Human Papillomavirus and Related Diseases Report

UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

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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 the United Kingdom on: cervical cancer; other anogenital cancers and head and neck cancers; HPV-related statistics; factors contributing to cervical cancer; cervical cancer screening practices; HPV vaccine introduction; and other relevant immunisation indicators. The report is intended to strengthen the guidance for health policy implementation of primary and secondary cervical cancer prevention strategies in the country.

Table 1: Key Statistics

Population			
Women at risk for cervical cancer (Female population aged >=15 years)			27.4 million
Burden of cervical cancer and other HPV-related cancers			
Annual number of cervical cancer cases			3,430
Annual number of cervical cancer deaths			1,033
Crude incidence rates per 100,000 and year:		Male	Female
	Cervical cancer	-	10.2
	Anal cancer ‡	1.0-1.8	1.6-2.7
	Vulvar cancer ‡	-	2.2-4.4
	Vaginal cancer ‡	-	0.5-1.1
	Penile cancer ‡	1.0-2.4	-
	Oropharyngeal cancer	7.0	2.2
Burden of cervical HPV infection			
Prevalence (%) of HPV 16 and/or HPV 18 among women with:			
	Normal cytology		3.2
	Low-grade cervical lesions (LSIL/CIN-1)		29.6
	High-grade cervical lesions (HSIL/CIN-2/CIN-3/CIS)		58.6
	Cervical cancer		79.0
Other factors contributing to cervical cancer			
Smoking prevalence (%), women			19.5 [15.4-25.1]
Total fertility rate (live births per women)			1.9
Oral contraceptive use (%) among women			28
HIV prevalence (%), adults (15-49 years)			-
Sexual behaviour			
Percentage of 15-year-old who have had sexual intercourse (men/women)			21 / 32
Range of median age at first sexual intercourse (men/women)			16.0-19.1 / 16.0-20.9
Cervical screening practices and recommendations			
Cervical cancer screening coverage, % (age and screening interval, reference)	77.5% (All women aged 25-64 screened every 5y, EUROSTAT UK)		
Screening ages (years)			25-64
Screening interval (years) or frequency of screens	3 years (ages 25-49), 5 years (ages 50-64)		
HPV vaccine			
HPV vaccine introduction			
	HPV vaccination programme		National program
	Date of HPV vaccination routine immunization programme start		2008

‡Please see the specific sections for more information.

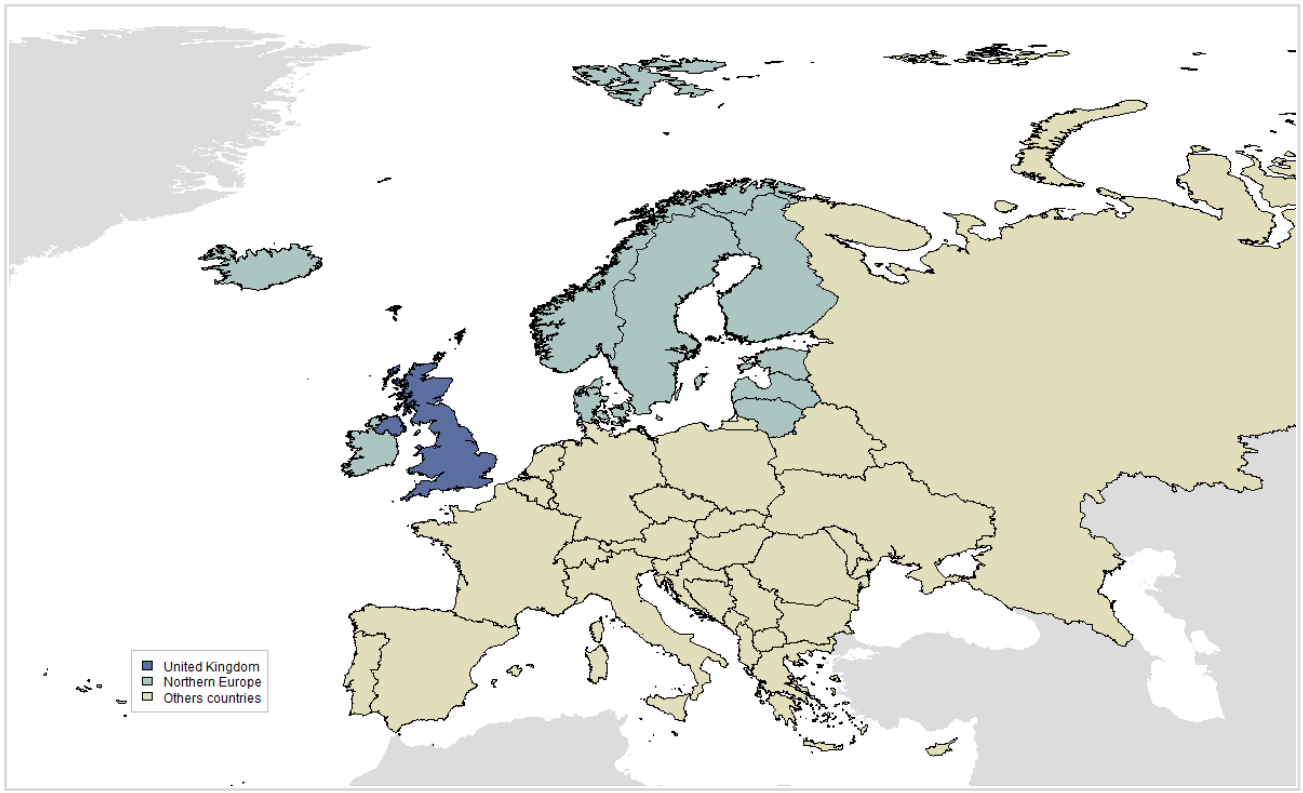
Contents

List of Figures

List of Tables

1 Introduction

Figure 1: The United Kingdom and Northern Europe



The HPV Information Centre aims to compile and centralise updated data and statistics on human papillomavirus (HPV) and related cancers. This report aims to summarise the data available to fully evaluate the burden of disease in the United Kingdom and to facilitate stakeholders and relevant bodies of decision makers to formulate recommendations on cervical cancer prevention. Data include relevant cancer statistic estimates, epidemiological determinants of cervical cancer such as demographics, socioeconomic factors, risk factors, burden of HPV infection, screening and immunisation. This report is part of the PREHDICT project (health-economic modelling of Prevention strategies for Hpv-related Diseases in European CounTries) granted by the EU Seven Franmework Programme. PREHDICT has been projected to provide objective data and supported criteria for future cancer prevention across European countries. Its overall goals are to determine prerequisites and strategies for vaccination in European countries and to predict the impact of vaccination on screening programmes. The report is structured into the following sections: The ICO Information Centre on HPV and Cancer (HPV Information Centre) participates in the PREHDICT project compiling and centralising updated data and statistics on human papillomavirus (HPV) and HPV-related cancers of European countries. The aim is to disseminate the information to all European countries concerned to facilitate stakeholders and relevant bodies of decision makers to formulate recommendations on the prevention of cervical cancer and other HPV-related cancers. This is a GBR report based on data from the European epidemiological database specifically created for this project. Data include relevant cancer statistic estimates, epidemiological determinants of cervical cancer such as demographics, socioeconomic factors, risk factors, burden of HPV infection, screening and immunisation. The report is structured into the following sections:

Section 2, Demographic and socioeconomic factors. This section summarises the sociodemographic profile of the United Kingdom, 43 European countries are covered in the PREHDICT project: *EU-27* (Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and United Kingdom), *12 Associated Countries*

(Albania, Bosnia and Herzegovina, Croatia, FYR Macedonia, Iceland, Israel, Liechtenstein, Montenegro, Norway, Serbia (including Kosovo), Switzerland and Turkey) and *4 countries from Eastern Europe* (Russia Federation, Belarus, Republic of Moldova and Ukraine) (Figure 1).

Section 3, Burden of HPV related cancers. This section describes the current burden of invasive cervical cancer and other HPV-related cancers in the United Kingdom with estimates of prevalence, incidence, and mortality rates. Information in other HPV-related cancers includes other anogenital cancers (anus, vulva, vagina, and penis), head and neck cancers (oral cavity, oropharynx, and hypopharynx) genital warts and recurrent respiratory papillomatosis.

Section 4, HPV related statistics. This section reports on prevalence of HPV and HPV type-specific distribution in the United Kingdom, 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 hypopharynx) 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 receptive anal intercourse among others.

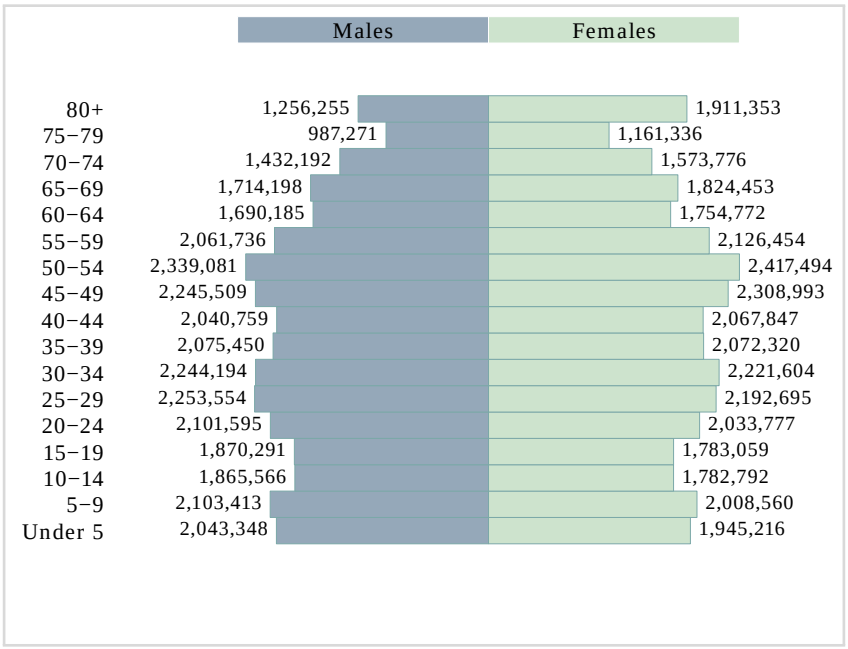
Section 7, HPV preventive strategies. This section presents preventive strategies that include basic characteristics and performance of cervical cancer screening status, status of HPV vaccine licensure introduction, and recommendations in national immunisation programmes.

Section 8, Protective factors for cervical cancer. This section presents male circumcision and the use of condoms.

Section 9, Indicators related to immunisation practices other than HPV vaccines. This section presents data on immunisation coverage and practices for selected vaccines. This information will be relevant for assessing the country's capacity to introduce and implement the new vaccines.

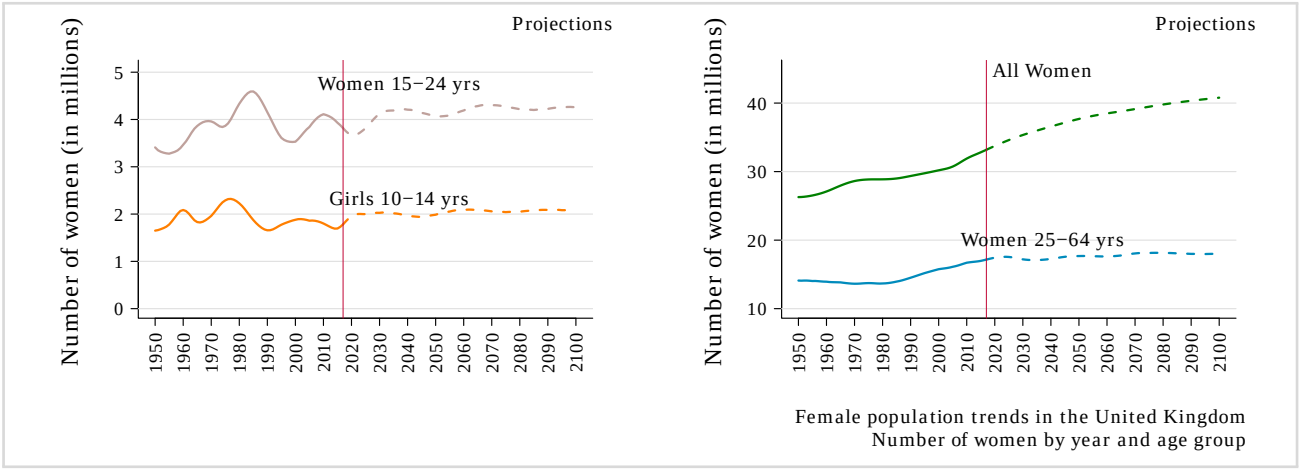
2 Demographic and socioeconomic factors

Figure 2: Population pyramid of the United Kingdom for 2017



Data accessed on 27 Mar 2017.
Please refer to original source for methods of estimation.
Year of estimate: 2017;
Data sources:
United Nations, Department of Economic and Social Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, DVD Edition. Available at: https://esa.un.org/unpd/wpp/Download/Standard/Population/. [Accessed on March 21, 2017].

