.03	23	24
Bolivia	12	[4.30-33.1]	0.21	0.21	0.02	22	29
Peru	17	[9.30-31]	0.10	0.08	0.01	30	31
Paraguay	2	[0.40-9.50]	0.06	0.05	0.01	26	27
Suriname	0	[0-10.9]	0	0	0	28	9

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

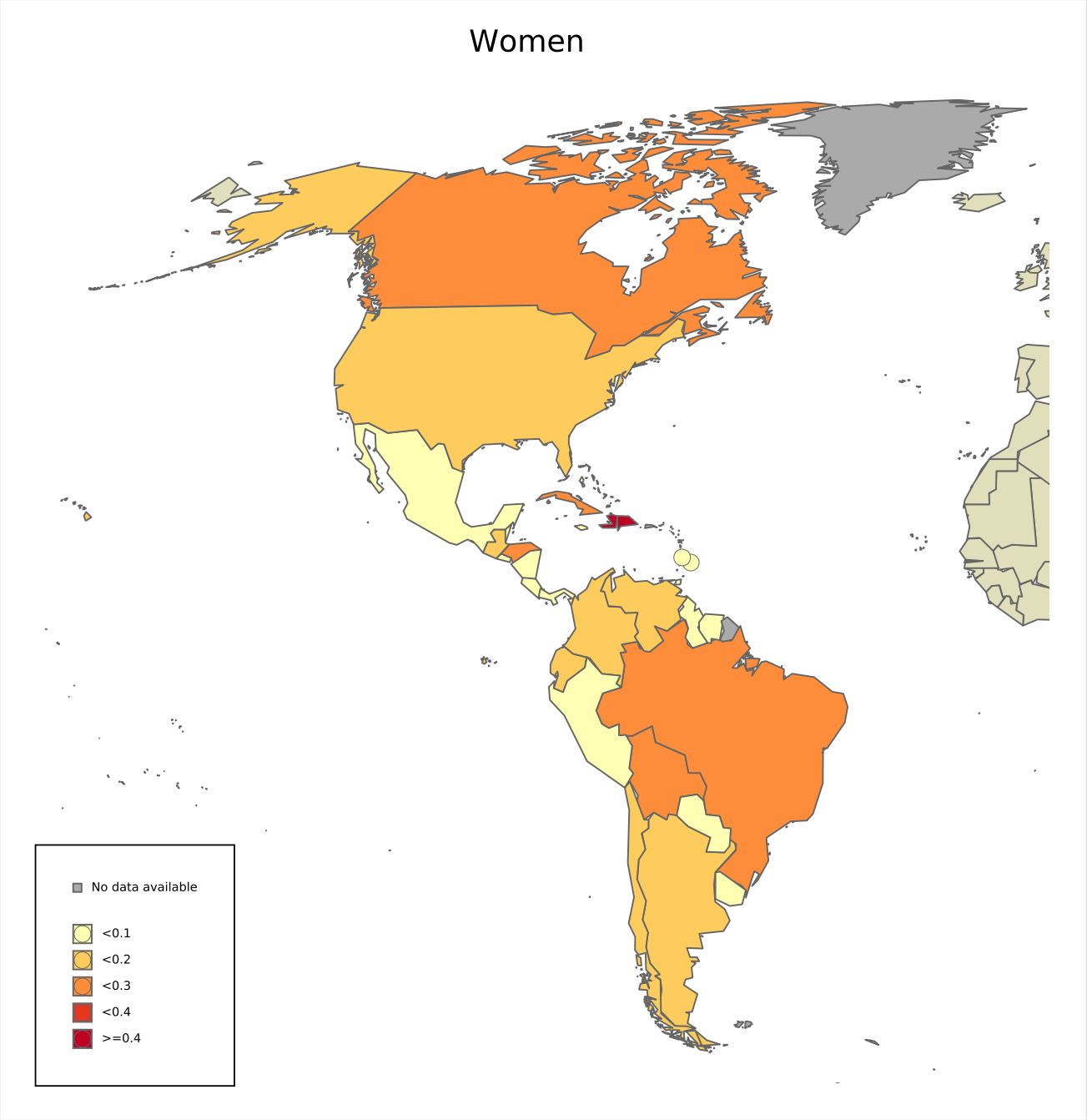
[a] Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the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

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 32: Age-standardised mortality rates of oropharyngeal cancer among women in Americas (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 women per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Table 19: Mortality of oropharyngeal cancer in men by Americas and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All men	Men 15-44 years
Americas	6,963	[3,826.3-4,399.7]	1.38	1.03	0.13	17	17
Caribbean	425	[334.4-540.2]	1.98	1.53	0.19	16	21
Trinidad & Tobago	6	[2.20-16.3]	0.87	0.66	0.07	16	12
St Lucia	0	[0-10.4]	0	0	0	25	15
Jamaica	12	[6-23.9]	0.82	0.69	0.10	15	26
Haiti	34	[23-50.2]	0.60	0.86	0.10	14	28
Dominican Republic	47	[31.8-69.4]	0.87	0.84	0.10	14	25
Cuba	242	[193.2-303.2]	4.30	2.33	0.28	14	17
Bahamas	1	[0.10-6.80]	0.52	0.56	0.09	19	28
Barbados	3	[0.60-15]	2.16	1.32	0.18	16	18
Central America	263	[216.2-319.9]	0.30	0.31	0.04	22	23
Belize	0	[0-9.90]	0	0	0	27	7
El Salvador	7	[2.90-17]	0.23	0.19	0.01	23	15
Panama	21	[12.7-34.8]	0.97	0.86	0.09	15	18
Nicaragua	14	[7.50-26.1]	0.43	0.54	0.07	19	13
Mexico	155	[124.3-193.3]	0.25	0.24	0.03	23	24
Guatemala	20	[11.9-33.6]	0.23	0.32	0.03	20	25
Costa Rica	21	[12.6-35.1]	0.83	0.63	0.08	18	25
Honduras	25	[2.80-223.1]	0.51	0.90	0.11	17	28
Northern America	2,860	[2,741.4-2,983.8]	1.57	0.87	0.11	17	21
Canada	347	[297.5-404.7]	1.85	0.92	0.12	17	23
United States of America	2,513	[2,358.4-2,677.7]	1.53	0.86	0.11	17	21
South America	3,415	[3,225.6-3,615.5]	1.61	1.40	0.17	16	15
Venezuela	151	[111.1-205.3]	1.08	1.02	0.12	16	23
Colombia	129	[95.1-174.9]	0.52	0.45	0.05	22	23
Uruguay	24	[15.2-37.9]	1.43	0.98	0.13	17	24
Argentina	152	[119.2-193.9]	0.69	0.59	0.07	19	26
Chile	40	[28-57.2]	0.42	0.29	0.03	23	25
Ecuador	17	[9.40-30.6]	0.19	0.20	0.02	22	21
Guyana	0	[0-10.1]	0	0	0	21	19
Brazil	2,804	[2,612.8-3,009.2]	2.68	2.27	0.27	15	12
Bolivia	14	[4.90-40]	0.24	0.24	0.02	23	25
Peru	46	[31.7-66.7]	0.28	0.23	0.02	23	26
Paraguay	36	[24.2-53.5]	0.99	1.14	0.15	18	18
Suriname	1	[0.10-10.9]	0.34	0.45	0	18	16

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

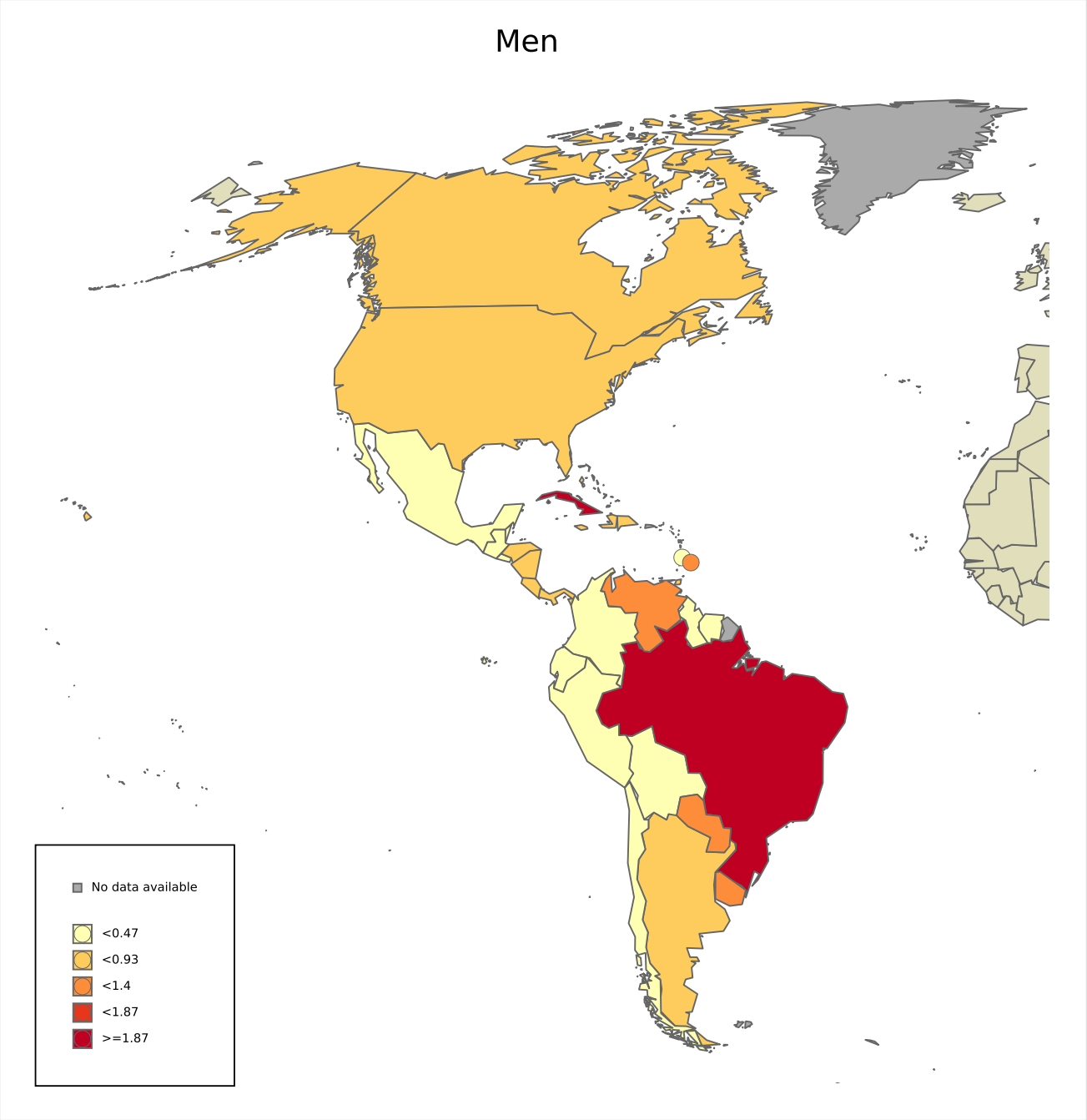
[a] Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the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

[b] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 33: Age-standardised mortality rates of oropharyngeal cancer among men in Americas (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 men per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.5.2 Oral cavity cancer

3.5.2.1 Oral cavity cancer incidence

Table 20: Incidence of oral cancer in women by Americas and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
Americas	15,129	[5,350.7-7,121.6]	2.92	1.86	0.21	18	15
Caribbean	486	[330.2-715.4]	2.21	1.43	0.16	17	17
Trinidad & Tobago	15	[5.30-42.2]	2.12	1.46	0.18	16	15
St Lucia	1	[0.90-1.10]	1.07	0.70	0.09	19	14
Jamaica	12	[4.60-31.5]	0.80	0.58	0.05	19	21
Haiti	32	[13.7-74.9]	0.55	0.60	0.04	21	16
Dominican Republic	53	[27.5-102]	0.98	0.78	0.08	22	21
Cuba	302	[202.3-450.9]	5.30	2.51	0.29	15	14
Bahamas	0	[0-1.10]	0	0	0	24	22
Barbados	3	[0.30-33.5]	2.02	0.46	0	20	26
Central America	1,132	[961.4-1,332.9]	1.24	1.09	0.12	20	16
El Salvador	58	[36-93.5]	1.68	1.26	0.11	16	15
Panama	23	[10.2-52]	1.07	0.82	0.09	19	15
Nicaragua	10	[4-24.7]	0.30	0.31	0.04	25	22
Mexico	870	[667.7-1,133.6]	1.32	1.13	0.12	20	16
Belize	0	[0-1.10]	0	0	0	17	31
Honduras	32	[8.50-121]	0.65	0.66	0.05	22	20
Guatemala	106	[69.5-161.7]	1.17	1.49	0.18	14	14
Costa Rica	33	[19.9-54.7]	1.29	0.87	0.10	19	18
Northern America	8,956	[8,750.9-9,165.9]	4.81	2.56	0.29	18	15
United States of America	8,050	[7,633.2-8,489.5]	4.81	2.59	0.30	18	15
Canada	906	[783.9-1,047.2]	4.77	2.31	0.26	19	15
South America	4,555	[3,813.8-5,440.2]	2.08	1.44	0.14	19	16
Venezuela	220	[131.2-368.8]	1.52	1.21	0.13	18	15
Uruguay	49	[35.2-68.2]	2.73	1.27	0.14	21	23
Colombia	575	[390.4-847]	2.22	1.62	0.18	17	16
Argentina	414	[280.3-611.5]	1.79	1.16	0.12	20	15
Chile	122	[82-181.6]	1.26	0.78	0.07	21	19
Ecuador	132	[89.5-194.6]	1.50	1.29	0.13	18	13
Guyana	1	[0.10-13.9]	0.26	0.14	0	24	29
Bolivia	24	[7.30-79.3]	0.41	0.33	0.04	25	25
Brazil	2,598	[2,266.2-2,978.4]	2.40	1.59	0.15	18	18
Peru	406	[273.8-602.1]	2.45	2.02	0.22	17	13
Paraguay	11	[4.20-29]	0.31	0.23	0	25	22
Suriname	3	[0.30-29.9]	1.03	0.90	0.11	16	12

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

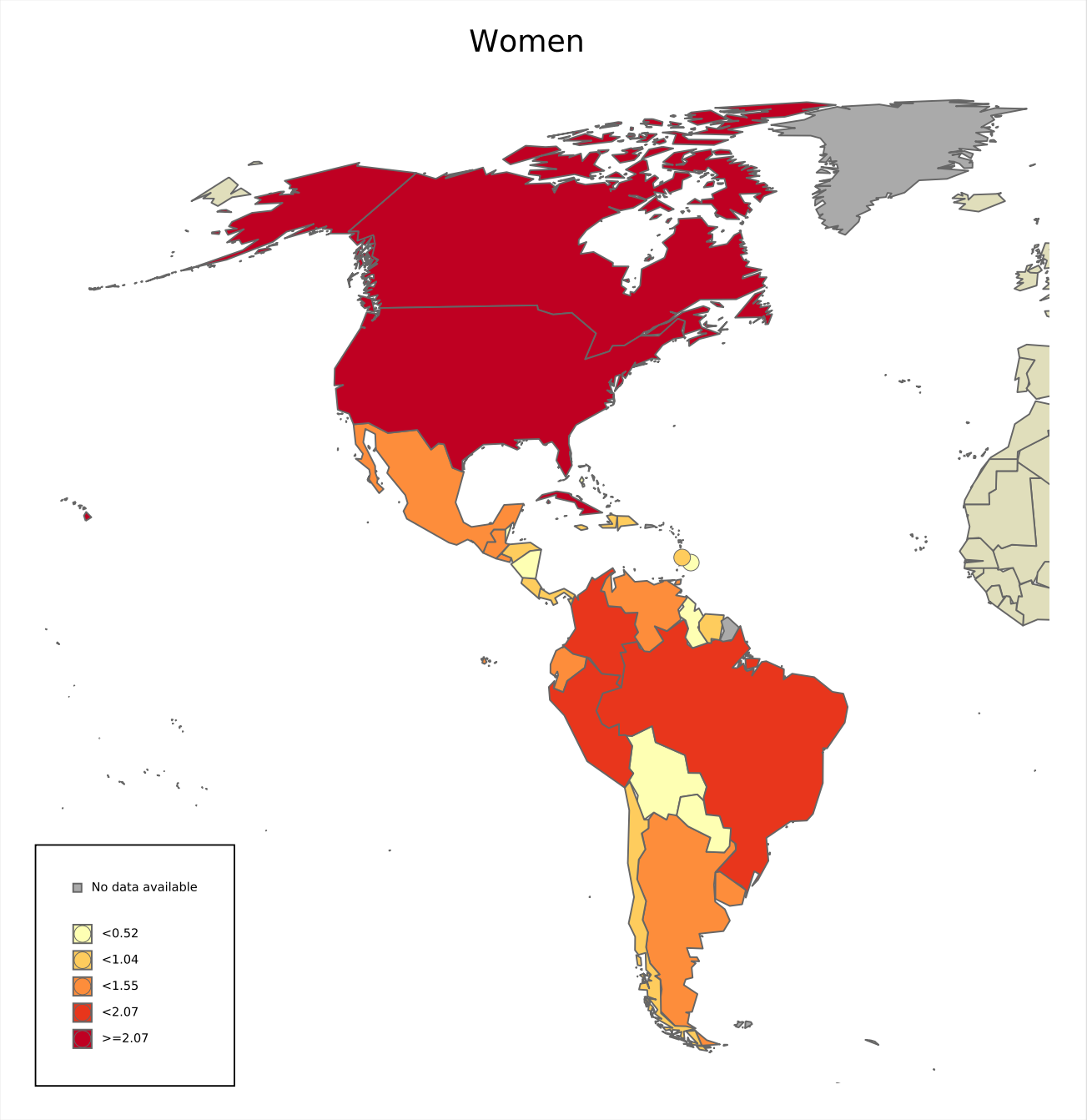
[a] Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed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

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 34: Age-standardised incidence rates of oral cancer among women in Americas (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 women per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Table 21: Incidence of oral cancer in men by Americas and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All men	Men 15-44 years
Americas	30,228	[10,613.4-12,931]	6.00	4.57	0.55	13	11
Caribbean	1,193	[937.8-1,517.6]	5.55	4.53	0.53	12	11
Jamaica	16	[6.20-41.2]	1.09	0.92	0.11	18	13
Trinidad & Tobago	18	[7.80-41.4]	2.61	1.88	0.21	14	21
St Lucia	9	[2-40]	9.95	7.97	1.14	5	11
Haiti	98	[60.9-157.6]	1.74	2.24	0.19	11	7
Dominican Republic	77	[44.5-133.1]	1.42	1.40	0.14	18	13
Cuba	782	[627.6-974.4]	13.9	8.09	0.97	7	7
Bahamas	5	[1.10-22.2]	2.62	2.25	0.28	13	12
Barbados	7	[2-25]	5.03	2.54	0.27	13	18
Central America	886	[752.8-1,042.7]	1.01	1.04	0.12	20	17
Belize	0	[0-1.10]	0	0	0	28	24
El Salvador	49	[30.5-78.8]	1.61	1.49	0.14	13	11
Panama	27	[14.9-49.1]	1.25	1.06	0.12	21	21
Nicaragua	18	[8.40-38.8]	0.55	0.72	0.10	21	22
Mexico	630	[518.8-765]	1.00	0.98	0.11	20	19
Guatemala	58	[37.1-90.8]	0.66	0.98	0.11	17	15
Costa Rica	47	[32.3-68.5]	1.85	1.46	0.18	19	13
Honduras	57	[20.2-160.7]	1.15	1.63	0.18	17	13
Northern America	18,513	[18,218.9-18,811.9]	10.1	6.01	0.73	12	11
United States of America	16,420	[15,936.4-16,918.3]	10.0	6.00	0.73	12	11
Canada	2,087	[1,877.3-2,320.2]	11.1	6.10	0.74	13	10
South America	9,636	[8,569.7-10,835]	4.54	3.95	0.46	14	11
Venezuela	381	[224.8-645.9]	2.72	2.58	0.30	14	13
Colombia	339	[241.7-475.6]	1.36	1.19	0.14	22	15
Uruguay	95	[55.3-163.2]	5.66	3.98	0.48	16	17
Argentina	890	[702.6-1,127.4]	4.04	3.51	0.40	16	12
Chile	173	[124.5-240.5]	1.84	1.32	0.15	19	21
Ecuador	101	[66.5-153.4]	1.14	1.12	0.12	20	14
Guyana	10	[2.60-38.3]	2.53	2.61	0.35	9	9
Brazil	7,241	[6,780.4-7,732.8]	6.93	5.86	0.67	8	8
Bolivia	49	[20-119.9]	0.84	0.91	0.17	20	10
Peru	261	[163.3-417.3]	1.59	1.36	0.15	19	14
Paraguay	85	[52.7-137.1]	2.35	2.66	0.30	19	10
Suriname	8	[2.80-22.7]	2.71	2.79	0.34	12	10

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

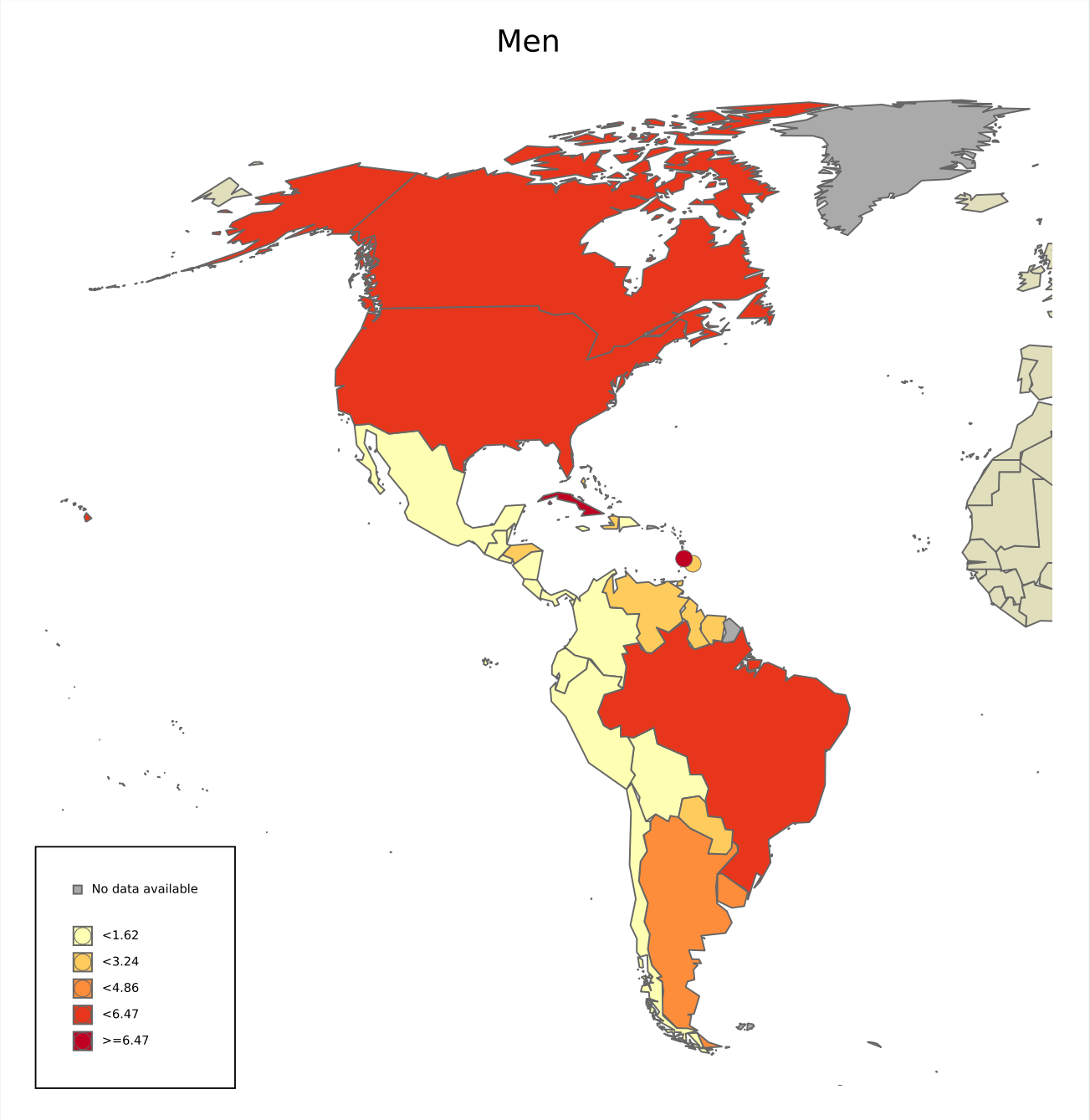
[a] Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed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

[b] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 35: Age-standardised incidence rates of oral cancer among men in Americas (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 men per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.5.2.2 Oral cavity cancer mortality

Table 22: Mortality of oral cancer in women by Americas and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
Americas	4,129	[2,132.2-2,629.9]	0.80	0.44	0.04	20	16
Caribbean	186	[128.9-268.4]	0.84	0.48	0.04	19	20
Trinidad & Tobago	7	[2.90-16.9]	0.99	0.66	0.08	17	30
St Lucia	0	[0-10.4]	0	0	0	31	30
Jamaica	7	[3-16.1]	0.47	0.32	0.03	19	19
Haiti	16	[7.50-34.1]	0.28	0.31	0.02	21	21
Dominican Republic	23	[12.9-41.1]	0.42	0.31	0.02	21	22
Cuba	107	[76.8-149]	1.88	0.77	0.08	17	17
Bahamas	0	[0-10.4]	0	0	0	21	20
Barbados	2	[0.20-16.7]	1.35	0.34	0	18	11
Central America	407	[352.7-469.7]	0.44	0.38	0.04	19	19
Belize	0	[0-4.50]	0	0	0	30	30
El Salvador	34	[22-52.5]	0.99	0.66	0.05	14	17
Panama	11	[5.50-22.2]	0.51	0.32	0.03	17	16
Nicaragua	6	[2.70-13.2]	0.18	0.17	0.02	24	17
Mexico	292	[234.6-363.4]	0.44	0.37	0.04	20	18
Guatemala	42	[29.1-60.6]	0.46	0.59	0.07	15	16
Honduras	10	[2.10-47]	0.20	0.28	0.03	24	25
Costa Rica	12	[6.20-23.3]	0.47	0.28	0.03	21	19
Northern America	1,761	[1,666.9-1,860.3]	0.95	0.39	0.04	18	17
Canada	255	[210.2-309.3]	1.34	0.50	0.05	19	20
United States of America	1,506	[1,371.3-1,654]	0.90	0.37	0.04	19	15
South America	1,775	[1,622.6-1,941.7]	0.81	0.53	0.05	20	16
Uruguay	25	[16-39.1]	1.39	0.52	0.05	19	18
Venezuela	96	[65.1-141.6]	0.66	0.50	0.05	18	16
Argentina	172	[126.7-233.5]	0.74	0.42	0.04	19	18
Colombia	232	[173.9-309.5]	0.90	0.61	0.06	19	15
Chile	54	[39.4-74.1]	0.56	0.28	0.02	21	18
Ecuador	54	[39.2-74.5]	0.61	0.50	0.05	19	14
Guyana	1	[0.10-8.30]	0.26	0.14	0	16	27
Brazil	973	[875.1-1,081.9]	0.90	0.57	0.06	17	17
Bolivia	13	[4.20-40.3]	0.22	0.17	0.02	20	20
Peru	146	[107.9-197.6]	0.88	0.68	0.07	19	15
Paraguay	7	[3.10-15.8]	0.20	0.15	0	23	21
Suriname	2	[0.30-15.1]	0.69	0.56	0.08	13	7

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

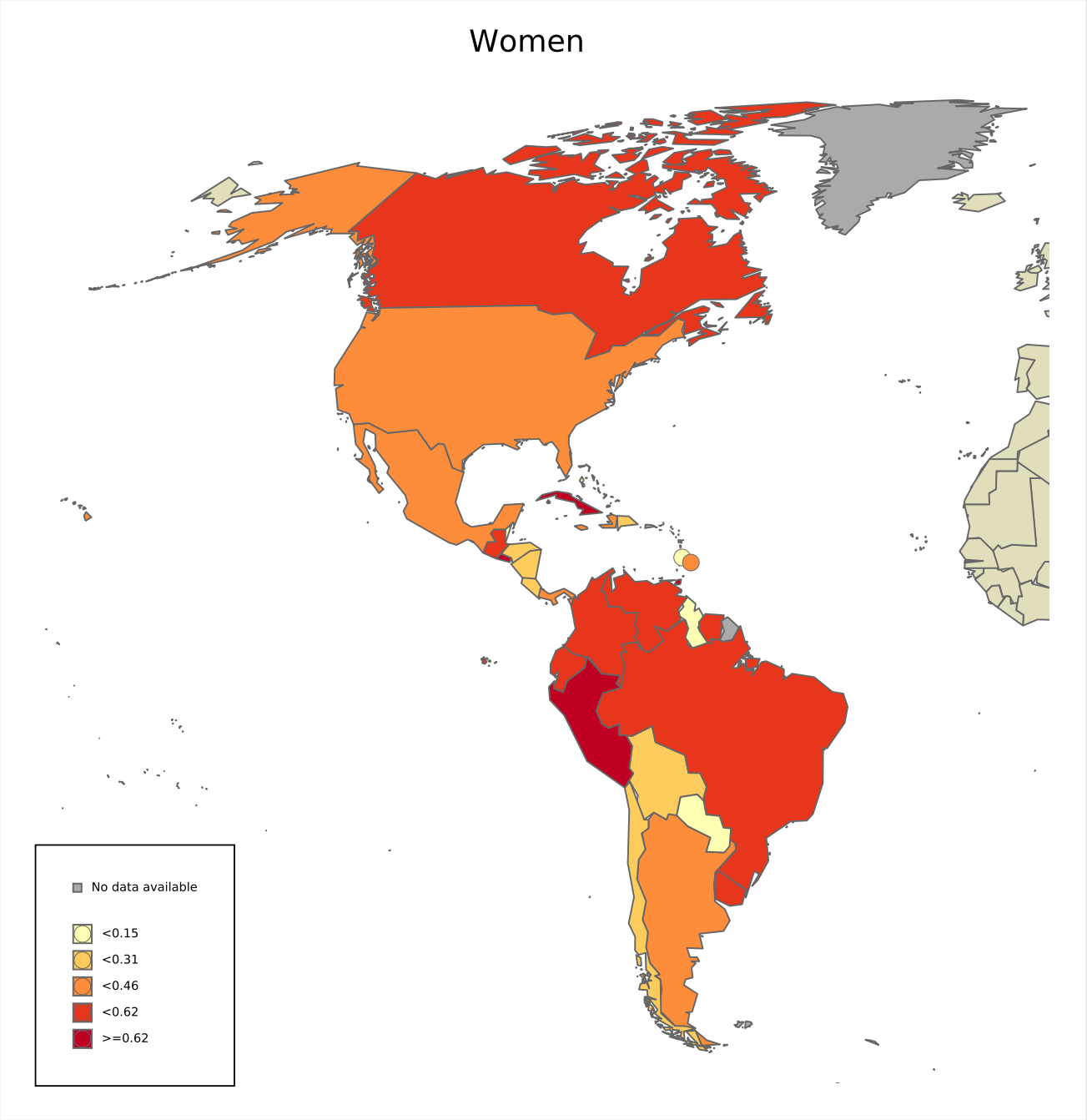
[a] Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the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

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 36: Age-standardised mortality rates of oral cancer among women in Americas (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 women per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Table 23: Mortality of oral cancer in men by Americas and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All men	Men 15-44 years
Americas	8,404	[4,859.8-5,521.2]	1.67	1.23	0.15	16	14
Caribbean	482	[385.2-603.1]	2.24	1.72	0.20	14	13
Trinidad & Tobago	10	[4.90-20.3]	1.45	1.00	0.12	15	14
St Lucia	3	[0.80-11]	3.32	2.45	0.39	9	13
Jamaica	7	[3.10-15.8]	0.48	0.40	0.06	17	27
Haiti	46	[30.2-70.1]	0.82	1.12	0.09	12	10
Dominican Republic	29	[17.8-47.2]	0.54	0.51	0.04	17	15
Cuba	311	[259.3-373]	5.53	2.97	0.35	13	14
Bahamas	4	[1.10-14.4]	2.09	1.83	0.24	12	23
Barbados	4	[1.30-12.3]	2.88	1.50	0.16	13	16
Central America	446	[386.8-514.3]	0.51	0.52	0.06	18	16
El Salvador	34	[22.1-52.3]	1.12	1.02	0.10	12	11
Panama	20	[12-33.4]	0.93	0.77	0.08	16	28
Nicaragua	13	[6.70-25.4]	0.40	0.52	0.08	20	12
Mexico	294	[250.4-345.2]	0.47	0.46	0.05	19	16
Belize	0	[0-9.90]	0	0	0	19	9
Honduras	22	[5.20-93.6]	0.44	0.47	0.04	19	13
Guatemala	37	[25.1-54.6]	0.42	0.62	0.07	14	15
Costa Rica	26	[16.8-40.2]	1.02	0.74	0.08	16	18
Northern America	3,224	[3,097.1-3,356.1]	1.77	0.96	0.11	16	13
United States of America	2,779	[2,612.7-2,955.9]	1.70	0.94	0.11	16	13
Canada	445	[374.6-528.6]	2.38	1.16	0.14	16	14
South America	4,252	[4,036.4-4,479.1]	2.00	1.74	0.21	15	13
Venezuela	172	[115.7-255.7]	1.23	1.17	0.13	15	15
Colombia	146	[113.5-187.8]	0.58	0.50	0.06	19	16
Uruguay	60	[44.8-80.4]	3.57	2.41	0.30	15	17
Argentina	339	[281.7-408]	1.54	1.29	0.15	16	14
Chile	76	[58.5-98.7]	0.81	0.54	0.06	18	19
Ecuador	48	[33.9-67.9]	0.54	0.53	0.06	18	15
Guyana	6	[2.10-17.2]	1.52	1.52	0.21	9	21
Brazil	3,225	[3,064.6-3,393.8]	3.09	2.60	0.31	12	10
Bolivia	23	[9.90-53.7]	0.39	0.43	0.08	18	12
Peru	111	[77.4-159.1]	0.68	0.57	0.06	16	15
Paraguay	37	[24.8-55.2]	1.02	1.18	0.14	17	11
Suriname	8	[3.30-19.5]	2.71	2.62	0.31	10	18

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

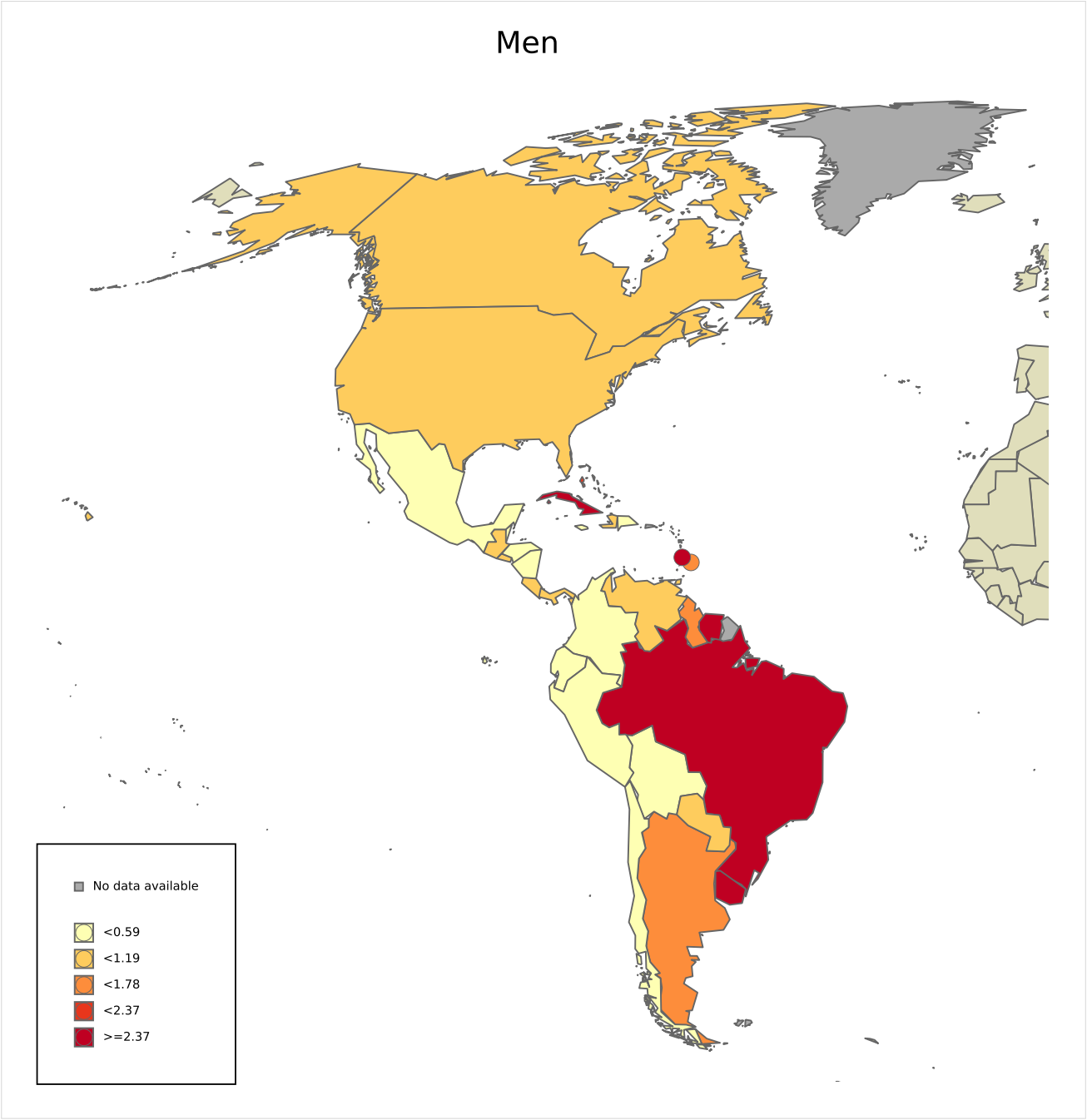
[a] Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the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

[b] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 37: Age-standardised mortality rates of oral cancer among men in Americas (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 men per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.5.3 Laryngeal cancer

3.5.3.1 Laryngeal cancer incidence

Table 24: Incidence of laryngeal cancer in women by Americas and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
Americas	5,363	[2,078.4-3,282.6]	1.03	0.69	0.09	24	27
Caribbean	355	[246.6-511]	1.61	1.11	0.13	19	22
Trinidad & Tobago	0	[0-1.10]	0	0	0	30	29
St Lucia	0	[0-1.10]	0	0	0	27	25
Jamaica	6	[1-34.7]	0.40	0.26	0.02	25	26
Haiti	37	[21.6-63.2]	0.64	0.73	0.06	19	15
Dominican Republic	61	[35.7-104.3]	1.12	0.99	0.11	20	18
Cuba	229	[169.5-309.4]	4.02	1.94	0.25	17	28
Bahamas	0	[0-1.10]	0	0	0	25	28
Barbados	0	[0-1.10]	0	0	0	28	13
Central America	278	[209-369.7]	0.30	0.26	0.03	26	27
Belize	0	[0-1.30]	0	0	0	27	20
El Salvador	8	[2.40-27.1]	0.23	0.14	0.01	25	23
Panama	9	[2.20-37.5]	0.42	0.31	0.04	25	27
Nicaragua	15	[5.80-38.9]	0.45	0.41	0.03	21	24
Mexico	180	[130.1-249.1]	0.27	0.23	0.03	26	27
Honduras	31	[8.50-112.9]	0.63	0.83	0.12	23	26
Guatemala	23	[11.9-44.6]	0.25	0.33	0.05	21	31
Costa Rica	12	[6.30-22.8]	0.47	0.32	0.04	25	22
Northern America	2,751	[2,640.2-2,866.5]	1.48	0.83	0.10	24	27
Canada	151	[115.4-197.7]	0.79	0.38	0.05	27	28
United States of America	2,600	[2,391.1-2,827.1]	1.55	0.88	0.11	24	27
South America	1,979	[1,486.1-2,635.5]	0.90	0.66	0.08	24	26
Venezuela	98	[67.5-142.3]	0.68	0.56	0.07	24	23
Uruguay	23	[14.2-37.2]	1.28	0.75	0.09	24	20
Argentina	163	[112.3-236.6]	0.70	0.48	0.06	24	28
Colombia	125	[81.5-191.7]	0.48	0.36	0.04	27	27
Chile	27	[13.7-53.3]	0.28	0.13	0.01	27	25
Ecuador	20	[9.70-41.4]	0.23	0.18	0.02	27	27
Guyana	0	[0-17.8]	0	0	0	26	23
Bolivia	31	[11.7-81.9]	0.53	0.54	0.07	20	13
Brazil	1,415	[1,219.5-1,641.9]	1.31	0.93	0.11	22	28
Peru	66	[41-106.2]	0.40	0.35	0.04	26	24
Paraguay	11	[3.80-31.6]	0.31	0.27	0.03	24	15
Suriname	0	[0-1.50]	0	0	0	28	24

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

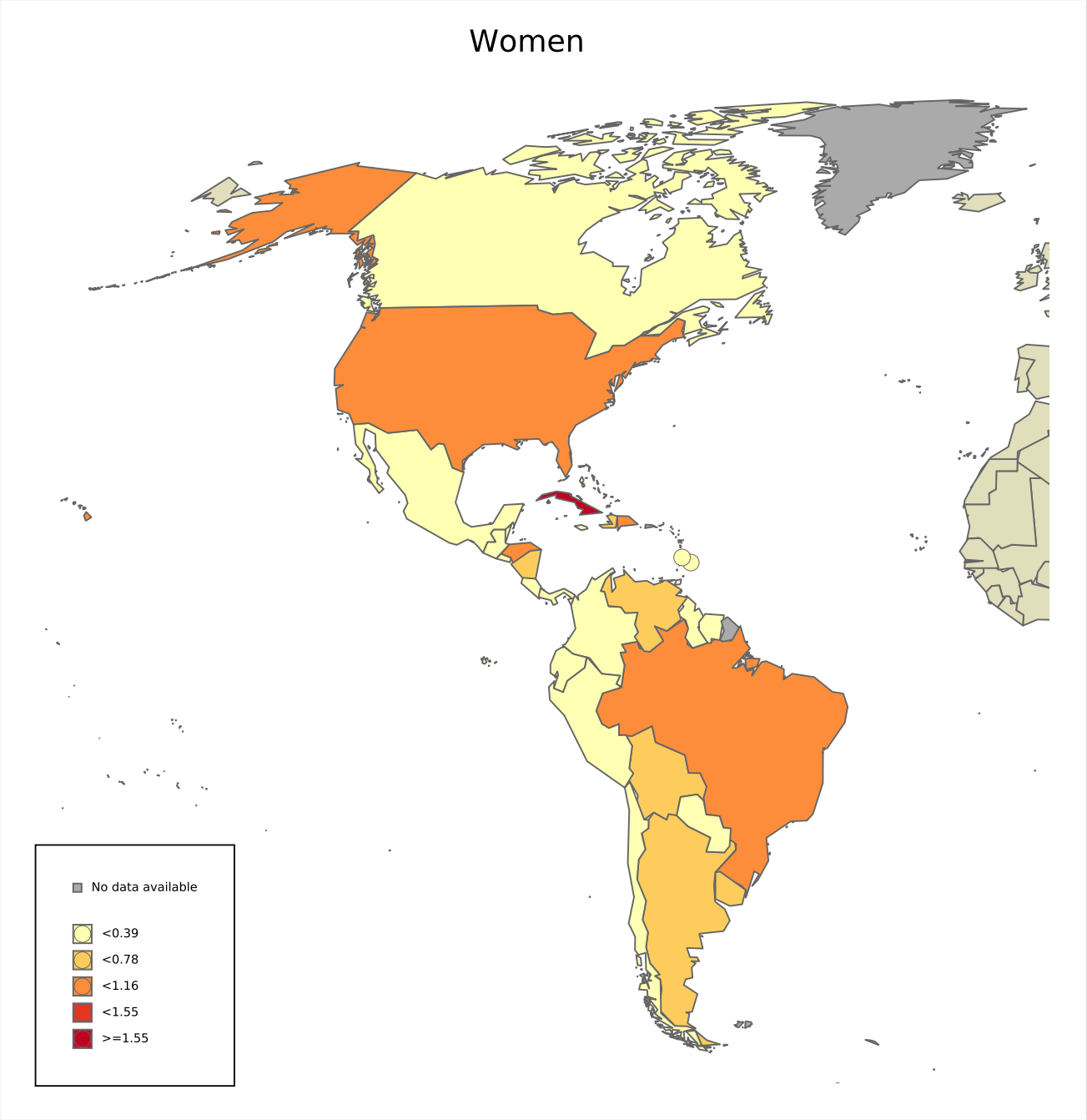
[a] Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed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

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 38: Age-standardised incidence rates of laryngeal cancer among women in Americas (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 women per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Table 25: Incidence of laryngeal cancer in men by Americas and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All men	Men 15-44 years
Americas	24,322	[12,223.7-14,971.4]	4.82	3.56	0.45	17	23
Caribbean	1,966	[1,679.2-2,301.8]	9.15	7.26	0.90	5	15
Trinidad & Tobago	28	[14-55.8]	4.05	2.86	0.26	12	13
St Lucia	3	[0.30-26.9]	3.32	2.35	0.26	12	23
Jamaica	51	[32-81.2]	3.47	2.89	0.35	12	19
Haiti	43	[23.6-78.5]	0.76	1.10	0.12	19	19
Dominican Republic	233	[178.8-303.7]	4.30	4.36	0.54	8	15
Cuba	1,424	[1,226.8-1,652.8]	25.3	14.2	1.78	4	9
Bahamas	8	[2.50-25.2]	4.19	4.11	0.28	11	8
Barbados	7	[2.10-23.7]	5.03	2.21	0.22	11	20
Central America	1,332	[1,184-1,498.5]	1.51	1.57	0.19	16	22
El Salvador	35	[20.8-58.9]	1.15	1.05	0.13	15	21
Panama	37	[23.2-59.1]	1.71	1.50	0.19	15	27
Nicaragua	47	[30.7-72]	1.44	1.96	0.26	15	24
Mexico	849	[720.8-1,000]	1.35	1.33	0.16	18	22
Belize	3	[0.80-12]	1.52	1.58	0.13	9	5
Honduras	219	[129.5-370.3]	4.43	6.67	0.82	8	19
Guatemala	62	[42.1-91.4]	0.70	1.03	0.11	15	16
Costa Rica	80	[60-106.6]	3.14	2.35	0.28	14	18
Northern America	10,794	[10,573.1-11,019.5]	5.91	3.34	0.42	18	24
United States of America	9,954	[9,530.9-10,395.8]	6.08	3.47	0.44	18	23
Canada	836	[701.7-996]	4.46	2.22	0.28	19	22
South America	10,230	[9,033.3-11,585.2]	4.82	4.18	0.52	13	22
Uruguay	156	[130-187.2]	9.29	6.22	0.80	11	19
Venezuela	659	[514.1-844.7]	4.71	4.48	0.57	10	17
Colombia	875	[702.1-1,090.4]	3.50	3.06	0.38	13	22
Argentina	1,251	[1,033.3-1,514.6]	5.67	4.78	0.60	13	21
Chile	190	[138.2-261.3]	2.02	1.36	0.17	18	24
Ecuador	133	[96.3-183.7]	1.51	1.51	0.18	17	19
Guyana	12	[2.80-50.7]	3.03	3.13	0.43	7	16
Brazil	6,580	[6,165-7,022.9]	6.30	5.33	0.66	11	21
Bolivia	95	[55.4-162.9]	1.62	1.67	0.21	14	18
Peru	168	[98.9-285.5]	1.03	0.87	0.10	22	27
Paraguay	100	[57.5-174]	2.76	3.18	0.40	15	19
Suriname	6	[1-37.5]	2.04	2.13	0.14	14	23

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

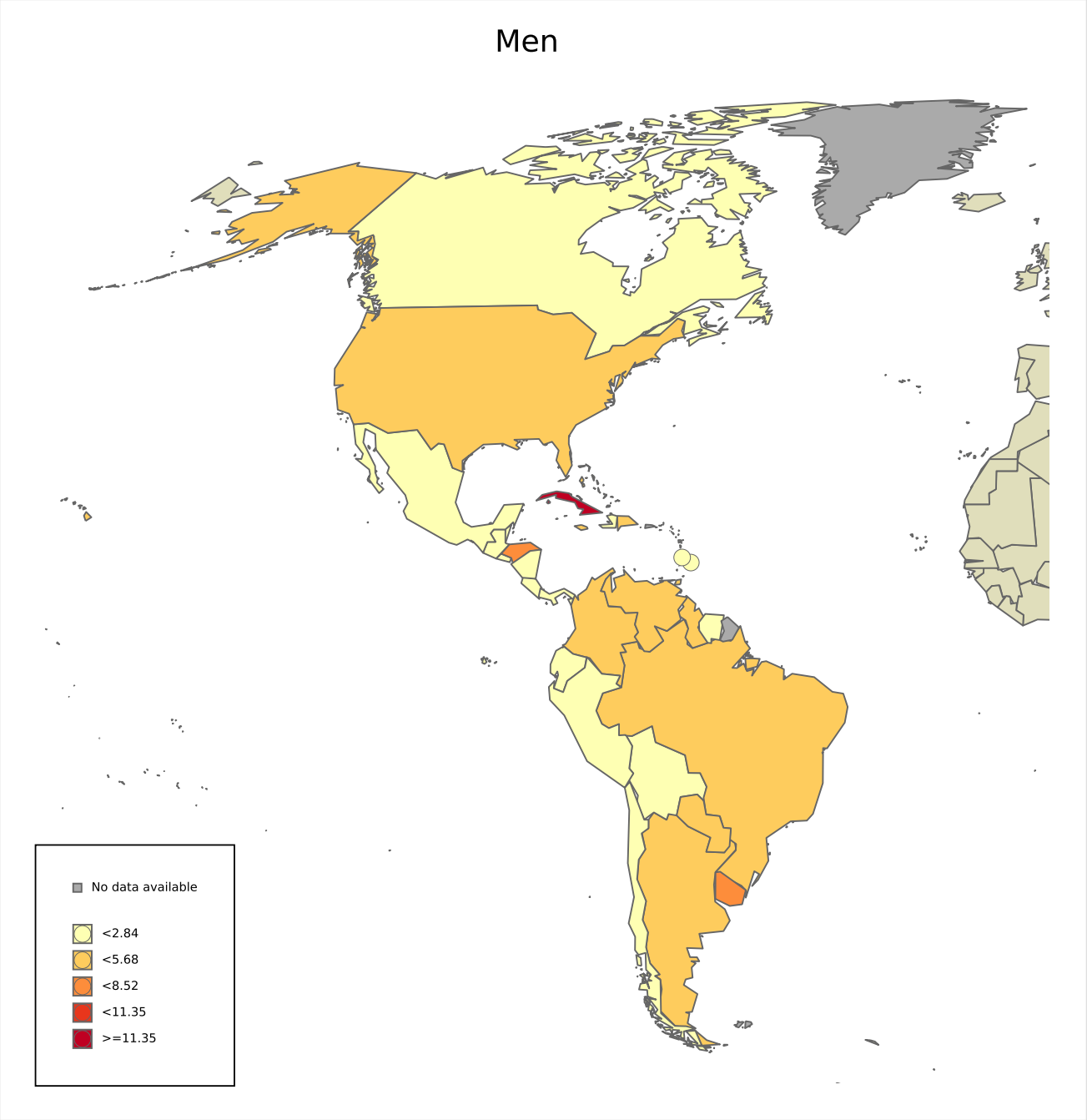
[a] Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed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

[b] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 39: Age-standardised incidence rates of laryngeal cancer among men in Americas (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 men per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.5.3.2 Laryngeal cancer mortality

Table 26: Mortality of laryngeal cancer in women by Americas and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
Americas	2,270	[1,238.6-1,611.9]	0.44	0.27	0.03	22	25
Caribbean	200	[143.5-278.7]	0.91	0.58	0.06	17	18
Trinidad & Tobago	0	[0-10.7]	0	0	0	26	14
St Lucia	0	[0-10.4]	0	0	0	27	9
Jamaica	3	[0.70-13.6]	0.20	0.12	0.01	24	24
Haiti	26	[16.2-41.9]	0.45	0.51	0.04	17	14
Dominican Republic	34	[21.1-54.7]	0.63	0.51	0.04	18	13
Cuba	125	[97.5-160.3]	2.19	0.97	0.12	16	28
Bahamas	0	[0-10.4]	0	0	0	31	13
Barbados	0	[0-11.2]	0	0	0	24	25
Central America	152	[118.4-195.1]	0.17	0.14	0.02	23	23
Belize	0	[0-9.90]	0	0	0	17	11
El Salvador	4	[1.30-12.1]	0.12	0.05	0	25	24
Panama	5	[1.50-17.1]	0.23	0.18	0.02	23	28
Nicaragua	9	[3.90-20.6]	0.27	0.25	0.02	19	16
Mexico	95	[72.6-124.3]	0.14	0.12	0.01	24	23
Guatemala	16	[9-28.5]	0.18	0.23	0.03	20	29
Honduras	18	[6.50-49.9]	0.36	0.48	0.05	20	18
Costa Rica	5	[1.60-16]	0.20	0.11	0.01	24	27
Northern America	857	[794.1-924.9]	0.46	0.21	0.03	23	29
Canada	65	[45.9-92.1]	0.34	0.13	0.02	25	28
United States of America	792	[712.7-880.1]	0.47	0.22	0.03	23	29
South America	1,061	[950.3-1,184.6]	0.49	0.34	0.04	22	22
Uruguay	10	[5.20-19.4]	0.56	0.30	0.04	23	26
Venezuela	59	[43.2-80.6]	0.41	0.33	0.04	22	21
Colombia	72	[52.4-99]	0.28	0.19	0.02	23	26
Argentina	114	[85.1-152.7]	0.49	0.31	0.04	22	27
Chile	17	[9.90-29.2]	0.18	0.08	0.01	27	25
Ecuador	15	[8.20-27.4]	0.17	0.13	0.01	24	27
Guyana	0	[0-10.1]	0	0	0	17	19
Bolivia	15	[6-37.6]	0.26	0.25	0.04	18	11
Brazil	716	[637.9-803.6]	0.66	0.46	0.06	20	26
Peru	37	[24.9-55.1]	0.22	0.19	0.02	24	23
Paraguay	6	[2.50-14.6]	0.17	0.15	0.01	24	14
Suriname	0	[0-10.9]	0	0	0	17	17

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

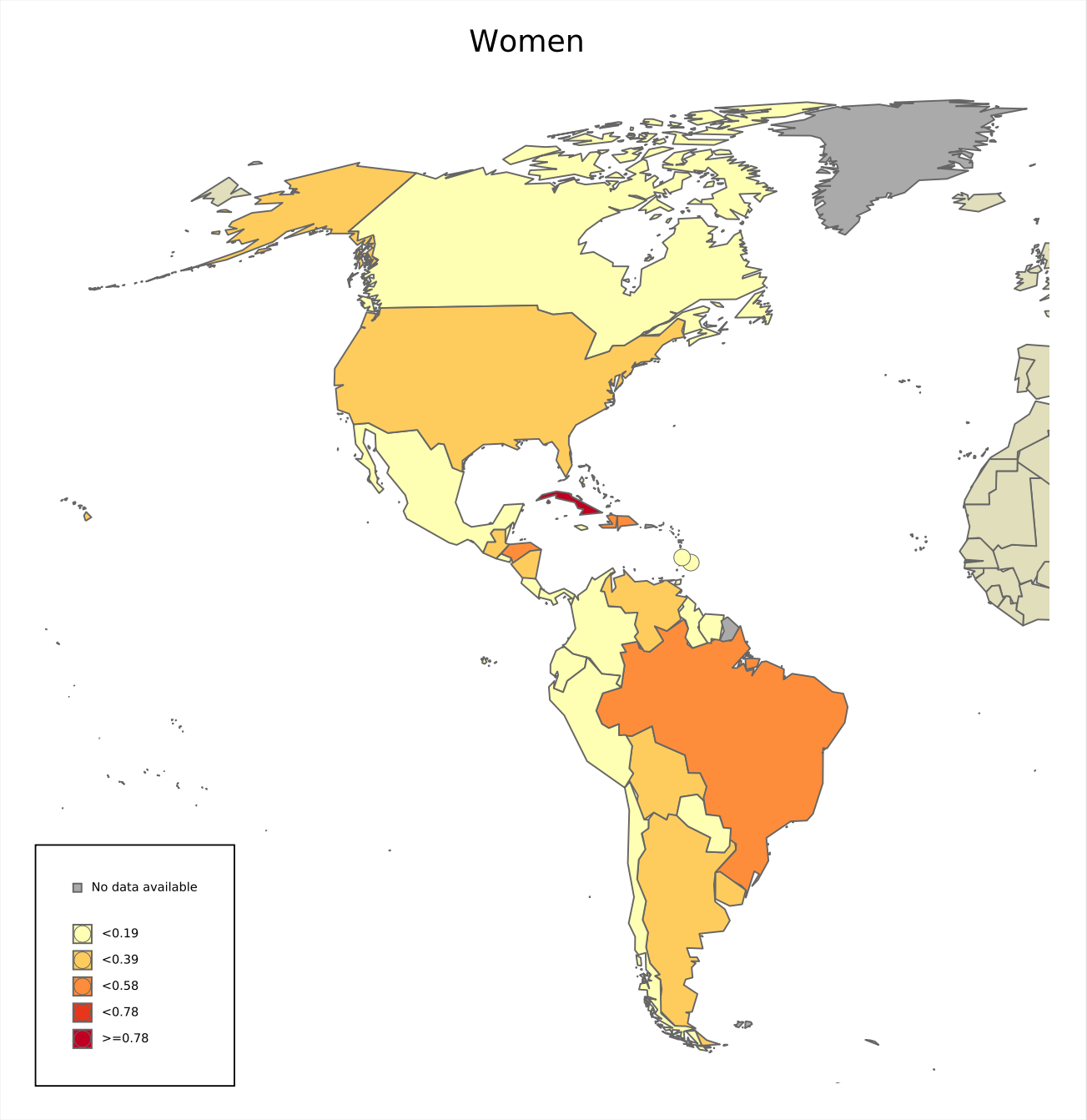
[a] Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the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

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 40: Age-standardised mortality rates of laryngeal cancer among women in Americas (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 women per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Table 27: Mortality of laryngeal cancer in men by Americas and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All men	Men 15-44 years
Americas	12,164	[8,367.8-9,275.6]	2.41	1.73	0.21	14	18
Caribbean	1,092	[945.7-1,261]	5.08	3.87	0.47	9	14
Trinidad & Tobago	19	[10.6-34.2]	2.75	1.87	0.17	12	8
St Lucia	1	[0.10-6.70]	1.11	0.99	0.17	13	4
Jamaica	37	[24.8-55.2]	2.52	2.07	0.28	12	13
Haiti	33	[19.3-56.3]	0.59	0.86	0.10	15	17
Dominican Republic	129	[102-163.2]	2.38	2.34	0.27	10	12
Cuba	769	[679.9-869.8]	13.7	7.23	0.89	5	12
Bahamas	6	[2.20-16.1]	3.14	2.96	0.24	9	7
Barbados	5	[1.70-14.6]	3.59	1.74	0.22	11	12
Central America	906	[817.5-1,004.1]	1.03	1.05	0.12	14	18
Belize	3	[0.90-9.90]	1.52	1.58	0.13	6	6
El Salvador	27	[16.8-43.3]	0.89	0.79	0.10	13	28
Panama	33	[22.1-49.4]	1.53	1.31	0.16	13	23
Nicaragua	38	[26.2-55]	1.16	1.60	0.22	11	16
Mexico	563	[491.7-644.6]	0.89	0.87	0.10	15	21
Honduras	138	[87.5-217.7]	2.79	4.16	0.53	9	10
Guatemala	50	[35.7-70.1]	0.57	0.83	0.08	12	14
Costa Rica	54	[39.3-74.3]	2.12	1.46	0.15	13	20
Northern America	3,354	[3,227.2-3,485.8]	1.84	0.94	0.11	15	23
United States of America	3,041	[2,885.7-3,204.6]	1.86	0.97	0.12	15	23
Canada	313	[269.8-363.1]	1.67	0.74	0.09	18	24
South America	6,812	[6,529.6-7,106.6]	3.21	2.75	0.34	13	16
Venezuela	404	[335.2-486.9]	2.89	2.74	0.34	9	17
Colombia	480	[407.5-565.4]	1.92	1.62	0.18	14	20
Uruguay	93	[62.5-138.4]	5.54	3.59	0.45	12	18
Argentina	746	[642.2-866.6]	3.38	2.75	0.34	13	20
Chile	126	[99.2-160.1]	1.34	0.88	0.10	16	24
Ecuador	80	[61.2-104.5]	0.91	0.87	0.09	14	18
Guyana	6	[1.90-18.6]	1.52	1.51	0.21	8	12
Brazil	4,652	[4,422.6-4,893.3]	4.45	3.75	0.46	9	16
Bolivia	57	[34.2-95]	0.97	0.94	0.10	13	18
Peru	96	[63.9-144.2]	0.59	0.48	0.05	18	27
Paraguay	67	[43.8-102.5]	1.85	2.10	0.26	11	19
Suriname	3	[0.60-15]	1.02	1.07	0.07	16	9

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

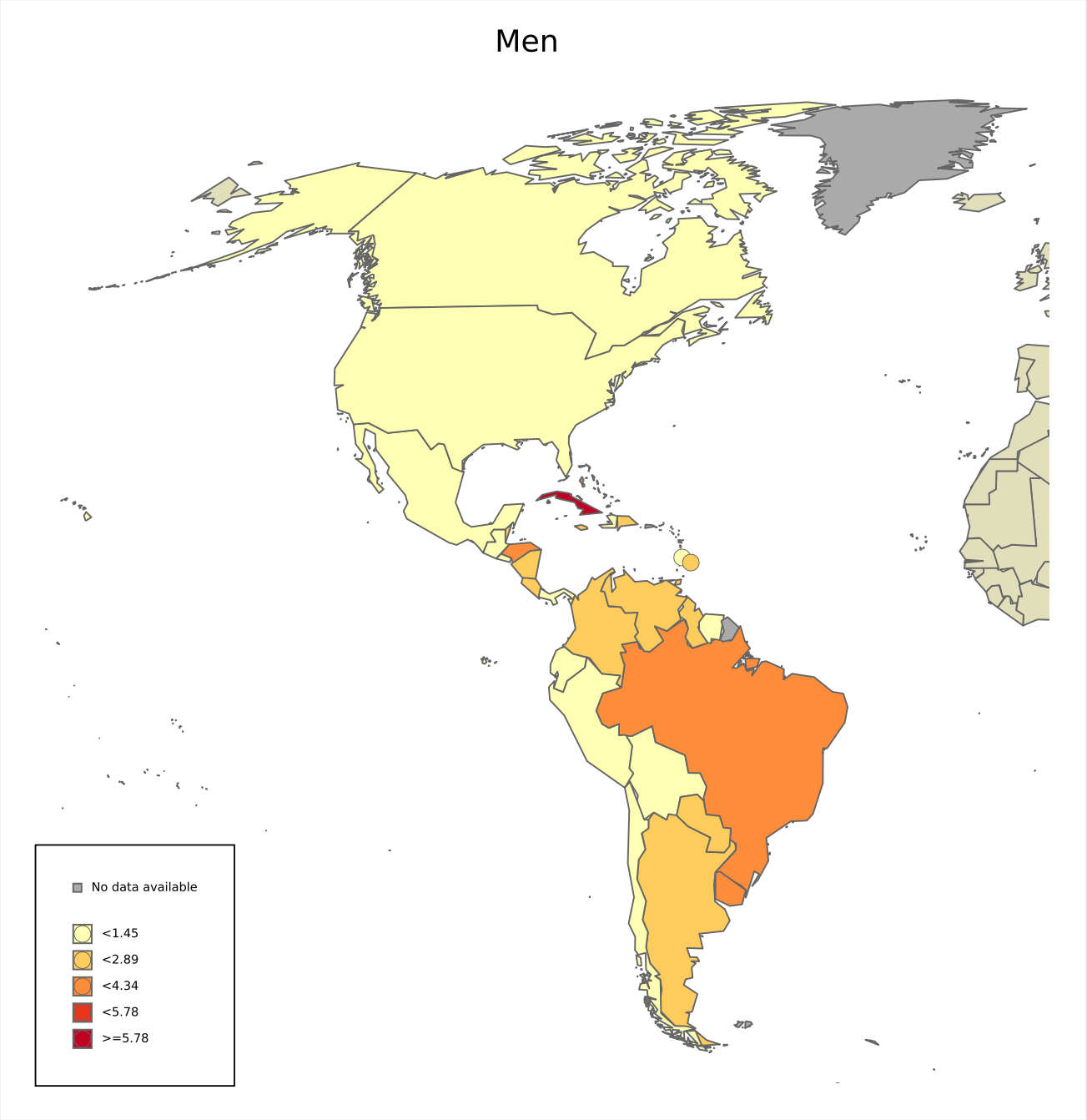
[a] Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the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

[b] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 41: Age-standardised mortality rates of laryngeal cancer among men in Americas (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 men per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

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).

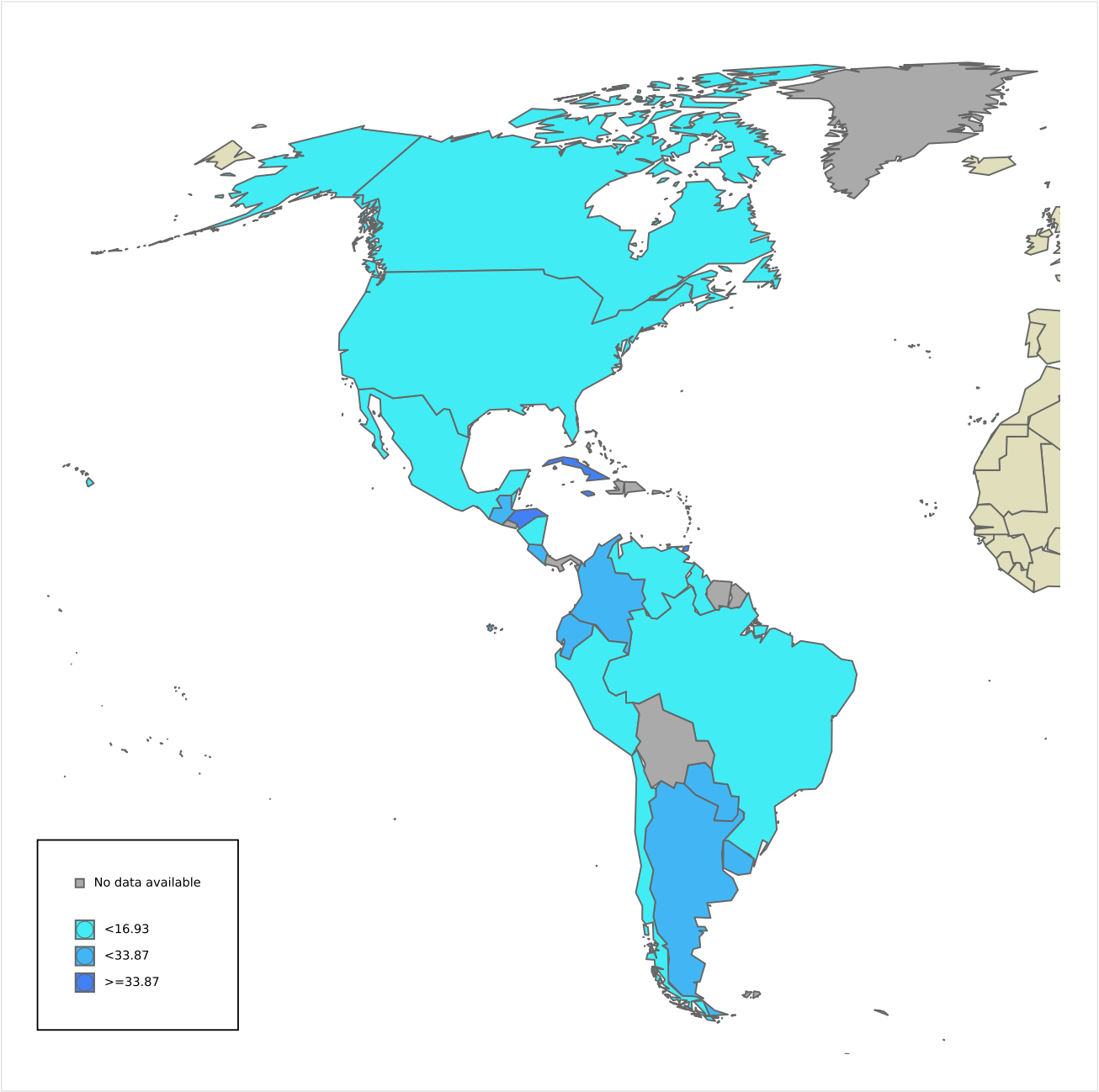
The prevalence of HPV increases with severity of the lesion. HPV causes virtually 100cervical cancer, and an underestimation of HPV prevalence in cervical cancer is most likely due to the limitations of study methodologies. Worldwide, HPV-16 and 18, the two vaccine-preventable types. contribute to over 7016-32% 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 20cancers 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 highgrade 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

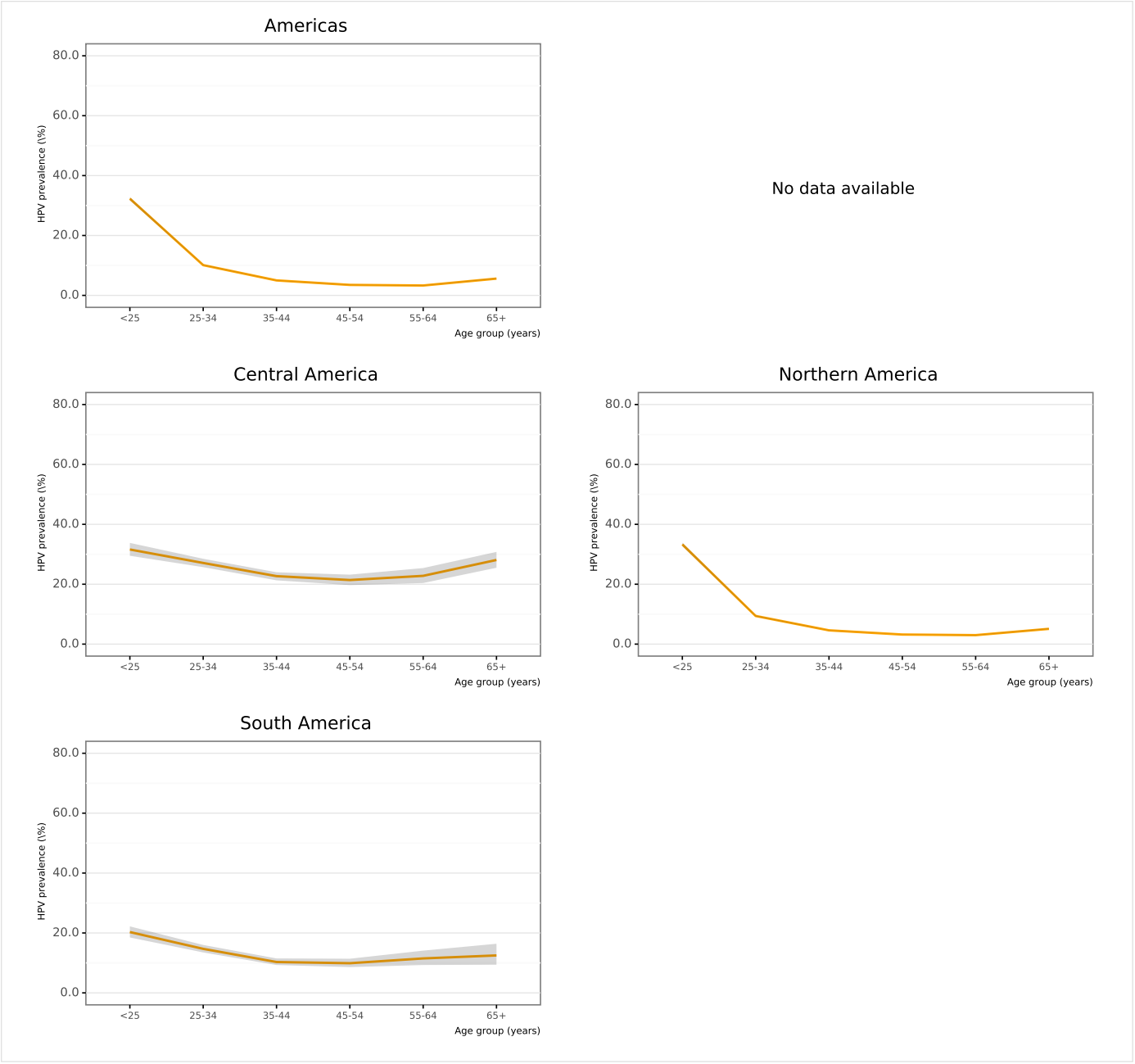
Figure 42: Prevalence of HPV among women with normal cervical cytology in Americas



Data updated on 22 May 2023 (data as of 30 Jun 2015)

Data Sources: See references in Section 9 References.

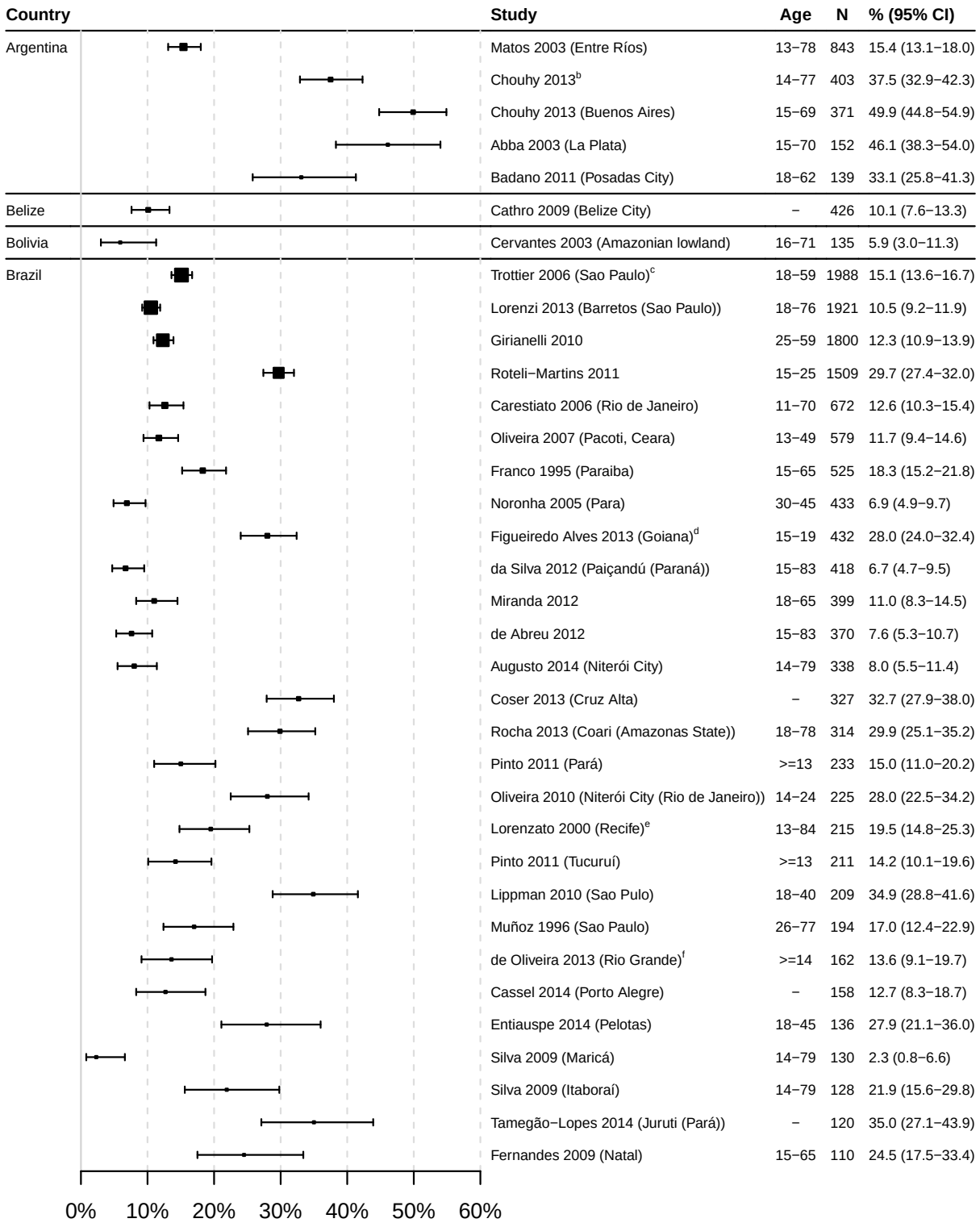
Figure 43: Crude age-specific HPV prevalence (%) and 95% confidence interval in women with normal cervical cytology in Americas and its regions



Data updated on 22 May 2023 (data as of 30 Jun 2014)

Data Sources: See references in Section 9 References.

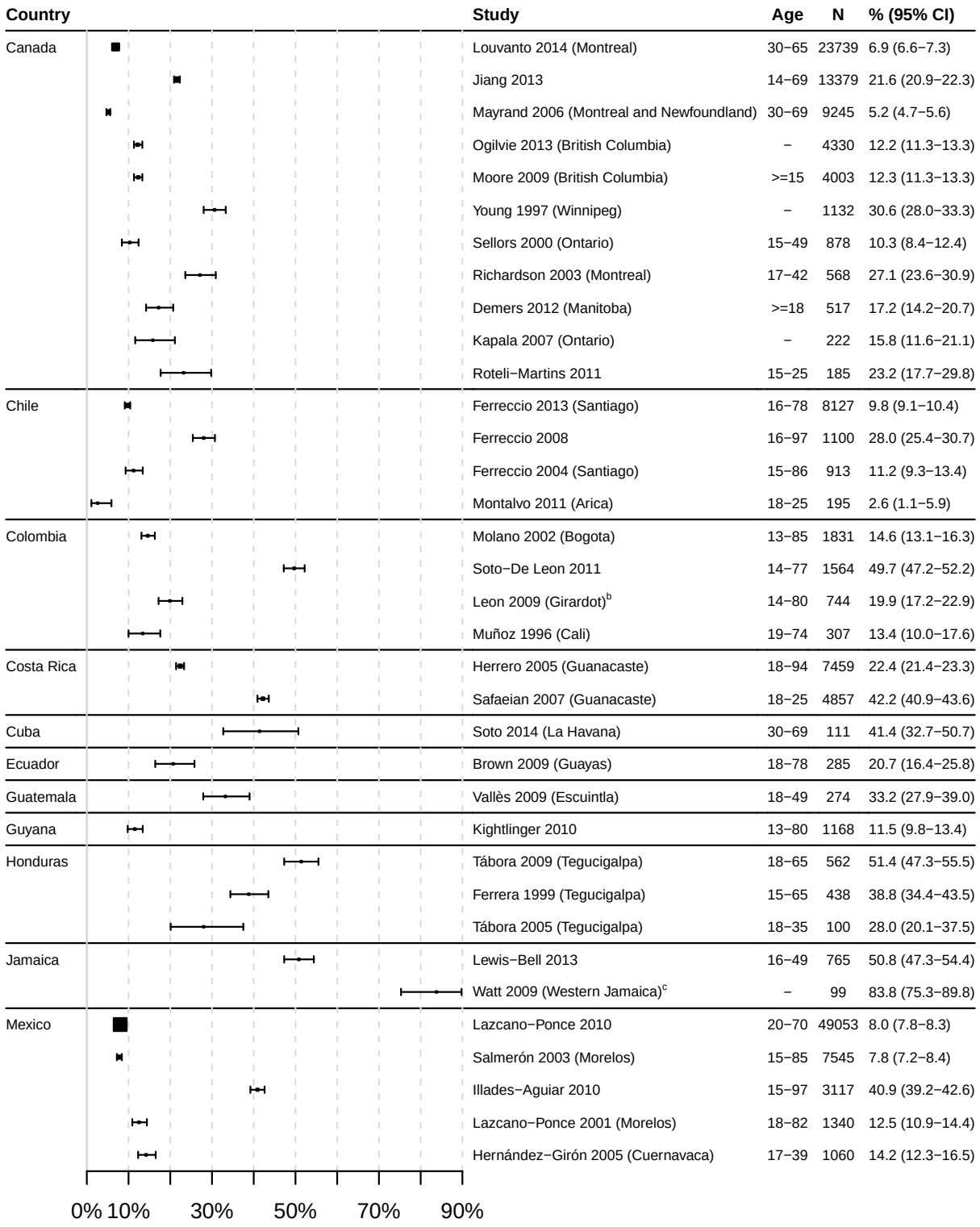
Figure 44: Prevalence of HPV among women with normal cervical cytology in Americas, by country and study



Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
[b] Granadero Baigorria City (Santa Fe Province)
[c] Maringá, Paiçandú and Uniao da Vitoria (Paraná State)
[d] Duque de Caxias and Nova Iguaçu (State of Rio de Janeiro)
[e] Ouro Preto city (Minas Gerais)
[f] Northwest Territories, Nunavut, Labrador, Yukon.
Data Sources: See references in Section 9 References.