Figure 3: Population trends in four selected age groups in the United Kingdom



Data accessed on 27 Mar 2017.
Please refer to original source for methods of estimation.
Year of estimate: 2017;
Data sources:
United Nations, Department of Economic and Social Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, DVD Edition. Available at: https://esa.un.org/unpd/wpp/Download/Standard/Population/. [Accessed on March 21, 2017].

Table 2: Sociodemographic indicators in the United Kingdom

Indicator	Male	Female	Total
Population in thousands[1,±]	32,324.6	33,186.5	65,511.1
Population growth rate (%)[1,∓]	-	-	0.6
Median age of the population (in years)[1,*]	-	-	40
Population living in urban areas (%)[2,*]	-	-	82.6
Crude birth rate (births per 1,000)[1,∓]	-	-	12.6
Crude death rate (deaths per 1,000)[1,∓]	-	-	9.2
Life expectancy at birth (in years)[3,a,b,*]	79.4	83.0	81.2
Adult mortality rate (probability of dying between 15 and 60 years old per 1,000)[4,*]	85	54	69
Maternal mortality ratio (per 100,000 live births)[3,c,*]	-	-	9
Under age five mortality rate (per 1,000 live births)[3,d,*]	-	-	4.2
Density of physicians (per 1,000 population)[5,e,*]	-	-	2.806
Gross national income per capita (PPP current international $)[6,f,*]	-	-	40900
Adult literacy rate (%) (aged 15 and older)[7]	-	-	-
Youth literacy rate (%) (aged 15-24 years)[7]	-	-	-
Net primary school enrollment ratio[7]	99.9⋆	99.7⋆	99.9°
Net secondary school enrollment ratio[7,°]	97.8	98.7	98.3

Data accessed on 27 Mar 2017.

Please refer to original source for methods of estimation.

[a] World Population Prospects, the 2015 revision (WPP2015). New York (NY): United Nations DESA, Population Division.

[b] WHO annual life tables for 1985–2015 based on the WPP2015, on the data held in the WHO Mortality Database and on HIV mortality estimates prepared by UNAIDS. WHO Member States with a population of less than 90 000 in 2015 were not included in the analysis.

[c] WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. Trends in maternal mortality: 1990 to 2015. Estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. Geneva: World Health Organization; 2015 (http://www.who.int/reproductivehealth/publications/monitoring/maternal-mortality-2015/en/, accessed 25 March 2016). WHO Member States with a population of less than 100 000 in 2015 were not included in the analysis.

[d] Levels & Trends in Child Mortality. Report 2015. Estimates Developed by the UN Inter-agency Group for Child Mortality Estimation. New York (NY), Geneva and Washington (DC): United Nations Children's Fund, World Health Organization, World Bank and United Nations; 2015 (http://www.unicef.org/publications/files/Child_Mortality_Report_2015_Web_9_Sept_15.pdf, accessed 26 March 2016).

[e] Number of medical doctors (physicians), including generalist and specialist medical practitioners, per 1 000 population.

[f] GNI per capita based on purchasing power parity (PPP). PPP GNI is gross national income (GNI) converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GNI as a U.S. dollar has in the United States. GNI is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad. Data are in current international dollars based on the 2011 ICP round.

Year of estimate: ±2017; ∓2010-2015; *2015; ⋆2012; °2014;

Data sources:

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

[2] United Nations, Department of Economic and Social Affairs, Population Division (2014). World Urbanization Prospects: The 2014 Revision, CD-ROM Edition. Available at: https://esa.un.org/unpd/wup/CD-ROM/. [Accessed on March 21, 2017].

[3] World Health Statistics 2016. Geneva, World Health Organization, 2016. Available at: http://who.int/entity/gho/publications/world_health_statistics/2016/en/index.html. [Accessed on March 21, 2017].

[4] World Health Organization. Global Health Observatory data repository. Available at: http://apps.who.int/gho/data/view.main.1360?lang=en. [Accessed on March 21, 2017].

[5] The 2016 update, Global Health Workforce Statistics, World Health Organization, Geneva (http://www.who.int/hrh/statistics/hwfstats/). [Accessed on March 21, 2017].

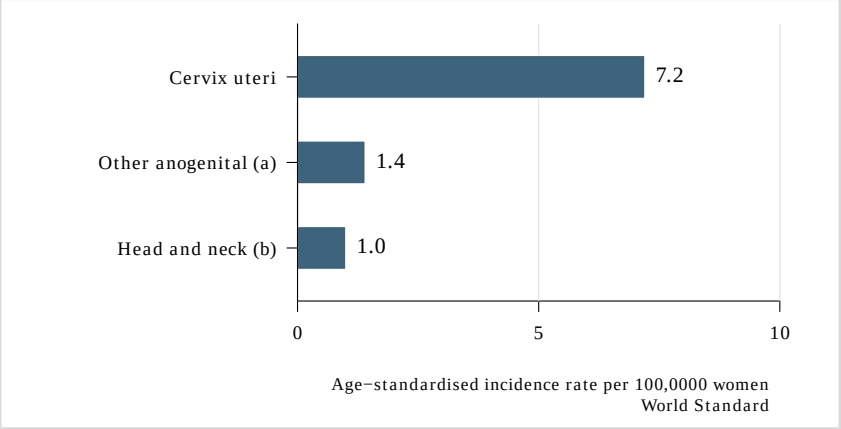
[6] World Bank, World Development Indicators Database. Washington, DC. International Comparison Program database. Available at: http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators#. [Accessed on March 21, 2017].

[7] UNESCO Institute for Statistics Data Centre [online database]. Montreal, UNESCO Institute for Statistics. Available at: http://stats.uis.unesco.org [Accessed on March 21, 2017].

3 Burden of HPV related cancers

HPV is the cause of almost all cervical cancer cases and is responsible for an important fraction of other anogenital and head and neck cancer. Here, we present the most recent estimations on the burden of HPV-associated cancer.

Figure 4: HPV-related cancer incidence in the United Kingdom (estimates for 2012)



Data accessed on 08 May 2017.
[a] Other anogenital cancer cases (vulvar, vaginal, anal, and penile).
[b] Head and neck cancer cases (oropharynx, oral cavity and larynx).
ASR: Age-standardized rate, rates per 100,000 per year.
Please refer to original source for methods.
GLOBOCAN quality index for availability of incidence data: High quality national data or high quality regional (coverage greater than 50%).
GLOBOCAN quality index of methods for calculating incidence: Methods to estimate the sex- and age-specific incidence rates of cancer for a specific country: Rates projected to 2012
Data sources:
de Martel C, Plummer M, Vignat J, Franceschi S. Worldwide burden of cancer attributable to HPV by site, country and HPV type. Int J Cancer. 2017

3.1 Cervical cancer

Cancer of the cervix uteri is the 3rd most common cancer among women worldwide, with an estimated 569,847 new cases and 311,365 deaths in 2018 (GLOBOCAN). The majority of cases are squamous cell carcinoma followed by adenocarcinomas. *(Vaccine 2006, Vol. 24, Suppl 3; Vaccine 2008, Vol. 26, Suppl 10; Vaccine 2012, Vol. 30, Suppl 5; IARC Monographs 2007, Vol. 90)*

This section describes the current burden of invasive cervical cancer in the United Kingdom and in comparison to geographic region, including estimates of the annual number of new cases, deaths, incidence, and mortality rates.

3.1.1 Cervical cancer incidence in the United Kingdom

KEY STATS.

About **3,430 new cervical cancer cases** are diagnosed **annually** in **the United Kingdom** (estimates for 2018).

Cervical cancer **ranks* as the 13^{th} leading cause** of female cancer in **the United Kingdom**.

Cervical cancer is the **2^{th} most common** female cancer in **women aged 15 to 44 years in the United Kingdom**.

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

Table 3: Cervical cancer incidence in the United Kingdom (estimates for 2018)

Indicator	United Kingdom	Northern Europe	World
Annual number of new cancer cases	3,430	6,319	569,847
Crude incidence rate[a]	10.2	11.9	15.1
Age-standardized incidence rate[a]	8.4	9.5	13.1
Cumulative risk (%) at 75 years old[b]	0.7	0.8	1.4

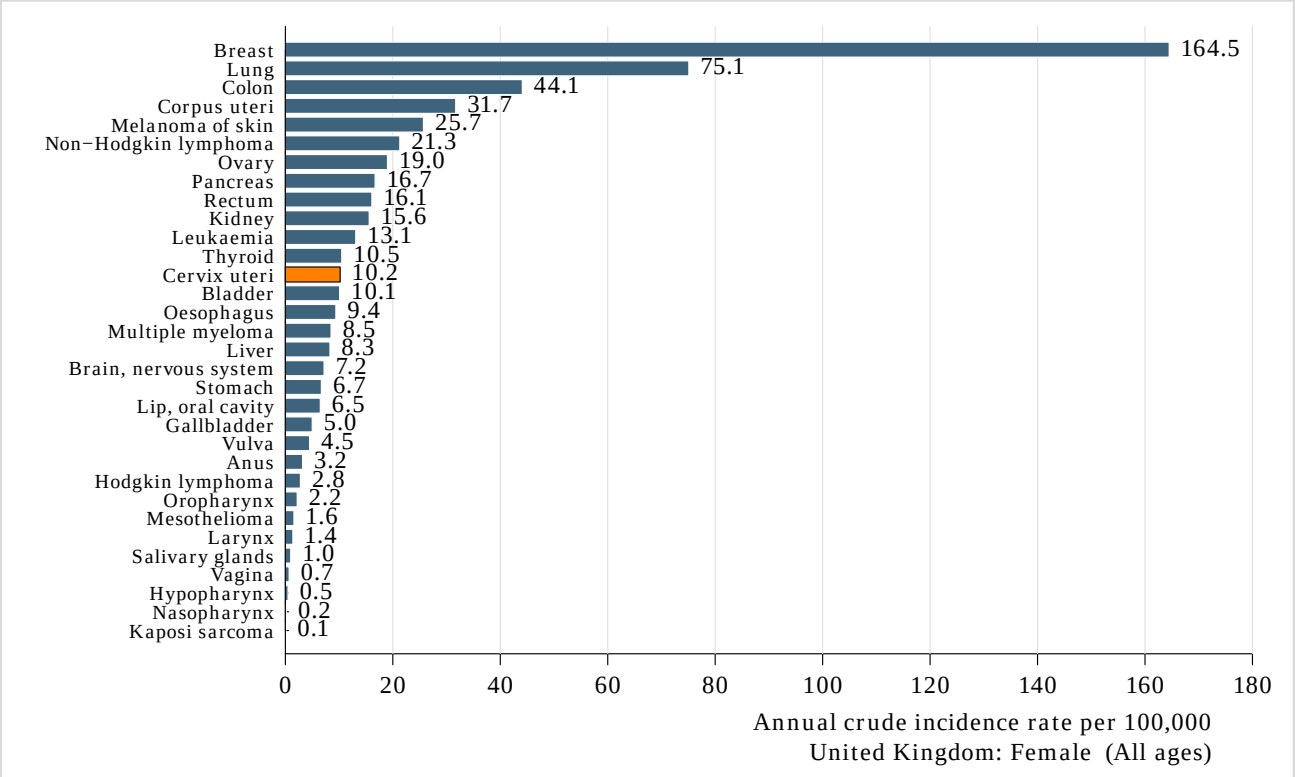
Data accessed on 05 Oct 2018.
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 women per year.
[b] Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.
Data sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2018). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [05 October 2018].