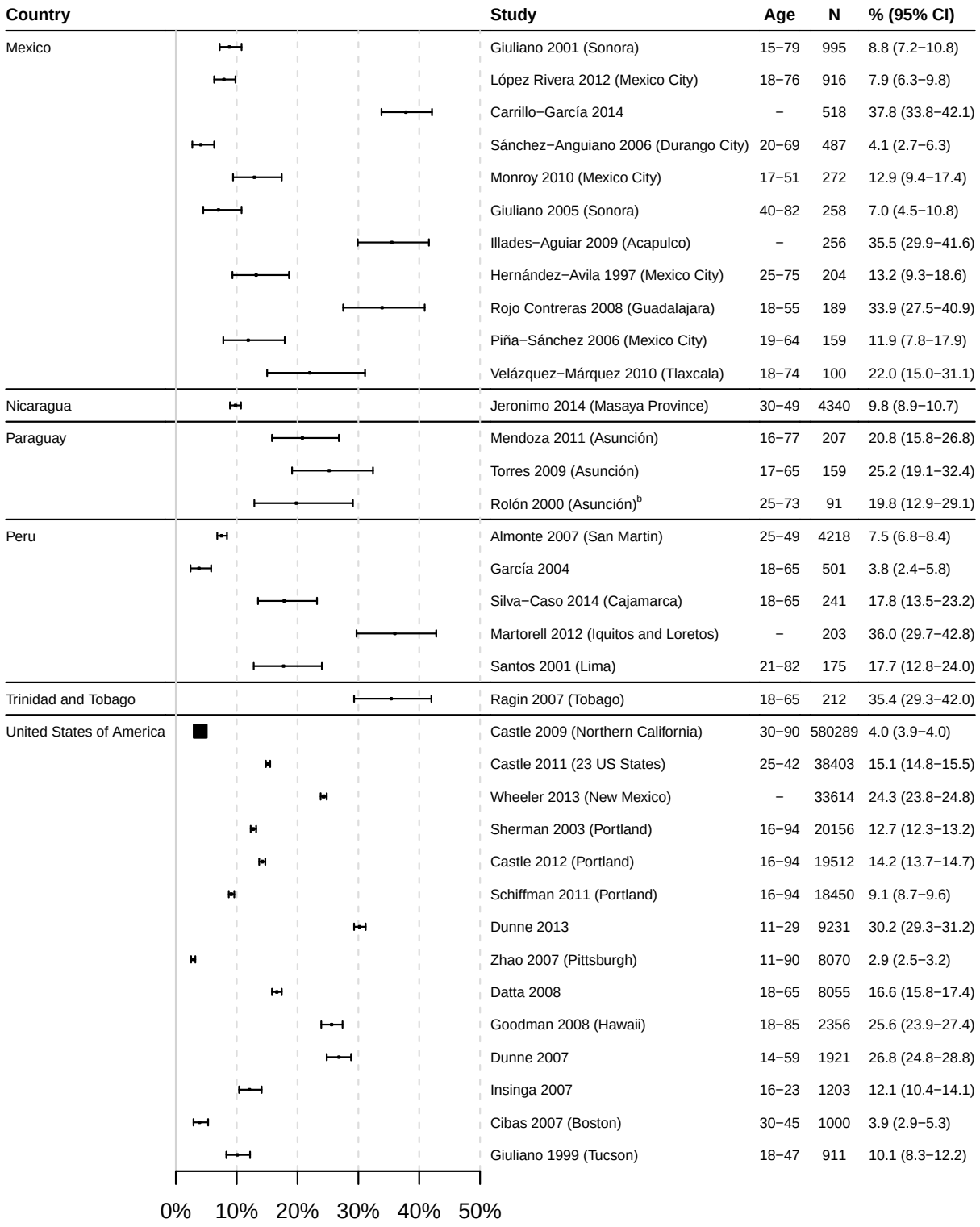
Figure 44: Prevalence of HPV among women with normal cervical cytology in Americas, by country and study (continued)



Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
[b] Bogotá, Leticia, Chaparral, Giradot and Tumaco
[c] Acapulco, Chilpancingo and Iguala (State of Guerrero)
Data Sources: See references in Section 9 References.

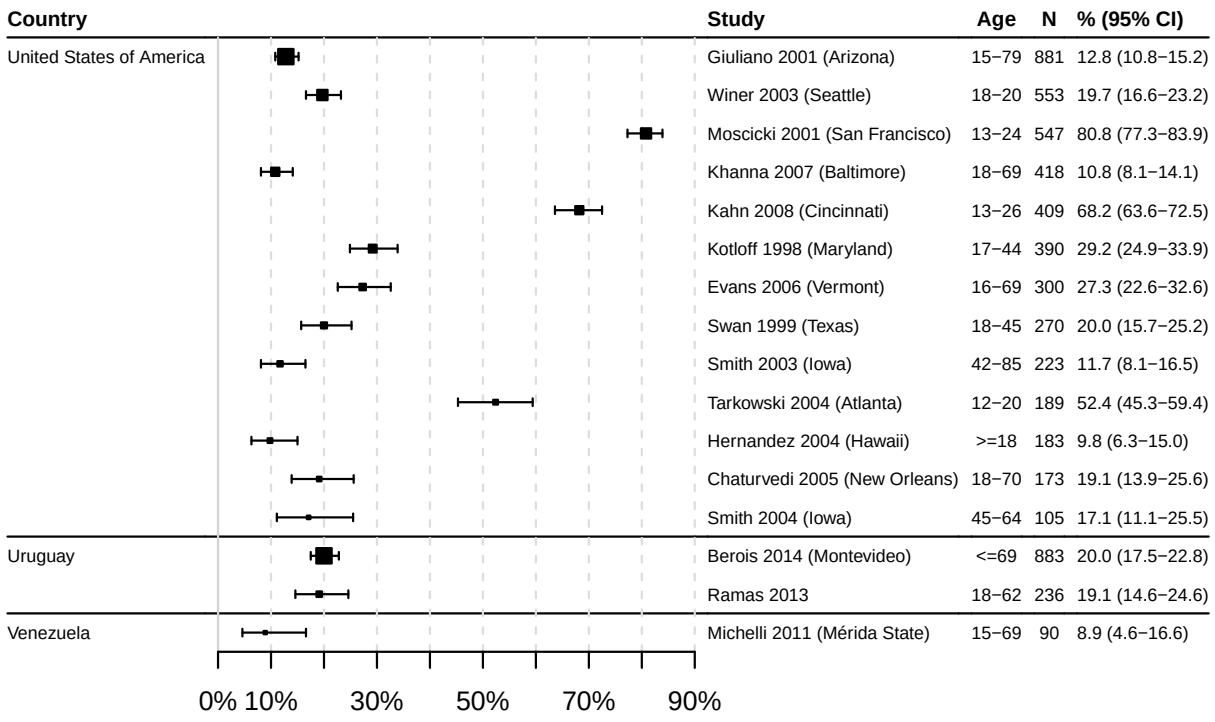
Figure 44: Prevalence of HPV among women with normal cervical cytology in Americas, by country and study (continued)



Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
[b] Boston, Baltimore, New Orleans, Denver, Seattle, Los Angeles
Data Sources: See references in Section 9 References.

Figure 44: Prevalence of HPV among women with normal cervical cytology in Americas, by country and study (continued)



Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

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

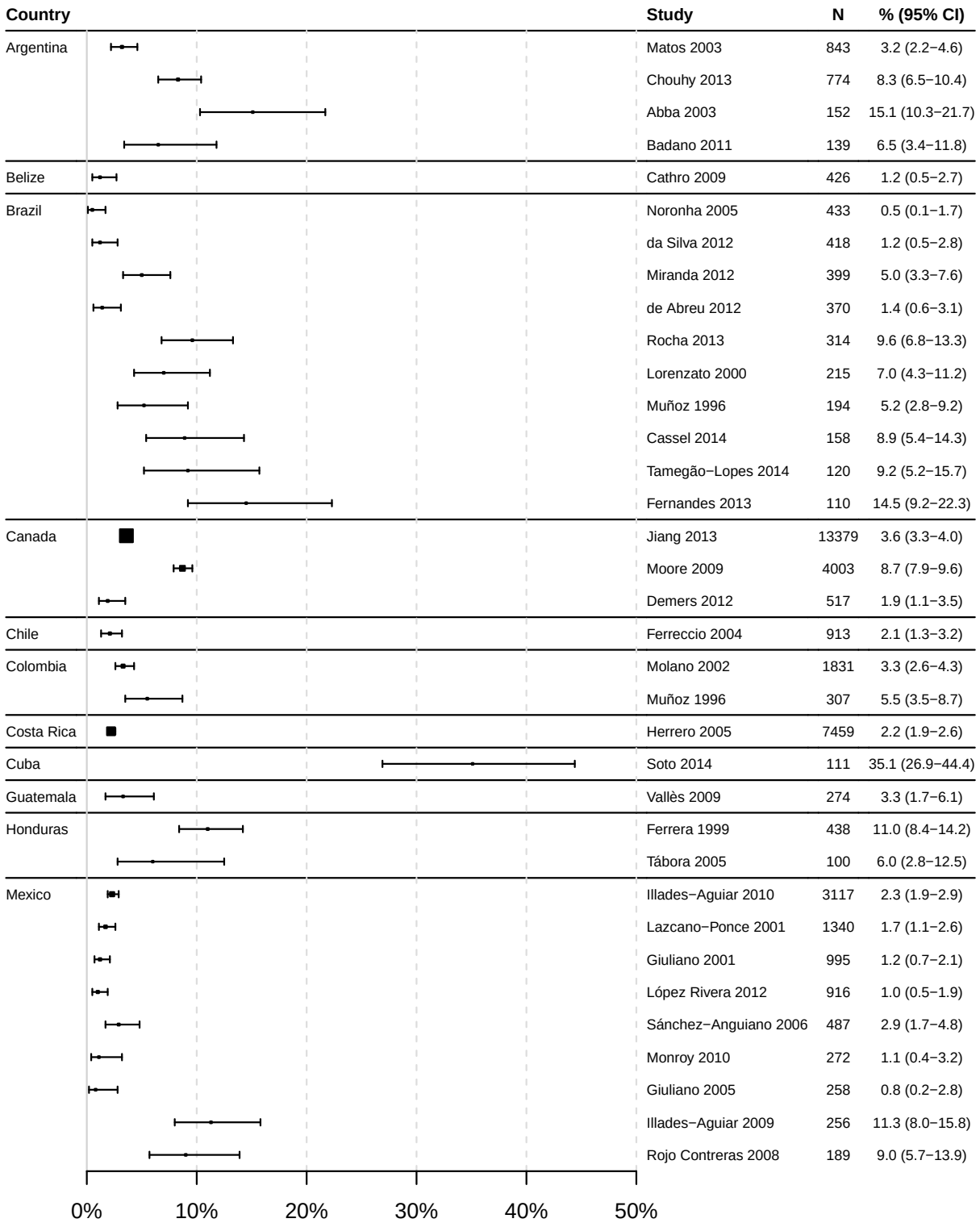
Table 28: Prevalence of HPV16 and HPV18 by cytology in Americas

	No. tested[a]	HPV 16/18 Prevalence % (95% CI)[b]
Normal cytology[1,2]	105042	4.5 (4.4-4.6)
Low-grade lesions[3,4]	9893	26.7 (25.8-27.6)
High-grade lesions[5,6]	13590	56.9 (56.1-57.7)
Cervical cancer[7,8]	10022	68.2 (67.3-69.1)

Data updated on 22 May 2023 (data as of 30 Jun 2015 / 30 Nov 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
[b] 95% Confidence Interval
Data Sources: See references in Section 9 References.

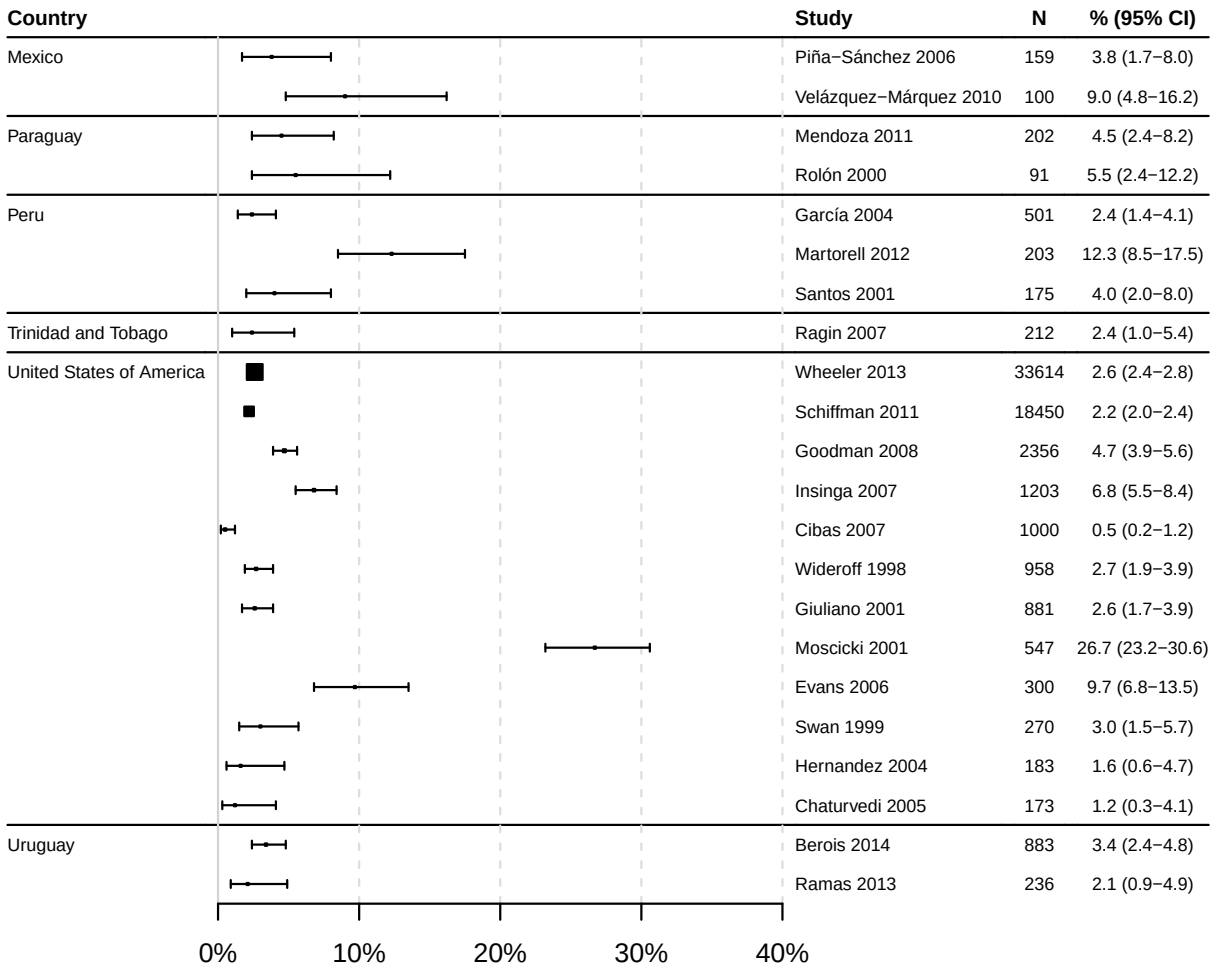
Figure 45: Prevalence of HPV 16 among women with normal cervical cytology in Americas, by country and study



Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

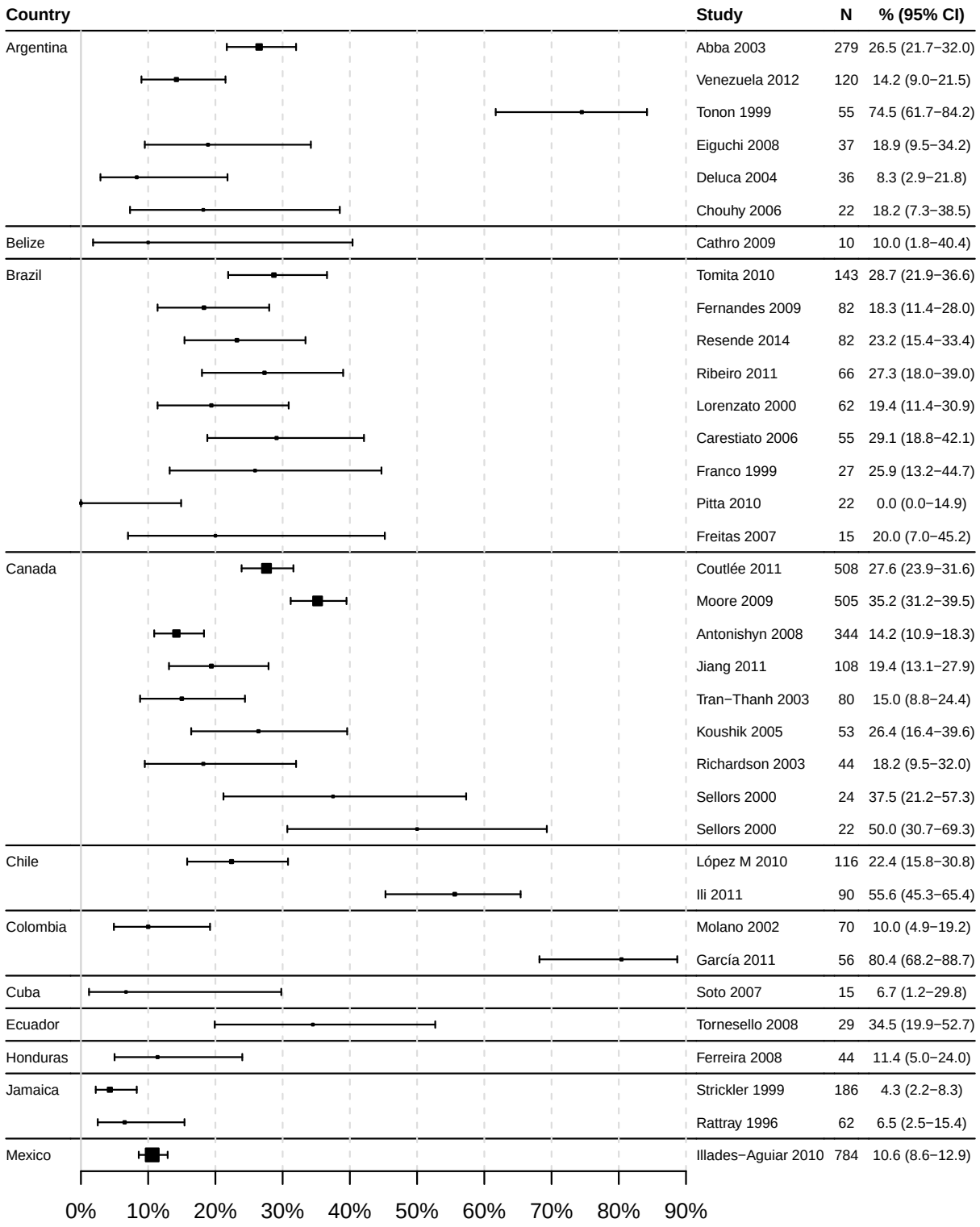
Figure 45: Prevalence of HPV 16 among women with normal cervical cytology in Americas, by country and study (continued)



Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

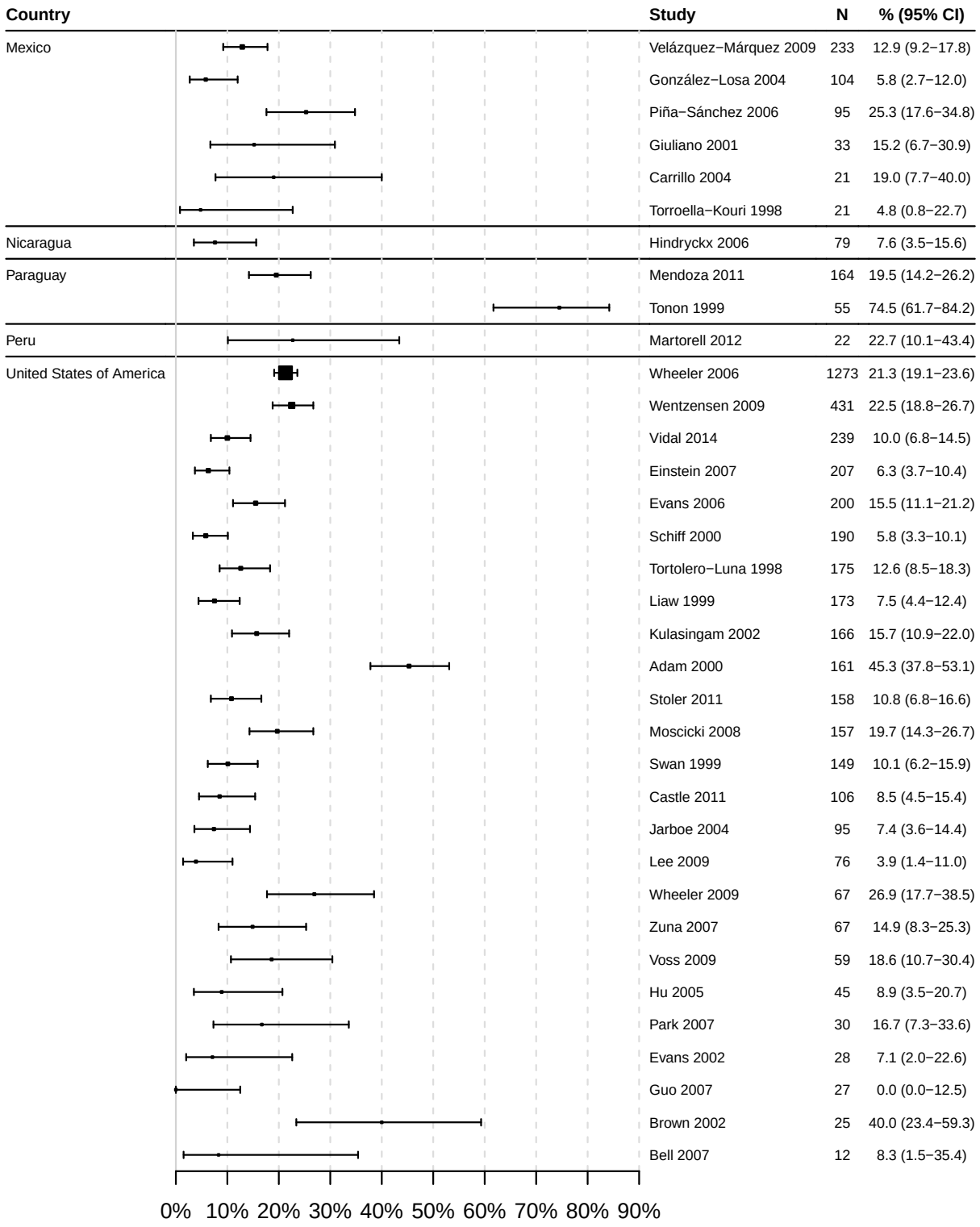
Figure 46: Prevalence of HPV 16 among women with low-grade cervical lesions in Americas, by country and study



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

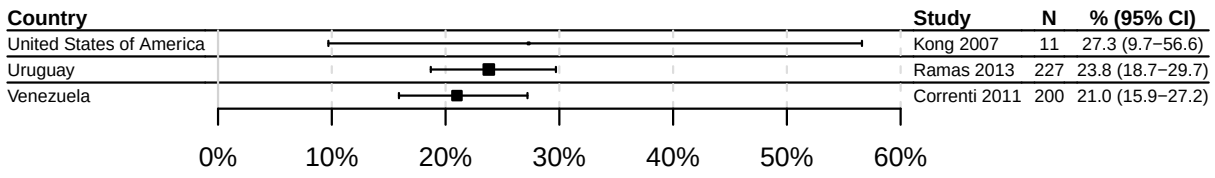
Figure 46: Prevalence of HPV 16 among women with low-grade cervical lesions in Americas, by country and study (continued)



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

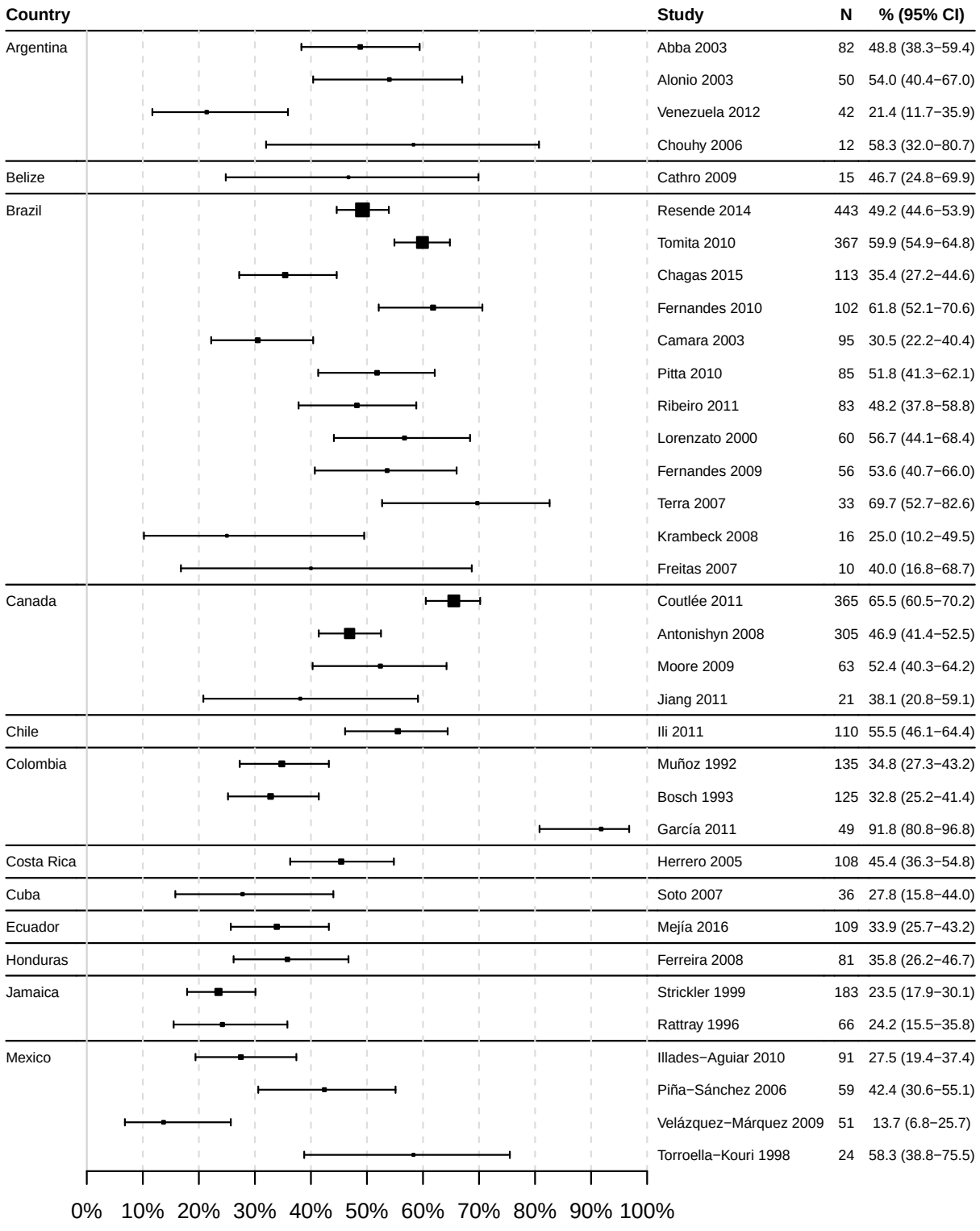
Figure 46: Prevalence of HPV 16 among women with low-grade cervical lesions in Americas, by country and study (continued)



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

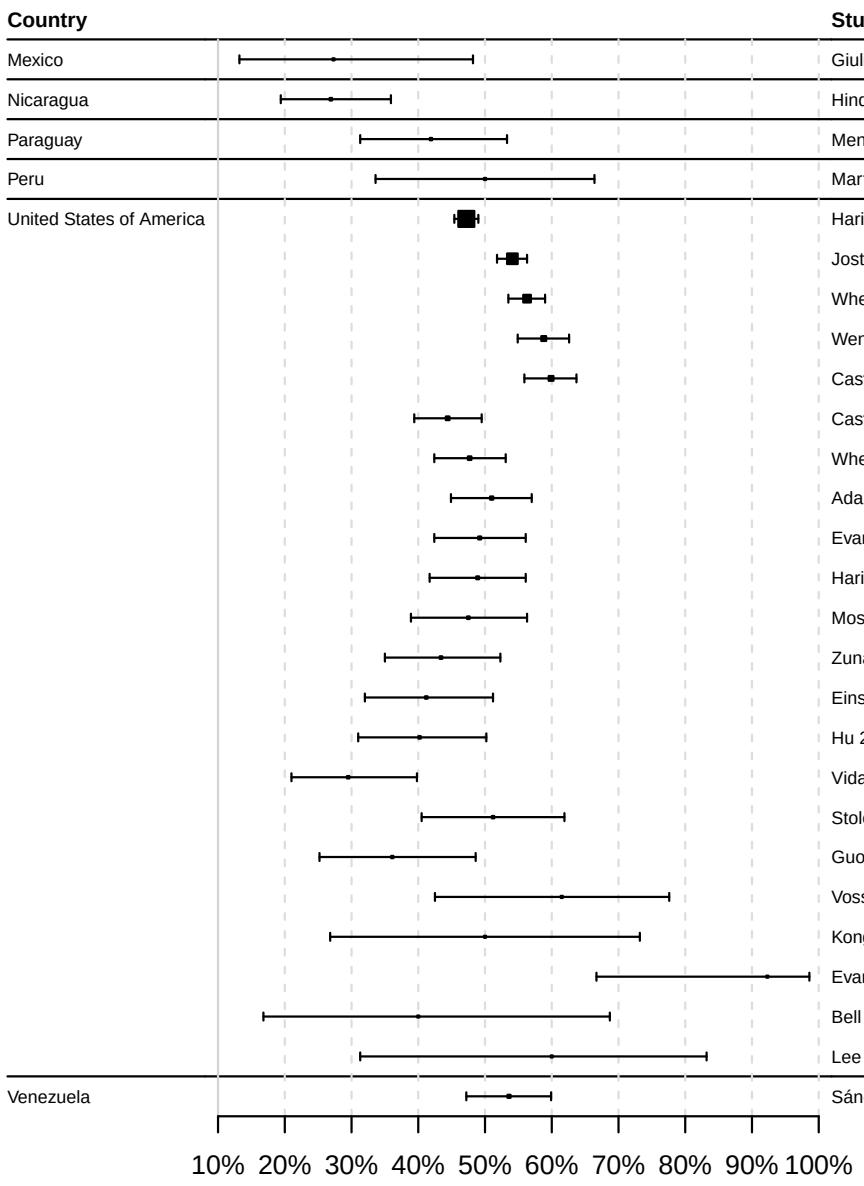
Figure 47: Prevalence of HPV 16 among women with high-grade cervical lesions in Americas, by country and study



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

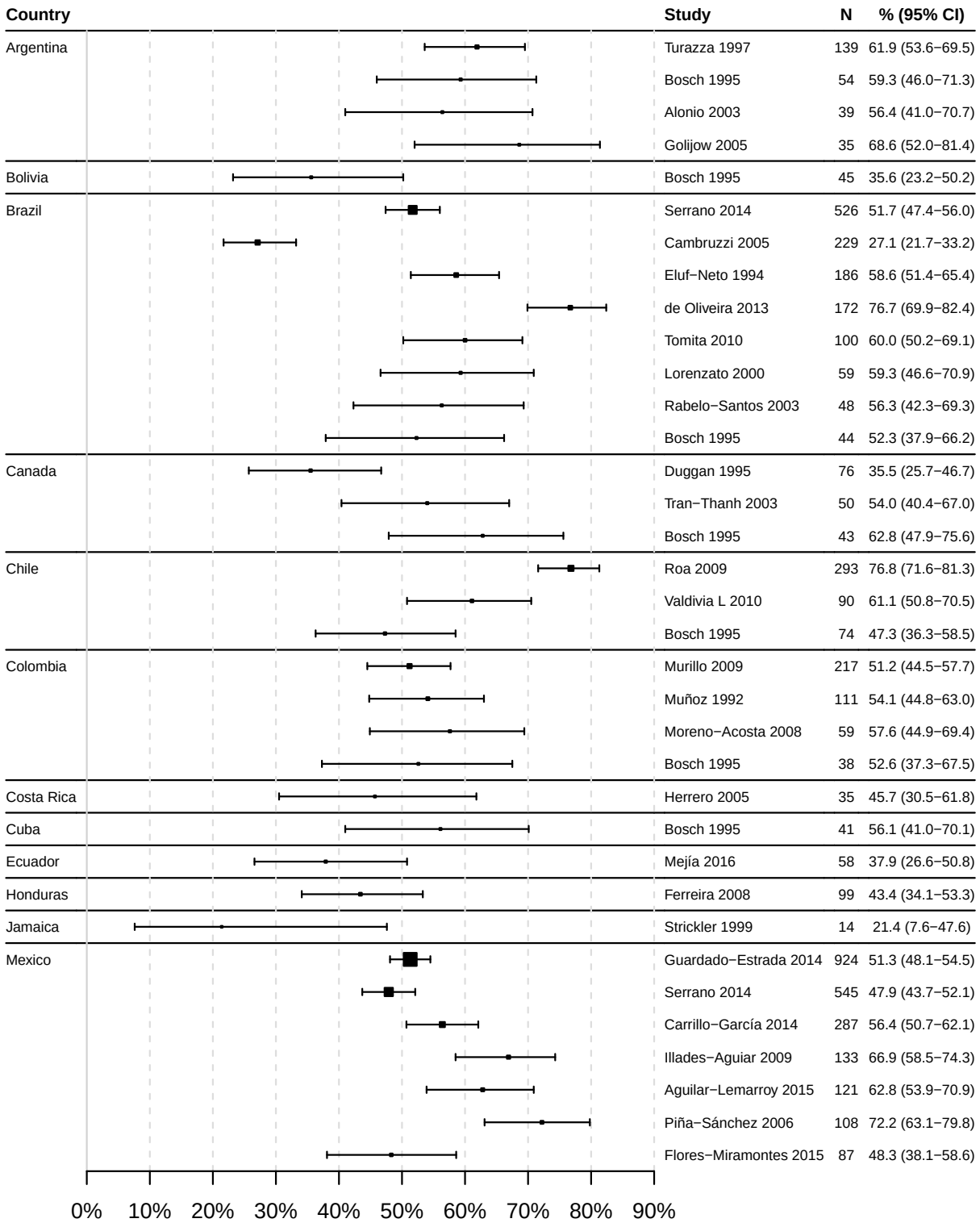
Figure 47: Prevalence of HPV 16 among women with high-grade cervical lesions in Americas, by country and study (continued)



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

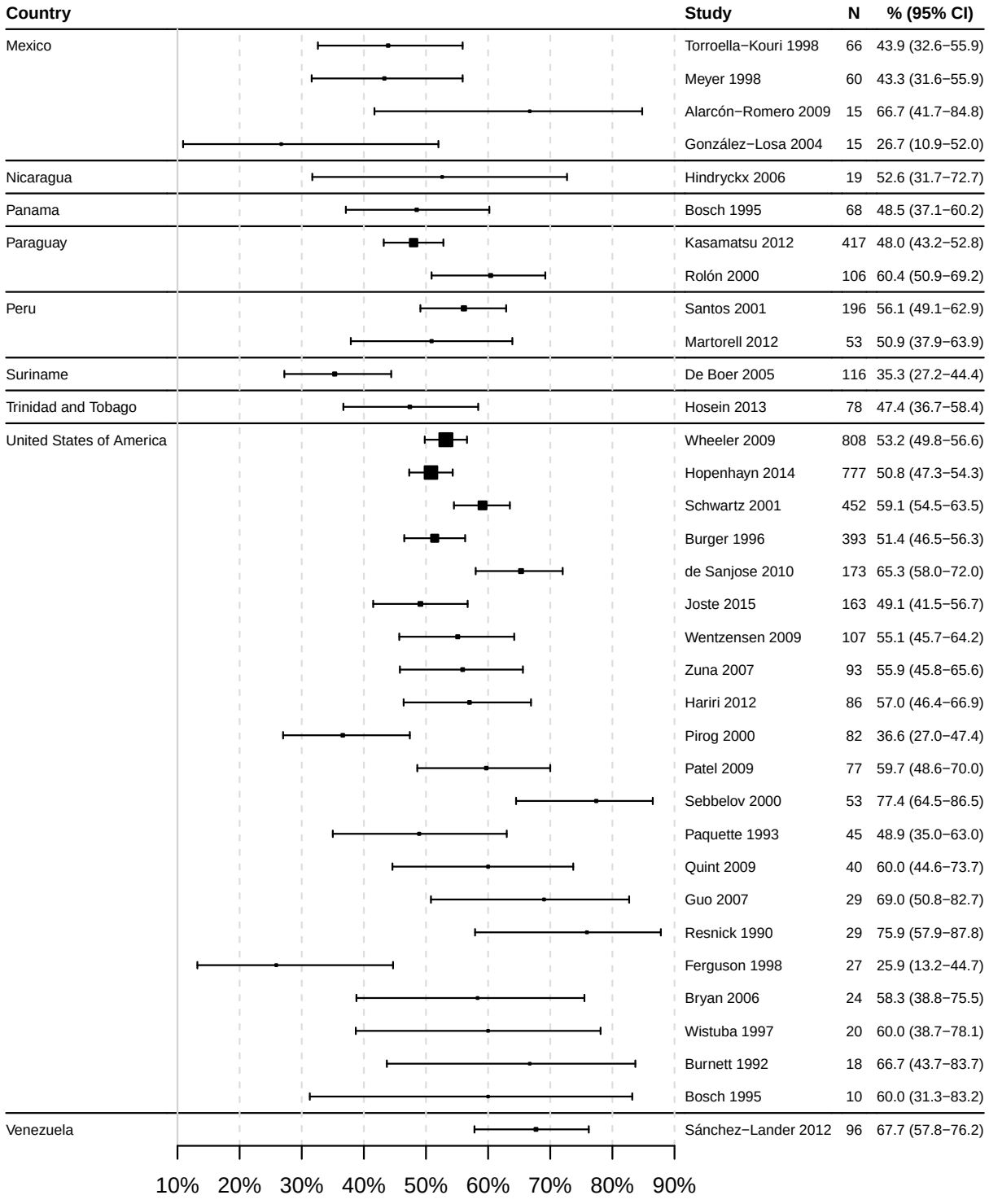
Figure 48: Prevalence of HPV 16 among women with invasive cervical cancer in Americas, by country and study



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

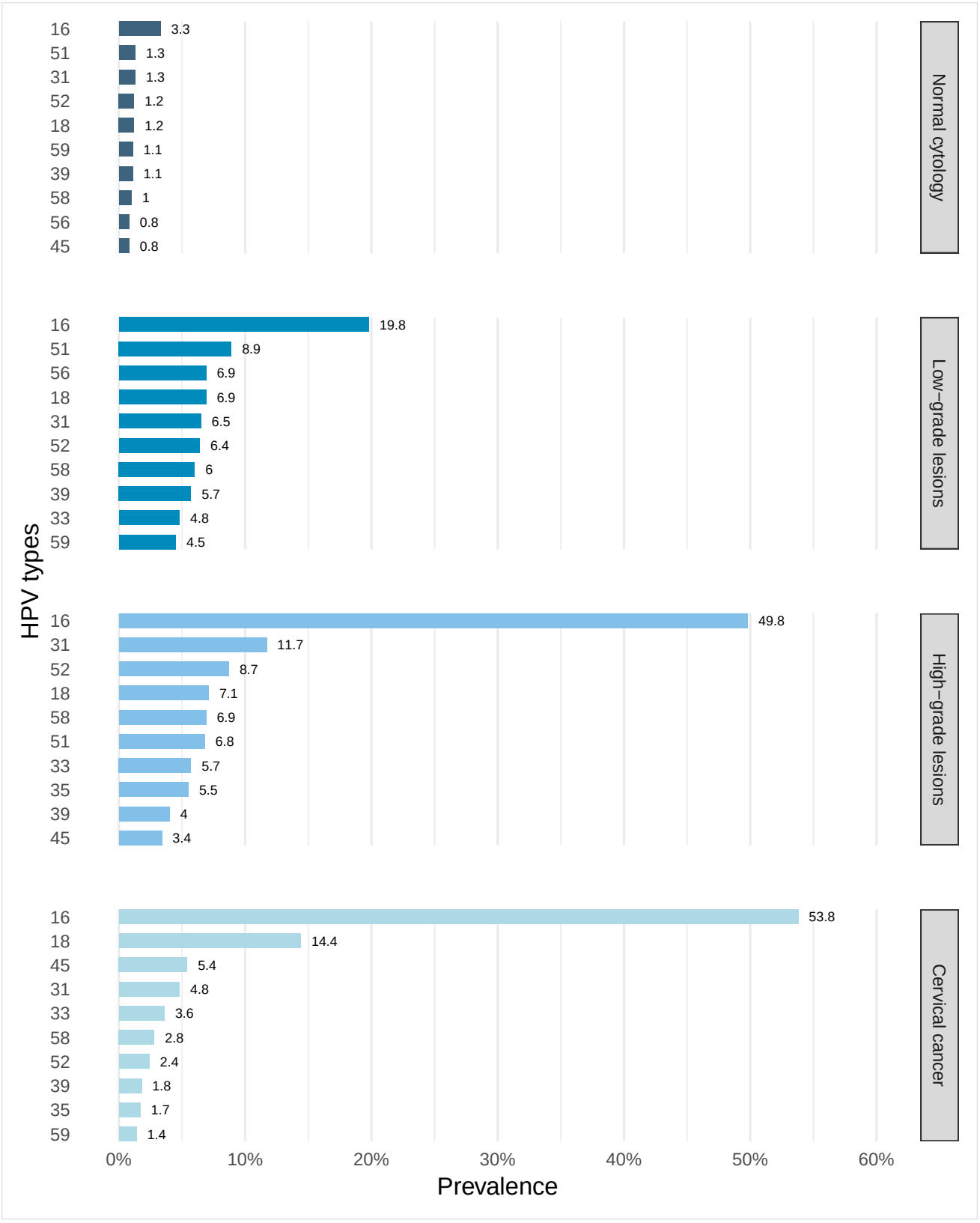
Figure 48: Prevalence of HPV 16 among women with invasive cervical cancer in Americas, by country and study (continued9



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

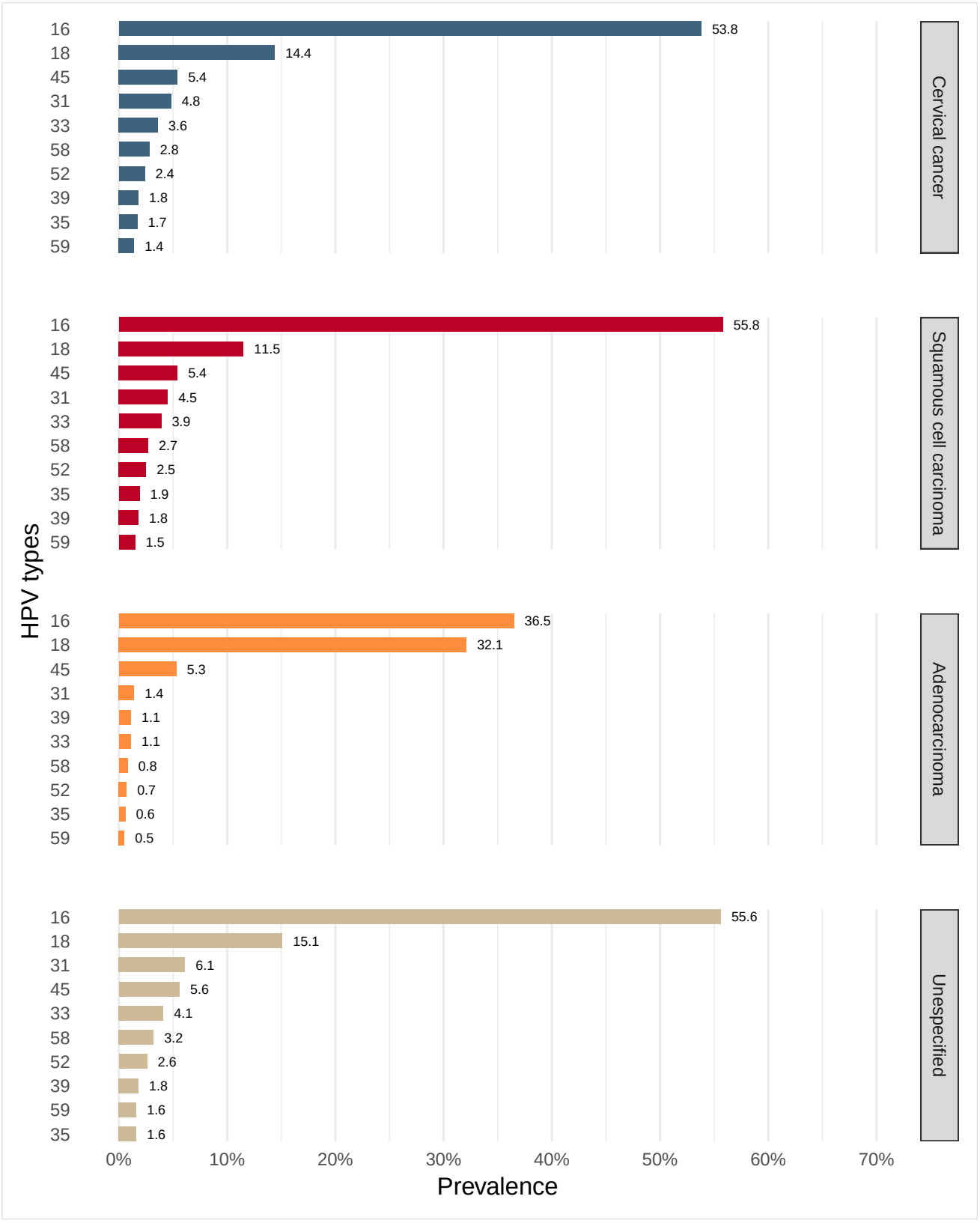
Figure 49: Comparison of the ten most frequent HPV oncogenic types in Americas among women with and without cervical lesions



Data updated on 22 May 2023 (data as of 30 Jun 2015)

Data Sources: See references in Section 9 References.