Table 4: Cervical cancer incidence in the United Kingdom by cancer registry

Cancer registry[1]	Period	N cases[a]	Crude rate[b]	ASR[b]
England	2008-2012	12,606	9.4	7.5
England, East	2008-2012	1,229	8.3	6.6
England, East Midlands	2008-2012	1,218	10.7	8.8
England, London	2008-2012	1,470	7.2	5.4
England, North East	2008-2012	810	12.2	10.4
England, North West	2008-2012	1,842	10.3	8.3
England, South East	2008-2012	1,733	7.9	6.3
England, South West	2008-2012	1,392	10.4	8.7
England, West Midlands	2008-2012	1,460	10.3	8.5
England, Yorkshire and The Humber	2008-2012	1,452	10.9	9.1
Northern Ireland	2008-2012	535	11.6	9.8
Scotland	2008-2012	1,596	11.8	9.1
Wales	2008-2012	789	10.1	8.0
National	2008-2012	15,526	9.7	7.7

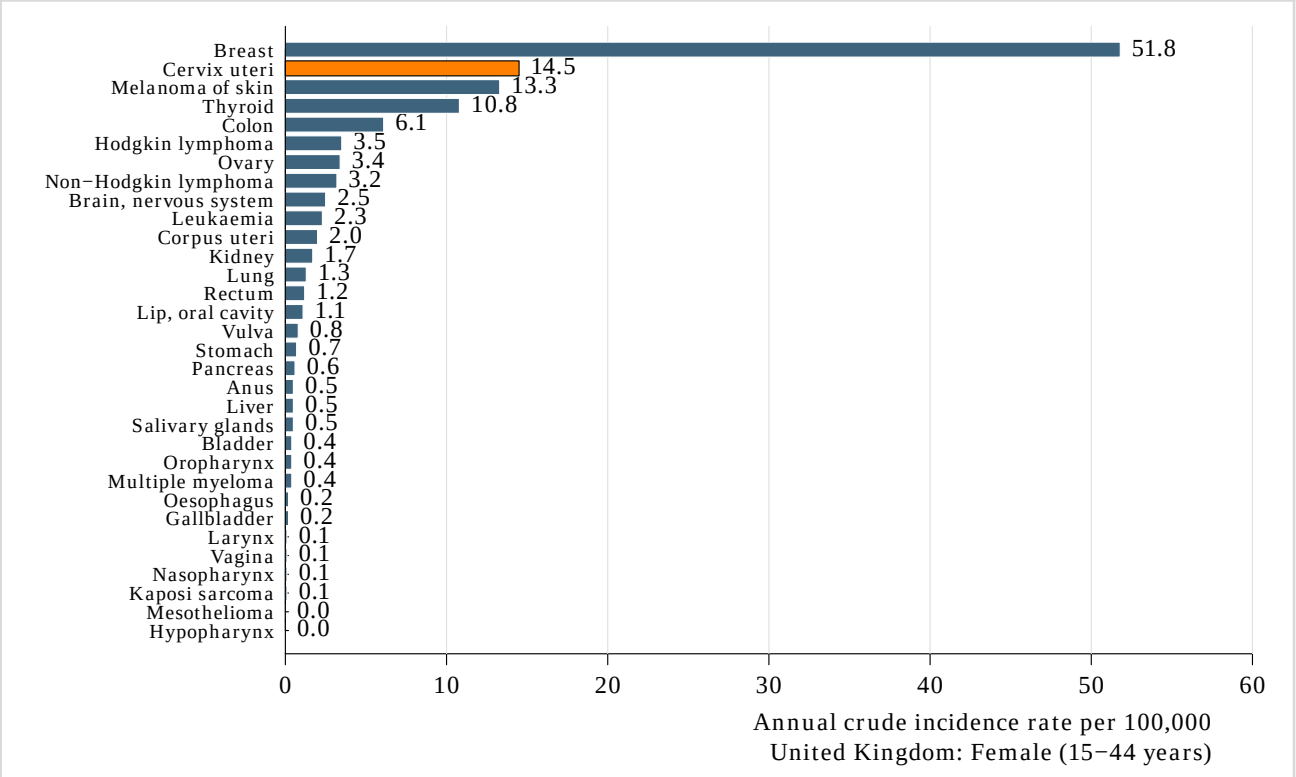
Data accessed on 05 Oct 2018.
ASR: Age-standardized rate, Standardized rates have been estimated using the direct method and the World population as the reference;
Please refer to original source (available at http://ci5.iarc.fr/CI5-XI/Default.aspx)
[a] Accumulated number of cases during the period in the population covered by the corresponding registry.
[b] Rates per 100,000 women per year.
Data sources:
[1] Bray F, Colombet M, Mery L, Piñeros M, Znaor A, Zanetti R and Ferlay J, editors (2017). Cancer Incidence in Five Continents, Vol. XI (electronic version). Lyon: International Agency for Research on Cancer. Available from: http://ci5.iarc.fr, accessed [05 October 2018].

Figure 5: Comparison of cervical cancer incidence to other cancers in women of all ages in the United Kingdom (estimates for 2018)



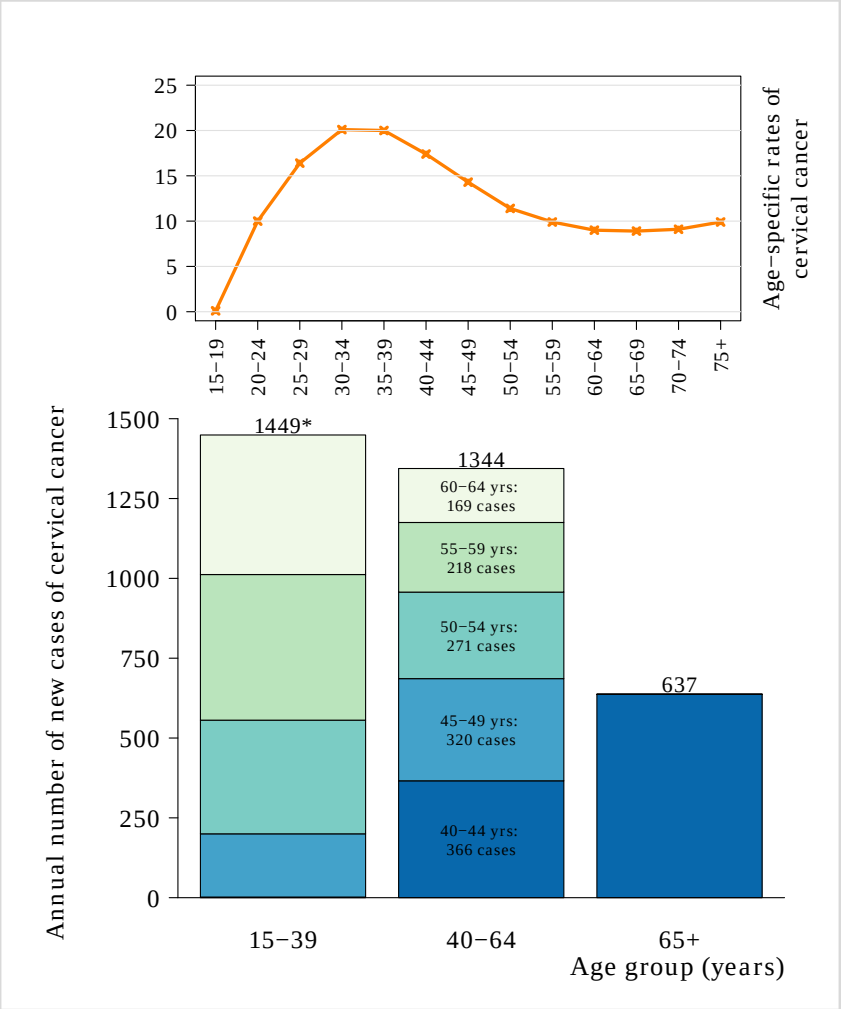
Data accessed on 07 Oct 2018.
Non-melanoma skin cancer is not included.
Rates per 100,000 women per year.
Data sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2018). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [05 October 2018].

Figure 6: Comparison of age-specific cervical cancer to age-specific incidence of other cancers among women 15-44 years of age in the United Kingdom (estimates for 2018)



Data accessed on 07 Oct 2018.
Non-melanoma skin cancer is not included.
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 (2018). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [05 October 2018].

Figure 7: Annual number of cases and age-specific incidence rates of cervical cancer in the United Kingdom (estimates for 2018)



*15-19 yrs: 2 cases. 20-24 yrs: 198 cases. 25-29 yrs: 356 cases. 30-34 yrs: 456 cases. 35-39 yrs: 437 cases.

Data accessed on 05 Oct 2018.

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 (2018). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [05 October 2018].

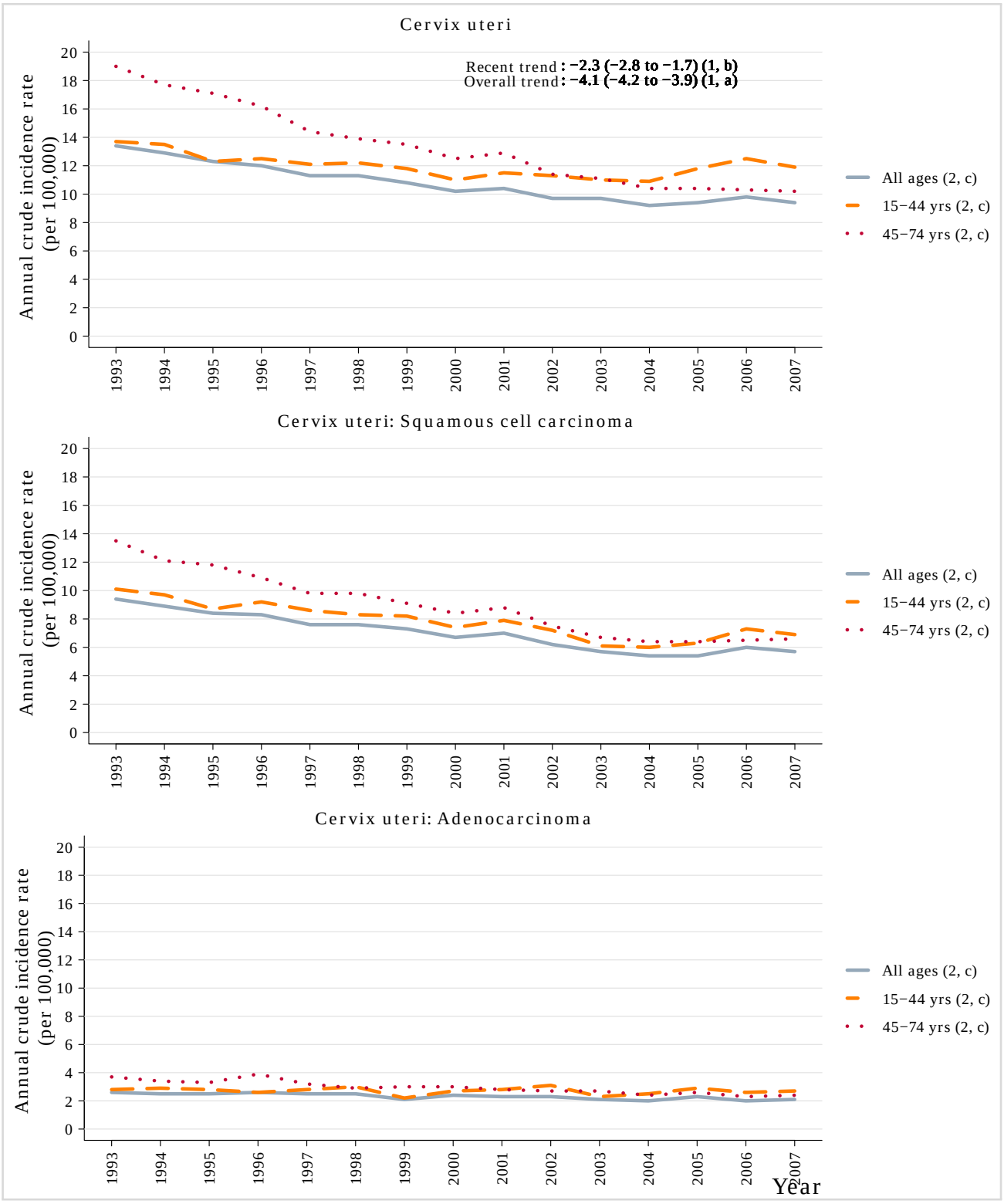
3.1.2 Cervical cancer incidence by histology in the United Kingdom

Table 5: Age-standardised incidence rates of cervical cancer in the United Kingdom by histological type and cancer registry

Cancer registry	Period	Carcinoma			
		Squamous	Adeno	Other	Unspec.
England	2008-2012	5.3	1.5	0.4	0.1
England, East	2008-2012	4.6	1.5	0.3	0.1
England, East Midlands	2008-2012	6.0	2.2	0.4	0.1
England, London	2008-2012	3.7	1.1	0.2	0.1
England, North East	2008-2012	8.0	1.6	0.6	0.1
England, North West	2008-2012	6.0	1.5	0.4	0.1
England, South East	2008-2012	4.3	1.4	0.3	0.1
England, South West	2008-2012	6.2	1.8	0.4	0.1
England, West Midlands	2008-2012	5.8	1.7	0.6	0.2
England, Yorkshire and The Humber	2008-2012	6.9	1.5	0.4	0.2
National	2008-2012	5.2	1.5	0.4	0.1
Northern Ireland	2008-2012	7.2	1.8	0.4	0.2
Scotland	2008-2012	6.7	1.8	0.4	0.1
Wales	2008-2012	-	-	-	-

Data accessed on 05 Oct 2018.
Adeno: adenocarcinoma; Other: Other carcinoma; Squamous: Squamous cell carcinoma; Unspec: Unspecified carcinoma;
Rates per 100,000 women per year.
Standarized rates have been estimated using the direct method and the World population as the references.
Data sources:
[1]Bray F, Colombet M, Mery L, Piñeros M, Znaor A, Zanetti R and Ferlay J, editors (2017). Cancer Incidence in Five Continents, Vol. XI (electronic version). Lyon: International Agency for Research on Cancer. Available from: http://ci5.iarc.fr, accessed [05 October 2018].

Figure 8: Time trends in cervical cancer incidence in the United Kingdom (cancer registry data)



Data accessed on 27 Apr 2015.

[a] Estimated annual percentage change based on the trend variable from the net drift for the most recent two 5-year periods.

[b] Estimated annual percentage change based on the trend variable from the net drift for 25 years, from 1983-2007.

[c] The following regional cancer registries provided data and contributed to their national estimate: Birmingham and West Midlands Region, East of England Region, Merseyside and Cheshire, North Western, Northern Ireland, Oxford, Scotland, South and Western Regions, Yorkshire.

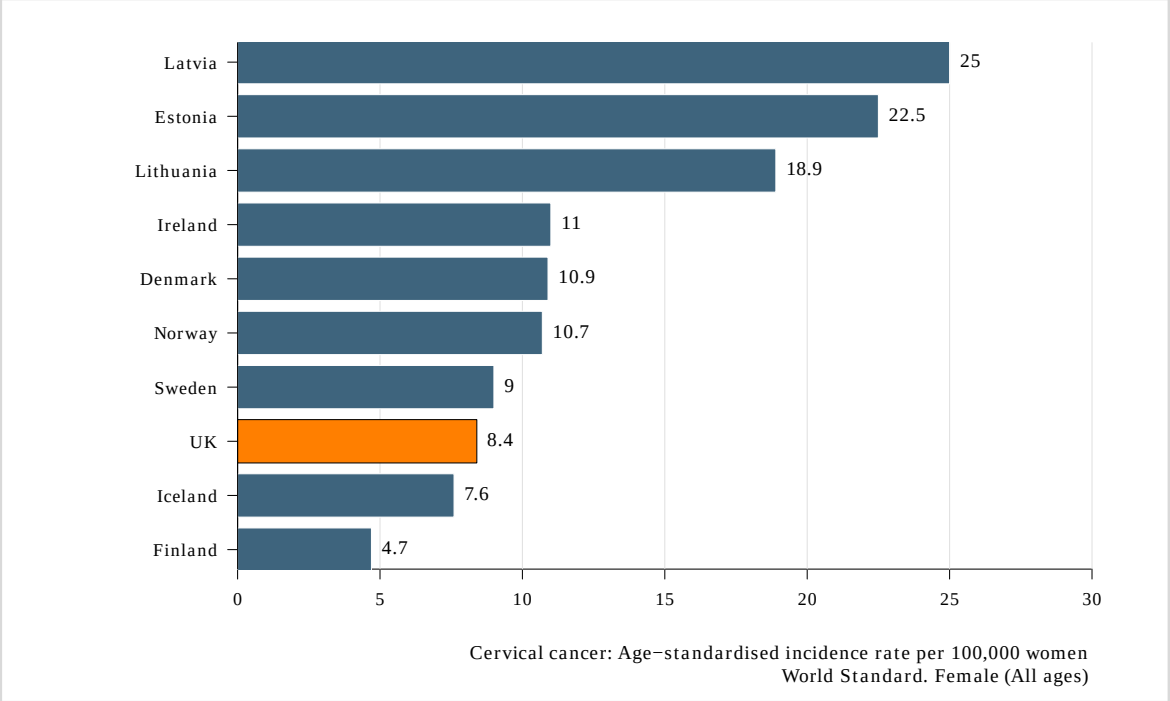
Data sources:

[1] Vaccarella S, Lortet-Tieulent J, Plummer M, Franceschi S, Bray F. Worldwide trends in cervical cancer incidence: Impact of screening against changes in disease risk factors. eur J Cancer 2013;49:3262-73.

[2] Ferlay J, Bray F, Steliarova-Foucher E and Forman D. Cancer Incidence in Five Continents, CI5plus: IARC CancerBase No. 9 [Internet]. Lyon, France: International Agency for Research on Cancer; 2014. Available from: http://ci5.iarc.fr

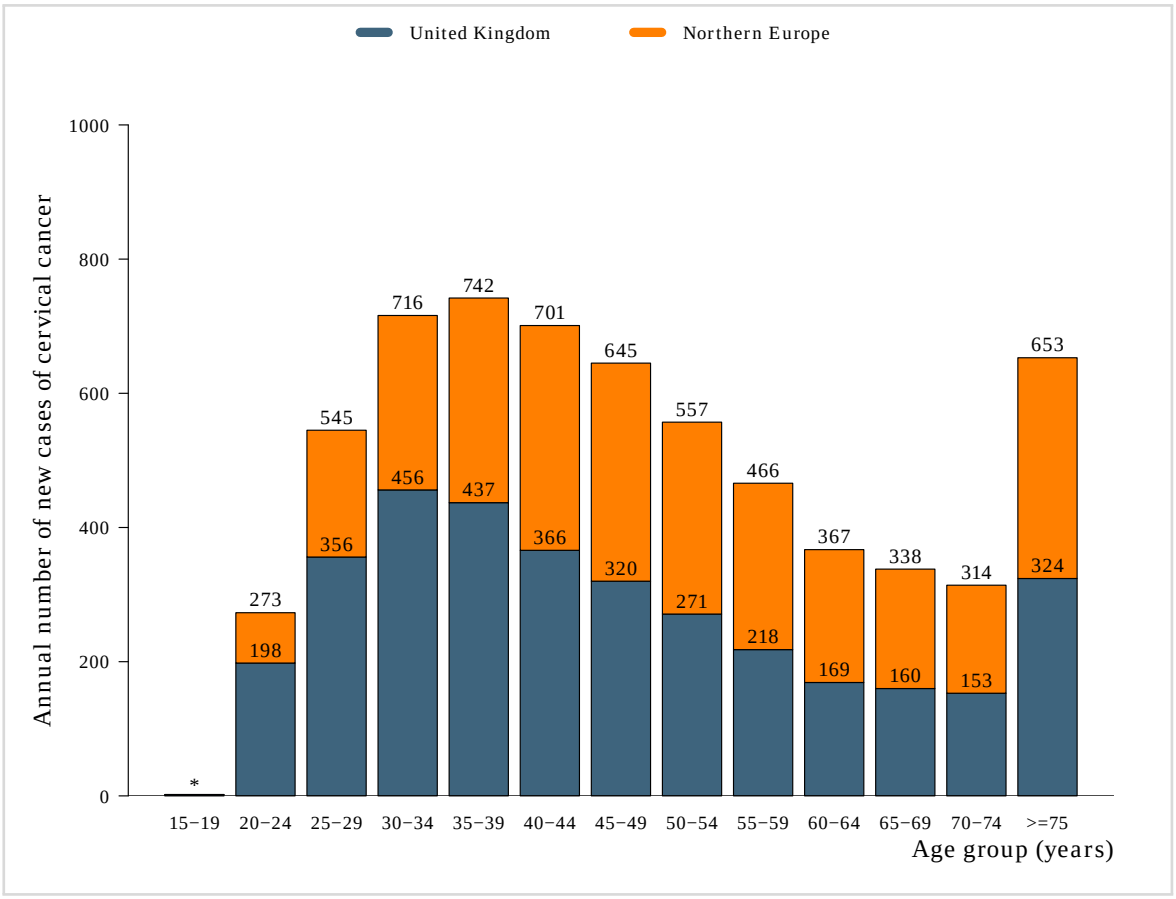
3.1.3 Cervical cancer incidence in the United Kingdom across Northern Europe

Figure 9: Age-standardised incidence rates of cervical cancer of the United Kingdom (estimates for 2018)



Data accessed on 05 Oct 2018.
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 (2018). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [05 October 2018].

Figure 10: Annual number of new cases of cervical cancer by age group in the United Kingdom (estimates for 2018)



*2 cases for United Kingdom and 2 cases for Northern Europe in the 15-19 age group.

Data accessed on 05 Oct 2018.

Data sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2018). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [05 October 2018].

3.1.4 Cervical cancer mortality in the United Kingdom

KEY STATS.

About **1,033 cervical cancer deaths occur annually in the United Kingdom** (estimates for 2018).

Cervical cancer **ranks* as the 18^{th} leading cause** of female cancer deaths in **the United Kingdom**.

Cervical cancer is the **2^{nd} leading cause of cancer deaths** in **women aged 15 to 44 years in the United Kingdom**.

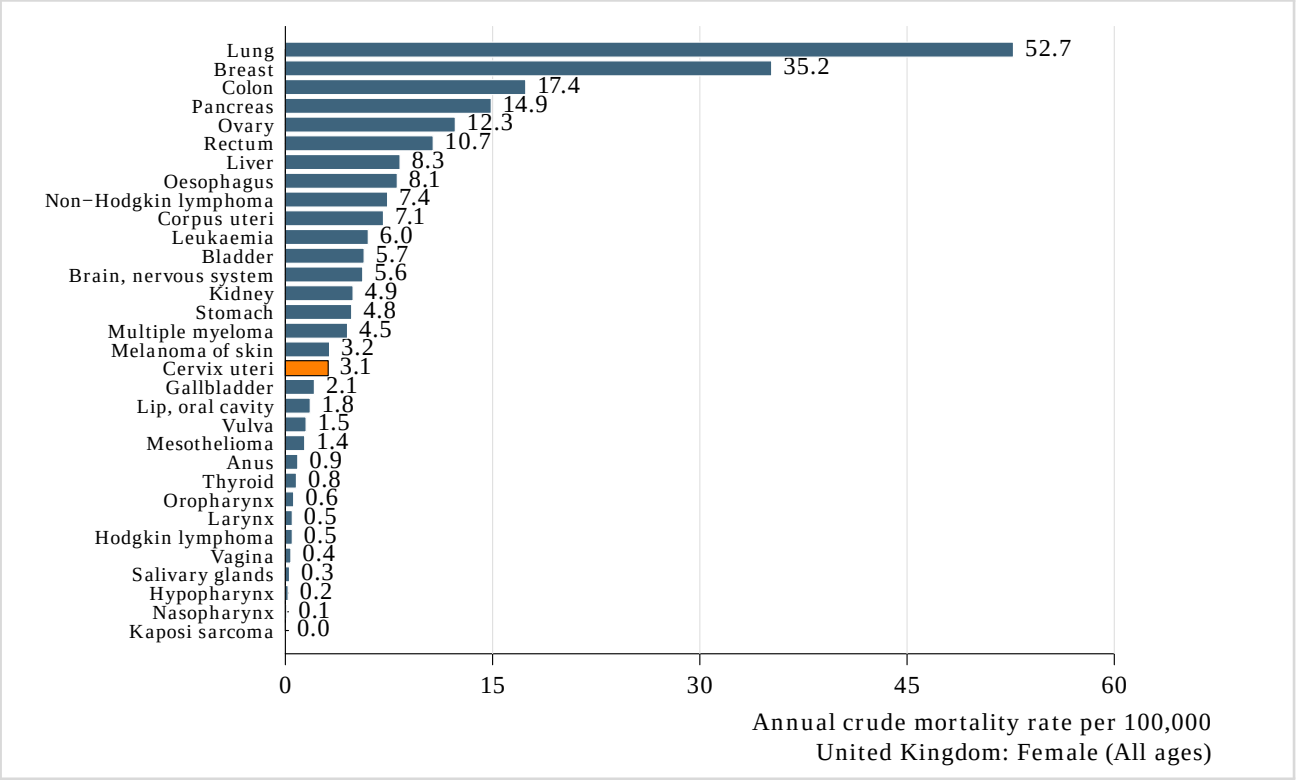
* Ranking of cervical cancer incidence to other cancers among all women according to highest incidence rates (ranking 1st) excluding non-melanoma skin cancer and considering separated colon, rectum and anus. Ranking is based on crude incidence rates (actual number of cervical cancer cases). Ranking using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

Table 6: Cervical cancer mortality in the United Kingdom (estimates for 2018)

Indicator	United Kingdom	Northern Europe	World
Annual number of deaths	1,033	2,060	311,365
Crude mortality rate[a]	3.1	3.9	8.2
Age-standardized mortality rate[a]	1.7	2.1	6.9
Cumulative risk (%) at 75 years old[b]	0.2	0.2	0.8

Data accessed on 05 Oct 2018.
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.
[b] Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.
Data sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2018). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [05 October 2018].

Figure 11: Comparison of cervical cancer mortality to other cancers in women of all ages in the United Kingdom (estimates for 2018)



Data accessed on 07 Oct 2018.

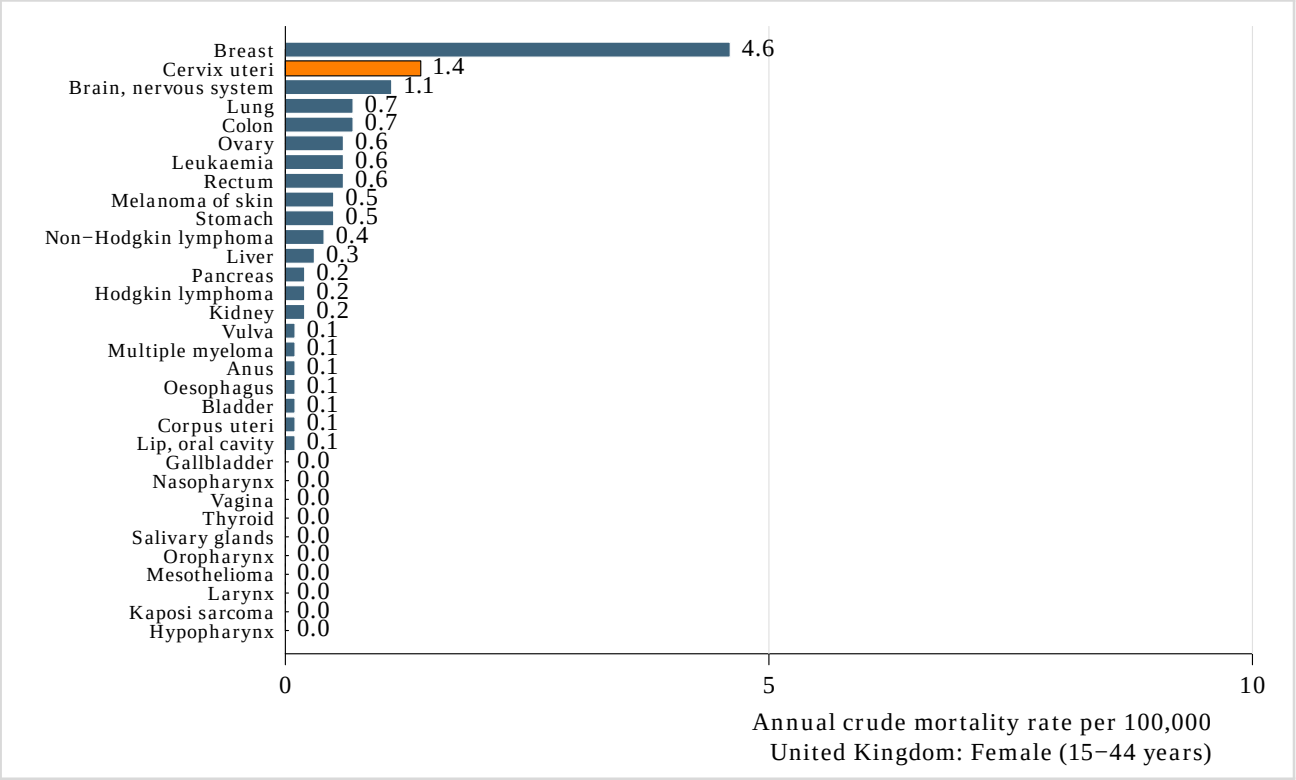
Non-melanoma skin cancer is not included.