Figure 50: Comparison of the ten most frequent HPV oncogenic types in Americas among women with invasive cervical cancer by histology



Data updated on 22 May 2023 (data as of 30 Jun 2015)

* No data available. No more types than shown were tested or were positive
Data Sources: See references in Section 9 References.

Table 29: Type-specific HPV prevalence in women with normal cervical cytology, precancerous cervical lesions and invasive cervical cancer in Americas

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	105,042	3.3 (3.2-3.4)	9,893	19.8 (19.0-20.6)	13,590	49.8 (48.9-50.6)	10,022	53.8 (52.9-54.8)
18	104,589	1.2 (1.1-1.3)	9,893	6.9 (6.5-7.5)	13,574	7.1 (6.7-7.5)	9,963	14.4 (13.7-15.1)
31	101,222	1.3 (1.2-1.3)	9,455	6.5 (6.0-7.0)	13,411	11.7 (11.2-12.3)	9,452	4.8 (4.4-5.3)
33	101,346	0.6 (0.6-0.7)	8,853	4.8 (4.4-5.3)	13,026	5.7 (5.3-6.1)	9,407	3.6 (3.3-4.0)
35	100,087	0.6 (0.5-0.6)	8,654	3.9 (3.5-4.3)	12,999	5.5 (5.1-5.9)	9,236	1.7 (1.5-2.0)
39	99,690	1.1 (1.0-1.2)	8,046	5.7 (5.2-6.2)	12,291	4.0 (3.6-4.3)	9,013	1.8 (1.5-2.0)
45	100,495	0.8 (0.8-0.9)	8,741	4.1 (3.7-4.6)	12,721	3.4 (3.1-3.8)	9,198	5.4 (5.0-5.9)
51	96,789	1.3 (1.2-1.4)	7,602	8.9 (8.3-9.6)	12,411	6.8 (6.3-7.2)	9,096	1.0 (0.9-1.3)
52	99,941	1.2 (1.2-1.3)	8,074	6.4 (5.9-7.0)	12,523	8.7 (8.2-9.2)	9,105	2.4 (2.1-2.7)
56	99,878	0.8 (0.8-0.9)	8,181	6.9 (6.3-7.4)	12,446	2.6 (2.4-2.9)	8,940	1.2 (1.0-1.5)
58	99,215	1.0 (1.0-1.1)	8,470	6.0 (5.5-6.5)	12,723	6.9 (6.5-7.3)	9,105	2.8 (2.5-3.1)
59	100,053	1.1 (1.0-1.1)	8,018	4.5 (4.1-5.0)	11,870	3.0 (2.7-3.3)	9,013	1.4 (1.2-1.6)
Probable/possible carcinogen								
26	93,201	0.1 (0.1-0.1)	6,114	0.5 (0.3-0.7)	10,463	0.5 (0.3-0.6)	7,340	0.4 (0.2-0.5)
30	34,451	0.2 (0.2-0.3)	1,186	0.7 (0.3-1.3)	656	0.3 (0.1-1.1)	2,343	0.1 (0.0-0.4)
34	72,202	0.1 (0.0-0.1)	3,022	0.3 (0.2-0.6)	6,055	0.0 (0.0-0.1)	4,788	0.1 (0.0-0.2)
53	98,509	1.4 (1.3-1.5)	7,765	6.3 (5.8-6.9)	11,380	3.3 (3.0-3.7)	7,699	0.6 (0.4-0.8)
66	98,453	1.2 (1.1-1.3)	7,742	6.9 (6.4-7.5)	11,659	3.3 (3.0-3.7)	8,012	0.6 (0.5-0.9)
67	86,831	0.4 (0.4-0.5)	4,435	1.9 (1.6-2.4)	9,460	1.0 (0.9-1.3)	4,422	0.2 (0.1-0.4)
68	98,294	0.5 (0.5-0.6)	7,473	2.5 (2.2-2.9)	10,292	1.6 (1.4-1.9)	7,241	1.3 (1.1-1.6)
69	88,551	0.0 (0.0-0.1)	4,664	0.3 (0.2-0.6)	9,284	0.3 (0.2-0.4)	4,912	0.5 (0.3-0.7)
70	93,380	0.8 (0.7-0.8)	5,719	2.0 (1.7-2.4)	10,140	1.3 (1.1-1.5)	7,617	0.2 (0.1-0.4)
73	97,201	0.5 (0.4-0.5)	7,318	2.0 (1.7-2.4)	9,656	1.9 (1.6-2.2)	5,941	0.5 (0.3-0.7)
82	97,830	0.3 (0.3-0.3)	6,837	1.8 (1.5-2.1)	10,801	2.1 (1.9-2.4)	7,022	0.1 (0.1-0.2)
85	41,032	0.2 (0.2-0.2)	903	0.6 (0.2-1.3)	3,455	0.3 (0.2-0.5)	-	-
97	272	0.4 (0.1-2.1)	-	-	-	-	-	-
LOW RISK HPV TYPES								
6	91,804	1.0 (1.0-1.1)	8,119	7.3 (6.7-7.9)	11,463	2.6 (2.3-2.9)	8,096	0.6 (0.5-0.8)
11	91,874	0.3 (0.3-0.3)	7,953	2.6 (2.3-3.0)	11,437	0.8 (0.6-0.9)	8,873	0.7 (0.5-0.9)
32	27,353	0.2 (0.1-0.2)	357	0.3 (0.0-1.6)	-	-	346	0.0 (0.0-1.1)
40	78,477	0.3 (0.3-0.3)	369	1.4 (0.6-3.1)	5,291	0.5 (0.3-0.7)	4,725	0.0 (0.0-0.1)
42	75,603	0.9 (0.8-0.9)	369	3.8 (2.3-6.3)	2,109	1.2 (0.8-1.7)	5,824	0.3 (0.2-0.5)
43	25,143	0.3 (0.2-0.3)	130	1.5 (0.4-5.4)	374	1.9 (0.9-3.8)	4,328	0.2 (0.1-0.4)
44	75,284	0.6 (0.5-0.6)	596	1.2 (0.6-2.4)	3,520	0.4 (0.3-0.7)	5,377	0.2 (0.1-0.3)
54	77,898	1.2 (1.2-1.3)	357	1.1 (0.4-2.8)	5,245	1.0 (0.8-1.3)	5,679	0.2 (0.1-0.3)
55	-	-	-	-	-	-	-	-
57	25,476	0.0 (0.0-0.0)	249	0.0 (0.0-1.5)	265	0.0 (0.0-1.4)	2,443	0.1 (0.0-0.4)
61	74,563	1.2 (1.2-1.3)	716	2.2 (1.4-3.6)	5,333	0.8 (0.6-1.0)	5,794	0.2 (0.1-0.3)
62	69,141	1.9 (1.8-2.0)	716	4.5 (3.2-6.2)	5,100	0.8 (0.6-1.1)	2,466	0.4 (0.2-0.7)
64	-	-	-	-	-	-	-	-
71	72,456	0.4 (0.3-0.4)	130	0.0 (0.0-2.9)	5,203	0.0 (0.0-0.1)	3,541	0.4 (0.2-0.6)
72	73,154	0.4 (0.4-0.5)	369	1.6 (0.7-3.5)	5,058	0.1 (0.1-0.3)	3,758	0.2 (0.1-0.4)
74	28,151	0.3 (0.3-0.4)	130	0.0 (0.0-2.9)	265	0.0 (0.0-1.4)	3,071	0.0 (0.0-0.1)
81	74,766	0.9 (0.8-0.9)	596	1.8 (1.0-3.3)	5,167	0.2 (0.1-0.4)	3,348	0.2 (0.1-0.4)
83	78,170	0.8 (0.8-0.9)	596	1.5 (0.8-2.8)	5,058	0.4 (0.3-0.7)	3,899	0.2 (0.1-0.4)
84	77,221	1.3 (1.2-1.3)	596	2.9 (1.8-4.5)	5,058	0.5 (0.3-0.7)	2,710	0.4 (0.3-0.8)
86	15,583	0.3 (0.2-0.4)	-	-	-	-	-	-
87	14,670	0.2 (0.1-0.3)	130	0.8 (0.1-4.2)	-	-	-	-
89	72,182	1.2 (1.1-1.3)	130	2.3 (0.8-6.6)	4,970	1.0 (0.8-1.4)	2,688	0.2 (0.1-0.5)
90	15,284	0.4 (0.3-0.5)	130	3.1 (1.2-7.6)	-	-	418	0.0 (0.0-0.9)
91	15,088	0.0 (0.0-0.1)	130	3.1 (1.2-7.6)	-	-	1,792	0.0 (0.0-0.2)

Data updated on 22 May 2023 (data as of 30 Jun 2015 / 30 Nov 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
Data Sources: See references in Section 9 References.

Table 30: Type-specific HPV prevalence among invasive cervical cancer cases in Americas by histology

HPV Type	Any Histology		Squamous cell carcinoma		Adenocarcinoma		Unespecified	
	No. tested	HPV Prev % (95% CI)	No. tested	HPV Prev % (95% CI)	No. tested	HPV Prev % (95% CI)	No. tested	HPV Prev % (95% CI)
ONCOGENIC HPV TYPES								
High-risk HPV types								
16	10,022	53.8 (52.9-54.8)	7,465	55.8 (54.7-57.0)	1,113	36.5 (33.7-39.3)	2,147	55.6 (53.5-57.7)
18	9,963	14.4 (13.7-15.1)	7,465	11.5 (10.8-12.2)	1,113	32.1 (29.4-34.9)	2,088	15.1 (13.7-16.7)
31	9,452	4.8 (4.4-5.3)	7,326	4.5 (4.1-5.0)	857	1.4 (0.8-2.4)	1,972	6.1 (5.2-7.3)
33	9,407	3.6 (3.3-4.0)	7,298	3.9 (3.4-4.3)	840	1.1 (0.6-2.0)	1,972	4.1 (3.3-5.1)
35	9,236	1.7 (1.5-2.0)	7,127	1.9 (1.6-2.2)	840	0.6 (0.3-1.4)	1,972	1.6 (1.1-2.2)
39	9,013	1.8 (1.5-2.0)	6,795	1.8 (1.5-2.2)	741	1.1 (0.5-2.1)	1,972	1.8 (1.3-2.5)
45	9,198	5.4 (5.0-5.9)	7,138	5.4 (4.9-5.9)	791	5.3 (4.0-7.1)	1,972	5.6 (4.6-6.7)
51	9,096	1.0 (0.9-1.3)	6,878	1.1 (0.9-1.4)	741	0.4 (0.1-1.2)	1,972	1.0 (0.6-1.5)
52	9,105	2.4 (2.1-2.7)	7,072	2.5 (2.2-2.9)	764	0.7 (0.3-1.5)	1,972	2.6 (2.0-3.4)
56	8,940	1.2 (1.0-1.5)	6,907	1.0 (0.8-1.2)	764	0.3 (0.1-0.9)	1,972	1.2 (0.8-1.7)
58	9,105	2.8 (2.5-3.1)	7,072	2.7 (2.3-3.1)	764	0.8 (0.4-1.7)	1,972	3.2 (2.5-4.1)
59	9,013	1.4 (1.2-1.6)	6,980	1.5 (1.3-1.8)	764	0.5 (0.2-1.3)	1,972	1.6 (1.1-2.2)
Probable/possible carcinogen								
26	7,340	0.4 (0.2-0.5)	-	-	-	-	-	-
30	2,343	0.1 (0.0-0.4)	1,961	0.2 (0.1-0.4)	251	0.0 (0.0-1.5)	131	0.0 (0.0-2.8)
34	4,788	0.1 (0.0-0.2)	3,007	0.1 (0.0-0.2)	530	0.0 (0.0-0.7)	1,251	0.2 (0.0-0.6)
53	7,699	0.6 (0.4-0.8)	-	-	-	-	-	-
66	8,012	0.6 (0.5-0.9)	5,871	0.4 (0.3-0.6)	741	0.3 (0.1-1.0)	1,895	0.9 (0.6-1.4)
67	4,422	0.2 (0.1-0.4)	2,939	0.3 (0.2-0.6)	340	0.0 (0.0-1.1)	1,143	0.0 (0.0-0.3)
68	7,241	1.3 (1.1-1.6)	5,211	0.8 (0.6-1.0)	701	0.3 (0.1-1.0)	1,164	0.4 (0.2-1.0)
69	4,912	0.5 (0.3-0.7)	-	-	-	-	-	-
70	7,617	0.2 (0.1-0.4)	-	-	-	-	-	-
73	5,941	0.5 (0.3-0.7)	-	-	-	-	-	-
82	7,022	0.1 (0.1-0.2)	4,357	0.1 (0.0-0.3)	497	0.0 (0.0-0.8)	1,881	0.2 (0.1-0.5)
85	-	-	-	-	-	-	-	-
97	-	-	-	-	-	-	-	-
LOW RISK HPV TYPES								
6	8,096	0.6 (0.5-0.8)	-	-	-	-	-	-
11	8,873	0.7 (0.5-0.9)	-	-	-	-	-	-
32	346	0.0 (0.0-1.1)	-	-	-	-	-	-
40	4,725	0.0 (0.0-0.1)	-	-	-	-	-	-
42	5,824	0.3 (0.2-0.5)	4,495	0.1 (0.0-0.3)	416	0.0 (0.0-0.9)	1,408	0.3 (0.1-0.7)
43	4,328	0.2 (0.1-0.4)	-	-	-	-	-	-
44	5,377	0.2 (0.1-0.3)	4,249	0.0 (0.0-0.2)	392	0.0 (0.0-1.0)	1,439	0.5 (0.2-1.0)
54	5,679	0.2 (0.1-0.3)	-	-	-	-	-	-
55	-	-	-	-	-	-	-	-
57	2,443	0.1 (0.0-0.4)	-	-	-	-	-	-
61	5,794	0.2 (0.1-0.3)	-	-	-	-	-	-
62	2,466	0.4 (0.2-0.7)	-	-	-	-	-	-
64	-	-	-	-	-	-	-	-
71	3,541	0.4 (0.2-0.6)	-	-	-	-	-	-
72	3,758	0.2 (0.1-0.4)	-	-	-	-	-	-
74	3,071	0.0 (0.0-0.1)	-	-	-	-	-	-
81	3,348	0.2 (0.1-0.4)	-	-	-	-	-	-
83	3,899	0.2 (0.1-0.4)	-	-	-	-	-	-
84	2,710	0.4 (0.3-0.8)	-	-	-	-	-	-
86	-	-	-	-	-	-	-	-
87	-	-	-	-	-	-	-	-
89	2,688	0.2 (0.1-0.5)	-	-	-	-	-	-
90	418	0.0 (0.0-0.9)	-	-	-	-	-	-
91	1,792	0.0 (0.0-0.2)	-	-	-	-	-	-

Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
[b] 95% Confidence Interval
Data Sources: See references in Section 9 References.

4.1.3 HPV type distribution among HIV+ women with normal cervical cytology

Table 31: Studies on HPV prevalence among HIV+ women with normal cytology in Americas

Study	HPV detection method and targeted HPV types	No. Tested[a]	HPV Prevalence		Prevalence of 5 most frequent HPVs, HPV type (%)
			%	(95% CI)[b]	
-	-	-	-	-	-

Data updated on 22 May 2023 (data as of 31 Dec 2011)

DBH: Dot Blot Hybridization; EIA: Enzyme ImmunoAssay; HC2: Hybrid Capture 2; PCR: Polymerase Chain Reaction; TS: Type Specific
[a] Number of women tested
[b] 95% Confidence Interval
Data Sources: See references in Section 9 References.

4.1.4 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 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 on 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 100% of anal squamous cell carcinoma cases associated with HPV infection worldwide (de Martel C et al. Lancet Glob Health 2020;8(2):e180-e190). 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 burden of HPV among cases of anal cancers and precancerous anal lesions in Americas are presented.

Table 32: Studies on HPV prevalence among anal cancer cases in Americas (male and female)

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence		Prevalence of 5 most frequent HPVs, HPV type (%)
				%	(95% CI)[a]	
Guatemala	Alemany 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)	157	90.4	(84.8-94.1)	HPV 16 (70.1), HPV 33 (5.7), HPV 58 (3.2), HPV 18 (2.5), HPV 31 (1.9)
United States of America	Alemany 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)
Paraguay	Alemany 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)	157	90.4	(84.8-94.1)	HPV 16 (70.1), HPV 33 (5.7), HPV 58 (3.2), HPV 18 (2.5), HPV 31 (1.9)
Chile	Alemany 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)	157	90.4	(84.8-94.1)	HPV 16 (70.1), HPV 33 (5.7), HPV 58 (3.2), HPV 18 (2.5), HPV 31 (1.9)
Colombia	Alemany 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)	157	90.4	(84.8-94.1)	HPV 16 (70.1), HPV 33 (5.7), HPV 58 (3.2), HPV 18 (2.5), HPV 31 (1.9)

Continued on next page

Table 32 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence		Prevalence of 5 most frequent HPVs, HPV type (%)
				%	(95% CI)[a]	
Mexico	Alemany 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)	157	90.4	(84.8-94.1)	HPV 16 (70.1), HPV 33 (5.7), HPV 58 (3.2), HPV 18 (2.5), HPV 31 (1.9)
Honduras	Alemany 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)	157	90.4	(84.8-94.1)	HPV 16 (70.1), HPV 33 (5.7), HPV 58 (3.2), HPV 18 (2.5), HPV 31 (1.9)
Ecuador	Alemany 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)	157	90.4	(84.8-94.1)	HPV 16 (70.1), HPV 33 (5.7), HPV 58 (3.2), HPV 18 (2.5), HPV 31 (1.9)
United States of America	Daling 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)
Canada	Ouhoummane 2013	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 33 (3.1), HPV 6 (3.1), HPV 18 (2.1), HPV 58 (2.1)
United States of America	Palefsky 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)
United States of America	Zaki 1992	PCR L1-Consensus primer, TS (HPV 6, 11, 16, 18, 16/18)	11	72.7	(43.4-90.3)	HPV 16 (18.2), HPV 11 (9.1), HPV 16/18 (9.1), HPV 6 (9.1)

Data updated on 22 May 2023 (data as of 30 Jun 2015)

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;
[a] 95% Confidence Interval
Data Sources: See references in Section 9 References.

Table 33: Studies on HPV prevalence among cases of AIN2/3 in Americas

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence		Prevalence of 5 most frequent HPVs, HPV type (%)
				%	(95% CI)[a]	
Guatemala	Alemany 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)	12	100.0	(75.8-100.0)	HPV 16 (91.7), HPV 11 (8.3), HPV 6 (8.3)
Paraguay	Alemany 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)	12	100.0	(75.8-100.0)	HPV 16 (91.7), HPV 11 (8.3), HPV 6 (8.3)
Chile	Alemany 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)	12	100.0	(75.8-100.0)	HPV 16 (91.7), HPV 11 (8.3), HPV 6 (8.3)

Continued on next page

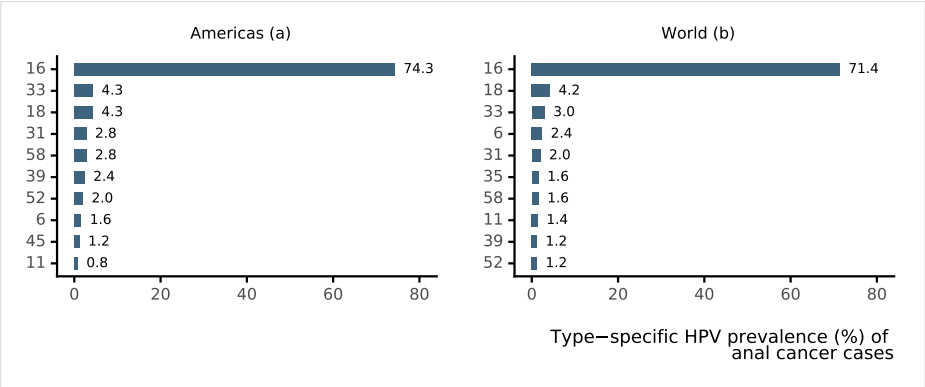
Table 33 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence		Prevalence of 5 most frequent HPVs, HPV type (%)
				%	(95% CI)[a]	
Mexico	Alemany 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)	12	100.0	(75.8-100.0)	HPV 16 (91.7), HPV 11 (8.3), HPV 6 (8.3)
Colombia	Alemany 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)	12	100.0	(75.8-100.0)	HPV 16 (91.7), HPV 11 (8.3), HPV 6 (8.3)
Honduras	Alemany 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)	12	100.0	(75.8-100.0)	HPV 16 (91.7), HPV 11 (8.3), HPV 6 (8.3)
Ecuador	Alemany 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)	12	100.0	(75.8-100.0)	HPV 16 (91.7), HPV 11 (8.3), HPV 6 (8.3)
Canada	Gohy 2008	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 58 (16.1), HPV 18 (16.1), HPV 42 (9.7), HPV 45 (9.7)
United States of America	Sahasrabuddhe 2013	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)
Canada	Salit 2009	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)

Data updated on 22 May 2023 (data as of 30 Jun 2015)

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;
AIN 2/3: Anal intraepithelial neoplasia of grade 2/3
[a] 95% Confidence Interval
Data Sources: See references in Section 9 References.

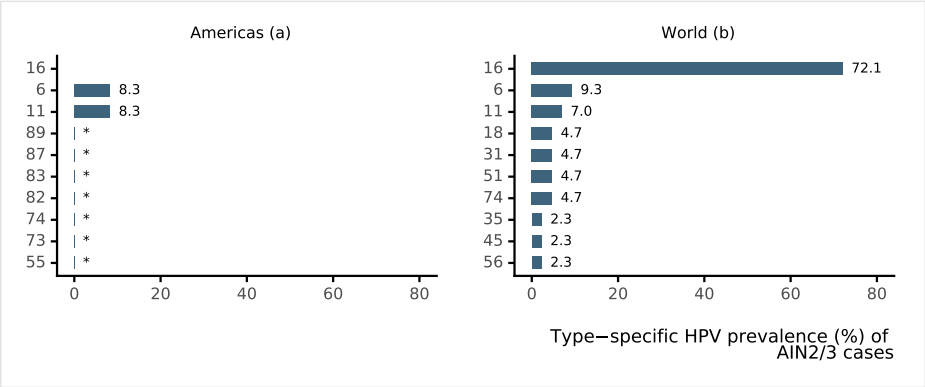
Figure 51: Comparison of the ten most frequent HPV types in anal cancer cases in Americas and the World



Data updated on 22 May 2023 (data as of 30 Jun 2014)

[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 References.

Figure 52: Comparison of the ten most frequent HPV types in AIN 2/3 cases in Americas and the World



Data updated on 22 May 2023 (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
[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)
[*] No data available. No more types than shown were tested or were positive.
Data Sources: See references in Section 9 References.

4.2.2 Vulvar cancer and precancerous vulvar lesions

HPV attribution for vulvar cancer is 48% among age 15-54 years, 28% among age 55-64 years, and 15% among age 65+ worldwide (de Martel C et al. Lancet Glob Health 2020;8(2):e180-e190). 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 burden among cases of vulvar cancer cases and precancerous vulvar lesions in Americas are presented.

Table 34: Studies on HPV prevalence among vulvar cancer cases in Americas

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence		
				%	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Paraguay	de Sanjosé 2013	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)	HPV 16 (25.3), HPV 18 (2.8), HPV 45 (2.5), HPV 33 (2.2), HPV 6 (1.2)
Venezuela	de Sanjosé 2013	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)	HPV 16 (25.3), HPV 18 (2.8), HPV 45 (2.5), HPV 33 (2.2), HPV 6 (1.2)
Argentina	de Sanjosé 2013	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)	HPV 16 (25.3), HPV 18 (2.8), HPV 45 (2.5), HPV 33 (2.2), HPV 6 (1.2)
United States of America	de Sanjosé 2013	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	(36.6-63.4)	HPV 16 (34.0), HPV 33 (8.0), HPV 18 (2.0), HPV 44 (2.0), HPV 58 (2.0)
Uruguay	de Sanjosé 2013	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)	HPV 16 (25.3), HPV 18 (2.8), HPV 45 (2.5), HPV 33 (2.2), HPV 6 (1.2)
Brazil	de Sanjosé 2013	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)	HPV 16 (25.3), HPV 18 (2.8), HPV 45 (2.5), HPV 33 (2.2), HPV 6 (1.2)
Mexico	de Sanjosé 2013	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)	HPV 16 (25.3), HPV 18 (2.8), HPV 45 (2.5), HPV 33 (2.2), HPV 6 (1.2)

Continued on next page

Table 34 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence		Prevalence of 5 most frequent HPVs, HPV type (%)
				%	(95% CI)[a]	
Chile	de Sanjosé 2013	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)	HPV 16 (25.3), HPV 18 (2.8), HPV 45 (2.5), HPV 33 (2.2), HPV 6 (1.2)
Colombia	de Sanjosé 2013	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)	HPV 16 (25.3), HPV 18 (2.8), HPV 45 (2.5), HPV 33 (2.2), HPV 6 (1.2)
Honduras	de Sanjosé 2013	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)	HPV 16 (25.3), HPV 18 (2.8), HPV 45 (2.5), HPV 33 (2.2), HPV 6 (1.2)
Guatemala	de Sanjosé 2013	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)	HPV 16 (25.3), HPV 18 (2.8), HPV 45 (2.5), HPV 33 (2.2), HPV 6 (1.2)
Ecuador	de Sanjosé 2013	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)	HPV 16 (25.3), HPV 18 (2.8), HPV 45 (2.5), HPV 33 (2.2), HPV 6 (1.2)
United States of America	Gargano 2012	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)
United States of America	Kim 1996	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)
United States of America	Madeleine 1997	PCR-MY09/11, PCR L1-Consensus primer, PCR-E6, RFLP (HPV 16)	55	50.9	(38.1-63.6)	HPV 16 (43.6)
Brazil	Pinto 1999	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)
United States of America	Riethdorf 2004	PCR L1-Consensus primer, TS (HPV 16)	71	87.3	(77.6-93.2)	HPV 16 (87.3)
United States of America	Sutton 2008	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 52 (2.6), HPV 6 (2.6)
United States of America	Tate 1994	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)

Data updated on 22 May 2023 (data as of 30 Jun 2015)

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;

[a] 95% Confidence Interval

Data Sources: See references in Section 9 References.

Table 35: Studies on HPV prevalence among VIN 2/3 cases in Americas

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence		Prevalence of 5 most frequent HPVs, HPV type (%)
				%	(95% CI)[a]	
Venezuela	de Sanjosé 2013	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)	HPV 16 (57.1), HPV 33 (8.7), HPV 6 (4.8), HPV 31 (4.0), HPV 11 (1.6)
Ecuador	de Sanjosé 2013	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)	HPV 16 (57.1), HPV 33 (8.7), HPV 6 (4.8), HPV 31 (4.0), HPV 11 (1.6)
Argentina	de Sanjosé 2013	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)	HPV 16 (57.1), HPV 33 (8.7), HPV 6 (4.8), HPV 31 (4.0), HPV 11 (1.6)
Uruguay	de Sanjosé 2013	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)	HPV 16 (57.1), HPV 33 (8.7), HPV 6 (4.8), HPV 31 (4.0), HPV 11 (1.6)
Paraguay	de Sanjosé 2013	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)	HPV 16 (57.1), HPV 33 (8.7), HPV 6 (4.8), HPV 31 (4.0), HPV 11 (1.6)
Brazil	de Sanjosé 2013	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)	HPV 16 (57.1), HPV 33 (8.7), HPV 6 (4.8), HPV 31 (4.0), HPV 11 (1.6)
Mexico	de Sanjosé 2013	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)	HPV 16 (57.1), HPV 33 (8.7), HPV 6 (4.8), HPV 31 (4.0), HPV 11 (1.6)
Chile	de Sanjosé 2013	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)	HPV 16 (57.1), HPV 33 (8.7), HPV 6 (4.8), HPV 31 (4.0), HPV 11 (1.6)
Colombia	de Sanjosé 2013	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)	HPV 16 (57.1), HPV 33 (8.7), HPV 6 (4.8), HPV 31 (4.0), HPV 11 (1.6)
Honduras	de Sanjosé 2013	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)	HPV 16 (57.1), HPV 33 (8.7), HPV 6 (4.8), HPV 31 (4.0), HPV 11 (1.6)
Guatemala	de Sanjosé 2013	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)	HPV 16 (57.1), HPV 33 (8.7), HPV 6 (4.8), HPV 31 (4.0), HPV 11 (1.6)

Continued on next page

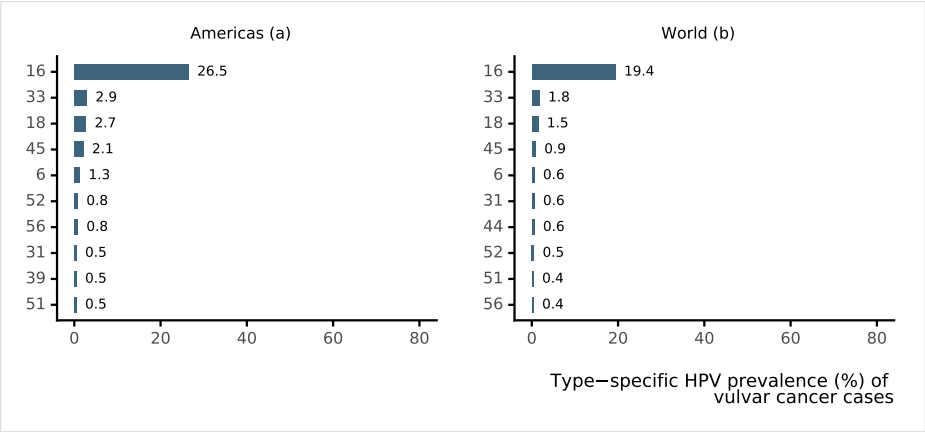
Table 35 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence		Prevalence of 5 most frequent HPVs, HPV type (%)
				%	(95% CI)[a]	
United States of America	Gargano 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)
United States of America	Madeleine 1997	PCR-MY09/11, PCR L1-Consensus primer, PCR-E6, RFLP (HPV 16)	253	71.5	(65.7-76.7)	HPV 16 (61.7)
United States of America	Riethdorf 2004	PCR L1-Consensus primer, TS (HPV 16)	60	68.3	(55.8-78.7)	HPV 16 (68.3)
United States of America	Srodon 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	(89.8-100.0)	HPV 16 (91.2), HPV 18 (5.9), HPV 35 (5.9), HPV 11 (2.9), HPV 33 (2.9)

Data updated on 22 May 2023 (data as of 30 Jun 2015)

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;
VIN 2/3: Vulvar intraepithelial neoplasia of grade 2/3
[a] 95% Confidence Interval
Data Sources: See references in Section 9 References.

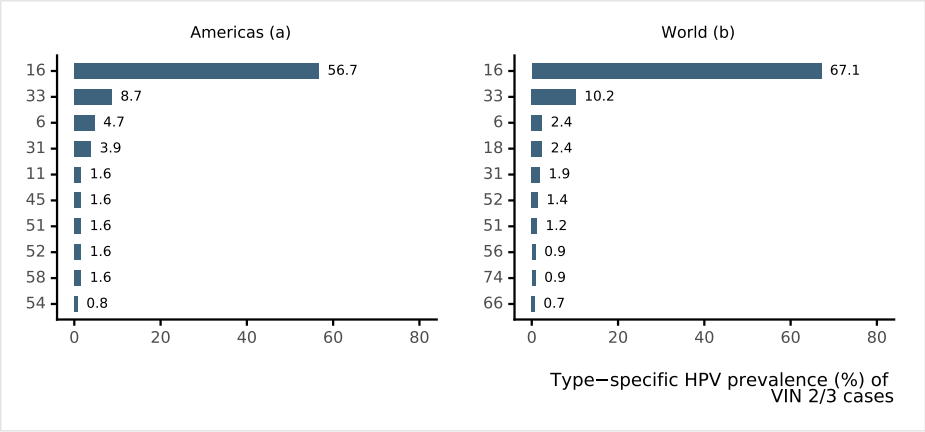
Figure 53: Comparison of the ten most frequent HPV types in cases of vulvar cancer in Americas and the World



Data updated on 22 May 2023 (data as of 30 Jun 2015)

[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 References.

Figure 54: Comparison of the ten most frequent HPV types in VIN 2/3 cases in Americas and the World



Data updated on 22 May 2023 (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, 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 References.

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 ano-genital cancers, particularly of the cervix, and these two carcinomas are frequently diagnosed simultaneously. HPV DNA is detected among 78% 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 78% of HPV-positive carcinomas (de Martel C et al. Lancet Glob Health 2020;8(2):e180-e190; De Vuyst H et al. Int J Cancer 2009; 124:1626-36). In this section, the HPV burden among cases of vaginal cancer cases and precancerous vaginal lesions in Americas are presented.

Table 36: Studies on HPV prevalence among vaginal cancer cases in Americas

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence		Prevalence of 5 most frequent HPVs, HPV type (%)
				%	(95% CI)[a]	
Venezuela	Alemany 2014	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	(71.6-83.3)	HPV 16 (42.4), HPV 31 (5.8), HPV 18 (4.2), HPV 33 (4.2), HPV 52 (3.1)
Ecuador	Alemany 2014	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	(71.6-83.3)	HPV 16 (42.4), HPV 31 (5.8), HPV 18 (4.2), HPV 33 (4.2), HPV 52 (3.1)
Argentina	Alemany 2014	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	(71.6-83.3)	HPV 16 (42.4), HPV 31 (5.8), HPV 18 (4.2), HPV 33 (4.2), HPV 52 (3.1)
United States of America	Alemany 2014	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	(71.6-83.3)	HPV 16 (42.4), HPV 31 (5.8), HPV 18 (4.2), HPV 33 (4.2), HPV 52 (3.1)
Uruguay	Alemany 2014	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	(71.6-83.3)	HPV 16 (42.4), HPV 31 (5.8), HPV 18 (4.2), HPV 33 (4.2), HPV 52 (3.1)
Paraguay	Alemany 2014	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	(71.6-83.3)	HPV 16 (42.4), HPV 31 (5.8), HPV 18 (4.2), HPV 33 (4.2), HPV 52 (3.1)
Brazil	Alemany 2014	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	(71.6-83.3)	HPV 16 (42.4), HPV 31 (5.8), HPV 18 (4.2), HPV 33 (4.2), HPV 52 (3.1)
Mexico	Alemany 2014	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	(71.6-83.3)	HPV 16 (42.4), HPV 31 (5.8), HPV 18 (4.2), HPV 33 (4.2), HPV 52 (3.1)
Chile	Alemany 2014	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	(71.6-83.3)	HPV 16 (42.4), HPV 31 (5.8), HPV 18 (4.2), HPV 33 (4.2), HPV 52 (3.1)
Colombia	Alemany 2014	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	(71.6-83.3)	HPV 16 (42.4), HPV 31 (5.8), HPV 18 (4.2), HPV 33 (4.2), HPV 52 (3.1)
Guatemala	Alemany 2014	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	(71.6-83.3)	HPV 16 (42.4), HPV 31 (5.8), HPV 18 (4.2), HPV 33 (4.2), HPV 52 (3.1)

Data updated on 22 May 2023 (data as of 30 Jun 2015)

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;

[a] 95% Confidence Interval

Data Sources: See references in Section 9 References.

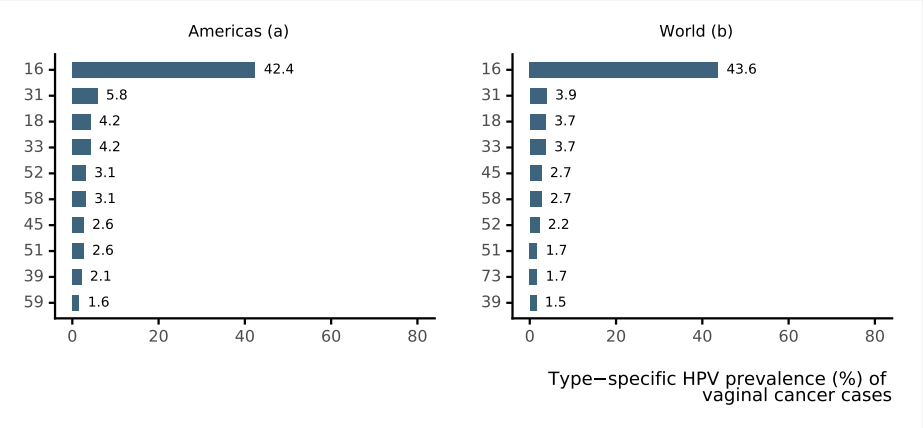
Table 37: Studies on HPV prevalence among VaIN 2/3 cases in Americas

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence		Prevalence of 5 most frequent HPVs, HPV type (%)
				%	(95% CI)[a]	
Brazil	Alemany 2014	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 52 (6.3), HPV 73 (6.3), HPV 18 (6.3), HPV 51 (3.8)
Venezuela	Alemany 2014	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 52 (6.3), HPV 73 (6.3), HPV 18 (6.3), HPV 51 (3.8)
Argentina	Alemany 2014	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 52 (6.3), HPV 73 (6.3), HPV 18 (6.3), HPV 51 (3.8)
United States of America	Alemany 2014	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 52 (6.3), HPV 73 (6.3), HPV 18 (6.3), HPV 51 (3.8)
Uruguay	Alemany 2014	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 52 (6.3), HPV 73 (6.3), HPV 18 (6.3), HPV 51 (3.8)
Paraguay	Alemany 2014	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 52 (6.3), HPV 73 (6.3), HPV 18 (6.3), HPV 51 (3.8)
Ecuador	Alemany 2014	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 52 (6.3), HPV 73 (6.3), HPV 18 (6.3), HPV 51 (3.8)
Mexico	Alemany 2014	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 52 (6.3), HPV 73 (6.3), HPV 18 (6.3), HPV 51 (3.8)
Chile	Alemany 2014	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 52 (6.3), HPV 73 (6.3), HPV 18 (6.3), HPV 51 (3.8)
Colombia	Alemany 2014	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 52 (6.3), HPV 73 (6.3), HPV 18 (6.3), HPV 51 (3.8)
Guatemala	Alemany 2014	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 52 (6.3), HPV 73 (6.3), HPV 18 (6.3), HPV 51 (3.8)
United States of America	Daling 2002	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)
United States of America	Srodon 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)	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 22 May 2023 (data as of 30 Jun 2015)

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;
VAIN 2/3: Vaginal intraepithelial neoplasia of grade 2/3
[a] 95% Confidence Interval
Data Sources: See references in Section 9 References.