[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 (2018). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [05 October 2018].

Figure 12: Comparison of age-specific mortality rates of cervical cancer to other cancers among women 15-44 years of age in the United Kingdom (estimates for 2018)



Data accessed on 07 Oct 2018.

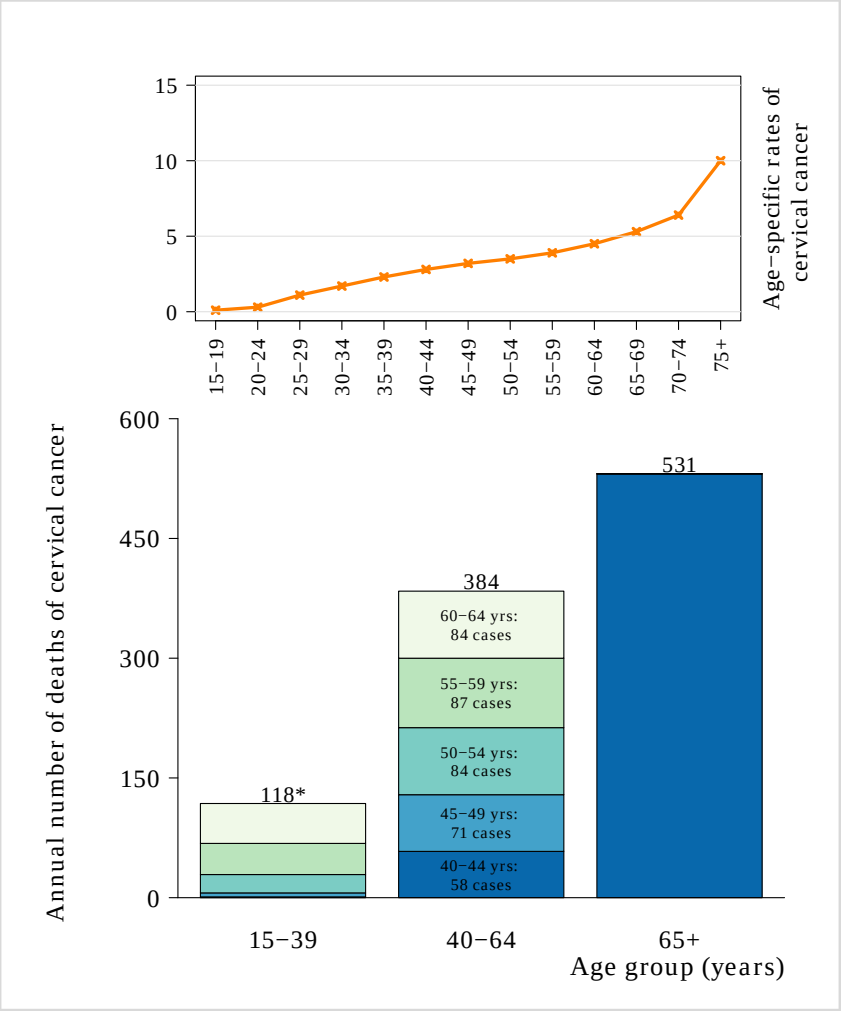
Non-melanoma skin cancer is not included.

[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 (2018). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [05 October 2018].

Figure 13: Annual number of deaths and age-specific mortality rates of cervical cancer in the United Kingdom (estimates for 2018)



* 15-19 yrs: 1 cases. 20-24 yrs: 5 cases. 25-29 yrs: 23 cases. 30-34 yrs: 39 cases. 35-39 yrs: 50 cases.

Data accessed on 05 Oct 2018.

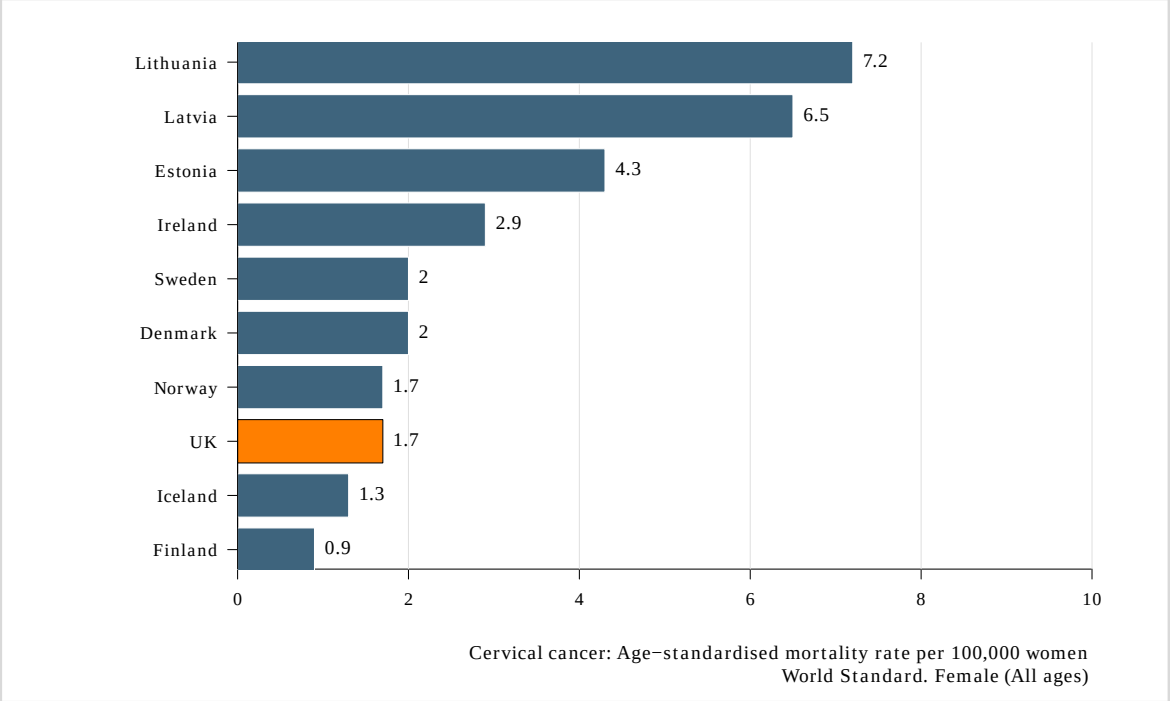
Rates per 100,000 women per year.

Data sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2018). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [05 October 2018].

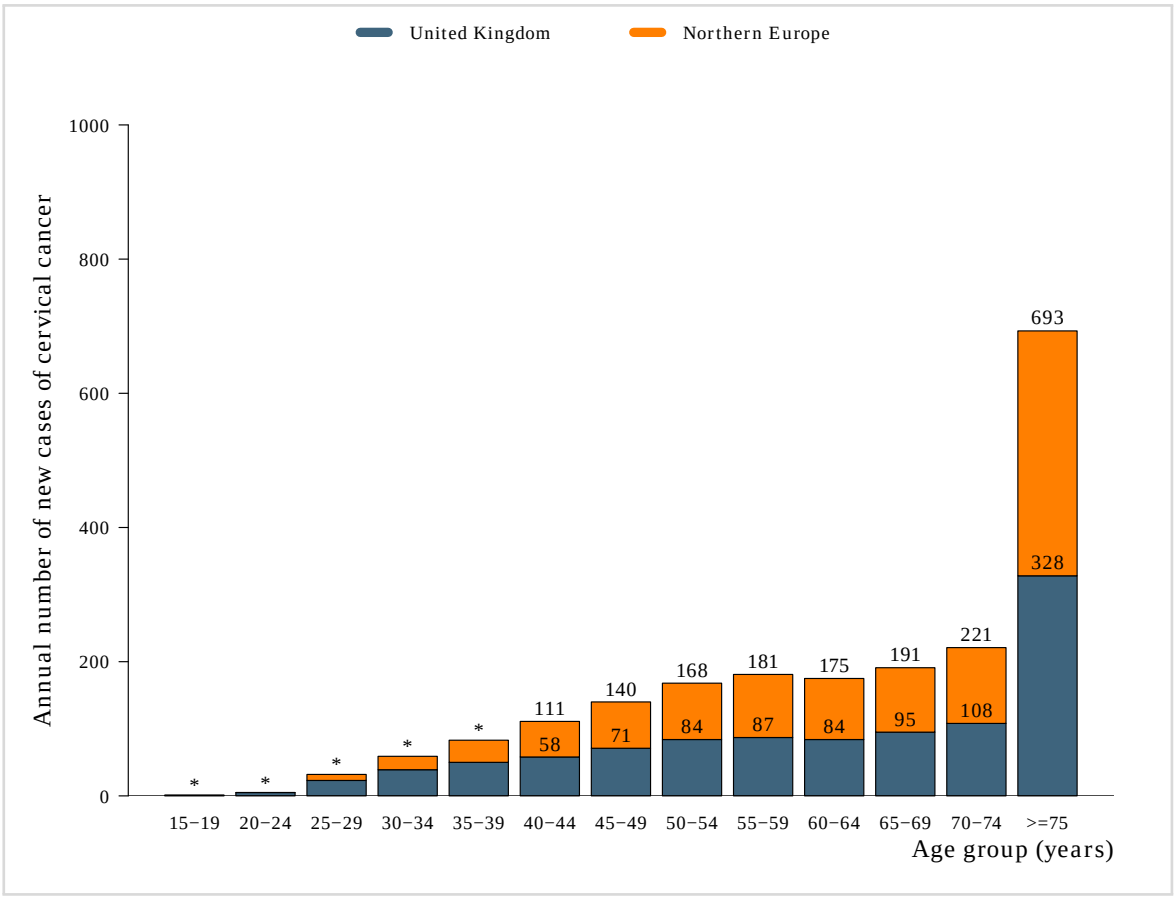
3.1.5 Cervical cancer mortality in the United Kingdom across Northern Europe

Figure 14: Comparison of age-standardised cervical cancer mortality rates in the United Kingdom and countries within the region (estimates for 2018)



Data accessed on 05 Oct 2018.
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 (2018). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [05 October 2018].

Figure 15: Annual deaths number of cervical cancer by age group in the United Kingdom (estimates for 2018)



*1 cases for United Kingdom and 1 cases for Northern Europe in the 15-19 age group. 5 cases for United Kingdom and 5 cases for Northern Europe in the 20-24 age group. 23 cases for United Kingdom and 32 cases for Northern Europe in the 25-29 age group. 39 cases for United Kingdom and 59 cases for Northern Europe in the 30-34 age group. 50 cases for United Kingdom and 83 cases for Northern Europe in the 35-39 age group.

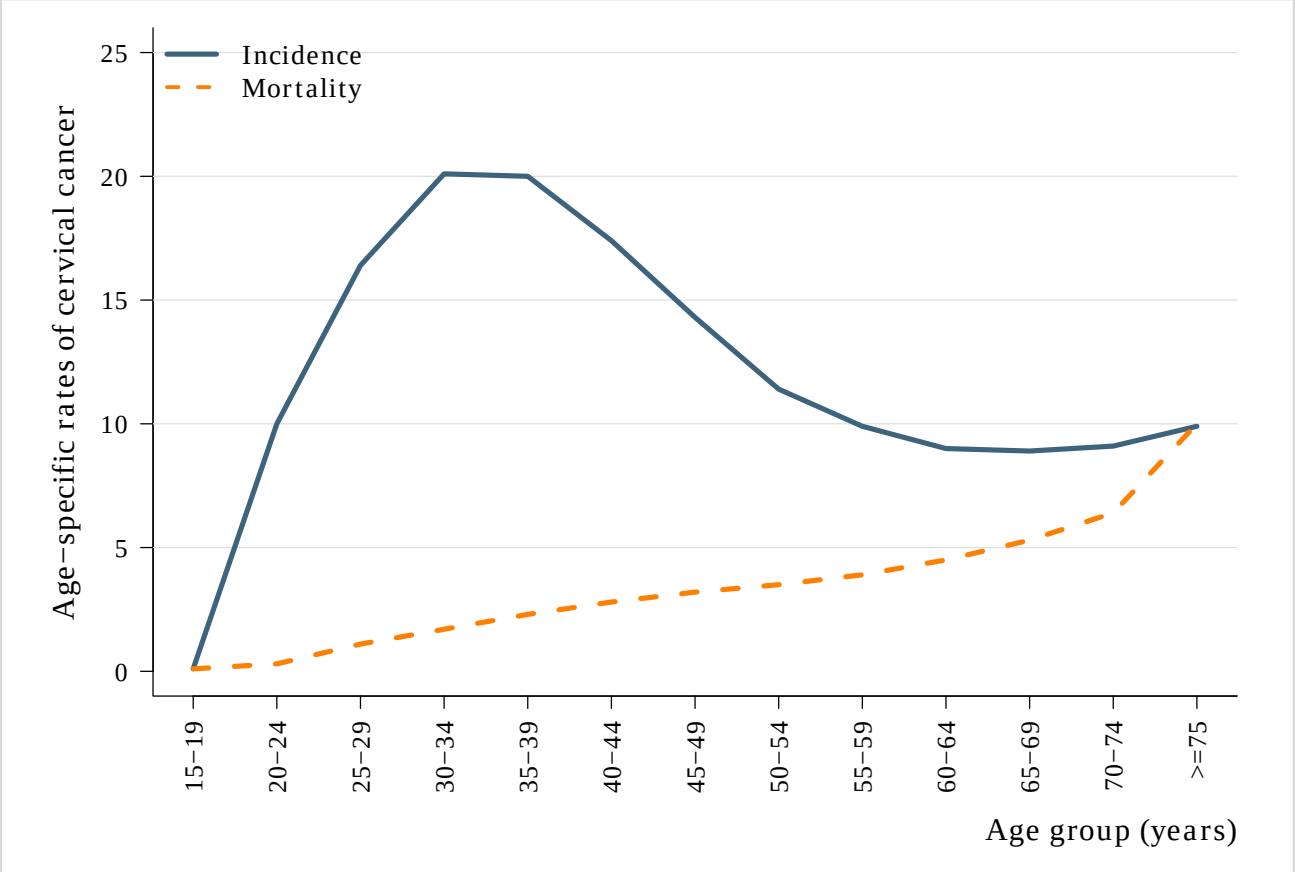
Data accessed on 05 Oct 2018.

Data sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2018). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [05 October 2018].

3.1.6 Cervical cancer incidence and mortality comparison, Premature deaths and disability in the United Kingdom

Figure 16: Comparison of age-specific cervical cancer incidence and mortality rates in the United Kingdom (estimates for 2018)



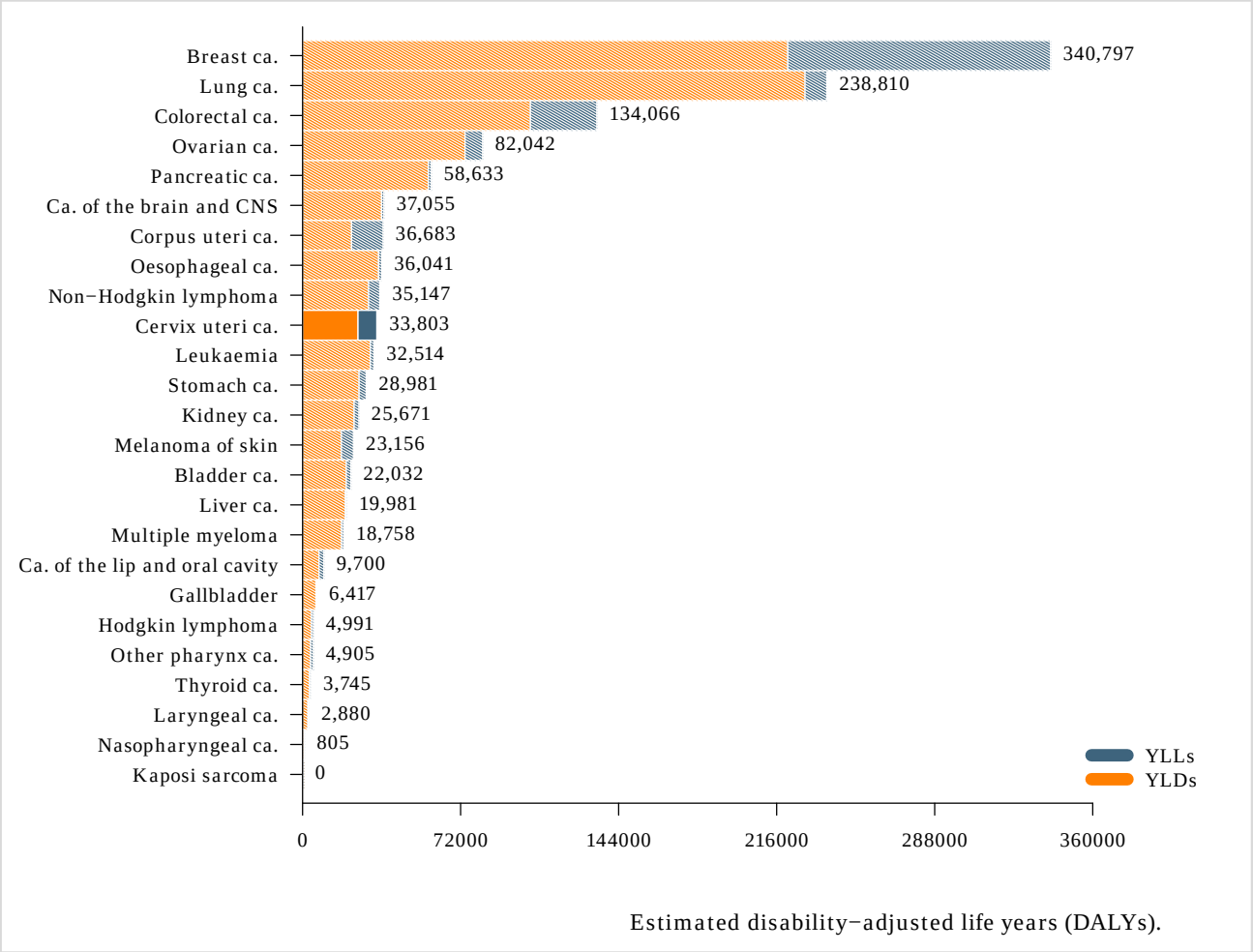
Data accessed on 05 Oct 2018.
Rates per 100,000 women per year.
Data sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2018). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [05 October 2018].

Table 7: Premature deaths and disability from cervical cancer in United Kingdom, Northern Europe and the rest of the world (estimates for 2008)

	United Kingdom		Northern Europe		World	
Indicator	**Number**	**ASR (W)**	**Number**	**ASR (W)**	**Number**	**ASR (W)**
Estimated disability-adjusted life years (DALYs)	33,803	89	64,572	105	8,738,004	293
Years of life lost (YLLs)	25,259	61	49,639	75	7,788,282	264
Years lived with disability (YLDs)	8,543	28	14,933	31	949,722	28

Data accessed on 04 Nov 2013.
Data sources:
Soerjomataram I, Lortet-Tieulent J, Parkin DM, Ferlay J, Mathers C, Forman D, Bray F. Global burden of cancer in 2008: a systematic analysis of disability-adjusted life-years in 12 world regions. Lancet. 2012 Nov 24;380(9856):1840-50.

Figure 17: Comparison of annual premature deaths and disability from cervical cancer in the United Kingdom to other cancers among women (estimates for 2008)



Data accessed on 04 Nov 2013.

CNS: Central Nervous System; YLDs: years lived with disability; YLLs: Years of life lost;

Data sources:

Soerjomataram I, Lortet-Tieulent J, Parkin DM, Ferlay J, Mathers C, Forman D, Bray F. Global burden of cancer in 2008: a systematic analysis of disability-adjusted life-years in 12 world regions. Lancet. 2012 Nov 24;380(9856):1840-50.

3.2 Anogenital cancers other than the cervix

Data on HPV role in anogenital cancers other than cervix are limited, but there is an increasing body of evidence strongly linking HPV DNA with cancers of anus, vulva, vagina, and penis. Although these cancers are much less frequent compared to cervical cancer, their association with HPV make them potentially preventable and subject to similar preventative strategies as those for cervical cancer. *(Vaccine 2006, Vol. 24, Suppl 3; Vaccine 2008, Vol. 26, Suppl 10; Vaccine 2012, Vol. 30, Suppl 5; IARC Monographs 2007, Vol. 90)*.

3.2.1 Anal cancer

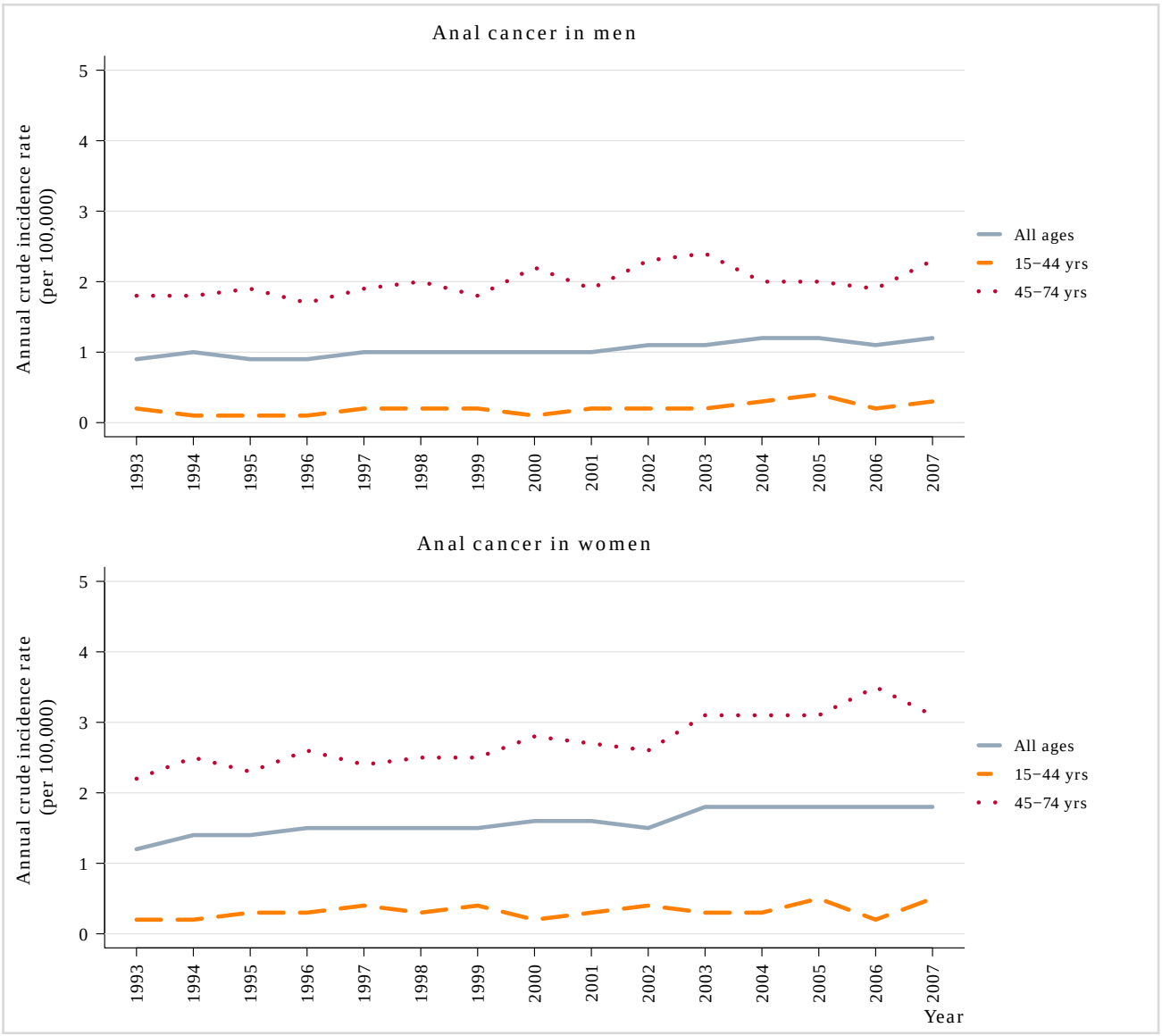
Anal cancer is rare in the general population with an average worldwide incidence of 1 per 100,000, but is reported to be increasing in more developed regions. Globally, there are an estimated 27,000 new cases every year *(de Martel C et al. Lancet Oncol 2012;13(6):607-15)*. Women have higher incidences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

Table 8: Anal cancer incidence in the United Kingdom by cancer registry and sex

		MALE			FEMALE		
Cancer registry[1]	**Period**	**N cases**[a]	**Crude rate**[b]	**ASR**[b]	**N cases**[a]	**Crude rate**[c]	**ASR**[c]
England	2008-2012	1,758	1.4	0.8	2,982	2.2	1.2
England, East	2008-2012	210	1.5	0.8	350	2.4	1.2
England, East Midlands	2008-2012	152	1.4	0.7	231	2.0	1.1
England, London	2008-2012	225	1.1	0.9	333	1.6	1.2
England, North East	2008-2012	74	1.2	0.7	164	2.5	1.4
England, North West	2008-2012	234	1.4	0.8	399	2.2	1.2
England, South East	2008-2012	283	1.3	0.8	512	2.3	1.3
England, South West	2008-2012	198	1.5	0.8	365	2.7	1.3
England, West Midlands	2008-2012	155	1.1	0.7	279	2.0	1.1
England, Yorkshire and The Humber	2008-2012	227	1.8	1.0	349	2.6	1.4
National	2008-2012	2,095	1.4	0.8	3,598	2.3	1.3
Northern Ireland	2008-2012	45	1.0	0.7	92	2.0	1.2
Scotland	2008-2012	176	1.4	0.8	337	2.5	1.4
Wales	2008-2012	116	1.6	0.9	187	2.4	1.3

Data accessed on 05 Oct 2018.
ASR: Age-standardized rate, Standardized rates have been estimated using the direct method and the World population as the reference;
Please refer to original source (available at http://ci5.iarc.fr/CI5-XI/Default.aspx)
[a] Accumulated number of cases during the period in the population covered by the corresponding registry.
[b] Rates per 100,000 men per year.
[c] Rates per 100,000 women per year.
Data sources:
[1] Bray F, Colombet M, Mery L, Piñeros M, Znaor A, Zanetti R and Ferlay J, editors (2017). Cancer Incidence in Five Continents, Vol. XI (electronic version). Lyon: International Agency for Research on Cancer. Available from: http://ci5.iarc.fr, accessed [05 October 2018].