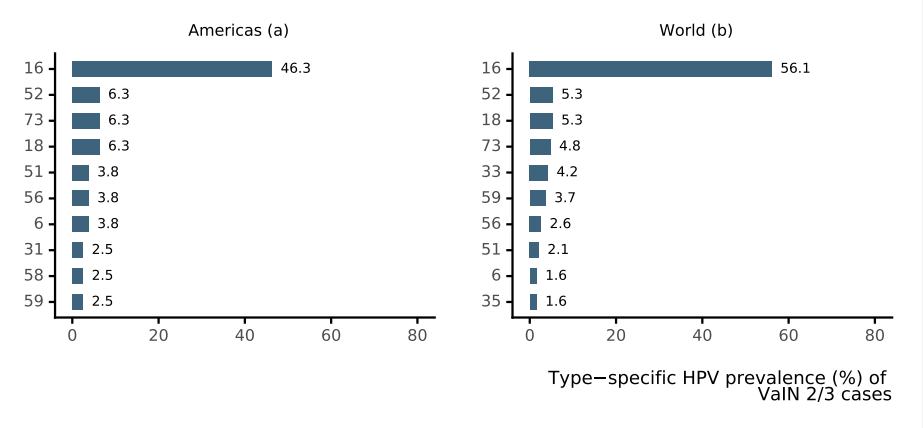
Figure 55: Comparison of the ten most frequent HPV types in cases of vaginal cancer in Americas and the World



Data updated on 22 May 2023 (data as of 30 Jun 2015)

[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 References.

Figure 56: Comparison of the ten most frequent HPV types in VaIN 2/3 cases in Americas and the World



Data updated on 22 May 2023 (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); Asia (Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey); and Oceania (Australia)
Data Sources: See references in Section 9 References.

4.2.4 Penile cancer and precancerous penile lesions

HPV DNA is detectable in approximately 51% of all penile cancers (de Martel C et al. Lancet Glob Health 2020;8(2):e180-e190). 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 burden among cases of penile cancer cases and precancerous penile lesions in Americas are presented.

Table 38: Studies on HPV prevalence among penile cancer cases in Americas

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence		Prevalence of 5 most frequent HPVs, HPV type (%)
				%	(95% CI)[a]	
Brazil	Afonso 2012	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)
Brazil	Bezerra 2001	PCR consensus primers and probing forHPV types: 6, 11, 16, 18, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 54, 56 and 58	82	30.5	(21.6-41.1)	
Brazil	Calmon 2013	PCR-GP5+/6+, PCR L1-Consensus primer, qPCR, 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, 82)	47	48.9	(35.3-62.8)	HPV 16 (40.4), HPV 11 (10.6), HPV 35 (2.1)
Paraguay	Cubilla 2010	PCR-SPF10, LiPA (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)
United States of America	Cupp 1995	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)
United States of America	Daling 2005	PCR MY09/11	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)
Brazil	Fonseca 2013	PCR-GP5+/6+, 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)
Paraguay	Gregoire 1995	PCR Type specific for: 6,11,16 and 18 + Primers for wide range including 16,18,31,33,35,52	109	23.9	(16.8-32.7)	
United States of America	Gregoire 1995	PCR Type specific for: 6,11,16 and 18 + Primers for wide range including 16,18,31,33,35,52	109	23.9	(16.8-32.7)	
Brazil	Levi 1998	PCR MY09/11 and probing for 6,11,16,18,31	50	56.0	(42.3-68.8)	
Mexico	López-Romero 2013	PCR-E6, RT-PCR, 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)
Canada	Maden 1993	PCR E6/E7 for HPV6,16 and 18	67	49.3	(37.7-60.9)	HPV 16 (34.3)
Argentina	Picconi 2000	PCR GP5+/6+ and typing by PCR-SSCP	38	71.1	(55.2-83.0)	HPV 18 (28.9), HPV 16 (21.1), HPV 6 (5.3)

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Table 38 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence		Prevalence of 5 most frequent HPVs, HPV type (%)
				%	(95% CI)[a]	
Paraguay	Rubin 2001	PCR SPF10 + INO-LIPA	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)
United States of America	Rubin 2001	PCR SPF10 + INO-LIPA	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)
Mexico	Salazar 2005	PCR Specific for HPV16	57	59.6	(46.7-71.4)	
United States of America	Sarkar 1992	PCR type specific for 6b/11, 16 and 18 + Southern Blot	27	59.3	(40.7-75.5)	
Brazil	Scheiner 2008	PCR-GP5+/6+, 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)
United States of America	Varma 1991	PCR Type specific for HPV 6/11 and 16 and ISH for 6,11,16,18,31,33 and 35	30	66.7	(48.8-80.8)	

Data updated on 22 May 2023 (data as of 30 Jun 2014)

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;
[a] 95% Confidence Interval
Data Sources: See references in Section 9 References.

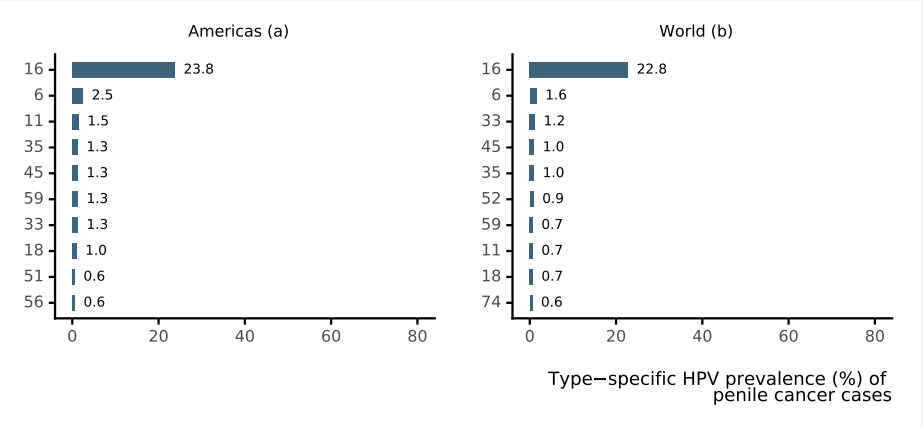
Table 39: Studies on HPV prevalence among PeIN 2/3 cases in Americas

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence		Prevalence of 5 most frequent HPVs, HPV type (%)
				%	(95% CI)[a]	
United States of America	Cupp 1995	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)
Mexico	López-Romero 2013	PCR-E6, RT-PCR, Sequencing (HPV 16)	10	100.0	(72.2-100.0)	HPV 16 (100.0)

Data updated on 22 May 2023 (data as of 30 Jun 2014)

PeIN 2/3: Penile intraepithelial neoplasia of grade 2/3
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;
[a] 95% Confidence Interval
Data Sources: See references in Section 9 References.

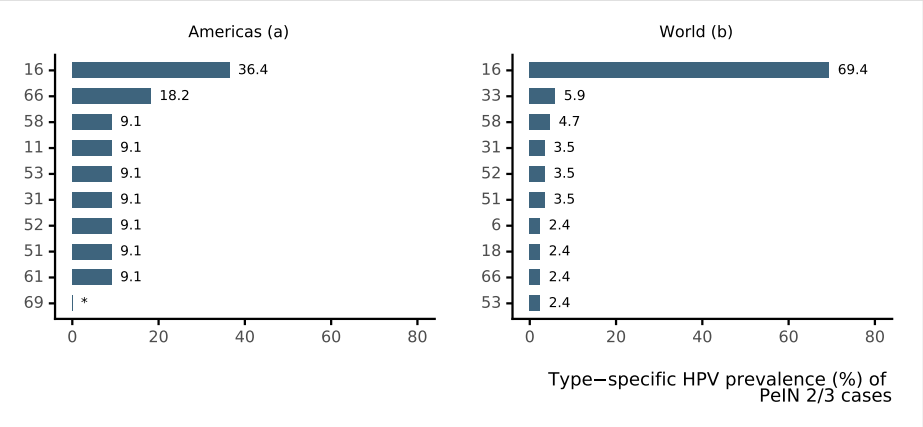
Figure 57: Comparison of the ten most frequent HPV types in cases of penile cancer in Americas and the World



Data updated on 22 May 2023 (data as of 30 Jun 2015)

[a] Includes cases from Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Venezuela and United States
[b] Includes 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 References.

Figure 58: Comparison of the ten most frequent HPV types in PeIN 2/3 cases in Americas and the World



Data updated on 22 May 2023 (data as of 30 Jun 2015)

PeIN 2/3: Penile intraepithelial neoplasia of grade 2/3
[a] Includes cases from Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Venezuela.
[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.
[*] No data available. No more types than shown were tested or were positive.
Data Sources: See references in Section 9 References.

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 subgroups 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 Americas 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 40: Studies on HPV prevalence among men in Americas

Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	No. Tested	HPV Prevalence	
							%	(95% CI)[a]
Brazil	Giuliano 2008	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- MSW from general population and population from a STD clinic	18-70	1305	12.2	(10.5-14.1)
	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)
	Rosenblatt 2004	Shaft, dorsal and prebalanic area, prepuce, urethral meatus	HC2 HR	Partners of women without CIN	-	60	15.0	(7.1-26.6)
	Vardas 2011[b]	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)

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Table 40 – continued from previous page

Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	No. Tested	HPV Prevalence	
							%	(95% CI)[a]
	Franceschi 2002	Glans, corona, urethra	PCR-GP5+/6+	Husbands of control women	24-81	56	39.3	(26.5-53.2)
Canada	Vardas 2011[b]	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)
Colombia	Franceschi 2002	Glans, corona, urethra	PCR-GP5+/6+	Husbands of control women	23-82	128	18.8	(12.4-26.6)
Mexico	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)
	Vardas 2011[b]	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)
	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)
	Sánchez-Alemán 2002	Glans and prepuce	HC2 HR	University students	>=18	71	8.5	(3.2-17.5)
	Nyitray 2011	Anal canal	PCR-PGMY09/11	HIV- MSW from organized health care systems, factories and military	18-70	1305	12.2	(10.5-14.1)
	Lazcano-Ponce 2001	Corona, urethra	PCR-GP5+/6+	Sexually active college students and industry workers	14-55	96	42.7	(32.7-53.2)
	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)
	Giuliano 2008	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)

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Table 40 – continued from previous page

Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	No. Tested	HPV Prevalence	
							%	(95% CI)[a]
United States of America	Giuliano 2008	Corona sulcus, glans, shaft and scrotum	PCR-PGMY09/11	General population	18-44	290	30.0	(24.8-35.6)
	Giuliano 2008	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- MSW from general population and population from University	18-70	1305	12.2	(10.5-14.1)
	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)
	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[b]	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)
	Weaver 2004	Glans, prepuce, shaft, scrotum	PCR-MY09/11 HMB 01	University students	18-25	283	35.0	(29.4-40.9)

Data updated on 22 May 2023 (data as of 31 Oct 2015)

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] 95% Confidence Interval

[b] Includes cases from Australia, Brazil, Canada, Croatia, Germany, Mexico, Spain, and USA.

Data Sources: See references in Section 9 References.

Table 41: Studies on HPV prevalence among men from special subgroups in Americas

Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	No. Tested	HPV Prevalence	
							%	(95% CI)[a]
Argentina	Pando 2012	Anus	GP-PCR Reverse line blot hybridization	HIV- MSM	Mean/Median 31 years	69	79.7	(68.3-88.4)
	Pando 2012	Anus	GP-PCR Reverse line blot hybridization	HIV+ MSM	Mean/Median 31 years	39	92.3	(79.1-98.4)
Brazil	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[b]	Anus	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16-27)	602	42.4	(38.4-46.4)
	Goldstone 2011[b]	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	70.0	(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)
	Rosenblatt 2004	Shaft, dorsal and prebalanic area, prepuce, urethral meatus	HC2 HR	Partners of women with CIN	-	30	76.7	(57.7-90.1)
	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)
Canada	Ogilvie 2009	Shaft, scrotum	PCR-Roche Amplicor HPV test	Heterosexual men attending provincial STD clinic	16-69	262	69.8	(63.9-75.3)

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Table 41 – continued from previous page

Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	No. Tested	HPV Prevalence	
							%	(95% CI)[a]
	Salit 2009	Anus	PCR-PGMY09/11	HIV+ MSM partici-pants in TRACE study	38-50	224	93.3	(89.2-96.2)
	Goldstone 2011[b]	Anus	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16-27)	602	42.4	(38.4-46.4)
	de Pokomandy 2009	Anal canal	PCR-PGMY09/11	HIV+ MSM	Median 43 (21-66)	241	97.9	(95.2-99.3)
	Salit 2010	Anal canal	HC2	HIV+ MSM	Median 44.4 (IQR=39.4-50.6)	400	93.0	(90.0-95.3)
	Goldstone 2011[b]	Penis	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16-27)	602	18.4	(15.4-21.8)
Colombia	Franceschi 2002	Glans, corona, urethra	PCR-GP5+/6+	Husbands of women with invasive cervical cancer	24-79	50	32.0	(19.5-46.7)
	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)
Mexico	Goldstone 2011[b]	Anus	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16-27)	602	42.4	(38.4-46.4)
	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)
	Goldstone 2011[b]	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)
	Torres-Ibarra 2014	Anus	PCR-PGMY09/11	HIV+ MSM	18-69	446	93.0	(90.3-95.2)
	Mendez-Martinez 2014	Anus	PCR-INNO-LIPA	HIV+ MSM	Median 39 (IQR=33-45)	324	86.1	(81.9-89.7)
Peru	Quinn 2012	Anus	PCR-Line blot	MSM	Mean 33 (SD=10.1)	105	77.1	(67.9-84.8)
	Blas 2015	Anal canal	PCR-Linear Array	HIV- MSM	Mean 34 (18-59)	101	76.2	(66.7-84.1)
	Blas 2015	Coronal sulcus, glans, penis shaft, and scrotum	PCR-Linear Array	HIV- MSM	Mean 34 (18-59)	101	40.6	(30.9-50.8)
United States of America	Wiley 2013	Anus	PCR-PGMY09/11	HIV- MSM	Mean 55	683	70.3	(66.7-73.7)
	Wilkin 2004	Anal canal	HC2	HIV+ MSM	90% > 30 years	55	78.2	(65.0-88.2)

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Table 41 – continued from previous page

Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	No. Tested	HPV Prevalence	
							%	(95% CI)[a]
	Wiley 2013	Anus	PCR-PGMY09/11	HIV+ MSM	Mean 55	579	90.7	(88.0-92.9)
	Friedman 1998	Anal canal	PCR-MY09/11, HMB01, and HC	HIV+ MSM	<40 years	135	90.4	(84.1-94.8)
	Palefsky 1998	Anus	PCR-MY09/11	HIV- homosexual or bisexual men	26-73	200	61.0	(53.9-67.8)
	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	32	90.6	(75.0-98.0)
	Berry 2009	Anal canal	PCR-MY09/11	HIV- MSM	26-75	81	56.8	(45.3-67.8)
	Caussy 1990	Anus	PCR-TS 6,11,16,18,31,33,35	HIV+ and HIV- homosexual men	Mean 40.6	105	39.0	(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)
	Chin-Hong 2008	Anus	PCR-generic probe set by DBH	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+ MSW	Median 42 (IQR=38-48)	92	58.7	(47.9-68.9)
	Conley 2010	Anal canal	PCR-Linear Array	HIV+ MSM	Median 42 (IQR=36-48)	379	95.8	(93.2-97.6)
	Critchlow 1998	Anus	PCR-MY09/11	HIV+ homosexual men	Mean 34	322	91.6	(88.0-94.4)
	Palefsky 2005	Anal canal	PCR-L1 consensus primers	HIV+ MSM	-	323	95.4	(92.5-97.4)
	Critchlow 1998	Anus	PCR-MY09/11	HIV- homosexual men	Mean 34	284	66.5	(60.7-72.0)
	Friedman 1998	Anal canal	PCR-MY09/11, HMB01, and HC	HIV- MSM	<40 years	46	69.6	(54.2-82.3)
	Gandra 2015	Anus	HC2	HIV+ heterosexual men	Median 55 (IQR=49-60)	40	27.5	(14.6-43.9)
	Gandra 2015	Anus	HC2	HIV+ MSM	Median 49 (IQR=41-57)	107	54.2	(44.3-63.9)

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Table 41 – continued from previous page

Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	No. Tested	HPV Prevalence	
							%	(95% CI)[a]
	Goldstone 2011[b]	Penis	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16-27)	602	18.4	(15.4-21.8)
	Goldstone 2011[b]	Anus	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16-27)	602	42.4	(38.4-46.4)
	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)
	Kiviat 1993	Anal canal	PCR-MY09/11	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	24-64	289	93.1	(89.5-95.7)
	Palefsky 1998	Anus	PCR-MY09/11	HIV+ and HIV- homosexual or bisexual men	24-73	489	80.0	(76.1-83.4)
	Fife 2003	Glans, corona, shaft, inguinal skin, scrotum, perineum, perianal, urine	PCR-TS 6,11	STD clinic attendees	18-50	20	10.0	(1.2-31.7)

Data updated on 22 May 2023 (data as of 31 Oct 2015)

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] 95% Confidence Interval

[b] Includes cases from Australia, Brazil, Canada, Croatia, Germany, Mexico, Spain, and USA.

Data Sources: See references in Section 9 References.

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. Around 30% of oropharyngeal cancers (which mainly comprises the tonsils and base of tongue sites) are caused by HPV with HPV16 being the most frequent type (de Martel C et al. Int J Cancer 2017;141(4):664-670). Attributable fraction varies greatly worldwide, being highest in more developed countries (60% in Republic of Korea, 51% in North America, 50% in Eastern Europe, 46% in Japan, 42% in North-Western Europe, 41% in Australia/New Zealand, 24% in South Europe, 23% in China, 22% in India, and 13% in elsewhere) (de Martel C et al. Lancet Glob Health 2020;8(2):e180-e190). In this section, the HPV burden in the head and neck in Americas is presented.

4.4.1 Burden of oral HPV infection in healthy population

Table 42: Studies on oral HPV prevalence among healthy in Americas

Study	Specimen collection method / anatomic site	HPV detection method[a]	Population	% males	Age (years)[b]	No. tested[c]	HPV prevalence % (95% CI)	High-Risk HPV prevalence % (95% CI)	5 most frequent HPVs, HPV type (n)[d]
Schwartz 1998	Brush/swab & oral rinse / Oral mucosa	PCR-MY09/11 TS-E6	Age-matched controls	63	18-65	435	9.19 (6.8-12.3)	-	-
Summersgil 2001	Oral rinse / Oral mucosa	PCR-MY09/11 GP5+	Convenient samples from out-patients	40	0-20	268	6 (3.7-9.5)	3.4 (1.8-6.3)	HPV16 (8); X (4); 6 (2); 17 (1); 18 (1)
Winer 2003	Brush / swab / Oral mucosa	PCR-MY09/11 HMB01	General population	0	18-20	318	1.9 (0.9-4.1)	-	HPVX (6)
Smith 2004	Oral rinse / Oral mucosa	PCR-MY09/11 TS-E6	Convenient samples from general population	100	-	68	5.9 (2.3-14.2)	4.4 (1.5-12.2)	HPV31 (2); 13 (1); 39 (1)
Smith 2004	Oral rinse / Oral mucosa	PCR-GP5+/6+ MY09/11	Age-matched controls	59	-	333	18.3 (14.5-22.8)	10.8 (7.9-14.6)	HPV16 (33)
do 2006	Brush/swab / Most parts of Oropharynx	PCR-MY09/11	Convenient samples from out-patients	57.9	16-52	50	10 (4.3-21.4)	6 (2.1-16.2)	HPV61 (2); X (2); 16 (1); 18 (1); 52 (1)
Pintos 2008	Brush/swab & oral rinse & gargle / Oral mucosa and throat	PCR-PGMY09/11	Age-matched controls	71	26-84	129	4.7 (2.1-9.8)	3.1 (1.2-7.7)	HPV58 (3); 11 (1); 44 (1); 56 (1); 66 (1)
Ragin 2007	Oral rinse and gargle / Oral mucosa and throat	PCR-GP5+/6+ PGMY09/11 HMB01	General population	0	18-65	212	5.7 (3.3-9.6)	1.4 (0.5-4.1)	HPV70 (8); 16 (2); 62 (2); 31 (1); 32 (1); 66 (1)
Smith 2007	Oral rinse / Oral mucosa	PCR-MY09/11 GP5+	Convenient samples from out-patients	45	0-20	1235	5.9 (2.3-14.2)	-	-

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Table 42 – continued from previous page

Study	Specimen collection method / anatomic site	HPV detection method[a]	Population	% males	Age (years)[b]	No. tested[c]	HPV prevalence % (95% CI)	High-Risk HPV prevalence % (95% CI)	5 most frequent HPVs, HPV type (n)[d]
Anaya-Saavedra 2008	Brush/swab / Oral mucosa	PCR-GP5+/6+ MY09/11	Age-matched controls	53	27-86	248	16.1 (12.1-21.2)	9.69999999999999 (6.6-14.0)	HPV16 (15); 11 (7); 18 (5); 6 (4); 13 (4)
D'Souza 2009	Oral rinse / Oral mucosa	PCR-PGMY09/11	Convenient samples from general population	100	18-23	210	2.9 (1.3-6.1)	1.9 (0.7-4.8)	HPV16 (1); 35 (1); 39 (1); 51 (1); 66 (1); 84 (1)
D'Souza 2009	Oral rinse / Oral mucosa	PCR-PGMY09/11	Age-matched controls	76	25-87	332	4.8 (3.0-7.7)	2.1 (1.0-4.3)	HPV62 (3); 58 (2); 6 (1); 11 (1); 16 (1); 42 (1); 51 (1); 52 (1); 56 (1); 58 (1); 59 (1); 61 (1); 62 (1); 66 (1); 68 (1); 73 (1); 83 (1); 89 (1)
Esquenazi 2010	Brush/swab / Oral mucosa and mastication sites	PCR-GP5+/6+ MY09/11	Convenient samples from general population	40	20-31	100	0 (0.0-3.7)	-	-
Kreimer 2011	Oral rinse / Oral mucosa	PCR-PGMY09/11	Convenient samples from general population	100	18-74	499	2.8 (1.7-4.7)	1.4 (0.7-2.9)	HPV16 (4); 51 (2); 61 (2); 6 (1); 58 (1) 62(1); 66 (1); 70 (1); 83 (1); 84 (1)
Kreimer 2011	Oral rinse / Oral mucosa	PCR-PGMY09/11	Convenient samples from general population	100	18-74	570	4.2 (2.8-6.2)	1.4 (0.7-2.7)	HPV16 (3); 6 (3); 66 (3); 72 (3); 84 (3)
Kreimer 2011	Oral rinse / Oral mucosa	PCR-PGMY09/11	Convenient samples from general population	100	18-74	557	5.9 (4.2-8.2)	1.3 (0.3-2.6)	HPV44 (15); 16 (3); 61 (3); 11 (2); 62 (2); 71 (2); 82 (2)
Ribeiro 2011	Brush/swab & oral rinse & gargle / Oral mucosa and throat	PCR-PGMY09/11	Age-matched controls	-	-	898	0.2 (0.1-0.8)	-	-
Ribeiro 2011	Brush/swab & oral rinse & gargle / Oral mucosa and throat	PCR-PGMY09/11	Age-matched controls	-	-	898	0.2 (0.1-0.8)	-	-
Ribeiro 2011	Brush/swab & oral rinse & gargle / Oral mucosa and throat	PCR-PGMY09/11	Age-matched controls	-	-	898	0.2 (0.1-0.8)	-	-

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Table 42 – continued from previous page

Study	Specimen collection method / anatomic site	HPV detection method[a]	Population	% males	Age (years)[b]	No. tested[c]	HPV prevalence % (95% CI)	High-Risk HPV prevalence % (95% CI)	5 most frequent HPVs, HPV type (n)[d]
Ragin 2011	Brush/swab & oral rinse / Oral mucosa and tonsil	PCR-PGMY09/11	General population	0	24-78	118	10.2 (5.9-16.9)	2.1 (0.9-4.9)	HPV84 (3); 83 (2); 52 (1); 54 (1); 61 (1); 82 (1); 16 (1); 33 (1); 35 (1); 52 (1); 66 (1); 70 (1)
Pickard 2012	Oral rinse / Oral mucosa	PCR-PGMY09/11	Convenient samples from general population	60	18-30	766	2.6 (1.7-4.0)	-	-
Edelstein 2012	Brush/swab & oral rinse & gargle / Oral mucosa and throat	PCR-PGMY09/11 HMB01	General population	100	18-25	212	7.5 (4.7-11.9)	13.2 (9.3-18.4)	HPV16 (6); 18 (5); 33 (4); 39 (4); 31 (3)
Gonzalez-Ramirez 2013	Brush/swab / Oral mucosa	PCR-GP5+/6+ MY09/11 L1C1/L1C2	Age-matched controls	43	21-NS	320	2.5 (1.3-4.9)	2.5 (1.3-4.9)	HPV18 (6); 16 (2)
Lang 2013	Oral rinse and gargle / Oral mucosa and throat	PCR-SPF10 TS 16/18	Age-matched controls	0	22-29	2926	5.4 (4.6-6.2)	1.5 (1.1-2.0)	HPVX (102); 16 (12); 51 (10); 52 (7); 66 (6)
Cavenaghi 2013	Oral rinse and gargle / Oral mucosa and throat	PCR-MY09/11	Convenient samples from general population	39	4-89	145	2.1 (0.7-5.9)	0.7 (0.1-3.8)	HPV44 (2); 58 (1)
Machado 2014	Brush/swab / Most parts of mouth	PCR-PGMY09/11	Convenient samples from out-patients	100	18-68	514	1.2 (0.5-2.5)	0.2 (0.0-1.1)	HPVX (2); 6 (1); 11 (1); 52 (1); 53 (1); 89 (1)
Araujo 2014	Brush/swab / Most parts of mouth	PCR-MY09/11	Convenient samples from out-patients	38	18-79	166	24.1 (18.2-31.1)	-	HPV18 (5); 6 (3); 58 (1)
Cook 2014	Oral rinse and gargle / Oral mucosa and throat	PCR-PGMY09/11	Convenient samples from general population	0	18-54	475	2.5 (1.5-4.4)	0.8 (0.3-2.1)	HPVX (7); 16 (2); 51 (1); 59 (1); 84 (1)
Dahlstrom 2014	Brush/swab & oral rinse & gargle / Oral mucosa and throat	PCR-PGMY09/11	Convenient samples from general population	50	18-50	442	4.1 (2.1-7.5)	4.1 (2.1-7.5)	HPV16 (5); 66 (5); 89 (5); 39 (2); 51 (2) 56 (2); 84 (2)
Sauter 2015	Brush/swab & oral rinse & gargle / Oral mucosa and throat	PCR-PGMY09/11	Convenient samples from general population	35	0-79	153	2.6 (1.0-6.5)	-	-
Chaturvedi 2015	Oral rinse and gargle / Oral mucosa and throat	PCR-PGMY09/11	General population	51	14-69	9480	6.9 (6.4-7.4)	-	-

Data updated on 19 Oct 2021 (data as of 19 May 2015)

(95% CI): 95% Confidence Interval

[a] TS: type-specific; RT-PCR: real-time PCR; qPCR: quantitative PCR
[b] NS: not specified
[c] number of cases tested for HPV DNA
[d] number of cases positive for the specific HPV-type

Data Sources:
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4.4.2 HPV burden in head and neck cancers

Table 43: Studies on HPV prevalence among cases of oral cavity cancer in Americas

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence		Prevalence of 5 most frequent HPVs, HPV type (%)
				%	(95% CI)[a]	
MEN						
Brazil	Oliveira 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)	-
Canada	Herrero 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)
Canada	Noble-Topham 1993	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)
Cuba	Herrero 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	-	-
Mexico	Ibieta 2005	MY09/MY11 (L1) and GP5/GP6 (L1) Amplification with TS primers (16. 18)	36	41.7	(27.1-57.8)	-
United States of America	Lohavanichbutr 2009	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)	-
Venezuela	Miller 1994	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)
WOMEN						
Brazil	Oliveira 2009	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)	-
Canada	Herrero 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)	11	9.1	(1.6-37.7)	HPV 16 (9.1)
Canada	Noble-Topham 1993	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)
Cuba	Herrero 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)	25	4	(0.7-19.5)	HPV 16 (4.0)
Mexico	Ibieta 2005	MY09/MY11 (L1) and GP5/GP6 (L1) Amplification with TS primers (16. 18)	14	42.9	(21.4-67.4)	-
United States of America	Lohavanichbutr 2009	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)	-
Venezuela	Miller 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)
Venezuela	Premoli-De-Percoco 2001	TS-PCR for 6/11/16/18 Hybridization with TS probes (6. 11. 16. 18)	50	60	(46.2-72.4)	HPV 16 (50.0) HPV 18 (16.0)
BOTH OR UNSPECIFIED						
Argentina	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	132	0	-	-
Argentina	González 2007	MY09/MY11 (L1) and GP5+/GP6+ (L1) RFLP and DBH	25	60	(40.7-76.6)	HPV 16 (48.0) HPV 11 (28.0) HPV 6 (8.0) HPV 18 (4.0)
Brazil	Oliveira 2009	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)
Brazil	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	132	0	-	-
Brazil	Rivero 2006	GP5+/GP6+ (L1) CSA-ISH (DAKO) (6. 11. 16. 18)	40	0	-	-
Canada	Herrero 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)	28	10.7	(3.7-27.2)	HPV 16 (10.7)
Canada	Lingen 2013	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)	-
Canada	Noble-Topham 1993	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)
Cuba	Herrero 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)	78	1.3	(0.2-6.9)	HPV 16 (1.3) HPV 18 (1.3)
Cuba	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	132	0	-	-
Mexico	Anaya-Saavedra 2008	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 11 (1.6) HPV 13 (1.6)
Mexico	Ibieta 2005	MY09/MY11 (L1) and GP5/GP6 (L1) Amplification with TS primers (16. 18)	50	42	(29.4-55.8)	HPV 16 (28.0)
United States of America	Lingen 2013	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)	-
United States of America	Zhao 2005	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 43 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	%	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
United States of America	Walline 2013	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)	-
United States of America	Smith 2004	MY09/MY11 (L1) and HMB01 (L1) Sequencing	123	10.6	(6.3-17.2)	HPV 16 (8.1) HPV 33 (2.4)
United States of America	Schwartz 1998	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)
United States of America	Schlecht 2011	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)
United States of America	Paz 1997	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)
United States of America	Lohavanichbutr 2009	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)
United States of America	Liang 2008	GP5+/GP6+ (L1) Amplification with TS primers (16)	51	2	(0.3-10.3)	HPV 16 (2.0)
United States of America	Hooper 2015	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)	-
United States of America	Holladay 1993	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)
United States of America	Harris 2011	MY09/MY11 (L1) and GP5+GP6+ (L1) Sequencing	25	8	(2.2-25.0)	HPV 16 (8.0)
United States of America	Ha 2002	RT-PCR E6/E7 for 16 Amplification with TS primers (16)	34	2.9	(0.5-14.9)	HPV 16 (2.9)
United States of America	Furniss 2007	TS-PCR L1 for 16 Amplification with TS primers (16)	150	25.3	(19.0-32.8)	HPV 16 (25.3)
United States of America	Chuang 2008	RT-PCR E6/E7 for 16 Hybridization with TS probes (16)	21	0	-	-
Venezuela	Miller 1994	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)
Venezuela	Premoli-De-Percoco 2001	TS-PCR for 6/11/16/18 Hybridization with TS probes (6. 11. 16. 18)	50	60	(46.2-72.4)	HPV 16 (50.0) HPV 18 (16.0)

Data updated on 22 May 2023 (data as of 31 Dec 2015)

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;
Only for European countries
[a] 95% Confidence Interval
Data Sources: See references in Section 9 References.

Table 44: Studies on HPV prevalence among cases of oropharyngeal cancer in Americas

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence		Prevalence of 5 most frequent HPVs, HPV type (%)
				%	(95% CI)[a]	
MEN						
Cuba	Herrero 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)
United States of America	Tezal 2009	TS-PCR E6 for 16/18 Amplification with TS primers (16. 18)	26	76.9	(57.9-89.0)	HPV 16 (76.9)
United States of America	Posner 2011	TS-PCR E6/E7 for 16 Amplification with TS primers (16)	89	50.6	(40.4-60.7)	HPV 16 (50.6)
United States of America	Lohavanichbutr 2009	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)	-
United States of America	Ernster 2007	TS-PCR for 16/18 Amplification with TS primers (16. 18)	51	72.5	(59.1-82.9)	HPV 16 (72.5)
United States of America	Cohen 2008	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)
United States of America	Chaturvedi 2011	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)	-
WOMEN						
Cuba	Herrero 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)	5	0.0	(0.0-43.4)	-
United States of America	Tezal 2009	TS-PCR E6 for 16/18 Amplification with TS primers (16. 18)	4	25.0	(4.6-69.9)	HPV 16 (25.0)
United States of America	Posner 2011	TS-PCR E6/E7 for 16 Amplification with TS primers (16)	22	50.0	(30.7-69.3)	HPV 16 (50.0)

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Table 44 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	%	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
United States of America	Lohavanichbutr 2009	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	(0.0-56.1)	-
United States of America	Ernster 2007	TS-PCR for 16/18 Amplification with TS primers (16. 18)	21	61.9	(40.9-79.2)	HPV 16 (61.9)
United States of America	Cohen 2008	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)
United States of America	Chaturvedi 2011	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)	-
BOTH OR UNSPECIFIED						
Argentina	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	136	0.7	(0.1-4.0)	HPV 16 (0.7)
Brazil	Cortezzi 2004	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)
Brazil	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	136	0.7	(0.1-4.0)	HPV 16 (0.7)
Cuba	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	136	0.7	(0.1-4.0)	HPV 16 (0.7)
Cuba	Herrero 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)	26	15.4	(6.2-33.5)	HPV 16 (15.4)
United States of America	Furniss 2007	TS-PCR L1 for 16 Amplification with TS primers (16)	43	34.9	(22.4-49.8)	HPV 16 (34.9)
United States of America	Zhao 2005	RT-PCR E6/E7 for 16 Hybridization with TS probes (16)	26	57.7	(38.9-74.5)	HPV 16 (57.7)
United States of America	Tezal 2009	TS-PCR E6 for 16/18 Amplification with TS primers (16. 18)	30	70.0	(52.1-83.3)	HPV 16 (70.0)
United States of America	Strome 2002	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)
United States of America	Smith 2004	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)
United States of America	Schwartz 1998	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)
United States of America	Schlecht 2011	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)
United States of America	Posner 2011	TS-PCR E6/E7 for 16 Amplification with TS primers (16)	111	50.5	(41.3-59.6)	HPV 16 (50.5)
United States of America	Lohavanichbutr 2009	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)
United States of America	Kong 2009	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)
United States of America	Kingma 2010	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)
United States of America	Ernster 2007	TS-PCR for 16/18 Amplification with TS primers (16. 18)	72	69.4	(58.0-78.9)	HPV 16 (69.4)
United States of America	D'Souza 2007	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)
United States of America	Cohen 2008	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)
United States of America	Chaturvedi 2011	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)
United States of America	Agoston 2010	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)

Data updated on 22 May 2023 (data as of 31 Dec 2015)

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

Only for European countries

[a] 95% Confidence Interval

Data Sources: See references in Section 9 References.

Table 45: Studies on HPV prevalence among cases of hypopharyngeal or laryngeal cancer in Americas

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence		Prevalence of 5 most frequent HPVs, HPV type (%)
				%	(95% CI)[a]	
MEN						
Canada	Fliss 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)
Chile	Torrente 2005	MY09/MY11 (L1) RFLP	25	36.0	(20.2-55.5)	-
WOMEN						
Canada	Fliss 1994	TS-PCR E6/E7 for 6b/11/16/18 Amplification with TS primers (6b/11. 16. 18)	1	0.0	-	-
Chile	Torrente 2005	MY09/MY11 (L1) RFLP	6	16.7	(3.0-56.4)	-
BOTH OR UNSPECIFIED						
Argentina	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	239	0.8	(0.2-3.0)	HPV 16 (0.8)
Brazil	Miranda 2009	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)
Brazil	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	239	0.8	(0.2-3.0)	HPV 16 (0.8)
Canada	Fliss 1994	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)
Chile	Gheit 2014	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)
Chile	Torrente 2005	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)
Cuba	García-Milián 1998	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 18 (3.0) HPV 6 (3.0)
Cuba	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	239	0.8	(0.2-3.0)	HPV 16 (0.8)
United States of America	Brandwein 1993	Perkin Census 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)
United States of America	Chernock 2013	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)
United States of America	Furniss 2007	TS-PCR L1 for 16 Amplification with TS primers (16)	63	31.7	(21.6-44.0)	HPV 16 (31.7)
United States of America	Paz 1997	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)
United States of America	Schlecht 2011	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)
United States of America	Shen 1996	MY09/MY11 (L1) and TS-PCR E7 for 16/18 RFLP*	32	9.4	(3.2-24.2)	HPV 11 (3.1) HPV 18 (3.1) HPV 6 (3.1)
United States of America	Zhao 2005	RT-PCR E6/E7 for 16 Hybridization with TS probes (16)	22	18.2	(7.3-38.5)	HPV 16 (18.2)

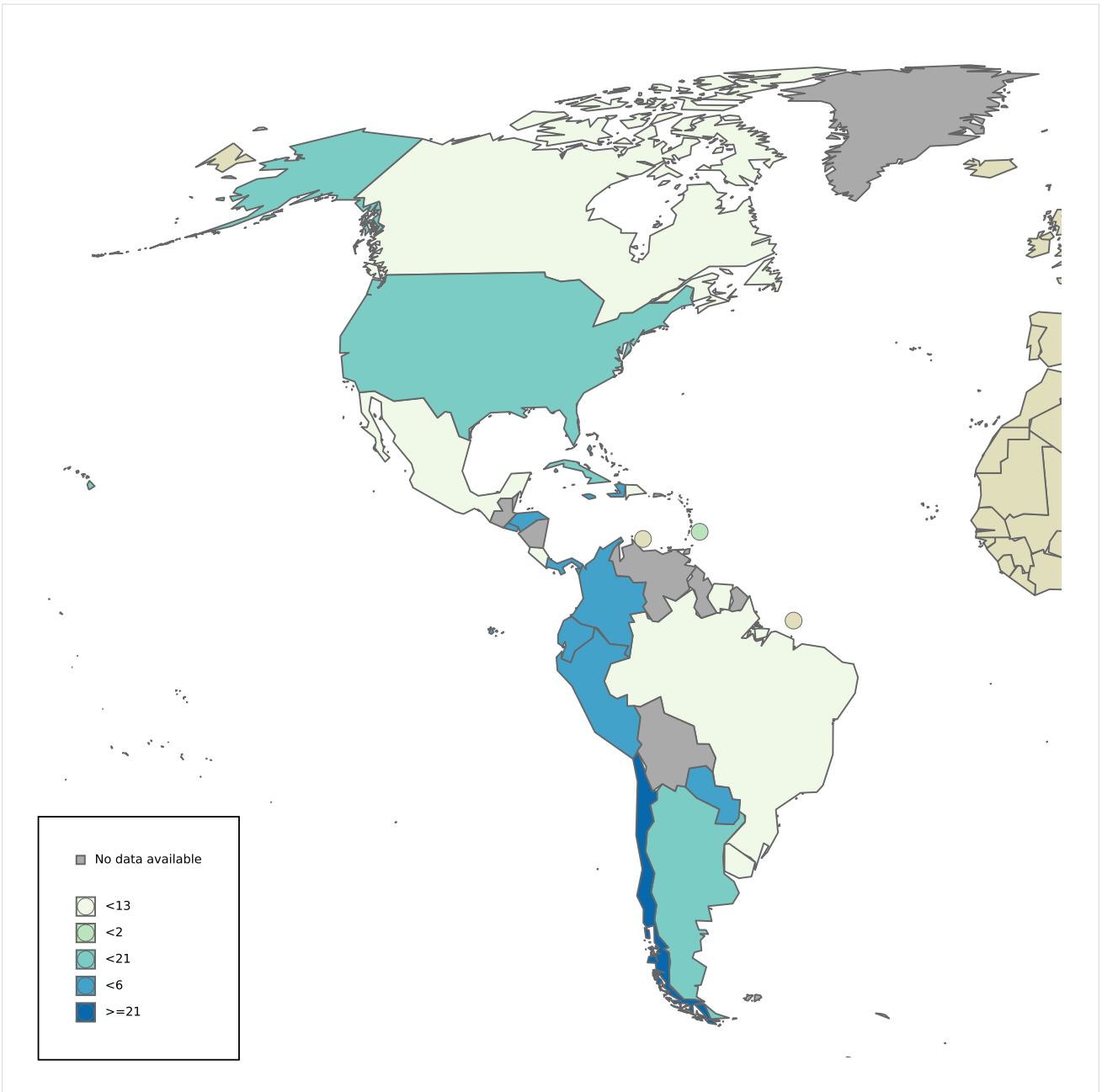
Data updated on 22 May 2023 (data as of 31 Dec 2015)

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
Only for European countries
[a] 95% Confidence Interval
Data Sources: See references in Section 9 References.

5 Factors contributing to cervical cancer

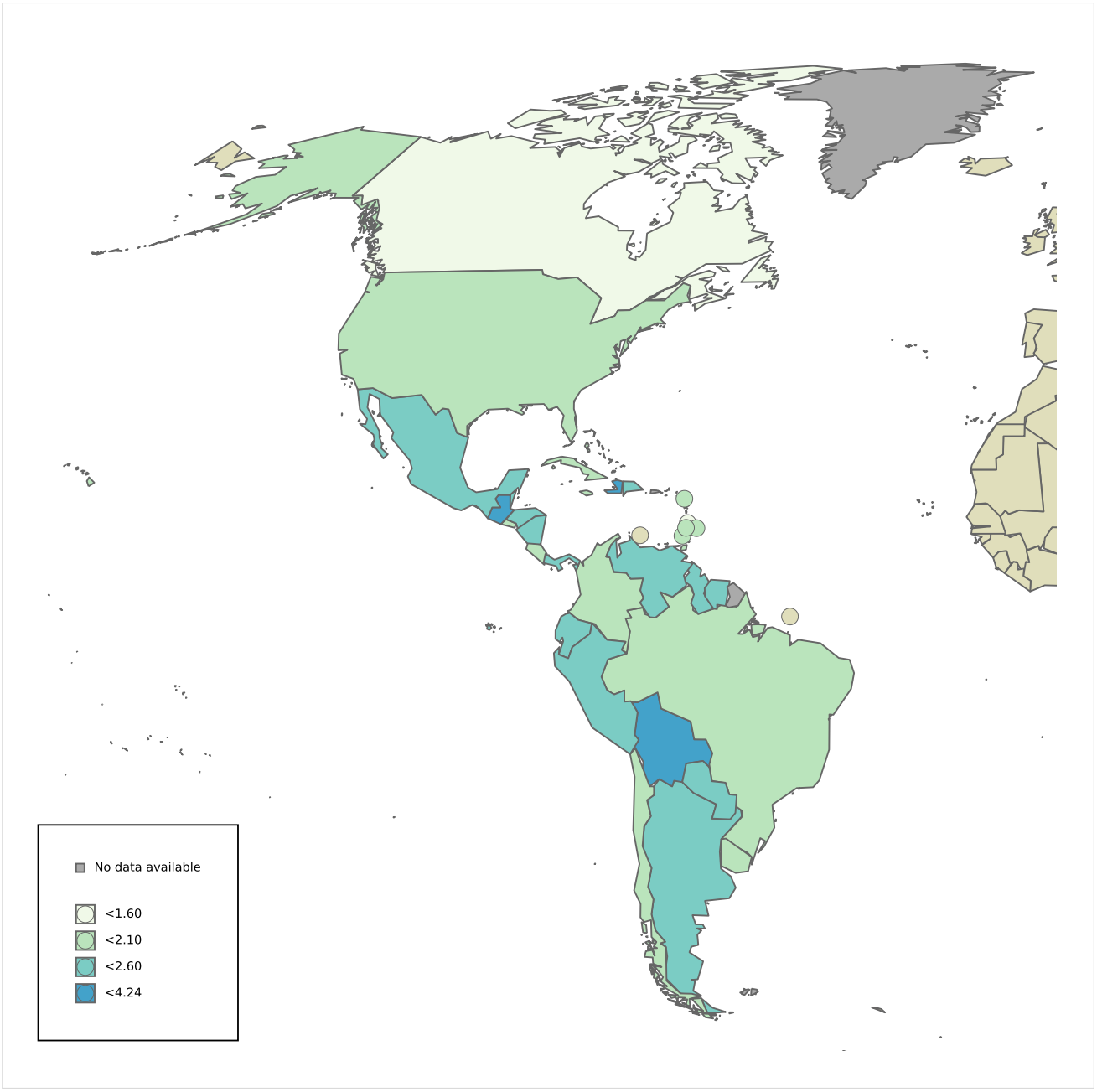
HPV is a necessary cause of cervical cancer, but it is not a sufficient cause. Other cofactors are necessary for progression from cervical HPV infection to cancer. Tobacco smoking, high parity, long-term hormonal contraceptive use, and co-infection with HIV have been identified as established cofactors. 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 Americasare presented.

Figure 59: Prevalence of female tobacco smoking in Americas



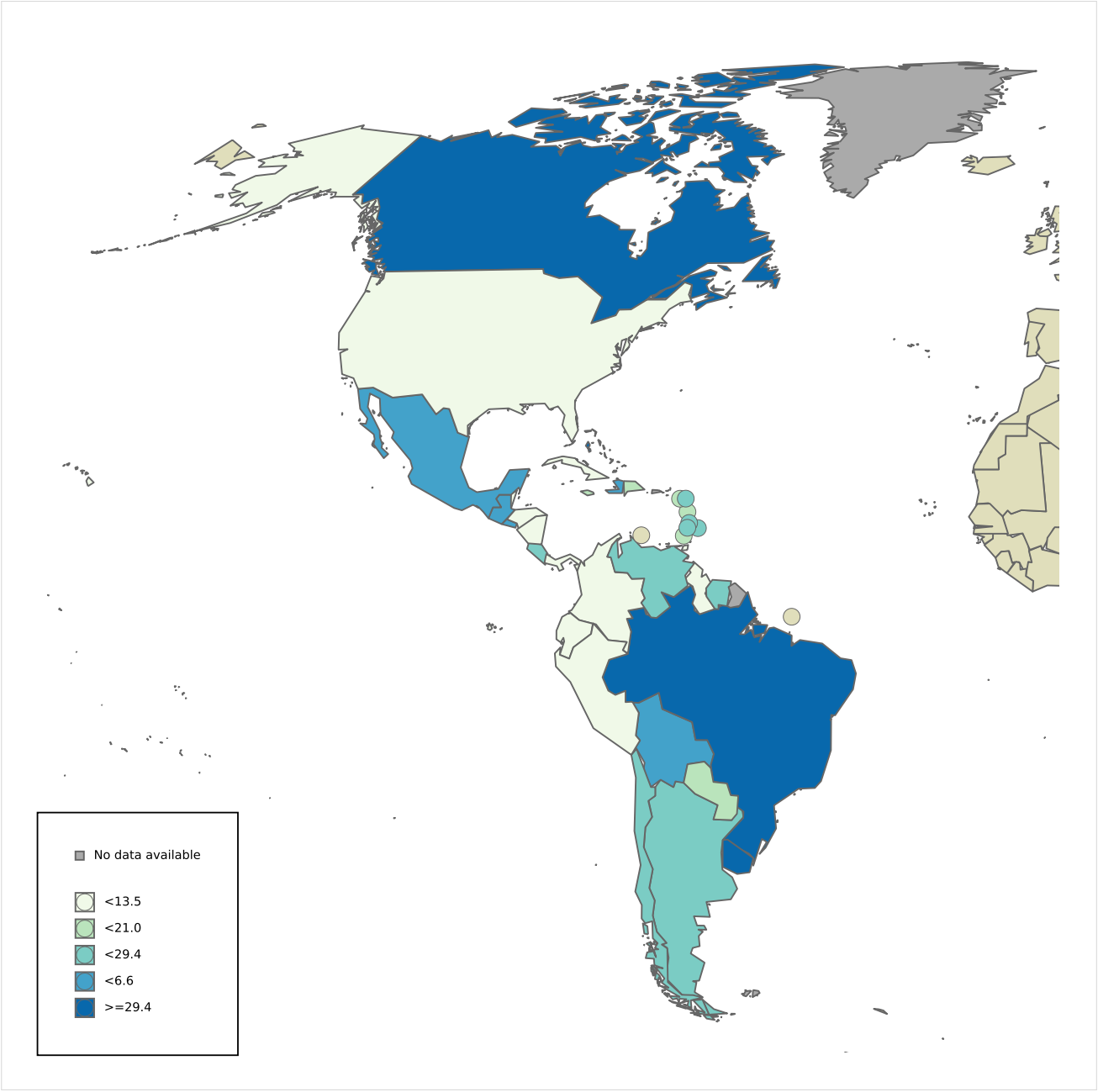
Data accessed on 12 Nov 2019
Crude adjusted prevalence (%) estimates of tabacco use among people aged >= 15 years by country, for the year 2016.
Data Sources:
WHO global report on trends in prevalence of tobacco use 2000–2025, third edition. Geneva: World Health Organization; 2019. Available at https://www.who.int/publications/i/item/who-global-report-on-trends-in-prevalence-of-tobacco-use-2000-2025-third-edition

Figure 60: Total fertility rates in Americas



Data accessed on 13 Nov 2019

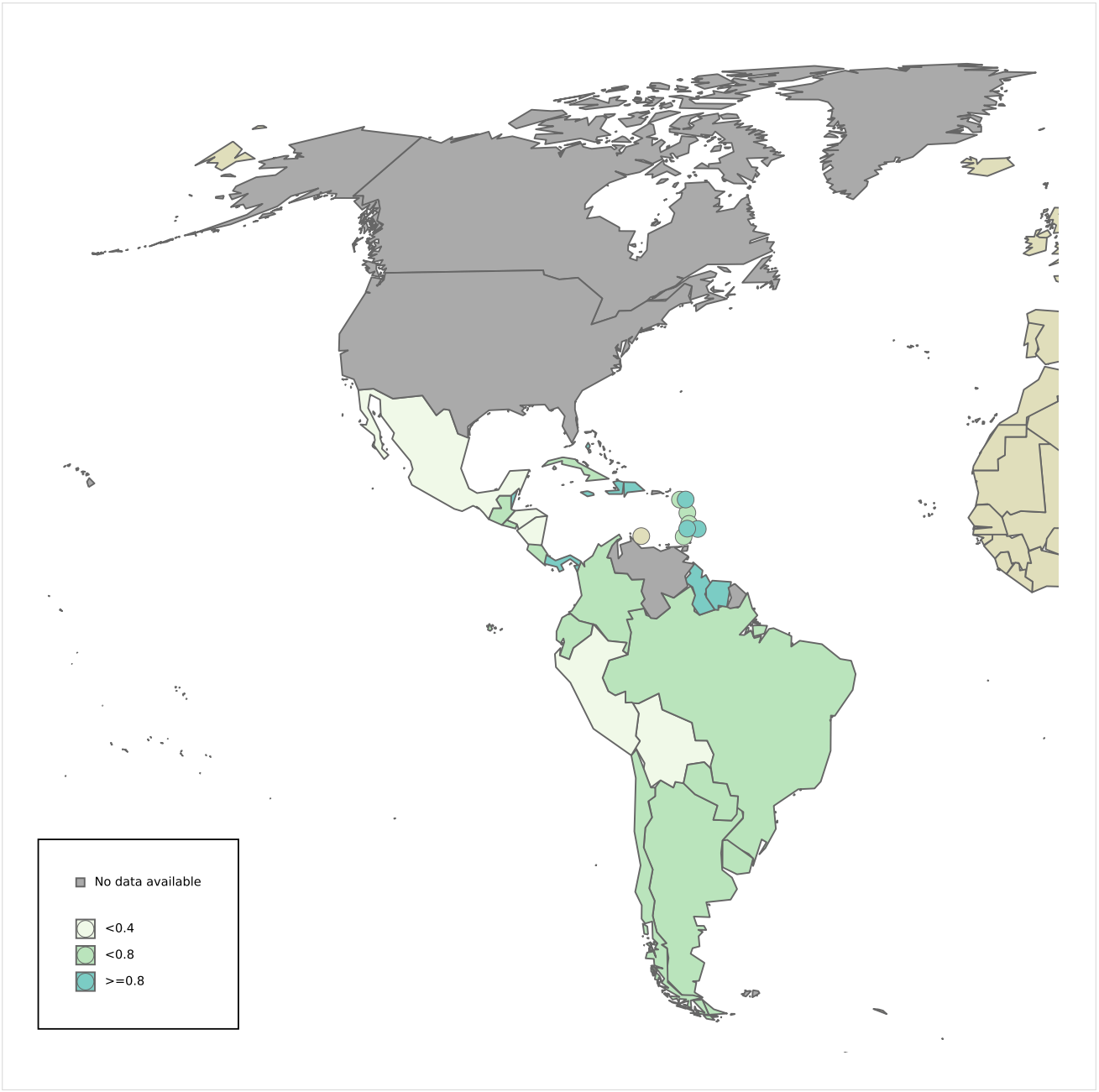
Figure 61: Oral contraceptive use (%) among women who are married or in union in Americas



Data accessed on 18 Nov 2019

Data Sources:
United Nations, Department of Economic and Social Affairs, Population Division (2019). World Contraceptive Use 2019 (POP/DB/CP/Rev2019). https://www.un.org/en/development/desa/population/publications/dataset/contraception/wcu2019.asp. Available at: [Accessed on November 18, 2019].

Figure 62: Prevalence of HIV in Americas



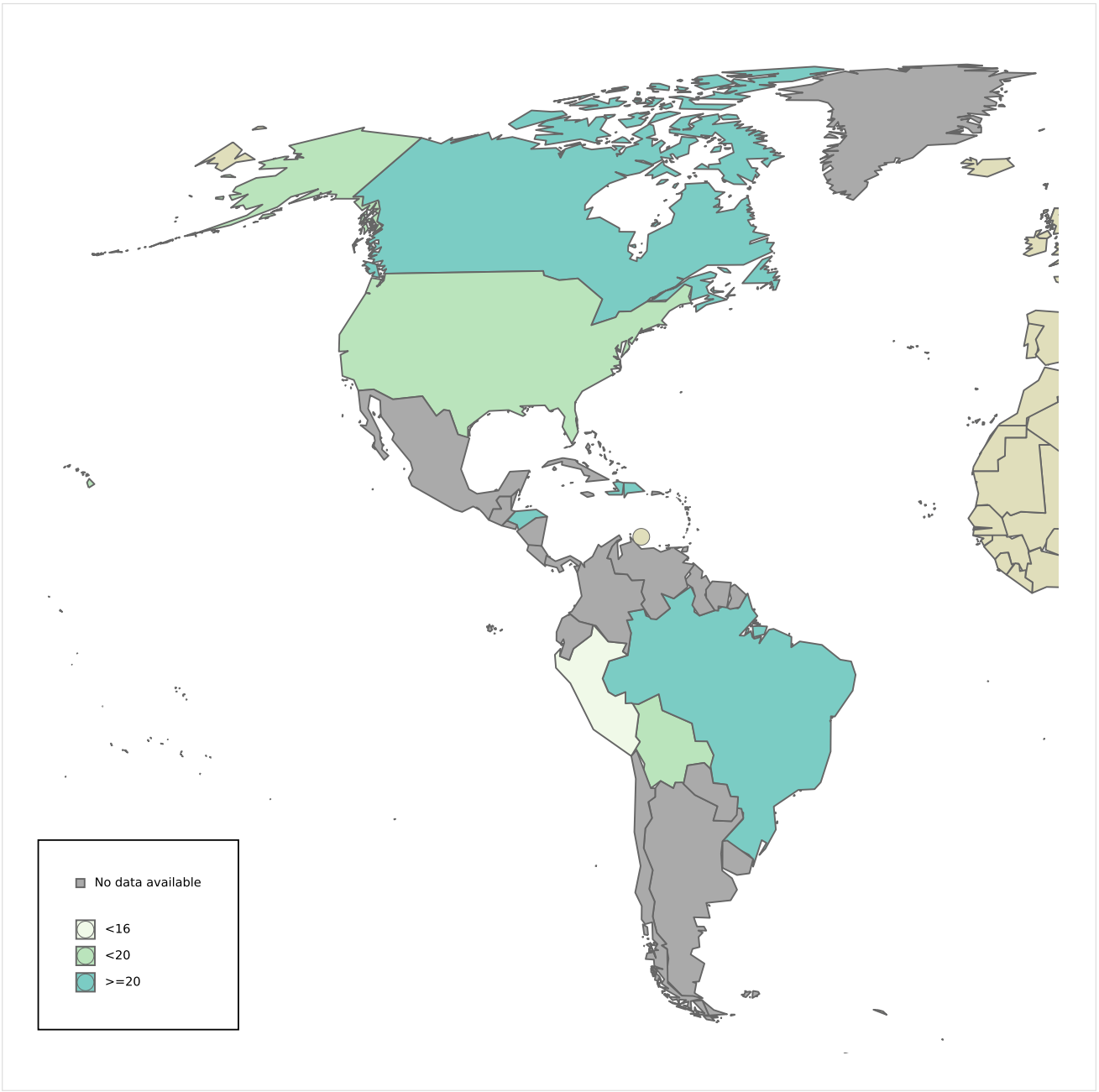
Data accessed on 21 Nov 2019

Data Sources:
UNAIDS database [internet]. Available at: http://aidsinfo.unaids.org/ [Accessed on November 21, 2019]

6 Sexual and reproductive health behaviour indicators

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

Figure 63: Percentage of 15-year-old girls who report sexual intercourse in Americas



Data accessed on 16 Mar 2017
Please refer to original source for methods of estimation
[a] Year of estimation: not reported
[b] The main sources of data were surveys by the MEASURE DHS (Demographic and Health Surveys) project and published estimates from Reproductive National Health Surveys.
[c] Fifteen-year-olds teenagers only were asked whether they had ever had sexual intercourse.
[d] Year of estimation: 2013-2014
[e] Year of estimation: 2000
[f] Percentage of all 15- to 19-year-olds who report having had sex before the age of 15 years.
[g] Year of estimation: 2013
[h] Year of estimation: 2011-2012
[i] Year of estimation: 2012
[j] Year of estimation: 2011-2013

Data Sources:

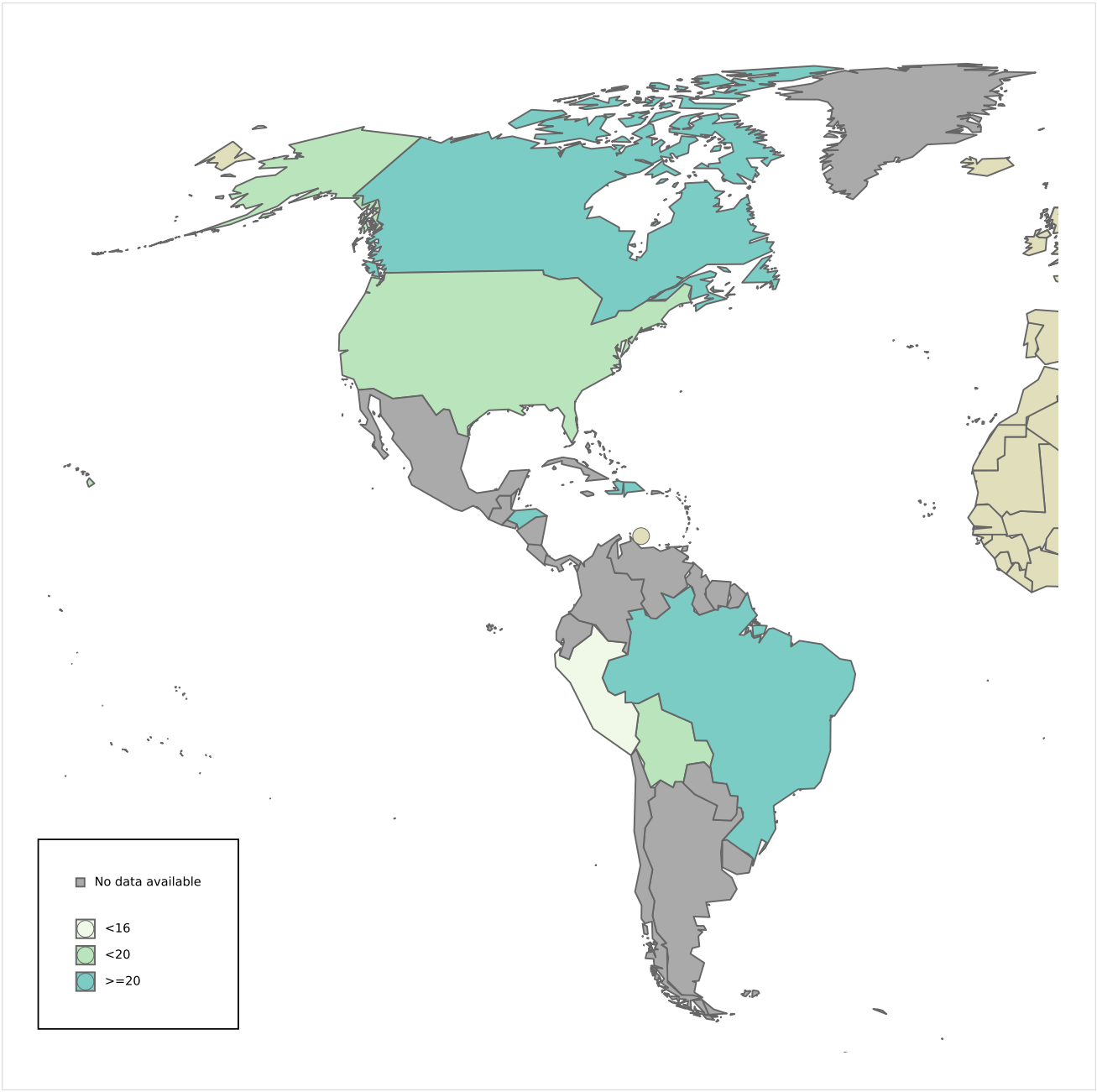
[1] Sexual behaviour in context: a global perspective. Wellings K, Collumbien M, Slaymaker E, et al. Lancet. 2006 Nov 11;368(9548):1706-28. Review. Erratum in: Lancet. 2007 Jan 27;369(9558):274. PMID:17098090.

[2] 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/HSBC-No.7-Growing-up-unequal-Full-Report.pdf?ua=1

[3] ICF International, 2015. The DHS (Demographic and Health Surveys) Program STATcompiler. Funded by USAID. http://www.statcompiler.com. Accessed on March 16 2017.

[4] 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

Figure 64: Percentage of 15-year-old boys who report sexual intercourse in Americas



Data accessed on 16 Mar 2017

Please refer to original source for methods of estimation

[a] Year of estimation: not reported

[b] The main sources of data were surveys by the MEASURE DHS (Demographic and Health Surveys) project and published estimates from Reproductive National Health Surveys.

[c] Fifteen-year-olds teenagers only were asked whether they had ever had sexual intercourse.

[d] Year of estimation: 2013-2014

[e] Year of estimation: 2000

[f] Percentage of all 15- to 19-year-olds who report having had sex before the age of 15 years.

[g] Year of estimation: 2013

[h] Year of estimation: 2011-2012

[i] Year of estimation: 2012

[j] Year of estimation: 2011-2013

Data Sources:

[1] 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.

[2] 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/HSBC-No.7-Growing-up-unequal-Full-Report.pdf?ua=1

[3] ICF International, 2015. The DHS (Demographic and Health Surveys) Program STATcompiler. Funded by USAID. http://www.statcompiler.com. Accessed on March 16 2017.

[4] 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

Table 46: Median age at first sex in Americas

Country	Study	Year/period	Birth cohort	Male		Female		Total	
				N	Median age at first sex	N	Median age at first sex	N	Median age at first sex
Belize	Belize RHS 1999[1]	1999	1935-1984	16.7	1210	-	-	-	-
	Belize RHS 1999[1]	1999	1960-1964	16.9	172	18.5	467	-	-
	Belize RHS 1999[1]	1999	1940-1944	18.2	53	-	-	-	-
	Belize RHS 1999[1]	1999	1935-1939	17.8	51	-	-	-	-
	Belize RHS 1999[1,a]	1999	1935-1984	16.3	633	-	-	-	-
	Belize RHS 1999[1]	1999	1950-1954	17.6	89	-	-	-	-
	Belize RHS 1999[1]	1999	1955-1959	17.7	123	18.0	332	-	-
	Belize RHS 1999[1,b]	1999	1955-1984	-	-	17.4	1458	-	-
	Belize RHS 1999[1]	1999	1980-1984	14.8	99	15.6	236	-	-
	Belize RHS 1999[1]	1999	1970-1974	16.8	207	17.8	634	-	-
	Belize RHS 1999[1]	1999	1965-1969	17.0	180	17.9	613	-	-
	Belize RHS 1999[1]	1999	1975-1979	15.7	162	17.0	534	-	-
	Belize RHS 1999[1]	1999	1945-1949	17.1	74	-	-	-	-
	Belize RHS 1999[1,a]	1999	1955-1984	-	-	17.7	1356	-	-
	Belize RHS 1999[1]	1999	1955-1984	-	-	17.6	2816	-	-
	Belize RHS 1999[1,b]	1999	1935-1984	17.1	577	-	-	-	-
Bolivia	Bolivia DHS 2008[2]	2008	1959-1963	17.7	508	18.7	1620	-	-
	Bolivia DHS 2008[2,a]	2008	1984-1988	-	-	19.3	1393	-	-
	Bolivia DHS 2008[2]	2008	1944-1983	17.5	4109	-	-	-	-
	Bolivia DHS 2008[2,c]	2008	1989-1993	-	418	-	1055	-	-
	Bolivia DHS 2008[2,b]	2008	1979-1983	-	-	18.1	835	-	-
	Bolivia DHS 2008[2,b]	2008	1969-1973	-	-	17.8	746	-	-
	Bolivia DHS 2008[2,a]	2008	1959-1983	-	-	18.9	6688	-	-
	Bolivia DHS 2008[2]	2008	1979-1983	17.2	751	18.8	2575	-	-
	Bolivia DHS 2008[2]	2008	1984-1988	17.3	717	18.8	2088	-	-
	Bolivia DHS 2008[2]	2008	1964-1968	17.4	570	18.4	1775	-	-
	Bolivia DHS 2008[2,b]	2008	1984-1988	-	-	17.8	696	-	-
	Bolivia DHS 2008[2]	2008	1959-1983	17.3	3875	18.6	10373	-	-
	Bolivia DHS 2008[2,a]	2008	1959-1963	-	-	18.9	971	-	-
	Bolivia DHS 2008[2,a]	2008	1969-1973	-	-	18.8	1370	-	-
	Bolivia DHS 2008[2,b]	2008	1959-1963	-	-	18.3	649	-	-
	Bolivia DHS 2008[2,b,c]	2008	1989-1993	-	-	-	431	-	-
	Bolivia DHS 2008[2]	2008	1969-1973	17.1	656	18.5	2117	-	-

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Table 46 – continued from previous page

Country	Study	Year/period	Birth cohort	Male		Female		Total	
				N	Median age at first sex	N	Median age at first sex	N	Median age at first sex
	Bolivia DHS 2008[2]	2008	1974-1978	17.1	673	18.6	2291	-	-
	Bolivia DHS 2008[2,b]	2008	1964-1968	-	-	18.2	684	-	-
	Bolivia DHS 2008[2,c,a]	2008	1989-1993	-	-	-	626	-	-
	Bolivia DHS 2008[2,b]	2008	1959-1983	-	-	18.1	3686	-	-
	Bolivia DHS 2008[2,a]	2008	1964-1968	-	-	18.6	1090	-	-
	Bolivia DHS 2008[2,b]	2008	1974-1978	-	-	18.1	773	-	-
	Bolivia DHS 2008[2,a]	2008	1974-1978	-	-	18.8	1517	-	-
	Bolivia DHS 2008[2,a]	2008	1979-1983	-	-	19.1	1739	-	-
Brazil	Brazil DHS 1998[3,b]	1998	1949-1978	-	-	19.1	-	-	-
	Brazil DHS 1998[3]	1998	1949-1978	-	-	19.4	9225	-	-
	Brazil DHS 1998[3]	1998	1949-1973	-	-	19.5	7472	-	-
	Brazil DHS 1998[3,b]	1998	1939-1973	16.9	-	-	-	-	-
	Brazil DHS 1998[3,c]	1998	1974-1978	-	-	-	1389	-	-
	Brazil DHS 1998[3]	1998	1954-1958	-	-	19.9	1433	-	-
	Brazil DHS 1998[3]	1998	1949-1953	-	-	20.7	1147	-	-
	Brazil DHS 1998[3,a]	1998	1939-1973	16.7	-	-	-	-	-
	Brazil DHS 1998[3,a]	1998	1949-1978	-	-	19.6	-	-	-
	Brazil DHS 1998[3,c]	1998	1979-1983	-	-	-	808	-	-
	Brazil DHS 1998[3]	1998	1959-1963	-	-	19.6	1662	-	-
	Brazil DHS 1998[3]	1998	1969-1973	-	-	18.8	1745	-	-
	Brazil DHS 1998[3]	1998	1939-1973	16.7	-	-	-	-	-
	Brazil DHS 1998[3]	1998	1964-1968	-	-	19.4	1849	-	-
Canada	Kiely 2011[4,d]	2009	1984-1985	-	-	16.0	1301	-	-
Chile	Chile Estudio Com-potamiento Sexual 2000[5,e]	2000	1929-1933	17.7	-	19.9	-	-	-
	Chile Estudio Com-potamiento Sexual 2000[5,e]	2000	1949-1953	16.8	-	18.9	-	-	-
	Chile Estudio Com-potamiento Sexual 2000[5,e]	2000	1979-1980	16.7	-	18.0	-	-	-

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Table 46 – continued from previous page

Country	Study	Year/period	Birth cohort	Male		Female		Total	
				N	Median age at first sex	N	Median age at first sex	N	Median age at first sex
	Chile Estudio Com-potamiento Sexual 2000[5,e]	2000	1964-1968	17.0	-	20.2	-	-	-
	Chile Estudio Com-potamiento Sexual 2000[5,e]	2000	1959-1963	16.9	-	19.5	-	-	-
	Chile Estudio Com-potamiento Sexual 2000[5,e]	2000	1954-1958	16.7	-	19.8	-	-	-
	Chile Estudio Com-potamiento Sexual 2000[5,e]	2000	1969-1973	17.5	-	18.7	-	-	-
	Chile Estudio Com-potamiento Sexual 2000[5,e]	2000	1944-1948	17.0	-	21.3	-	-	-
	Chile Estudio Com-potamiento Sexual 2000[5,e]	2000	1939-1943	17.3	-	20.5	-	-	-
	Chile Estudio Com-potamiento Sexual 2000[5,e]	2000	1974-1978	17.4	-	19.8	-	-	-
	Chile Estudio Com-potamiento Sexual 2000[5,e]	2000	1934-1938	16.7	-	20.3	-	-	-
Colombia	Colombia DHS 1990 [6,f]	1990	-	-	-	-	-	-	-
	Colombia DHS 1995 [6,f]	1995	-	-	-	19.4	-	-	-
	Colombia DHS 2000 [6,f]	2000	-	-	-	19	-	-	-
	Colombia DHS 2005 [6,f]	2005	-	-	-	18.3	-	-	-
	Colombia DHS 2010 [6,f]	2010	-	-	-	18	-	-	-
Costa Rica	Costa Rica RHS 1993[7,g]	1993	1969-1778	-	-	21.4	-	-	-
Dominican Republic	Dominican Republic DHS 1991 [6,f]	1991	-	-	-	19.3	-	-	-
	Dominican Republic DHS 1996 [6,f]	1996	-	16.3	-	18.7	-	-	-
	Dominican Republic DHS 1999 [6,f]	1999	-	16.6	-	18.7	-	-	-

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Table 46 – continued from previous page

Country	Study	Year/period	Birth cohort	Male		Female		Total	
				N	Median age at first sex	N	Median age at first sex	N	Median age at first sex
	Dominican Republic DHS 2002 [6,f]	2002	-	16.5	-	18.4	-	-	-
	Dominican Republic DHS 2007 [6,f]	2007	-	16.5	-	18	-	-	-
	Dominican Republic DHS 2013 [6,f]	2013	-	16.4	-	18	-	-	-
Ecuador	Equator RHS 2004[8,c]	2004	1985-1989	-	-	-	467	-	-
	Equator RHS 2004[8]	2004	1960-1964	-	-	18.5	1170	-	-
	Equator RHS 2004[8]	2004	1965-1969	-	-	18.6	1434	-	-
	Equator RHS 2004[8,b]	2004	1955-1989	-	-	18.3	-	-	-
	Equator RHS 2004[8]	2004	1975-1979	-	-	18.5	1620	-	-
	Equator RHS 2004[8]	2004	1970-1974	-	-	18.7	1610	-	-
	Equator RHS 2004[8]	2004	1980-1984	-	-	18.8	1244	-	-
	Equator RHS 2004[8]	2004	1955-1989	-	-	18.7	8050	-	-
	Equator RHS 2004[8]	2004	1955-1959	-	-	18.7	840	-	-
	Equator RHS 2004[8,a]	2004	1955-1989	-	-	19.0	-	-	-
El Salvador	El Salvador RHS 2008[9,g]	2008	1984-1993	-	-	16.3	-	-	-
Guatemala	Guatemala RHS 2008/2009[10]	2008-2009	1969-1973	-	-	17.9	2102	-	-
	Guatemala RHS 2008/2009[10]	2008-2009	1959-1993	-	-	18.3	12482	-	-
	Guatemala RHS 2008/2009[10,c]	2008-2009	1989-1993	-	-	-	810	-	-
	Guatemala RHS 2008/2009[10]	2008-2009	1979-1983	-	-	18.2	2746	-	-
	Guatemala RHS 2008/2009[10]	2008-2009	1964-1968	-	-	18.0	1432	-	-
	Guatemala RHS 2008/2009[10]	2008-2009	1984-1988	-	-	18.9	2062	-	-
	Guatemala RHS 2008/2009[10]	2008-2009	1959-1963	-	-	18.1	1288	-	-
	Guatemala RHS 2008/2009[10]	2008-2009	1974-1978	-	-	18.1	2720	-	-
	Guatemala RHS 2008/2009[10,a]	2008-2009	1959-1988	-	-	19.0	-	-	-
	Guatemala RHS 2008/2009[10,b]	2008-2009	1959-1988	-	-	17.7	-	-	-
Guyana	Guyana DHS 2009[11]	2009	1980-1984	18.0	440	18.3	641	-	-
	Guyana DHS 2009[11,b]	2009	1960-1989	18.0	-	18.4	-	-	-
	Guyana DHS 2009[11]	2009	1975-1979	17.7	509	18.2	633	-	-

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Table 46 – continued from previous page

Country	Study	Year/period	Birth cohort	Male		Female		Total	
				N	Median age at first sex	N	Median age at first sex	N	Median age at first sex
	Guyana DHS 2009[11,a]	2009	1960-1989	17.5	-	18.7	-	-	-
	Guyana DHS 2009[11]	2009	1965-1969	18.0	451	18.6	614	-	-
	Guyana DHS 2009[11]	2009	1960-1989	17.8	2720	18.5	3825	-	-
	Guyana DHS 2009[11]	2009	1970-1974	17.8	462	18.8	693	-	-
	Guyana DHS 2009[11,c]	2009	1990-1994	-	283	-	390	-	-
	Guyana DHS 2009[11]	2009	1960-1964	18.5	404	18.8	582	-	-
	Guyana DHS 2009[11,c]	2009	1985-1994	-	737	-	1052	-	-
	Guyana DHS 2009[11]	2009	1960-1984	18.0	2266	18.5	3162	-	-
	Guyana DHS 2009[11]	2009	1985-1989	17.1	454	18.3	663	-	-
Haiti	Haiti DHS 1994-95 [6,f]	1994	-	18.3	-	18.9	-	-	-
	Haiti DHS 2000 [6,f]	2000	-	17.1	-	18.2	-	-	-
	Haiti DHS 2005-06 [6,f]	2006	-	16.1	-	18	-	-	-
	Haiti DHS 2012 [6,f]	2012	-	16.4	-	18	-	-	-
Honduras	Honduras DHS 2005-06 [6,f]	2005	-	-	-	18.3	-	-	-
	Honduras DHS 2011-12 [6,f]	2011	-	16.5	-	18.4	-	-	-
Jamaica	Jamaica KABP 2012[12]	2012	1993-1997	13.0	-	16.0	-	14.0	-
	Jamaica KABP 2012[12]	2012	1963-1987	15.0	-	17.0	-	16.0	-
	Jamaica KABP 2012[12]	2012	1963-1997	14.0	-	17.0	-	16.0	-
	Jamaica KABP 2012[12]	2012	1988-1992	14.0	-	17.0	-	16.0	-
Nicaragua	Nicaragua RHS 2006/2007[13]	2006-2007	1982-1991	-	-	17.7	-	-	-
	Nicaragua RHS 2006/2007[13,a]	2006-2007	1982-1991	-	-	18.4	-	-	-
	Nicaragua RHS 2006/2007[13,b]	2006-2007	1982-1991	-	-	16.9	-	-	-
Panama	Panama RHS 1994/1995	1994-1995	1945-1979	-	-	17.0	1718	-	-
Paraguay	Paraguay RHS 2008[14]	2008	1989-1993	-	-	18.1	545	-	-
	Paraguay RHS 2008[14]	2008	1964-1993	-	-	18.2	5372	-	-
	Paraguay RHS 2008[14]	2008	1964-1968	-	-	18.8	724	-	-
	Paraguay RHS 2008[14,b]	2008	1964-1993	-	-	17.9	-	-	-
	Paraguay RHS 2008[14]	2008	1979-1983	-	-	18.2	1178	-	-

Continued on next page

Table 46 – continued from previous page

Country	Study	Year/period	Birth cohort	Male		Female		Total	
				N	Median age at first sex	N	Median age at first sex	N	Median age at first sex
	Paraguay RHS 2008[14,a]	2008	1964-1993	-	-	18.3	-	-	-
	Paraguay RHS 2008[14]	2008	1974-1978	-	-	17.9	1019	-	-
	Paraguay RHS 2008[14]	2008	1969-1973	-	-	18.2	881	-	-
	Paraguay RHS 2008[14]	2008	1984-1988	-	-	18.1	1102	-	-
Peru	Peru DHS 1991-92 [6,f]	1992	-	-	-	19.7	-	-	-
	Peru DHS 1996 [6,f]	1996	-	16.9	-	19.1	-	-	-
	Peru DHS 2000 [6,f]	2000	-	-	-	19.1	-	-	-
	Peru DHS 2004-06 [6,f]	2004	-	-	-	19.1	-	-	-
	Peru DHS 2007-08 [6,f]	2007	-	-	-	18.9	-	-	-
	Peru DHS 2009 [6,f]	2009	-	-	-	18.8	-	-	-
	Peru DHS 2010 [6,f]	2010	-	-	-	18.7	-	-	-
	Peru DHS 2011 [6,f]	2011	-	-	-	18.7	-	-	-
	Peru DHS 2012 [6,f]	2012	-	-	-	18.6	-	-	-
United States of America	USA 2011-2013 National Survey of Family Growth[15,h]	2011-2013	-	16.8	-	17.2	-	-	-

Data accessed on 16 Mar 2017

Please refer to original source for methods of estimation

[a] Urban.
[b] Rural.
[c] Data omitted because less than 50 percent of respondents had intercourse for the first time before reaching the beginning of the age group.
[d] Residents in Quebec, beneficiaires from binificiaires de la Rigie de l'assurance maladie du Quebec.
[e] Number of subjects refers to the number of surveyed men/women (not all sexually active).
[f] Median age at first sexual intercourse for women aged 20-49; Median age at first sexual intercourse for men aged 20-49(54,59).
[g] Mean age at first sex.
[h] Mean age at first sexual intercourse after menarche for women aged 15-44; Mean age at first sexual intercourse for men aged 15-44.