Figure 18: Time trends in anal cancer incidence in the United Kingdom (cancer registry data)



Data accessed on 27 Apr 2015.

The following regional cancer registries provided data and contributed to their national estimate: Birmingham and West Midlands Region, East of England Region, Merseyside and Cheshire, North Western, Northern Ireland, Oxford, Scotland, South and Western Regions, Yorkshire.

Data sources:

Ferlay J, Bray F, Steliarova-Foucher E and Forman D. Cancer Incidence in Five Continents, CI5plus: IARC CancerBase No. 9 [Internet]. Lyon, France: International Agency for Research on Cancer; 2014. Available from: http://ci5.iarc.fr

3.2.2 Vulvar cancer

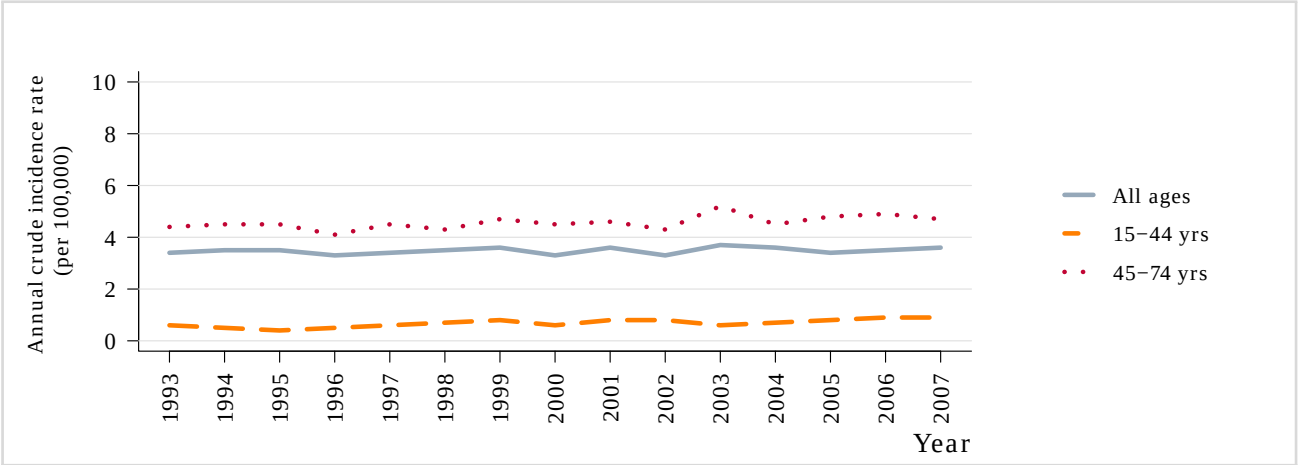
Cancer of the vulva is rare among women worldwide, with an estimated 27,000 new cases in 2008, representing 4% of all gynaecologic cancers *(de Martel C et al. Lancet Oncol 2012;13(6):607-15)*. Worldwide, about 60% of all vulvar cancer cases occur in more developed countries. Vulvar cancer has two distinct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

Table 9: Vulvar cancer incidence in the United Kingdom by cancer registry

Cancer registry[1]	Period	N cases[a]	Crude rate[b]	ASR[b]
England	2008-2012	5,009	3.7	1.8
England, East	2008-2012	548	3.7	1.6
England, East Midlands	2008-2012	490	4.3	2.0
England, London	2008-2012	451	2.2	1.3
England, North East	2008-2012	278	4.2	1.9
England, North West	2008-2012	757	4.2	2.0
England, South East	2008-2012	786	3.6	1.6
England, South West	2008-2012	590	4.4	1.8
England, West Midlands	2008-2012	570	4.0	2.0
England, Yorkshire and The Humber	2008-2012	539	4.0	2.0
Northern Ireland	2008-2012	134	2.9	1.6
Scotland	2008-2012	527	3.9	2.0
Wales	2008-2012	329	4.2	1.9
National	2008-2012	5,999	3.8	1.8

Data accessed on 05 Oct 2018.
ASR: Age-standardized rate, Standardized rates have been estimated using the direct method and the World population as the reference;
Please refer to original source (available at http://ci5.iarc.fr/CI5-XI/Default.aspx)
[a] Accumulated number of cases during the period in the population covered by the corresponding registry.
[b] Rates per 100,000 women per year.
Data sources:
[1] Bray F, Colombet M, Mery L, Piñeros M, Znaor A, Zanetti R and Ferlay J, editors (2017). Cancer Incidence in Five Continents, Vol. XI (electronic version). Lyon: International Agency for Research on Cancer. Available from: http://ci5.iarc.fr, accessed [05 October 2018].

Figure 19: Time trends in vulvar cancer incidence in the United Kingdom (cancer registry data)



Data accessed on 27 Apr 2015.
The following regional cancer registries provided data and contributed to their national estimate: Birmingham and West Midlands Region, East of England Region, Merseyside and Cheshire, North Western, Northern Ireland, Oxford, Scotland, South and Western Regions, Yorkshire.
Data sources:
Ferlay J, Bray F, Steliarova-Foucher E and Forman D. Cancer Incidence in Five Continents, CI5plus: IARC CancerBase No. 9 [Internet]. Lyon, France: International Agency for Research on Cancer; 2014. Available from: http://ci5.iarc.fr

3.2.3 Vaginal cancer

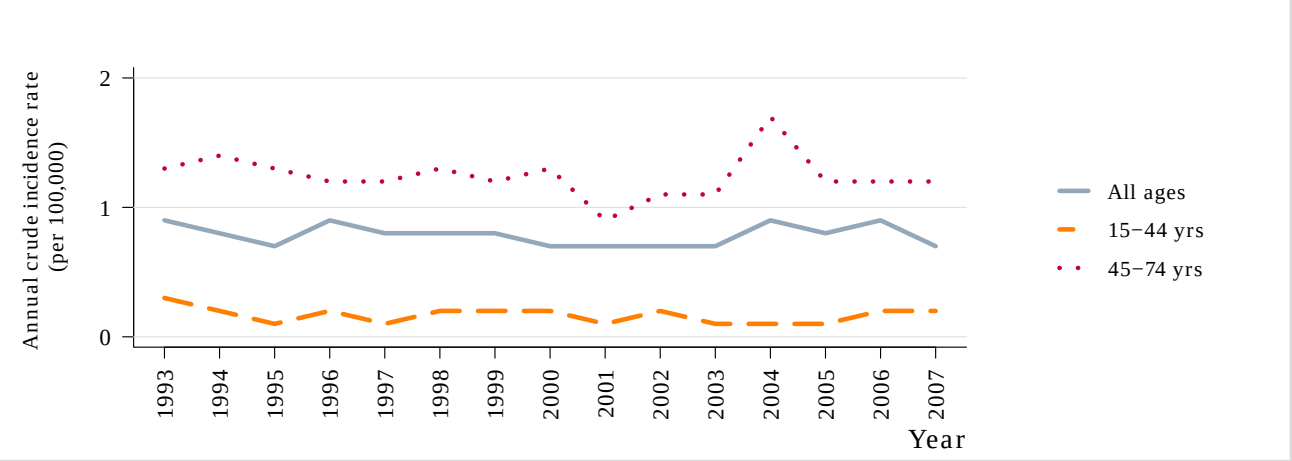
Cancer of the vagina is a rare cancer, with an estimated 13,000 new cases in 2008, representing 2% of all gynaecologic cancers *(de Martel C et al. Lancet Oncol 2012;13(6):607-15)*. Similar to cervical cancer, the majority of vaginal cancer cases (68%) occur in less developed countries. Most vaginal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

Table 10: Vaginal cancer incidence in the United Kingdom by cancer registry

Cancer registry[1]	Period	N cases[a]	Crude rate[b]	ASR[b]
England	2008-2012	1,081	0.8	0.4
England, East	2008-2012	94	0.6	0.3
England, East Midlands	2008-2012	109	1.0	0.5
England, London	2008-2012	155	0.8	0.5
England, North East	2008-2012	36	0.5	0.3
England, North West	2008-2012	141	0.8	0.4
England, South East	2008-2012	170	0.8	0.4
England, South West	2008-2012	122	0.9	0.4
England, West Midlands	2008-2012	103	0.7	0.4
England, Yorkshire and The Humber	2008-2012	151	1.1	0.6
Northern Ireland	2008-2012	41	0.9	0.5
Scotland	2008-2012	130	1.0	0.5
Wales	2008-2012	71	0.9	0.5
National	2008-2012	1,323	0.8	0.4

Data accessed on 05 Oct 2018.
ASR: Age-standardized rate, Standardized rates have been estimated using the direct method and the World population as the reference;
Please refer to original source (available at http://ci5.iarc.fr/CI5-XI/Default.aspx)
[a] Accumulated number of cases during the period in the population covered by the corresponding registry.
[b] Rates per 100,000 women per year.
Data sources:
[1] Bray F, Colombet M, Mery L, Piñeros M, Znaor A, Zanetti R and Ferlay J, editors (2017). Cancer Incidence in Five Continents, Vol. XI (electronic version). Lyon: International Agency for Research on Cancer. Available from: http://ci5.iarc.fr, accessed [05 October 2018].

Figure 20: Time trends in vaginal cancer incidence in the United Kingdom (cancer registry data)



Data accessed on 27 Apr 2015.
The following regional cancer registries provided data and contributed to their national estimate: Birmingham and West Midlands Region, East of England Region, Merseyside and Cheshire, North Western, Northern Ireland, Oxford, Scotland, South and Western Regions, Yorkshire.
Data sources:
Ferlay J, Bray F, Steliarova-Foucher E and Forman D. Cancer Incidence in Five Continents, CI5plus: IARC CancerBase No. 9 [Internet]. Lyon, France: International Agency for Research on Cancer; 2014. Available from: http://ci5.iarc.fr

3.2.4 Penile cancer

The annual burden of penile cancer has been estimated to be 22,000 cases worldwide with incidence rates strongly correlating with those of cervical cancer *(de Martel C et al. Lancet Oncol 2012;13(6):607-15)*. Penile cancer is rare and most commonly affects men aged 50-70 years. Incidence rates are higher in less developed countries than in more developed countries, accounting for up to 10% of male cancers in some parts of Africa, South America and Asia. Precursor cancerous penile lesions (PeIN) are rare.