Data Sources:

[1] Belize Central Statistical Office. Belize Family Health Survey 1999. Belmopan, Belize: Belize Central Statistical Office. Institute for resource development. Macro Systems Inc. Columbia, Maryland USA
[2] Ministerio de Salud y Deportes (MSD), Programa Reforma de Salud (PRS), Instituto Nacional de Estadística (INE) [Bolivia]. Encuesta Nacional de Demografía y Salud ENDSA 2008, Bolivia. Institute for resource development. Macro Systems Inc. Columbia, Maryland USA
[3] Ministerio da Saude [Brazil]. Pesquisa Nacional sobre Demografia e Saúde 1996, Brazil. Institute for resource development. Macro Systems Inc. Columbia, Maryland USA
[4] Kiely M, Sauvageau C, Dubé E, Deceuninck G, De Wals P. Virus du papillome humain : connaissances, croyances et comportements des femmes québécoises. Rev can santé publique 2011;102(4):303-7.
[5] Gobierno de Chile. Ministerio de Salud. Comisión Nacional del Sida/ ANRS, Francia. Estudio Nacional de Comportamiento Sexual 2000, Chile.
[6] ICF International, 2015. The DHS (Demographic and Health Surveys) Program STATcompiler. Funded by USAID. http://www.statcompiler.com. Accessed on March 16 2017.
[7] Costa Rica Social Security Institute and Division of Reproductive Health-Centers for Disease Control and Prevention (CDC). Costa Rica 1993 Reproductive Health Survey. Atlanta, United States: Centers for Disease Control and Prevention (CDC).
[8] Center for Studies of Population and Social Development (CEPAR) (Ecuador) and Division of Reproductive Health-Centers for Disease Control and Prevention (CDC). (2005) Ecuador Reproductive Health Survey 2004. Quito, Ecuador: CEPAR.
[9] Asociación Demográfica Salvadoreña (ADS), Division of Reproductive Health-Centers for Disease Control and Prevention (CDC). (2009) El Salvador Reproductive Health Survey 2008. San Salvador, El Salvador: ADS.
[10] Guatemala Ministry of Health and Social Assistance, University of Valle and Division of Reproductive Health-Centers for Disease Control and Prevention (CDC). Guatemala Reproductive Health Survey 2008-2009. Atlanta, United States: Centers for Disease Control and Prevention (CDC).
[11] Ministry of Health (MOH), Bureau of Statistics (BOS), and ICF Macro. 2010. Guyana Demographic and Health Survey 2009. Georgetown, Guyana: MOH, BOS, and ICF Macro.
[12] Report of Findings from HIV/AIDS Knowledge Attitudes and Behavior Survey, Jamaica 2012.
[13] Division of Reproductive Health-Centers for Disease Control and Prevention (CDC), National Institute for Development Information (Nicaragua). Nicaragua Reproductive Health Survey 2006-2007. Managua, Nicaragua: National Institute for Development Information (Nicaragua).
[14] Paraguay Center for Population Studies (CEPEP). Paraguay Reproductive Health Survey 2008. Asunción, Paraguay: Paraguayan Center for Population Studies (CEPEP).
[15] Centers for disease control and prevention (CDC):National Center for health statistics. Key Statistics from the National Survey of Family Growth. Accessed on March 16 2017. Available at: https://www.cdc.gov/nchs/nsfg/key_statistics/s.htm#sexualactivity

Table 47: Average number of sexual partners in Americas

Country	Study	Period of estimate	Year/period	Birth cohort	Male Mean(N)	Female Mean(N)	Total Mean (N)
-	-	-	-	-	-	-	-

Data accessed on 8 Aug 2013

Please refer to original source for methods of estimation

Table 48: Lifetime prevalence of anal intercourse among women in Americas

Country	Study	Year/period	Birth cohort	N surveyed	N sexual active	% among sexually active
-	-	-	-	-	-	-

Data accessed on 8 Aug 2013
Please refer to original source for methods of estimation

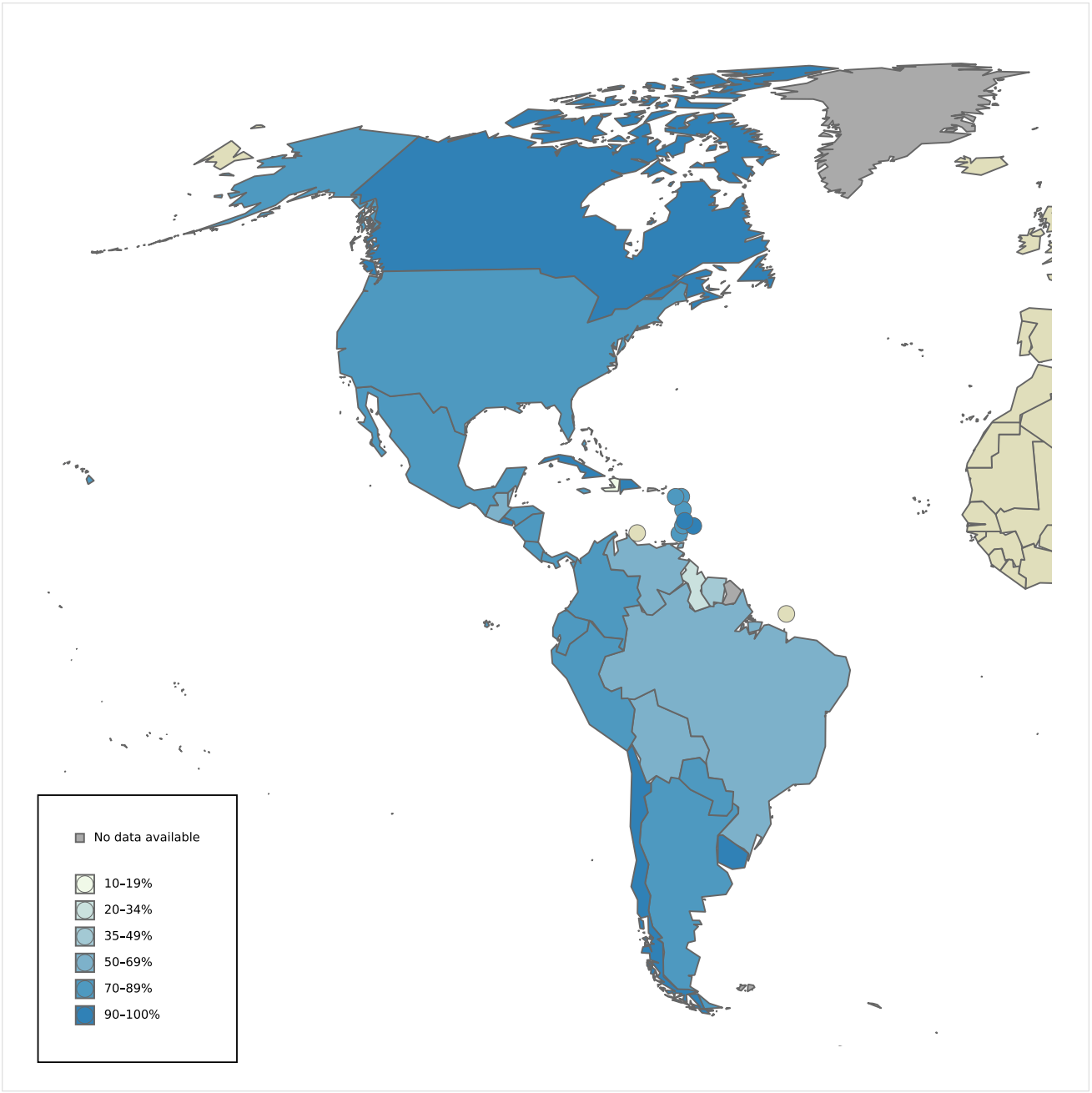
7 HPV preventive strategies

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 Americas.

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 65: Ever in lifetime cervical cancer screening coverage in women 25–65 years in 2019 by country in Americas

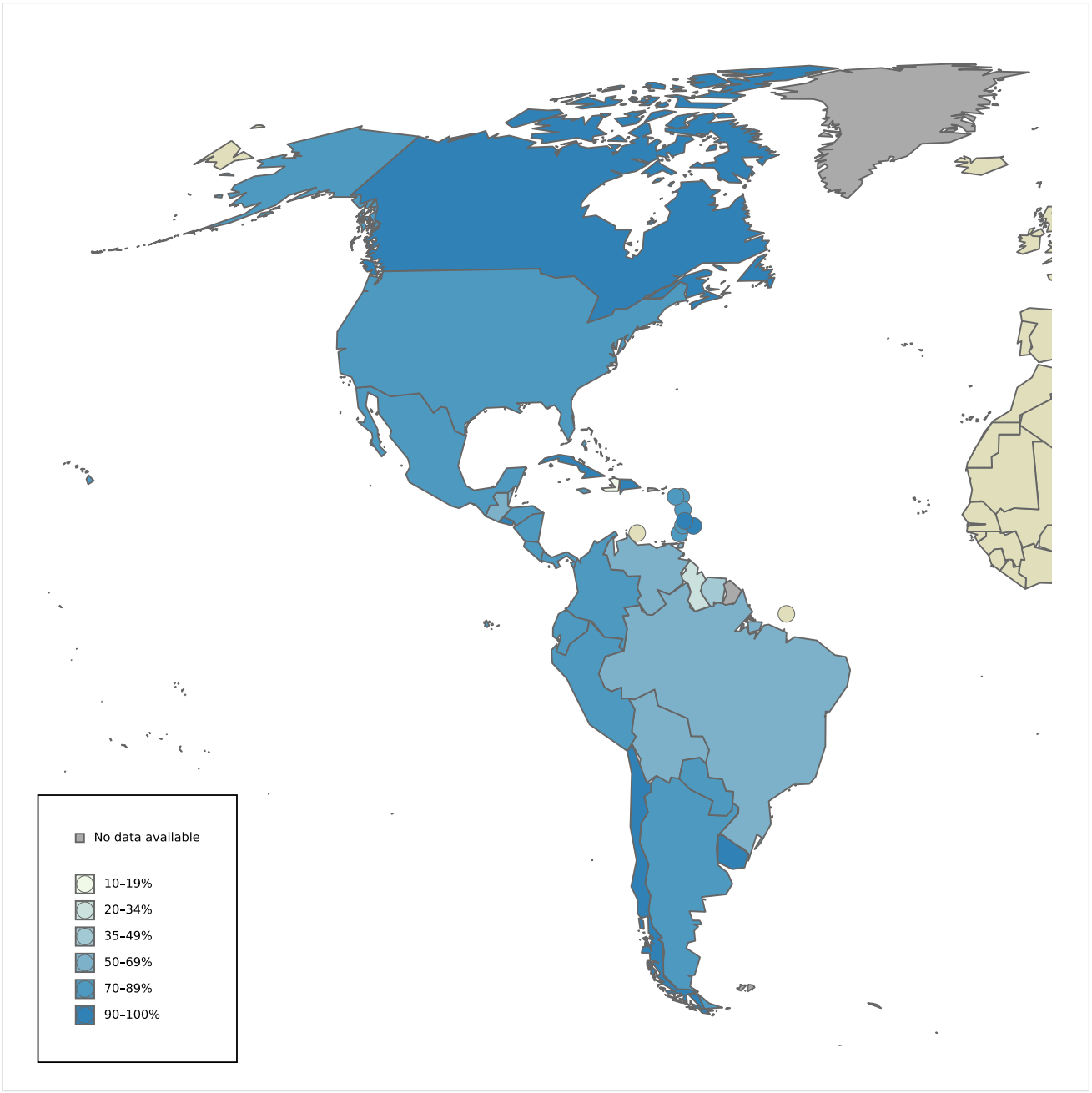


Data accessed on 31 Aug 2022

Data Sources:

Bruni L, Serrano B, Roura E, Alemany L, Cowan M, Herrero R, et al. Cervical cancer screening programmes and age-specific coverage estimates for 202 countries and territories worldwide: a review and synthetic analysis. Lancet Glob Health. 2022;10(8):e1115.

Figure 66: Ever in lifetime cervical cancer screening coverage in women 30-49 years in 2019 by country in Americas



Data accessed on 31 Aug 2022

Data Sources:

Bruni L, Serrano B, Roura E, Alemany L, Cowan M, Herrero R, et al. Cervical cancer screening programmes and age-specific coverage estimates for 202 countries and territories worldwide: a review and synthetic analysis. Lancet Glob Health. 2022;10(8):e1115.

Table 49: Main characteristics of cervical cancer screening in Americas

Country	Region	Existence of official national recommendations	Starting year of current recommendations	Active invitation to screening	Screening ages (years), primary screening test used, and screening interval or frequency of screenings
Antigua and Barbuda	Antigua and Barbuda	Yes	Unk	No	21-29 (cytology, 5 years); 30-65 (cytology and HPV test, 5 years)
Argentina	Argentina	Yes	2015	No	25-29 (cytology, 3 years); 30-64 (HPV test, 5 years)
Bahamas	Bahamas	Yes	Unk	No	>=18 (cytology, 1 year)
Barbados	Barbados	No	-	-	-
Belize	Belize	Yes	2016	No	25-49 (cytology and VIA, 3 years); >=50 (cytology, 3 years)

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Table 49 – continued from previous page

Country	Region	Existence of official national recommendations	Starting year of current recommendations	Active invitation to screening	Screening ages (years), primary screening test used, and screening interval or frequency of screenings
Bolivia (Plurinational State of)	Bolivia	Yes	2009	No	25-64 (cytology, 3 years); Unk (VIA, Unk years)
Brazil	Brazil	Yes	2016	No	25-64 (cytology, 3 years)
Canada	Nova Scotia	Yes	2021	Yes	25-70 (cytology, 3 years)
Canada	Yukon	Yes	2028	Yes	25-69 (cytology, 3 years)
Canada	Nuvanut	Yes	2027	Yes	21-69 (cytology, 3 years)
Canada	Saskatchewan	Yes	2026	Yes	21-69 (cytology, 3 years)
Canada	Quebec	Yes	2025	Yes	21-65 (cytology, 2/3 years)
Canada	Price Edward island	Yes	2024	Yes	25-65 (cytology, 3 years)
Canada	Ontario	Yes	2023	Yes	Unk (cytology, 3 years)
Canada	Northwest territories	Yes	2022	Yes	21-69 (cytology, 2 years)
Canada	Newfoundland and Labrador	Yes	2020	Yes	21-70 (cytology, 3 years)
Canada	New Brunswick	Yes	2019	Yes	21-69 (cytology, 2/3 years)
Canada	Manitoba	Yes	2018	Yes	21-70 (cytology, 3 years)
Canada	British Columbia	Yes	2017	Yes	25-69 (cytology, 3 years)
Canada	Alberta	Yes	2016	Yes	25-69 (cytology, 3 years)
Chile	Chile	Yes	2015	No	25-64 (cytology, 3 years); 30-64 (HPV test, 5 years)
Colombia	Colombia	Yes	2018	No	25-29 (cytology, 3 years); 30-65 (cytology, 3 years); 30-65 (HPV test, 5 years); 30-50 (VIA, 3 years)
Costa Rica	Costa Rica	Yes	2007	No	>=20 (cytology, 2 years)
Cuba	Cuba	Yes	2018	No	25-64 (cytology, 3 years)
Dominica	Dominica	Yes	Unk	No	18-65 (cytology, Unk years)
Dominican Republic	Dominican Republic	Yes	2010	No	35-64 (cytology, 3 years)
Ecuador	Ecuador	Yes	2017	No	21-65 (cytology, 3 years); 30-65 (HPV test, 5 years)
El Salvador	El Salvador	Yes	2015	No	20-29 (cytology, 2 years); 30-59 (cytology, 2 years); 30-59 (HPV test, 5 years); 60-65 (cytology, 2 years)
Grenada	Grenada	Yes	Unk	No	>=21 (cytology, 3 years)
Guatemala	Guatemala	Yes	2020	No	25-29 (cytology, 3 years); 50-54 (cytology, 3 years); 30-49 (cytology, 3 years); 30-39 (HPV test, 5 years); 40-49 (VIA, 3 years)
Guyana	Guyana	Yes	2010	No	25-49 (cytology and VIA, 3 years)
Haiti	Haiti	Yes	2019	No	35-59 (HPV test, 5 years)
Honduras	Honduras	Yes	2015	No	25-29 (VIA, 3 years); 30-64 (HPV test, 5 years)
Jamaica	Jamaica	Yes	2011	No	18-65 (cytology, 3 years)
Mexico	Mexico	Yes	2013	No	25-64 (cytology, 3 years); 35-64 (HPV test, 5 years)
Nicaragua	Nicaragua	Yes	2010	No	25-64 (cytology, 3 years); 30-50 (VIA, 1 year)
Panama	Panama	Yes	2017	No	21-70 (cytology, 2 years); 25-64 (HPV test, 3 years); 30-64 (cytology and HPV test, 3 years); Unk (VIA, unk)
Paraguay	Paraguay	Yes	2017	No	21-65 (cytology, 3 years); 30-65 (HPV test, 5 years)
Peru	Peru	Yes	2017	No	25-64 (cytology, 2 years); 30-49 (VIA, 2 years); 30-49 (HPV test, 5 years);
Saint Kitts and Nevis	St Kitts and Nevis	Yes	Unk	No	18-55 (cytology, 3 years)

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Table 49 – continued from previous page

Country	Region	Existence of official national recommendations	Starting year of current recommendations	Active invitation to screening	Screening ages (years), primary screening test used, and screening interval or frequency of screenings
Saint Lucia	St Lucia	Yes	Unk	No	18-55 (cytology, 1 year)
Saint Vincent and the Grenadines	St Vincent and The Grenadines	Yes	Unk	No	18-60 (cytology and VIA, 3 years)
Suriname	Suriname	No	-	-	-
Trinidad and Tobago	Trinidad and Tobago	Yes	Unk	No	21-65 (cytology, 3 years)
United States of America	United States of America	Yes	2018	No	21-29 (cytology, 3 years); 30-65 (cytology, 3 years); 30-65 (HPV test, 5 years); 30-65 (cytology OR HPV test, 5 years)
Uruguay	Urugay	Yes	2014	No	21-69 (cytology, 3 years)
Venezuela (Bolivarian Republic of)	Venezuela	Yes	Unk	No	25-64 (cytology, 3 years)

Data accessed on 31 Aug 2022

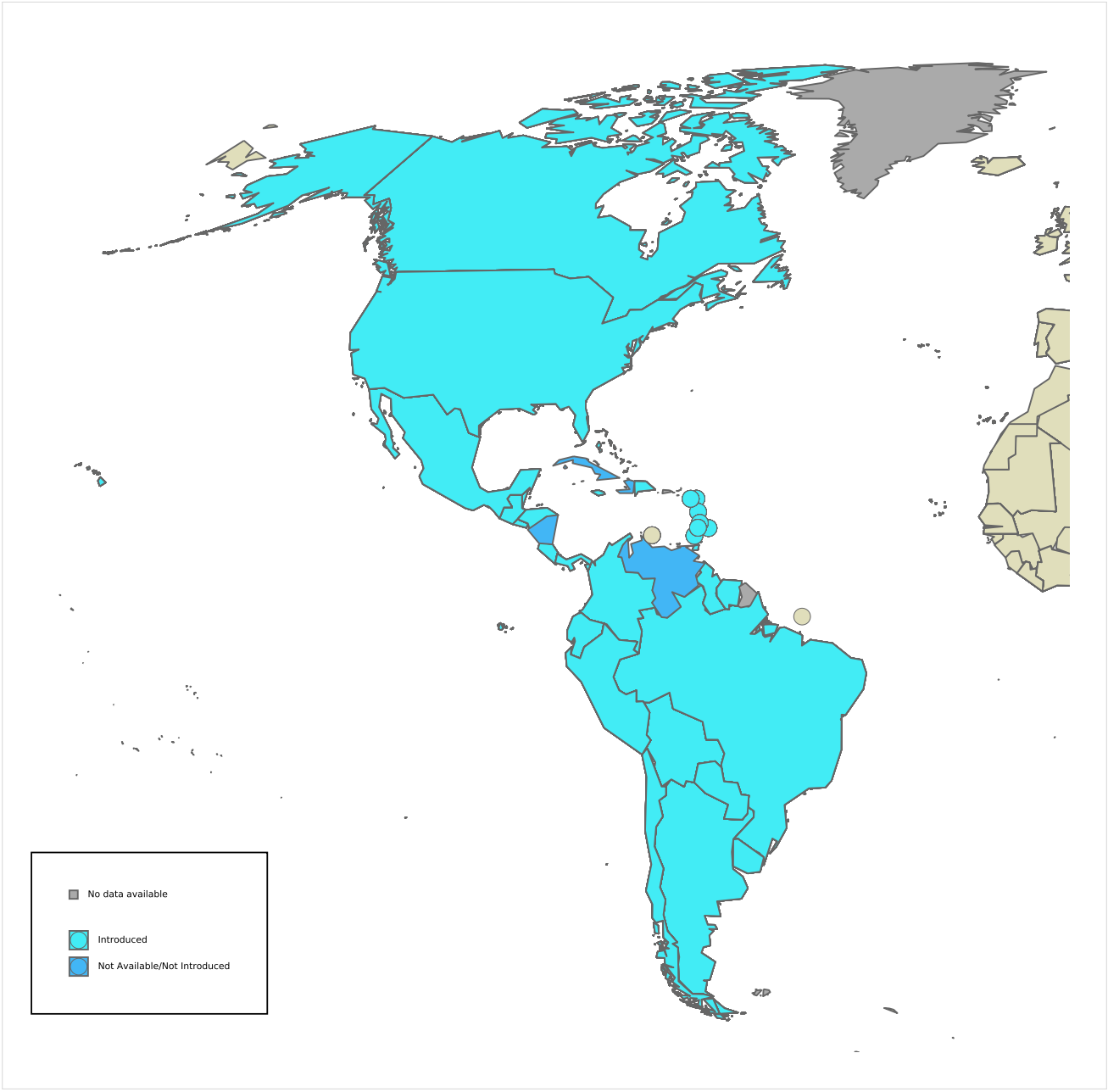
Data Sources:

Bruni L, Serrano B, Roura E, Alemany L, Cowan M, Herrero R, et al. Cervical cancer screening programmes and age-specific coverage estimates for 202 countries and territories worldwide: a review and synthetic analysis. Lancet Glob Health. 2022;10(8):e1115.

7.2 HPV vaccination

7.2.1 HPV vaccine licensure and introduction

Figure 67: Countries with HPV vaccine in the national immunization programme in Americas



Data accessed on 24 Oct 2022

Data Sources:

Human papillomavirus (HPV) vaccination coverage. World Health Organization. 2022. Available from: https://immunizationdata.who.int/pages/coverage/hpv.html, accessed [24 Oct 2022]

Bruni L, Saura-Lázaro A, Montoliu A, Brotons M, Alemany L, Diallo MS, et al. HPV vaccination introduction worldwide and WHO and UNICEF estimates of national HPV immunization coverage 2010-2019. Prev Med. 2021;144(106399):106399.

Table 50: HPV vaccination policies in Americas

Country	Sex	Programme	Introduction year	Year of estimation of HPV vaccination coverage	HPV coverage – first dose (%)	HPV coverage – last dose (%)
Antigua and Barbuda	Female	Introduced	2018	2021	2	-
Antigua and Barbuda	Male	Introduced	2018	2021	1	-
Argentina	Female	Introduced	2011	2021	53	79
Argentina	Male	Introduced	2017	2021	42	67
Bahamas	Female	Introduced	2015	2021	-	-
Bahamas	Male	Introduced	2015	2021	-	-
Barbados	Female	Introduced	2014	2021	28	39
Barbados	Male	Introduced	2017	2021	26	36
Belize	Female	Introduced	2016	2021	4	5
Belize	Male	Introduced	2019	2021	4	5
Bolivia (Plurinational State of)	Female	Introduced	2017	2021	36	60
Brazil	Female	Introduced	2014	2021	67	81
Brazil	Male	Introduced	2017	2021	44	58
Canada	Female	Introduced	2008	2021	87	87
Canada	Male	Introduced	2017	2021	73	73
Chile	Female	Introduced	2014	2021	57	67
Chile	Male	Introduced	2019	2021	60	70
Colombia	Female	Introduced	2012	2021	11	39
Costa Rica	Female	Introduced	2019	2021	59	77
Dominica	Female	Introduced	2019	2021	68	68
Dominica	Male	Introduced	2019	2021	68	68
Dominican Republic	Female	Introduced	2017	2021	8	27
Dominican Republic	Male	Introduced	2019	2021	-	-
Ecuador	Female	Introduced	2014	2021	3	30
El Salvador	Female	Introduced	2020	2021	24	43
Grenada	Female	Introduced	2019	2021	-	-
Guatemala	Female	Introduced	2018	2021	15	34
Guyana	Female	Introduced	2011	2021	2	3
Guyana	Male	Introduced	2019	2021	2	3
Honduras	Female	Introduced	2016	2021	53	75
Jamaica	Female	Introduced	2017	2021	2	1
Mexico	Female	Introduced	2012	2021	1	1
Panama	Female	Introduced	2008	2021	-	-
Panama	Male	Introduced	2016	2021	-	-
Paraguay	Female	Introduced	2013	2021	17	23
Peru	Female	Introduced	2011	2021	53	-
Saint Kitts and Nevis	Female	Introduced	2019	2021	84	71
Saint Kitts and Nevis	Male	Introduced	2019	2021	84	74
Saint Lucia	Female	Introduced	2019	2021	62	83
Saint Lucia	Male	Introduced	2019	2021	56	76
Saint Vincent and the Grenadines	Female	Introduced	2017	2021	-	-
Suriname	Female	Introduced	2013	2021	2	3
Trinidad and Tobago	Female	Introduced	2013	2021	8	19
Trinidad and Tobago	Male	Introduced	2015	2021	8	19
United States of America	Female	Introduced	2006	2021	48	71
United States of America	Male	Introduced	2011	2021	43	68
Uruguay	Female	Introduced	2013	2021	17	55
Uruguay	Male	Introduced	2019	2021	11	44

Data accessed on 24 Oct 2022

Data Sources:

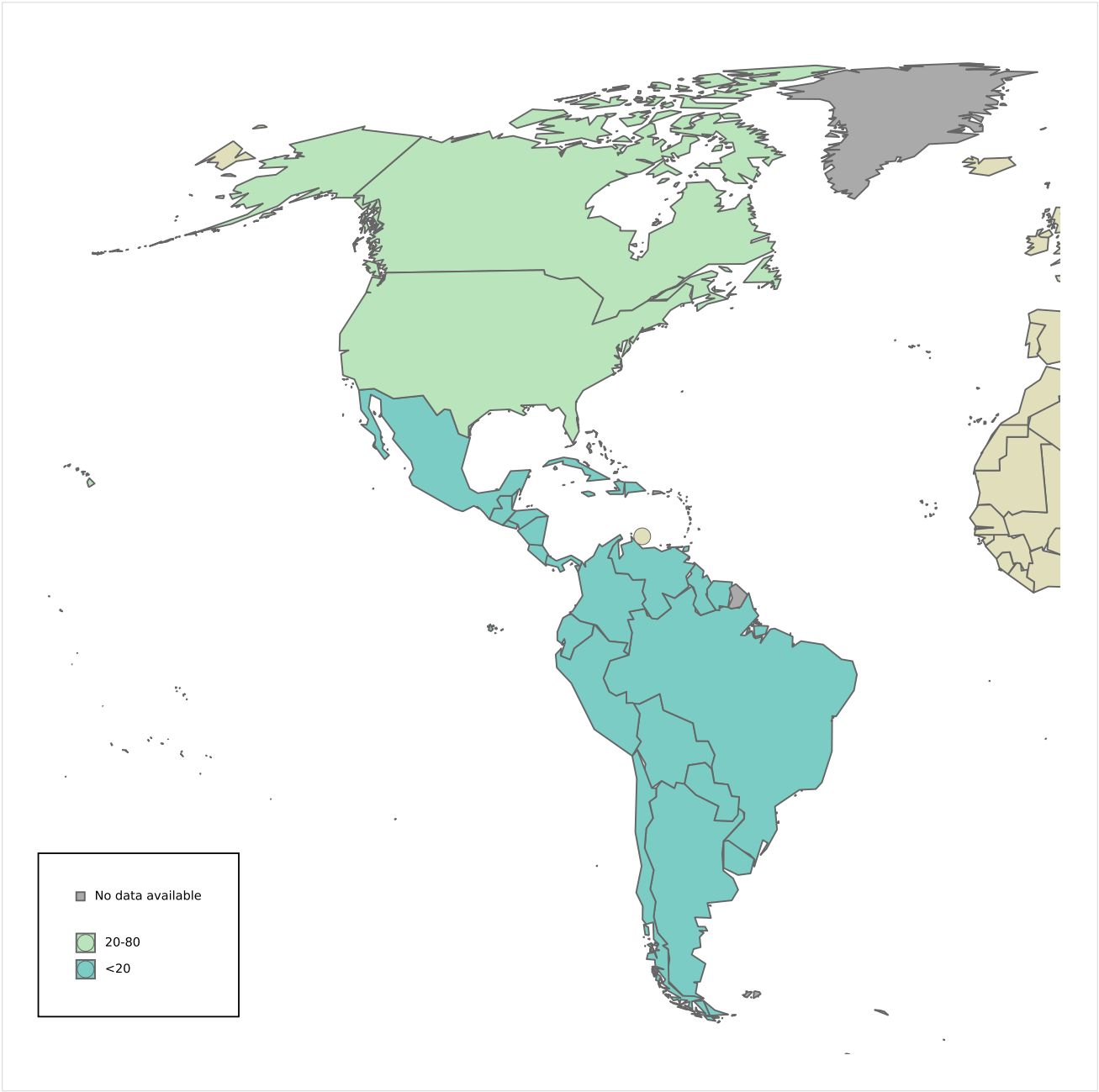
Human papillomavirus (HPV) vaccination coverage. World Health Organization. 2022. Available from: https://immunizationdata.who.int/pages/coverage/hpv.html, accessed [24 Oct 2022]

Bruni L, Saura-Lázaro A, Montoliu A, Brotons M, Alemany L, Diallo MS, et al. HPV vaccination introduction worldwide and WHO and UNICEF estimates of national HPV immunization coverage 2010-2019. Prev Med. 2021;144(106399):106399.

8 Protective factors for cervical cancer

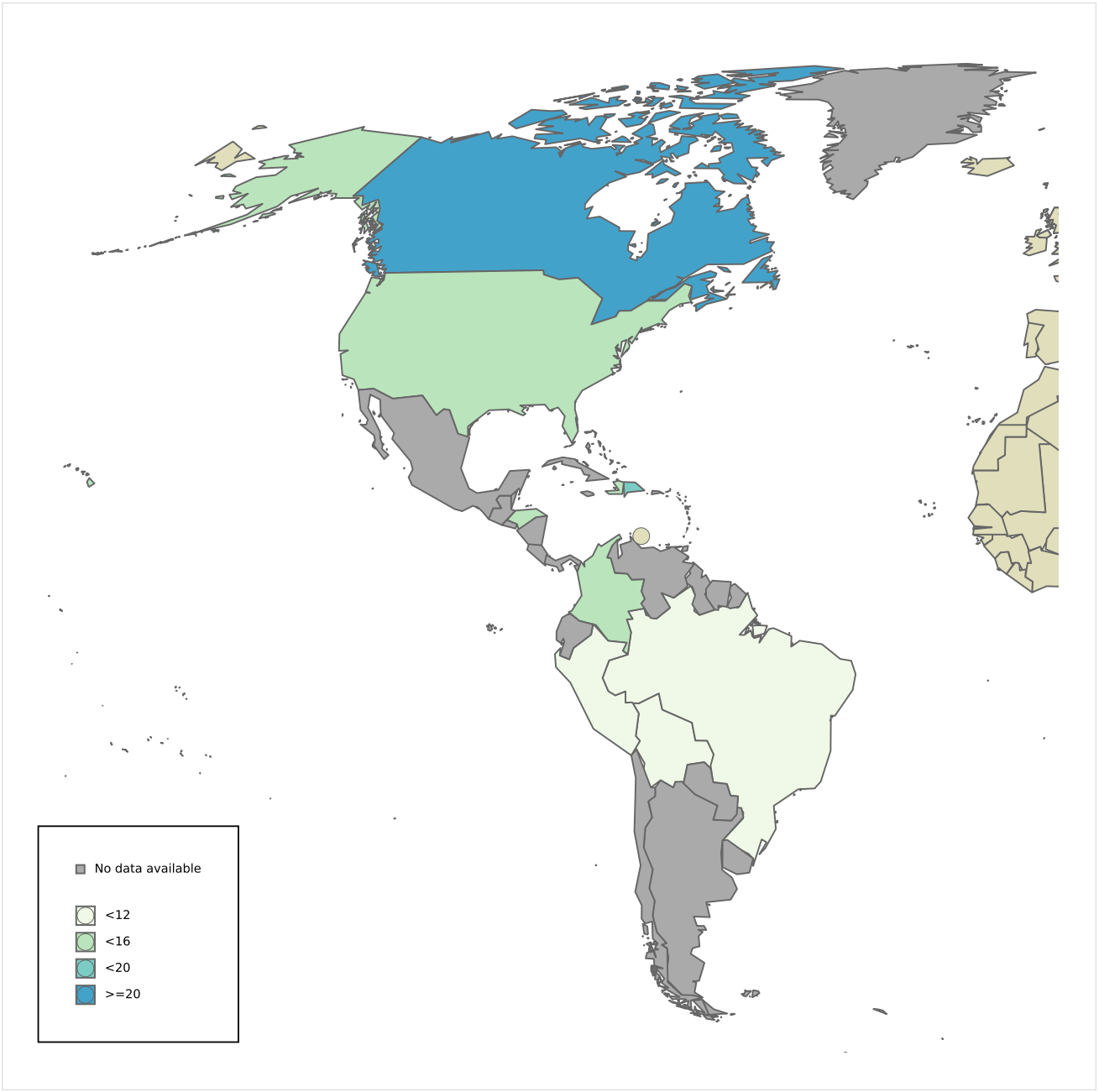
Male circumcision and the use of condoms have shown a significant protective effect against HPV transmission.

Figure 68: Prevalence of male circumcision in Americas



Data accessed on 31 Aug 2015
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.

Figure 69: Prevalence of condom use in Americas



Data accessed on 16 Mar 2017

Please refer to original source for methods of estimation

[a] Year of estimation: not reported

[b] The main sources of data were surveys by the MEASURE DHS (Demographic and Health Surveys) project and published estimates from Reproductive National Health Surveys.

[c] Fifteen-year-olds teenagers only were asked whether they had ever had sexual intercourse.

[d] Year of estimation: 2013-2014

[e] Year of estimation: 2000

[f] Percentage of all 15- to 19-year-olds who report having had sex before the age of 15 years.

[g] Year of estimation: 2013

[h] Year of estimation: 2011-2012

[i] Year of estimation: 2012

[j] Year of estimation: 2011-2013

Data Sources:

[1] 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.

[2] 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/HSBC-No.7-Growing-up-unequal-Full-Report.pdf?ua=1

[3] ICF International, 2015. The DHS (Demographic and Health Surveys) Program STATcompiler. Funded by USAID. http://www.statcompiler.com. Accessed on March 16 2017.

[4] 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

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 51: 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 2014. Reference publications: 1) Bruni L, J Infect Dis 2010; 202: 1789. 2) De Sanjosé S, Lancet Infect Dis 2007; 7: 453
Argentina	Matos E, Sex Transm Dis 2003; 30: 593, Abba MC, Rev Argent Microbiol 2003; 35: 74 ǀ Badano I, Rev Argent Microbiol 2011; 43: 263 ǀ Chouhy D, J Med Virol 2013; 85: 655 ǀ Matos E, Sex Transm Dis 2003; 30: 593
Belize	Cathro HP, Hum Pathol 2009; 40: 942
Bolivia	Cervantes J, Rev Inst Med Trop Sao Paulo 2003; 45: 131
Brazil	Augusto EF, Rev Lat Am Enfermagem 2014; 22: 100 ǀ Carestiato FN, Braz J Infect Dis 2006; 10: 331 ǀ Cassel AP, Genet Mol Biol 2014; 37: 360 ǀ Coser J, Genet Mol Res 2013; 12: 4276 ǀ da Silva MC, Arch Gynecol Obstet 2012; 286: 1015 ǀ de Abreu AL, Am J Trop Med Hyg 2012; 87: 1149 ǀ de Oliveira GR, Rev Bras Ginecol Obstet 2013; 35: 226 ǀ Entiauspe LG, Braz J Microbiol 2014; 45: 689 ǀ Fernandes JV, Int J Gynaecol Obstet 2009; 105: 21 ǀ Figueiredo Alves RR, BMC Public Health 2013; 13: 1041 ǀ Franco EL, J Infect Dis 1995; 172: 756 ǀ Girianelli VR, Rev Bras Ginecol Obstet 2010; 32: 39 ǀ Lippman SA, Int J STD AIDS 2010; 21: 105 ǀ Lorenzato F, Int J Gynecol Cancer 2000; 10: 143 ǀ Lorenzi AT, Gynecol Oncol 2013; 131: 131 ǀ Miranda PM, Genet Mol Res 2012; 11: 1752 ǀ Muñoz N, Sex Transm Dis 1996; 23: 504 ǀ Noronha VL, DST J Bras Doenças Sex Transm 2005; 17: 49 ǀ Oliveira FA, Mem Inst Oswaldo Cruz 2007; 102: 751 ǀ Oliveira LH, Rev Soc Bras Med Trop 2010; 43: 4 ǀ Pinto Dda S, Cad Saude Publica 2011; 27: 769 ǀ Rocha DA, Infect Dis Obstet Gynecol 2013; 2013: 514859 ǀ Roteli-Martins CM, Int J Gynecol Pathol 2011; 30: 173 ǀ Silva KC, Mem Inst Oswaldo Cruz 2009; 104: 885 ǀ Tamegão-Lopes BP, Infect Agents Cancer 2014; 9: 25 ǀ Trottier H, Cancer Epidemiol Biomarkers Prev 2006; 15: 1274, da Silva MC, Arch Gynecol Obstet 2012; 286: 1015 ǀ Fernandes JV, Int J Gynaecol Obstet 2009; 105: 21 ǀ Miranda PM, Genet Mol Res 2012; 11: 1752 ǀ Muñoz N, Sex Transm Dis 1996; 23: 504 ǀ Noronha VL, DST J Bras Doenças Sex Transm 2005; 17: 49 ǀ Rama CH, Rev Saude Publica 2008; 42: 123 ǀ Trottier H, Cancer Epidemiol Biomarkers Prev 2006; 15: 1274, Augusto EF, Rev Lat Am Enfermagem 2014; 22: 100 ǀ Cassel AP, Genet Mol Biol 2014; 37: 360 ǀ da Silva MC, Arch Gynecol Obstet 2012; 286: 1015 ǀ de Abreu AL, Am J Trop Med Hyg 2012; 87: 1149 ǀ Fernandes J, Ann Med Health Sci Res 2013; 3: 504 ǀ Girianelli VR, Rev Bras Ginecol Obstet 2010; 32: 39 ǀ Lorenzato F, Int J Gynecol Cancer 2000; 10: 143 ǀ Miranda PM, Genet Mol Res 2012; 11: 1752 ǀ Muñoz N, Sex Transm Dis 1996; 23: 504 ǀ Noronha VL, DST J Bras Doenças Sex Transm 2005; 17: 49 ǀ Rocha DA, Infect Dis Obstet Gynecol 2013; 2013: 514859 ǀ Tamegão-Lopes BP, Infect Agents Cancer 2014; 9: 25, Augusto EF, Rev Lat Am Enfermagem 2014; 22: 100 ǀ Carestiato FN, Braz J Infect Dis 2006; 10: 331 ǀ Cassel AP, Genet Mol Biol 2014; 37: 360 ǀ Coser J, Genet Mol Res 2013; 12: 4276 ǀ da Silva MC, Arch Gynecol Obstet 2012; 286: 1015 ǀ de Abreu AL, Am J Trop Med Hyg 2012; 87: 1149 ǀ Entiauspe LG, Braz J Microbiol 2014; 45: 689 ǀ Fernandes JV, Int J Gynaecol Obstet 2009; 105: 21 ǀ Girianelli VR, Rev Bras Ginecol Obstet 2010; 32: 39 ǀ Lippman SA, Int J STD AIDS 2010; 21: 105 ǀ Lorenzato F, Int J Gynecol Cancer 2000; 10: 143 ǀ Lorenzi AT, Gynecol Oncol 2013; 131: 131 ǀ Miranda PM, Genet Mol Res 2012; 11: 1752 ǀ Muñoz N, Sex Transm Dis 1996; 23: 504 ǀ Noronha VL, DST J Bras Doenças Sex Transm 2005; 17: 49 ǀ Oliveira LH, Rev Soc Bras Med Trop 2010; 43: 4 ǀ Rocha DA, Infect Dis Obstet Gynecol 2013; 2013: 514859 ǀ Silva KC, Mem Inst Oswaldo Cruz 2009; 104: 885 ǀ Tamegão-Lopes BP, Infect Agents Cancer 2014; 9: 25 ǀ Trottier H, Cancer Epidemiol Biomarkers Prev 2006; 15: 1274
Canada	Demers AA, Chronic Dis Inj Can 2012; 32: 177 ǀ Jiang Y, Infect Agents Cancer 2013; 8: 25 ǀ Kapala J, J Virol Methods 2007; 142: 223 ǀ Louvanto K, Am J Obstet Gynecol 2014; 210: 474.e1 ǀ Mayrand MH, Int J Cancer 2006; 119: 615 ǀ Moore RA, Cancer Causes Control 2009; 20: 1387 ǀ Ogilvie GS, Vaccine 2013; 31: 1129 ǀ Richardson H, Cancer Epidemiol Biomarkers Prev 2003; 12: 485 ǀ Roteli-Martins CM, Int J Gynecol Pathol 2011; 30: 173 ǀ Sellors JW, CMAJ 2000; 163: 503 ǀ Young TK, Sex Transm Dis 1997; 24: 293, Jiang Y, J Infect Public Health 2011; 4: 219 ǀ Kapala J, J Virol Methods 2007; 142: 223 ǀ Richardson H, Cancer Epidemiol Biomarkers Prev 2003; 12: 485, Demers AA, Chronic Dis Inj Can 2012; 32: 177 ǀ Jiang Y, Infect Agents Cancer 2013; 8: 25 ǀ Moore RA, Cancer Causes Control 2009; 20: 1387, Demers AA, Chronic Dis Inj Can 2012; 32: 177 ǀ Jiang Y, Infect Agents Cancer 2013; 8: 25 ǀ Kapala J, J Virol Methods 2007; 142: 223 ǀ Mayrand MH, Int J Cancer 2006; 119: 615 ǀ Moore RA, Cancer Causes Control 2009; 20: 1387 ǀ Richardson H, Cancer Epidemiol Biomarkers Prev 2003; 12: 485 ǀ Sellors JW, CMAJ 2000; 163: 503 ǀ Young TK, Sex Transm Dis 1997; 24: 293
Chile	Ferreccio C, Cancer Epidemiol Biomarkers Prev 2004; 13: 2271 ǀ Ferreccio C, Int J Cancer 2013; 132: 916 ǀ Montalvo MT, Oncol Lett 2011; 2: 701, Ferreccio C, BMC Public Health 2008; 8: 78 ǀ Ferreccio C, Cancer Epidemiol Biomarkers Prev 2004; 13: 2271 ǀ Ferreccio C, Int J Cancer 2013; 132: 916 ǀ Montalvo MT, Oncol Lett 2011; 2: 701, Ferreccio C, Cancer Epidemiol Biomarkers Prev 2004; 13: 2271
Colombia	Molano M, Br J Cancer 2002; 87: 324 ǀ Muñoz N, Sex Transm Dis 1996; 23: 504, Leon S, Sex Transm Dis 2009; 36: 290 ǀ Molano M, Br J Cancer 2002; 87: 324 ǀ Muñoz N, Sex Transm Dis 1996; 23: 504 ǀ Soto-De Leon S, PLoS ONE 2011; 6: e14705

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Country	Study
Costa Rica	Herrero R, J Infect Dis 2005; 191: 1796, Herrero R, J Infect Dis 2005; 191: 1796 ǀ Safaeian M, J Clin Microbiol 2007; 45: 1447
Cuba	Soto Y, J Low Genit Tract Dis 2014; 18: 210
Ecuador	Brown CR, Braz J Med Biol Res 2009; 42: 629
Guatemala	Vallès X, Int J Cancer 2009; 125: 1161
Guyana	Kightlinger RS, Am J Obstet Gynecol 2010; 202: 626.e1
Honduras	Ferrera A, Int J Cancer 1999; 82: 799 ǀ Tábora N, Am J Trop Med Hyg 2005; 73: 50, Ferrera A, Int J Cancer 1999; 82: 799 ǀ Tábora N, Am J Trop Med Hyg 2005; 73: 50 ǀ Tábora N, Cancer Causes Control 2009; 20: 1663
Jamaica	Lewis-Bell K, Rev Panam Salud Publica 2013; 33: 159 ǀ Watt A, Infect Agents Cancer 2009; 4 Suppl 1: S11, Lewis-Bell K, Rev Panam Salud Publica 2013; 33: 159
Mexico	Carrillo-García A, Gynecol Oncol 2014; 134: 534 ǀ Giuliano AR, Cancer Epidemiol Biomarkers Prev 2001; 10: 1129 ǀ Giuliano AR, Int J STD AIDS 2005; 16: 247 ǀ Hernández-Avila M, Arch Med Res 1997; 28: 265 ǀ Hernández-Girón C, Sex Transm Dis 2005; 32: 613 ǀ Illades-Aguiar B, Cancer Detect Prev 2009; 32: 300 ǀ Illades-Aguiar B, Gynecol Oncol 2010; 117: 291 ǀ Lazcano-Ponce E, Cancer Causes Control 2010; 21: 1693 ǀ Lazcano-Ponce E, Int J Cancer 2001; 91: 412 ǀ López Rivera MG, Infect Dis Obstet Gynecol 2012; 2012: 384758 ǀ Monroy OL, J Clin Virol 2010; 47: 43 ǀ Piña-Sánchez P, Int J Gynecol Cancer 2006; 16: 1041 ǀ Rojo Contreras W, Ginecol Obstet Mex 2008; 76: 9 ǀ Salmerón J, Cancer Causes Control 2003; 14: 505 ǀ Sánchez-Anguiano LF, BMC Infect Dis 2006; 6: 27 ǀ Velázquez-Márquez N, Braz J Microbiol 2010; 41: 749, Giuliano AR, Int J STD AIDS 2005; 16: 247 ǀ Illades-Aguiar B, Gynecol Oncol 2010; 117: 291 ǀ Lazcano-Ponce E, Int J Cancer 2001; 91: 412 ǀ Piña-Sánchez P, Int J Gynecol Cancer 2006; 16: 1041 ǀ Sánchez-Anguiano LF, BMC Infect Dis 2006; 6: 27, Carrillo-García A, Gynecol Oncol 2014; 134: 534 ǀ Giuliano AR, Cancer Epidemiol Biomarkers Prev 2001; 10: 1129 ǀ Giuliano AR, Int J STD AIDS 2005; 16: 247 ǀ Illades-Aguiar B, Cancer Detect Prev 2009; 32: 300 ǀ Illades-Aguiar B, Gynecol Oncol 2010; 117: 291 ǀ Lazcano-Ponce E, Int J Cancer 2001; 91: 412 ǀ López Rivera MG, Infect Dis Obstet Gynecol 2012; 2012: 384758 ǀ Monroy OL, J Clin Virol 2010; 47: 43 ǀ Piña-Sánchez P, Int J Gynecol Cancer 2006; 16: 1041 ǀ Rojo Contreras W, Ginecol Obstet Mex 2008; 76: 9 ǀ Sánchez-Anguiano LF, BMC Infect Dis 2006; 6: 27 ǀ Velázquez-Márquez N, Braz J Microbiol 2010; 41: 749, Carrillo-García A, Gynecol Oncol 2014; 134: 534 ǀ Giuliano AR, Cancer Epidemiol Biomarkers Prev 2001; 10: 1129 ǀ Giuliano AR, Int J STD AIDS 2005; 16: 247 ǀ Illades-Aguiar B, Cancer Detect Prev 2009; 32: 300 ǀ Illades-Aguiar B, Gynecol Oncol 2010; 117: 291 ǀ Lazcano-Ponce E, Cancer Causes Control 2010; 21: 1693 ǀ Lazcano-Ponce E, Int J Cancer 2001; 91: 412 ǀ López Rivera MG, Infect Dis Obstet Gynecol 2012; 2012: 384758 ǀ Monroy OL, J Clin Virol 2010; 47: 43 ǀ Piña-Sánchez P, Int J Gynecol Cancer 2006; 16: 1041 ǀ Rojo Contreras W, Ginecol Obstet Mex 2008; 76: 9 ǀ Salmerón J, Cancer Causes Control 2003; 14: 505 ǀ Sánchez-Anguiano LF, BMC Infect Dis 2006; 6: 27 ǀ Velázquez-Márquez N, Braz J Microbiol 2010; 41: 749
Nicaragua	Jeronimo J, Int J Gynecol Cancer 2014; 24: 576
Paraguay	Rolón PA, Int J Cancer 2000; 85: 486, Mendoza LP, J Med Virol 2011; 83: 1351 ǀ Rolón PA, Int J Cancer 2000; 85: 486, Mendoza LP, J Med Virol 2011; 83: 1351 ǀ Rolón PA, Int J Cancer 2000; 85: 486 ǀ Torres LM, Braz J Infect Dis 2009; 13: 203
Peru	García PJ, Bull World Health Organ 2004; 82: 483 ǀ Santos C, Br J Cancer 2001; 85: 966, García PJ, Bull World Health Organ 2004; 82: 483 ǀ Martorell M, Genet Mol Res 2012; 11: 2099 ǀ Santos C, Br J Cancer 2001; 85: 966, Almonte M, Int J Cancer 2007; 121: 796 ǀ García PJ, Bull World Health Organ 2004; 82: 483 ǀ Martorell M, Genet Mol Res 2012; 11: 2099 ǀ Santos C, Br J Cancer 2001; 85: 966 ǀ Silva-Caso W, Asian Pac J Trop Med 2014; 7S1: S121
Trinidad and Tobago	Ragin CC, Biomarkers 2007; 12: 510

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Country	Study
United States of America	Castle PE, J Clin Oncol 2012; 30: 3044 ǀ Castle PE, Lancet Oncol 2011; 12: 880 ǀ Castle PE, Obstet Gynecol 2009; 113: 595 ǀ Chaturvedi AK, J Med Virol 2005; 75: 105 ǀ Cibas ES, Gynecol Oncol 2007; 104: 702 ǀ Datta SD, Ann Intern Med 2008; 148: 493 ǀ Dunne EF, Cancer Causes Control 2013; 24: 403 ǀ Dunne EF, JAMA 2007; 297: 813 ǀ Evans MF, Cancer 2006; 106: 1054 ǀ Giuliano AR, Cancer Epidemiol Biomarkers Prev 1999; 8: 615 ǀ Giuliano AR, Cancer Epidemiol Biomarkers Prev 2001; 10: 1129 ǀ Goodman MT, Cancer Res 2008; 68: 8813 ǀ Hernandez BY, Nutr Cancer 2004; 49: 109 ǀ Insinga RP, Cancer Epidemiol Biomarkers Prev 2007; 16: 709 ǀ Kahn JA, Obstet Gynecol 2008; 111: 1103 ǀ Khanna N, Int J Gynecol Cancer 2007; 17: 615 ǀ Kotloff KL, Sex Transm Dis 1998; 25: 243 ǀ Moscicki AB, JAMA 2001; 285: 2995 ǀ Schiffman M, Cancer Epidemiol Biomarkers Prev 2011; 20: 1398 ǀ Sherman ME, J Natl Cancer Inst 2003; 95: 46 ǀ Smith EM, Cancer Detect Prev 2003; 27: 472 ǀ Smith EM, Int J Gynaecol Obstet 2004; 87: 131 ǀ Swan DC, J Clin Microbiol 1999; 37: 1030 ǀ Tarkowski TA, J Infect Dis 2004; 189: 46 ǀ Wheeler CM, Int J Cancer 2013; 132: 198 ǀ Winer RL, Am J Epidemiol 2003; 157: 218 ǀ Zhao C, Cancer 2007; 111: 292, Castle PE, Obstet Gynecol 2009; 113: 595 ǀ Cibas ES, Gynecol Oncol 2007; 104: 702 ǀ Datta SD, Ann Intern Med 2008; 148: 493 ǀ Evans MF, Cancer 2006; 106: 1054 ǀ Hernandez BY, Nutr Cancer 2004; 49: 109 ǀ Schiffman M, Cancer Epidemiol Biomarkers Prev 2011; 20: 1398 ǀ Smith EM, Int J Gynaecol Obstet 2004; 87: 131 ǀ Swan DC, J Clin Microbiol 1999; 37: 1030 ǀ Wheeler CM, Int J Cancer 2013; 132: 198 ǀ Wideroff L, Nutr Cancer 1998; 30: 130 ǀ Zhao C, Cancer 2007; 111: 292, Chaturvedi AK, J Med Virol 2005; 75: 105 ǀ Cibas ES, Gynecol Oncol 2007; 104: 702 ǀ Dunne EF, Cancer Causes Control 2013; 24: 403 ǀ Evans MF, Cancer 2006; 106: 1054 ǀ Giuliano AR, Cancer Epidemiol Biomarkers Prev 2001; 10: 1129 ǀ Goodman MT, Cancer Res 2008; 68: 8813 ǀ Hernandez BY, Nutr Cancer 2004; 49: 109 ǀ Insinga RP, Cancer Epidemiol Biomarkers Prev 2007; 16: 709 ǀ Moscicki AB, JAMA 2001; 285: 2995 ǀ Schiffman M, Cancer Epidemiol Biomarkers Prev 2011; 20: 1398 ǀ Swan DC, J Clin Microbiol 1999; 37: 1030 ǀ Wheeler CM, Int J Cancer 2013; 132: 198 ǀ Wideroff L, Nutr Cancer 1998; 30: 130, Castle PE, Lancet Oncol 2011; 12: 880 ǀ Castle PE, Obstet Gynecol 2009; 113: 595 ǀ Chaturvedi AK, J Med Virol 2005; 75: 105 ǀ Cibas ES, Gynecol Oncol 2007; 104: 702 ǀ Datta SD, Ann Intern Med 2008; 148: 493 ǀ Dunne EF, Cancer Causes Control 2013; 24: 403 ǀ Evans MF, Cancer 2006; 106: 1054 ǀ Giuliano AR, Cancer Epidemiol Biomarkers Prev 1999; 8: 615 ǀ Giuliano AR, Cancer Epidemiol Biomarkers Prev 2001; 10: 1129 ǀ Goodman MT, Cancer Res 2008; 68: 8813 ǀ Hernandez BY, Nutr Cancer 2004; 49: 109 ǀ Insinga RP, Cancer Epidemiol Biomarkers Prev 2007; 16: 709 ǀ Khanna N, Int J Gynecol Cancer 2007; 17: 615 ǀ Kotloff KL, Sex Transm Dis 1998; 25: 243 ǀ Moscicki AB, JAMA 2001; 285: 2995 ǀ Schiffman M, Cancer Epidemiol Biomarkers Prev 2011; 20: 1398 ǀ Sherman ME, J Natl Cancer Inst 2003; 95: 46 ǀ Smith EM, Cancer Detect Prev 2003; 27: 472 ǀ Smith EM, Int J Gynaecol Obstet 2004; 87: 131 ǀ Swan DC, J Clin Microbiol 1999; 37: 1030 ǀ Tarkowski TA, J Infect Dis 2004; 189: 46 ǀ Wheeler CM, Int J Cancer 2013; 132: 198 ǀ Zhao C, Cancer 2007; 111: 292
Uruguay	Ramas V, J Med Virol 2013; 85: 845, Berois N, J Med Virol 2014; 86: 647 ǀ Ramas V, J Med Virol 2013; 85: 845
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.
Argentina	Alonio LV, J Clin Virol 2003; 27: 263 ǀ Bosch FX, J Natl Cancer Inst 1995; 87: 796 ǀ Golijow CD, Gynecol Oncol 2005; 96: 181 ǀ Turazza E, Acta Obstet Gynecol Scand 1997; 76: 271, Contributing studies: Alonio LV, J Clin Virol 2003; 27: 263 ǀ Bosch FX, J Natl Cancer Inst 1995; 87: 796 ǀ Golijow CD, Gynecol Oncol 2005; 96: 181 ǀ Turazza E, Acta Obstet Gynecol Scand 1997; 76: 271
Bolivia	Bosch FX, J Natl Cancer Inst 1995; 87: 796, Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796
Brazil	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 ǀ Cambruzzi E, Pathol Oncol Res 2005; 11: 114 ǀ de Oliveira CM, BMC Cancer 2013; 13: 357 ǀ Eluf-Neto J, Br J Cancer 1994; 69: 114 ǀ Lorenzato F, Int J Gynecol Cancer 2000; 10: 143 ǀ Rabelo-Santos SH, Mem Inst Oswaldo Cruz 2003; 98: 181 ǀ Serrano B, Cancer Epidemiol 2014 ǀ Tomita LY, Int J Cancer 2010; 126: 703, Bosch FX, J Natl Cancer Inst 1995; 87: 796 ǀ Cambruzzi E, Pathol Oncol Res 2005; 11: 114 ǀ de Oliveira CM, BMC Cancer 2013; 13: 357 ǀ Eluf-Neto J, Br J Cancer 1994; 69: 114 ǀ Lorenzato F, Int J Gynecol Cancer 2000; 10: 143 ǀ Rabelo-Santos SH, Mem Inst Oswaldo Cruz 2003; 98: 181 ǀ Serrano B, Cancer Epidemiol 2014 ǀ Tomita LY, Int J Cancer 2010; 126: 703
Canada	Bosch FX, J Natl Cancer Inst 1995; 87: 796 ǀ Duggan MA, Hum Pathol 1995; 26: 319 ǀ Tran-Thanh D, Am J Obstet Gynecol 2003; 188: 129, Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 ǀ Duggan MA, Hum Pathol 1995; 26: 319 ǀ Tran-Thanh D, Am J Obstet Gynecol 2003; 188: 129
Chile	Bosch FX, J Natl Cancer Inst 1995; 87: 796 ǀ Roa JC, Int J Gynaecol Obstet 2009; 105: 150 ǀ Valdivia L IM, Rev Chilena Infectol 2010; 27: 11, Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 ǀ Roa JC, Int J Gynaecol Obstet 2009; 105: 150 ǀ Valdivia L IM, Rev Chilena Infectol 2010; 27: 11
Colombia	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 ǀ Moreno-Acosta P, Virus Genes 2008; 37: 22 ǀ Murillo R, Infect Dis Obstet Gynecol 2009; 2009: 653598 ǀ Muñoz N, Int J Cancer 1992; 52: 743, Bosch FX, J Natl Cancer Inst 1995; 87: 796 ǀ Moreno-Acosta P, Virus Genes 2008; 37: 22 ǀ Murillo R, Infect Dis Obstet Gynecol 2009; 2009: 653598 ǀ Muñoz N, Int J Cancer 1992; 52: 743
Costa Rica	Herrero R, J Infect Dis 2005; 191: 1796, Contributing studies: Herrero R, J Infect Dis 2005; 191: 1796
Cuba	Bosch FX, J Natl Cancer Inst 1995; 87: 796, Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796
Ecuador	Mejía L, J Med Virol 2016; 88: 144, Contributing studies: Mejía L, J Med Virol 2016; 88: 144
Honduras	Ferreira M, Mod Pathol 2008; 21: 968, Contributing studies: Ferreira M, Mod Pathol 2008; 21: 968

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Country	Study
Jamaica	Strickler HD, J Med Virol 1999; 59: 60, 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-Aguiar 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, 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-Aguiar 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	Hindryckx P, Sex Transm Infect 2006; 82: 334, Contributing studies: Hindryckx P, Sex Transm Infect 2006; 82: 334
Panama	Bosch FX, J Natl Cancer Inst 1995; 87: 796, Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796
Paraguay	Kasamatsu E, J Med Virol 2012; 84: 1628 | Rolón PA, Int J Cancer 2000; 85: 486, Contributing studies: Kasamatsu E, J Med Virol 2012; 84: 1628 | Rolón PA, Int J Cancer 2000; 85: 486
Peru	Martorell M, Genet Mol Res 2012; 11: 2099 | Santos C, Br J Cancer 2001; 85: 966, Contributing studies: Martorell M, Genet Mol Res 2012; 11: 2099 | Santos C, Br J Cancer 2001; 85: 966
Suriname	De Boer MA, Int J Cancer 2005; 114: 422, Contributing studies: De Boer MA, Int J Cancer 2005; 114: 422
Trinidad and Tobago	Hosein F, Rev Panam Salud Publica 2013; 33: 267, Contributing studies: Hosein F, Rev Panam Salud Publica 2013; 33: 267
United States of America	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, 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
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 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.
Argentina	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, 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	Cathro HP, Hum Pathol 2009; 40: 942, Contributing studies: Cathro HP, Hum Pathol 2009; 40: 942
Brazil	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, 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

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Country	Study
Canada	Antonishyn NA, Arch Pathol Lab Med 2008; 132: 54 ǀ Coutlée F, J Med Virol 2011; 83: 1034 ǀ Jiang Y, J Infect Public Health 2011; 4: 219 ǀ Moore RA, Cancer Causes Control 2009; 20: 1387, Contributing studies: Antonishyn NA, Arch Pathol Lab Med 2008; 132: 54 ǀ Coutlée F, J Med Virol 2011; 83: 1034 ǀ Jiang Y, J Infect Public Health 2011; 4: 219 ǀ Moore RA, Cancer Causes Control 2009; 20: 1387
Chile	Ili CG, J Med Virol 2011; 83: 833, Contributing studies: Ili CG, J Med Virol 2011; 83: 833
Colombia	Bosch FX, Cancer Epidemiol Biomarkers Prev 1993; 2: 415 ǀ García DA, Open Virol J 2011; 5: 70 ǀ Muñoz N, Int J Cancer 1992; 52: 743, Contributing studies: Bosch FX, Cancer Epidemiol Biomarkers Prev 1993; 2: 415 ǀ García DA, Open Virol J 2011; 5: 70 ǀ Muñoz N, Int J Cancer 1992; 52: 743
Costa Rica	Herrero R, J Infect Dis 2005; 191: 1796, Contributing studies: Herrero R, J Infect Dis 2005; 191: 1796
Cuba	Soto Y, Sex Transm Dis 2007; 34: 974, Contributing studies: Soto Y, Sex Transm Dis 2007; 34: 974
Ecuador	Mejía L, J Med Virol 2016; 88: 144, Contributing studies: Mejía L, J Med Virol 2016; 88: 144
Honduras	Ferreira M, Mod Pathol 2008; 21: 968, Contributing studies: Ferreira M, Mod Pathol 2008; 21: 968
Jamaica	Rattray C, J Infect Dis 1996; 173: 718 ǀ Strickler HD, J Med Virol 1999; 59: 60, Contributing studies: Rattray C, J Infect Dis 1996; 173: 718 ǀ Strickler HD, J Med Virol 1999; 59: 60
Mexico	Giuliano AR, Cancer Epidemiol Biomarkers Prev 2001; 10: 1129 ǀ Illades-Aguiar B, Gynecol Oncol 2010; 117: 291 ǀ Piña-Sánchez P, Int J Gynecol Cancer 2006; 16: 1041 ǀ Torroella-Kouri M, Gynecol Oncol 1998; 70: 115 ǀ Velázquez-Márquez N, Int J Infect Dis 2009; 13: 690, Contributing studies: Giuliano AR, Cancer Epidemiol Biomarkers Prev 2001; 10: 1129 ǀ Illades-Aguiar B, Gynecol Oncol 2010; 117: 291 ǀ Piña-Sánchez P, Int J Gynecol Cancer 2006; 16: 1041 ǀ Torroella-Kouri M, Gynecol Oncol 1998; 70: 115 ǀ Velázquez-Márquez N, Int J Infect Dis 2009; 13: 690
Nicaragua	Hindryckx P, Sex Transm Infect 2006; 82: 334, Contributing studies: Hindryckx P, Sex Transm Infect 2006; 82: 334
Paraguay	Mendoza LP, J Med Virol 2011; 83: 1351, Contributing studies: Mendoza LP, J Med Virol 2011; 83: 1351
Peru	Martorell M, Genet Mol Res 2012; 11: 2099, Contributing studies: Martorell M, Genet Mol Res 2012; 11: 2099
United States of America	Adam E, Am J Obstet Gynecol 1998; 178: 1235 ǀ Bell MC, Gynecol Oncol 2007; 107: 236 ǀ Castle PE, Cancer Epidemiol Biomarkers Prev 2010; 19: 1675 ǀ Castle PE, Cancer Epidemiol Biomarkers Prev 2011; 20: 946 ǀ Einstein MH, Int J Cancer 2007; 120: 55 ǀ Evans MF, Cancer 2006; 106: 1054 ǀ Evans MF, Eur J Gynaecol Oncol 2003; 24: 373 ǀ Giuliano AR, Cancer Epidemiol Biomarkers Prev 2001; 10: 1129 ǀ Guo M, Mod Pathol 2007; 20: 256 ǀ Hariri S, J Infect Dis 2012; 206: 1878 ǀ Hariri S, PLoS ONE 2012; 7: e34044 ǀ Hu L, Mod Pathol 2005; 18: 267 ǀ Joste NE, Cancer Epidemiol Biomarkers Prev 2015; 24: 230 ǀ Kong CS, Am J Surg Pathol 2007; 31: 33 ǀ Lee SH, Int J Gynaecol Obstet 2009; 105: 210 ǀ Moscicki AB, Obstet Gynecol 2008; 112: 1335 ǀ Stoler MH, Am J Clin Pathol 2011; 135: 468 ǀ Vidal AC, Cancer Causes Control 2014; 25: 1055 ǀ Voss JS, Anal Quant Cytol Histol 2009; 31: 208 ǀ Wentzensen N, Int J Cancer 2009; 124: 964 ǀ Wheeler CM, J Infect Dis 2006; 194: 1291 ǀ Wheeler CM, J Natl Cancer Inst 2009; 101: 475 ǀ Zuna RE, Mod Pathol 2007; 20: 167, Contributing studies: Adam E, Am J Obstet Gynecol 1998; 178: 1235 ǀ Bell MC, Gynecol Oncol 2007; 107: 236 ǀ Castle PE, Cancer Epidemiol Biomarkers Prev 2010; 19: 1675 ǀ Castle PE, Cancer Epidemiol Biomarkers Prev 2011; 20: 946 ǀ Einstein MH, Int J Cancer 2007; 120: 55 ǀ Evans MF, Cancer 2006; 106: 1054 ǀ Evans MF, Eur J Gynaecol Oncol 2003; 24: 373 ǀ Giuliano AR, Cancer Epidemiol Biomarkers Prev 2001; 10: 1129 ǀ Guo M, Mod Pathol 2007; 20: 256 ǀ Hariri S, J Infect Dis 2012; 206: 1878 ǀ Hariri S, PLoS ONE 2012; 7: e34044 ǀ Hu L, Mod Pathol 2005; 18: 267 ǀ Joste NE, Cancer Epidemiol Biomarkers Prev 2015; 24: 230 ǀ Kong CS, Am J Surg Pathol 2007; 31: 33 ǀ Lee SH, Int J Gynaecol Obstet 2009; 105: 210 ǀ Moscicki AB, Obstet Gynecol 2008; 112: 1335 ǀ Stoler MH, Am J Clin Pathol 2011; 135: 468 ǀ Vidal AC, Cancer Causes Control 2014; 25: 1055 ǀ Voss JS, Anal Quant Cytol Histol 2009; 31: 208 ǀ Wentzensen N, Int J Cancer 2009; 124: 964 ǀ Wheeler CM, J Infect Dis 2006; 194: 1291 ǀ Wheeler CM, J Natl Cancer Inst 2009; 101: 475 ǀ Zuna RE, Mod Pathol 2007; 20: 167
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
Argentina	Abba MC, Rev Argent Microbiol 2003; 35: 74 ǀ Chouhy D, Int J Mol Med 2006; 18: 995 ǀ Deluca GD, Rev Inst Med Trop Sao Paulo 2004; 46: 9 ǀ Eiguchi K, J Low Genit Tract Dis 2008; 12: 262 ǀ Tonon SA, Infect Dis Obstet Gynecol 1999; 7: 237 ǀ Venezuela RF, Rev Inst Med Trop Sao Paulo 2012; 54: 11, Contributing studies: Abba MC, Rev Argent Microbiol 2003; 35: 74 ǀ Chouhy D, Int J Mol Med 2006; 18: 995 ǀ Deluca GD, Rev Inst Med Trop Sao Paulo 2004; 46: 9 ǀ Eiguchi K, J Low Genit Tract Dis 2008; 12: 262 ǀ Tonon SA, Infect Dis Obstet Gynecol 1999; 7: 237 ǀ Venezuela RF, Rev Inst Med Trop Sao Paulo 2012; 54: 11
Belize	Cathro HP, Hum Pathol 2009; 40: 942, Contributing studies: Cathro HP, Hum Pathol 2009; 40: 942

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Country	Study
Brazil	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, 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	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, 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	Ili CG, J Med Virol 2011; 83: 833 | López M J, Rev Med Chil 2010; 138: 1343, Contributing studies: Ili CG, J Med Virol 2011; 83: 833 | López M J, Rev Med Chil 2010; 138: 1343
Colombia	García DA, Open Virol J 2011; 5: 70 | Molano M, Br J Cancer 2002; 87: 1417, Contributing studies: García DA, Open Virol J 2011; 5: 70 | Molano M, Br J Cancer 2002; 87: 1417
Cuba	Soto Y, Sex Transm Dis 2007; 34: 974, Contributing studies: Soto Y, Sex Transm Dis 2007; 34: 974
Ecuador	Tornesello ML, J Med Virol 2008; 80: 1959, Contributing studies: Tornesello ML, J Med Virol 2008; 80: 1959
Honduras	Ferreira M, Mod Pathol 2008; 21: 968, Contributing studies: Ferreira M, Mod Pathol 2008; 21: 968
Jamaica	Rattray C, J Infect Dis 1996; 173: 718 | Strickler HD, J Med Virol 1999; 59: 60, Contributing studies: Rattray C, J Infect Dis 1996; 173: 718 | Strickler HD, J Med Virol 1999; 59: 60
Mexico	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-Aguiar 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, 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-Aguiar 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	Hindryckx P, Sex Transm Infect 2006; 82: 334, Contributing studies: Hindryckx P, Sex Transm Infect 2006; 82: 334
Paraguay	Mendoza LP, J Med Virol 2011; 83: 1351 | Tonon SA, Infect Dis Obstet Gynecol 1999; 7: 237, Contributing studies: Mendoza LP, J Med Virol 2011; 83: 1351 | Tonon SA, Infect Dis Obstet Gynecol 1999; 7: 237
Peru	Martorell M, Genet Mol Res 2012; 11: 2099, Contributing studies: Martorell M, Genet Mol Res 2012; 11: 2099
United States of America	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, 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
Uruguay	Ramas V, J Med Virol 2013; 85: 845, Contributing studies: Ramas V, J Med Virol 2013; 85: 845

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Country	Study
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
Canada	Ouhoummane N, Cancer Epidemiol 2013; 37: 807
Chile	Alemany L, Int J Cancer 2015; 136: 98
Colombia	Alemany L, Int J Cancer 2015; 136: 98
Ecuador	Alemany L, Int J Cancer 2015; 136: 98
Guatemala	Alemany L, Int J Cancer 2015; 136: 98
Honduras	Alemany L, Int J Cancer 2015; 136: 98
Mexico	Alemany L, Int J Cancer 2015; 136: 98
Paraguay	Alemany L, Int J Cancer 2015; 136: 98
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
Canada	Gohy L, J Acquir Immune Defic Syndr 2008; 49: 32 ǀ Salit IE, Cancer Epidemiol Biomarkers Prev 2009; 18: 1986
Chile	Alemany L, Int J Cancer 2015; 136: 98
Colombia	Alemany L, Int J Cancer 2015; 136: 98
Ecuador	Alemany L, Int J Cancer 2015; 136: 98
Guatemala	Alemany L, Int J Cancer 2015; 136: 98
Honduras	Alemany L, Int J Cancer 2015; 136: 98
Mexico	Alemany L, Int J Cancer 2015; 136: 98
Paraguay	Alemany L, Int J Cancer 2015; 136: 98
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
Argentina	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Brazil	de Sanjosé S, Eur J Cancer 2013; 49: 3450 ǀ 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
United States of America	de Sanjosé S, Eur J Cancer 2013; 49: 3450 ǀ Gargano JW, J Low Genit Tract Dis 2012; 16: 471 ǀ Kim YT, Hum Pathol 1996; 27: 389 ǀ Madeleine MM, J Natl Cancer Inst 1997; 89: 1516 ǀ Riethdorf S, Hum Pathol 2004; 35: 1477 ǀ Sutton BC, Mod Pathol 2008; 21: 345 ǀ Tate JE, Gynecol Oncol 1994; 53: 78
Uruguay	de Sanjosé S, Eur J Cancer 2013; 49: 3450
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
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
United States of America	Gargano JW, J Low Genit Tract Dis 2012; 16: 471 ǀ Madeleine MM, J Natl Cancer Inst 1997; 89: 1516 ǀ Riethdorf S, Hum Pathol 2004; 35: 1477 ǀ Srodon M, Am J Surg Pathol 2006; 30: 1513
Uruguay	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

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Country	Study
Argentina	Alemany L, Eur J Cancer 2014; 50: 2846
Brazil	Alemany L, Eur J Cancer 2014; 50: 2846
Chile	Alemany L, Eur J Cancer 2014; 50: 2846
Colombia	Alemany L, Eur J Cancer 2014; 50: 2846
Ecuador	Alemany L, Eur J Cancer 2014; 50: 2846
Guatemala	Alemany L, Eur J Cancer 2014; 50: 2846
Mexico	Alemany L, Eur J Cancer 2014; 50: 2846
Paraguay	Alemany L, Eur J Cancer 2014; 50: 2846
United States of America	Alemany L, Eur J Cancer 2014; 50: 2846
Uruguay	Alemany L, Eur J Cancer 2014; 50: 2846
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
Argentina	Alemany L, Eur J Cancer 2014; 50: 2846
Brazil	Alemany L, Eur J Cancer 2014; 50: 2846
Chile	Alemany L, Eur J Cancer 2014; 50: 2846
Colombia	Alemany L, Eur J Cancer 2014; 50: 2846
Ecuador	Alemany L, Eur J Cancer 2014; 50: 2846
Guatemala	Alemany L, Eur J Cancer 2014; 50: 2846
Mexico	Alemany L, Eur J Cancer 2014; 50: 2846
Paraguay	Alemany L, Eur J Cancer 2014; 50: 2846
United States of America	Alemany L, Eur J Cancer 2014; 50: 2846 ǀ Daling JR, Gynecol Oncol 2002; 84: 263 ǀ Srodon M, Am J Surg Pathol 2006; 30: 1513
Uruguay	Alemany 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
Argentina	Picconi MA, J Med Virol 2000; 61: 65
Brazil	Afonso LA, Mem Inst Oswaldo Cruz 2012; 107: 18 ǀ Bezerra AL, Cancer 2001; 91: 2315 ǀ Calmon MF, PLoS ONE 2013; 8: e53260 ǀ Fonseca AG, Int Braz J Urol 2013; 39: 542 ǀ Levi JE, Int J Cancer 1998; 76: 779 ǀ Scheiner MA, Int Braz J Urol 2008; 34: 467, Afonso LA, Mem Inst Oswaldo Cruz 2012; 107: 18 ǀ Calmon MF, PLoS ONE 2013; 8: e53260 ǀ de Sousa ID, BMC Urol 2015; 15: 13 ǀ Fonseca AG, Int Braz J Urol 2013; 39: 542 ǀ 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 ǀ Salazar EL, Arch Androl 2005; 51: 327, López-Romero R, Int J Clin Exp Pathol 2013; 6: 1409
Paraguay	Cubilla AL, Am J Surg Pathol 2010; 34: 104 ǀ Gregoire L, J Natl Cancer Inst 1995; 87: 1705 ǀ Rubin MA, Am J Pathol 2001; 159: 1211, Cubilla AL, Am J Surg Pathol 2010; 34: 104 ǀ Rubin MA, Am J Pathol 2001; 159: 1211
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
Argentina	GonzÃ¡lez JV, Medicina (B Aires) 2007; 67: 363 ǀ Ribeiro KB, Int J Epidemiol 2011; 40: 489
Brazil	Oliveira MC, Auris Nasus Larynx 2009; 36: 450 ǀ Ribeiro KB, Int J Epidemiol 2011; 40: 489 ǀ Rivero ER, Braz Oral Res 2006; 20: 21
Canada	Herrero R, J Natl Cancer Inst 2003; 95: 1772 ǀ Lingen MW, Oral Oncol 2013; 49: 1 ǀ Noble-Topham SE, Arch Otolaryngol Head Neck Surg 1993; 119: 1299
Cuba	Herrero R, J Natl Cancer Inst 2003; 95: 1772 ǀ Ribeiro KB, Int J Epidemiol 2011; 40: 489
Mexico	Anaya-Saavedra G, Arch Med Res 2008; 39: 189 ǀ Ibieta BR, Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2005; 99: 311, López-Romero R, Int J Clin Exp Pathol 2013; 6: 1409
United States of America	Cupp MR, J Urol 1995; 154: 1024, Chuang AY, Oral Oncol 2008; 44: 915 ǀ Furniss CS, Int J Cancer 2007; 120: 2386 ǀ Ha PK, Clin Cancer Res 2002; 8: 1203 ǀ Harris SL, Head Neck 2011; 33: 1622 ǀ Holladay EB, Am J Clin Pathol 1993; 100: 36 ǀ Hooper JE, Appl Immunohistochem Mol Morphol 2015; 23: 266 ǀ Liang XH, J Oral Maxillofac Surg 2008; 66: 1875 ǀ Lingen MW, Oral Oncol 2013; 49: 1 ǀ Lohavanichbutr P, Arch Otolaryngol Head Neck Surg 2009; 135: 180 ǀ Paz IB, Cancer 1997; 79: 595 ǀ Schlecht NF, Mod Pathol 2011; 24: 1295 ǀ Schwartz SM, J Natl Cancer Inst 1998; 90: 1626 ǀ Smith EM, Int J Cancer 2004; 108: 766 ǀ Walline HM, JAMA Otolaryngol Head Neck Surg 2013; 139: 1320 ǀ Zhao M, Int J Cancer 2005; 117: 605
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.
Brazil	Franceschi S, Br J Cancer 2002; 86: 705 ǀ Giuliano AR, Cancer Epidemiol Biomarkers Prev 2008; 17: 2036 ǀ Nyitray AG, J Infect Dis 2011; 203: 49 ǀ Rosenblatt C, Int J Gynaecol Obstet 2004; 84: 156 ǀ Vardas E, J Infect Dis 2011; 203: 58

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Country	Study
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
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.
Argentina	Pando MA, PLoS One 2012; 7: 127
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
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.
Argentina	Ribeiro KB, Int J Epidemiol 2011;40(2):489-502
Brazil	Araujo MV, Cad Saude Publica 2014;30(5):1115-9 | Cavenaghi VB, Braz J Otorhinolaryngol 2013;79(5):599-602 | do Sacramento PR, J Med Virol 2006;78(5):614-8 | Esquenazi D, Braz J Otorhinolaryngol 2010;76(1):78-84 | Kreimer AR, Cancer Epidemiol Biomarkers Prev 2011;20(1):172-82 | Machado AP, Braz J Infect Dis 2014;18(3):266-70 | Ribeiro KB, Int J Epidemiol 2011;40(2):489-502
Canada	Dahlstrom KR, Cancer Epidemiol Biomarkers Prev 2014;23(12):2959-64 | Pintos J, Oral Oncol 2008;44(3):242-50
Costa Rica	Lang Kuhs KA, J Infect Dis 2013;208(10):1643-52
Cuba	Ribeiro KB, Int J Epidemiol 2011;40(2):489-502
Mexico	Anaya-Saavedra G, Arch Med Res 2008;39(2):189-97 | Gonzalez-Ramirez I, Oral Dis 2013;19(8):796-804 | Kreimer AR, Cancer Epidemiol Biomarkers Prev 2011;20(1):172-82
Trinidad and Tobago	Ragin CC, Biomarkers 2007;12(5):510-22
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
Argentina	González JV, Medicina (B Aires) 2007; 67: 363 | Ribeiro KB, Int J Epidemiol 2011; 40: 489
Brazil	Oliveira MC, Auris Nasus Larynx 2009; 36: 450 | Ribeiro KB, Int J Epidemiol 2011; 40: 489 | Rivero ER, Braz Oral Res 2006; 20: 21
Canada	Herrero R, J Natl Cancer Inst 2003; 95: 1772 | Lingen MW, Oral Oncol 2013; 49: 1 | Noble-Topham SE, Arch Otolaryngol Head Neck Surg 1993; 119: 1299
Cuba	Herrero R, J Natl Cancer Inst 2003; 95: 1772 | Ribeiro KB, Int J Epidemiol 2011; 40: 489
Mexico	Anaya-Saavedra G, Arch Med Res 2008; 39: 189 | Ibieta BR, Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2005; 99: 311
United States of America	Chuang AY, Oral Oncol 2008; 44: 915 | Furniss CS, Int J Cancer 2007; 120: 2386 | Ha PK, Clin Cancer Res 2002; 8: 1203 | Harris SL, Head Neck 2011; 33: 1622 | Holladay EB, Am J Clin Pathol 1993; 100: 36 | Hooper JE, Appl Immunohistochem Mol Morphol 2015; 23: 266 | Liang XH, J Oral Maxillofac Surg 2008; 66: 1875 | Lingen MW, Oral Oncol 2013; 49: 1 | Lohavanichbutr P, Arch Otolaryngol Head Neck Surg 2009; 135: 180 | Paz IB, Cancer 1997; 79: 595 | Schlecht NF, Mod Pathol 2011; 24: 1295 | Schwartz SM, J Natl Cancer Inst 1998; 90: 1626 | Smith EM, Int J Cancer 2004; 108: 766 | Walline HM, JAMA Otolaryngol Head Neck Surg 2013; 139: 1320 | Zhao M, Int J Cancer 2005; 117: 605
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
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

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Country	Study
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
Argentina	Ribeiro KB, Int J Epidemiol 2011; 40: 489
Brazil	Miranda FA, J Histochem Cytochem 2009; 57: 665 ǀ Ribeiro KB, Int J Epidemiol 2011; 40: 489
Canada	Fliss DM, Laryngoscope 1994; 104: 146
Chile	Gheit T, J Med Virol 2014; 86: 642 ǀ Torrente MC, Acta Otolaryngol 2005; 125: 888
Cuba	García-Milián R, Acta Otolaryngol 1998; 118: 754 ǀ Ribeiro KB, Int J Epidemiol 2011; 40: 489

10 Glossary

Table 52: 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 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.
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).
Adenocarcinoma	Invasive tumour with glandular and squamous elements intermingled
Caribbean	Antigua and Barbuda, Bahamas, Barbados, Cuba, Dominica, Dominican Republic, Grenada, Haiti, Jamaica, St Kitts and Nevis, St Lucia, St Vincent and The Grenadines, Trinidad and Tobago
Central America	Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama
Northern America	Canada, United States of America
South America	Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay, Venezuela

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Cancer Epidemiology Research Program, Catalan Institute of Oncology (ICO), Institut d'Investigació Biomèdica de Bellvitge (IDIBELL), in alphabetic order
Albero G, Amarilla S, Bosch FX, Bruni L, Collado JJ, de Sanjosé S, Gómez D, Mena M, Muñoz J, Ruiz FJ, Serrano B.
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.
Although efforts have been made by the HPV Information Centre to prepare and include as accurately as possible the data presented, mistakes may occur. Readers are requested to communicate any errors to the HPV Information Centre, so that corrections can be made in future volumes.

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Contact information:
ICO/IARC HPV Information Centre
Institut Català d'Oncologia
Avda. Gran Via de l'Hospitalet, 199-203
08908 L'Hospitalet de Llobregat (Barcelona, Spain)
e-mail: info@hpvcentre.net
internet address: www.hpvcentre.net