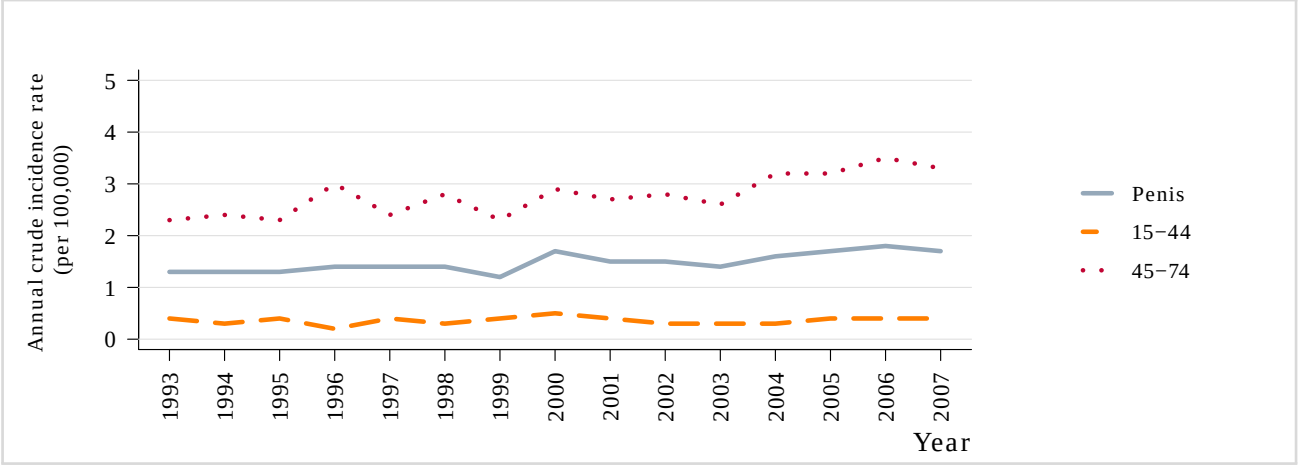
Cancers of the penis are primarily of squamous cell carcinomas (SCC) (95%) and the most common penile SCC histologic sub-types are keratinising (49%), mixed warty-basaloid (17%), verrucous (8%) warty (6%), and basaloid (4%). HPV is most commonly detected in basaloid and warty tumours but is less common in keratinising and verrucous tumours. Approximately 60-100% of PeIN lesions are HPV DNA positive.

Table 11: Penile cancer incidence in the United Kingdom by cancer registry

Cancer registry	Period	N cases[a]	Crude rate[b]	ASR[b]
England	2008-2012	2,202	1.7	1.0
England, East	2008-2012	224	1.6	0.8
England, East Midlands	2008-2012	210	1.9	1.0
England, London	2008-2012	199	1.0	0.8
England, North East	2008-2012	111	1.8	1.0
England, North West	2008-2012	398	2.3	1.3
England, South East	2008-2012	329	1.6	0.9
England, South West	2008-2012	255	2.0	1.0
England, West Midlands	2008-2012	231	1.7	1.0
England, Yorkshire and The Humber	2008-2012	245	1.9	1.1
Northern Ireland	2008-2012	91	2.1	1.3
Scotland	2008-2012	302	2.4	1.4
Wales	2008-2012	163	2.2	1.2
National	2008-2012	2,758	1.8	1.0

Data accessed on 05 Oct 2018.
ASR: Age-standardized rate, Standardized rates have been estimated using the direct method and the World population as the reference;
Please refer to original source (available at http://ci5.iarc.fr/CI5-XI/Default.aspx)
[a] Accumulated number of cases during the period in the population covered by the corresponding registry.
[b] Rates per 100,000 men per year.
Data sources:
[1] Bray F, Colombet M, Mery L, Piñeros M, Znaor A, Zanetti R and Ferlay J, editors (2017). Cancer Incidence in Five Continents, Vol. XI (electronic version). Lyon: International Agency for Research on Cancer. Available from: http://ci5.iarc.fr, accessed [05 October 2018].

Figure 21: Time trends in penile cancer incidence in the United Kingdom (cancer registry data)



Data accessed on 27 Apr 2015.

(Continued on next page)

(Figure 21 – continued from previous page)

The following regional cancer registries provided data and contributed to their national estimate: Birmingham and West Midlands Region, East of England Region, Merseyside and Cheshire, North Western, Northern Ireland, Oxford, Scotland, South and Western Regions, Yorkshire.

Data sources:

Ferlay J, Bray F, Steliarova-Foucher E and Forman D. Cancer Incidence in Five Continents, CI5plus: IARC CancerBase No. 9 [Internet]. Lyon, France: International Agency for Research on Cancer; 2014. Available from: http://ci5.iarc.fr

3.3 Head and neck cancers

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

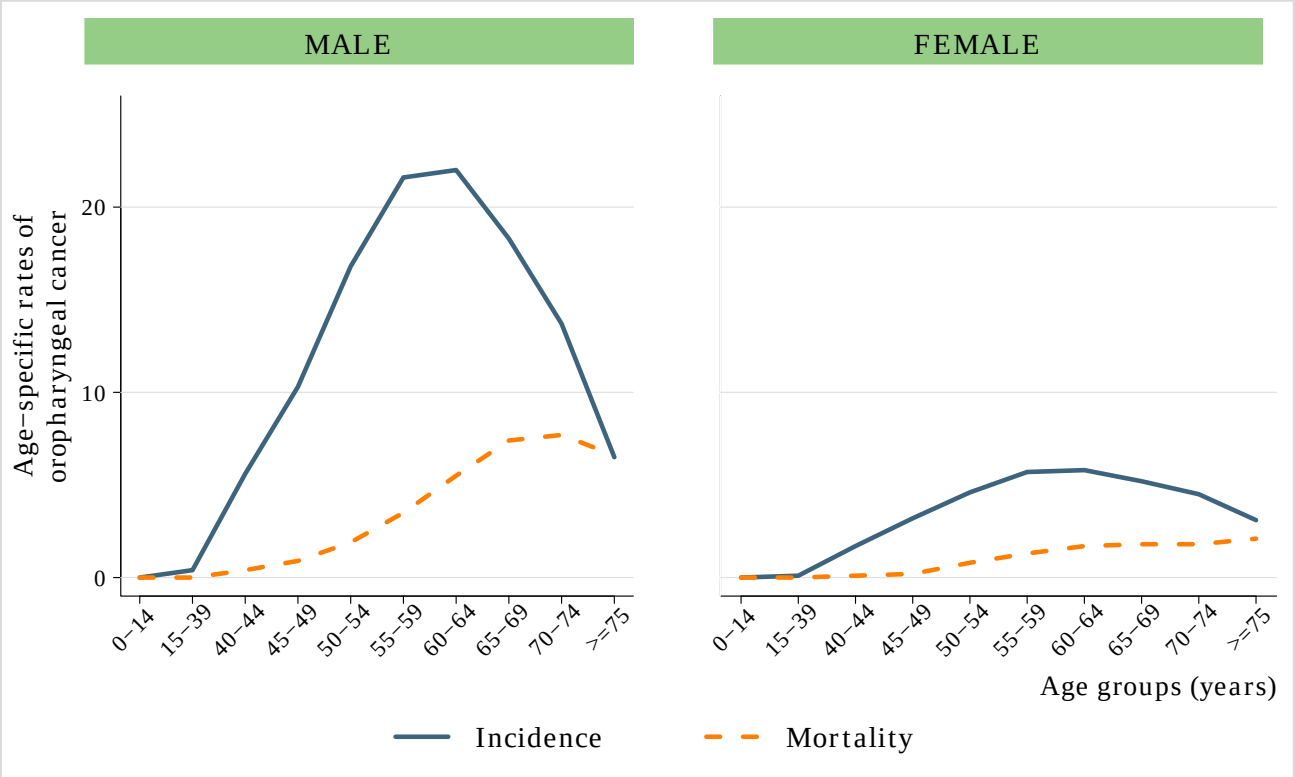
3.3.1 Oropharyngeal cancer

Table 12: Incidence and mortality of cancer of the oropharynx in the United Kingdom, Northern Europe and the rest of the world by sex (estimates for 2018). Includes ICD-10 codes: C09-10

Indicator	MALE			FEMALE		
	United Kingdom	Northern Europe	World	United Kingdom	Northern Europe	World
INCIDENCE						
Annual number of new cancer cases	2,313	3,103	74,472	736	998	18,415
Crude incidence rate[a]	7.0	6.0	1.9	2.2	1.9	0.5
Age-standardized incidence rate[a]	4.6	3.9	1.8	1.3	1.1	0.4
Cumulative risk (%) at 75 years old[b]	0.6	0.5	0.2	0.2	0.1	0
MORTALITY						
Annual number of deaths	653	1,008	42,116	219	309	8,889
Crude mortality rate[a]	2.0	2.0	1.1	0.6	0.6	0.2
Age-standardized mortality rate[a]	1.0	1.0	1.0	0.3	0.3	0.2
Cumulative risk (%) at 75 years old[c]	0.1	0.1	0.1	0	0	0

Data accessed on 05 Oct 2018.
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Male: Rates per 100,000 men per year. Female: Rates per 100,000 women per year.
[b] Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.
[c] Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.
Data sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2018). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [05 October 2018].

Figure 22: Comparison of incidence and mortality rates of the oropharynx by age group and sex in the United Kingdom (estimates for 2018). Includes ICD-10 codes: C09-10



Data accessed on 05 Oct 2018.
Male: Rates per 100,000 men per year. Female: 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 (2018). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [05 October 2018].

Table 13: Incidence of oropharyngeal cancer in the United Kingdom by cancer registry and sex

Cancer registry[1,α]	Period[α]	MALE			FEMALE		
		N cases[a]	Crude rate[b]	ASR[α]	N cases[a]	Crude rate[b]	ASR[b]
Tongue (ICD-10 code: C01-02)							
England	2008-2012	5,467	4.2	2.8	2,906	2.2	1.3
England, East	2008-2012	589	4.1	2.6	309	2.1	1.1
England, East Midlands	2008-2012	452	4.1	2.5	274	2.4	1.4
England, London	2008-2012	628	3.2	2.6	348	1.7	1.2
England, North East	2008-2012	330	5.2	3.2	148	2.2	1.2
England, North West	2008-2012	864	5.0	3.2	411	2.3	1.4
England, South East	2008-2012	848	4.0	2.5	446	2.0	1.1
England, South West	2008-2012	613	4.8	2.8	339	2.5	1.3
England, West Midlands	2008-2012	545	4.0	2.5	337	2.4	1.4
England, Yorkshire and The Humber	2008-2012	598	4.6	3.0	294	2.2	1.3
National	2008-2012	6,685	4.3	2.8	3,559	2.2	1.3
Northern Ireland	2008-2012	163	3.7	2.6	87	1.9	1.1
Scotland	2008-2012	696	5.5	3.3	401	3.0	1.6
Wales	2008-2012	359	4.8	2.9	165	2.1	1.2
Tonsillar cancer (ICD-10 code: C09)							
England	2008-2012	3,612	2.8	1.9	1,214	0.9	0.6
England, East	2008-2012	407	2.9	1.9	126	0.9	0.6
England, East Midlands	2008-2012	342	3.1	2.1	114	1.0	0.7
England, London	2008-2012	422	2.1	1.8	145	0.7	0.6
England, North East	2008-2012	200	3.2	2.1	67	1.0	0.6
England, North West	2008-2012	544	3.2	2.1	182	1.0	0.7
England, South East	2008-2012	602	2.9	1.9	211	1.0	0.6
England, South West	2008-2012	379	2.9	1.9	122	0.9	0.6
England, West Midlands	2008-2012	356	2.6	1.8	138	1.0	0.7
England, Yorkshire and The Humber	2008-2012	360	2.8	1.9	109	0.8	0.5
Northern Ireland	2008-2012	78	1.8	1.3	34	0.7	0.5
Scotland	2008-2012	357	2.8	1.9	131	1.0	0.6
Wales	2008-2012	267	3.6	2.3	93	1.2	0.7
National	2008-2012	4,314	2.8	1.9	1,472	0.9	0.6
Cancer of the oropharynx (excludes tonsil) (ICD-10 code: C10)							
England	2008-2012	832	0.6	0.4	278	0.2	0.1
England, East	2008-2012	59	0.4	0.3	25	0.2	0.1
England, East Midlands	2008-2012	69	0.6	0.4	22	0.2	0.1
England, London	2008-2012	115	0.6	0.5	48	0.2	0.2
England, North East	2008-2012	68	1.1	0.6	21	0.3	0.2
England, North West	2008-2012	195	1.1	0.7	55	0.3	0.2
England, South East	2008-2012	102	0.5	0.3	28	0.1	0.1
England, South West	2008-2012	55	0.4	0.2	23	0.2	0.1
England, West Midlands	2008-2012	83	0.6	0.4	27	0.2	0.1
England, Yorkshire and The Humber	2008-2012	86	0.7	0.4	29	0.2	0.1
Northern Ireland	2008-2012	51	1.2	0.8	13	0.3	0.2
Scotland	2008-2012	194	1.5	0.9	69	0.5	0.3
Wales	2008-2012	57	0.8	0.5	22	0.3	0.1

(Continued on next page)

(Table 13 – continued from previous page)

Cancer registry[1,a]	Period[a]	MALE			FEMALE		
		N cases[a]	Crude rate[b]	ASR[a]	N cases[a]	Crude rate[b]	ASR[b]
National	2008-2012	1,134	0.7	0.5	382	0.2	0.1

Data accessed on 15 Oct 2018.

ASR: Age-standardised rate. Standardised rates have been estimated using the direct method and the World population as the reference.

[a] Accumulated number of cases during the period in the population covered by the corresponding registry.

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

[a] Please refer to original source (available at http://ci5.iarc.fr/CI5-XI/Default.aspx)

Data sources:

[1] Bray F, Colombet M, Mery L, Piñeros M, Znaor A, Zanetti R and Ferlay J, editors (2017). Cancer Incidence in Five Continents, Vol. XI (electronic version). Lyon: International Agency for Research on Cancer. Available from: http://ci5.iarc.fr, accessed [05 October 2018].

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 within 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 HPV DNA detection in cervical cells (fresh tissue, paraffin embedded or exfoliated cells).

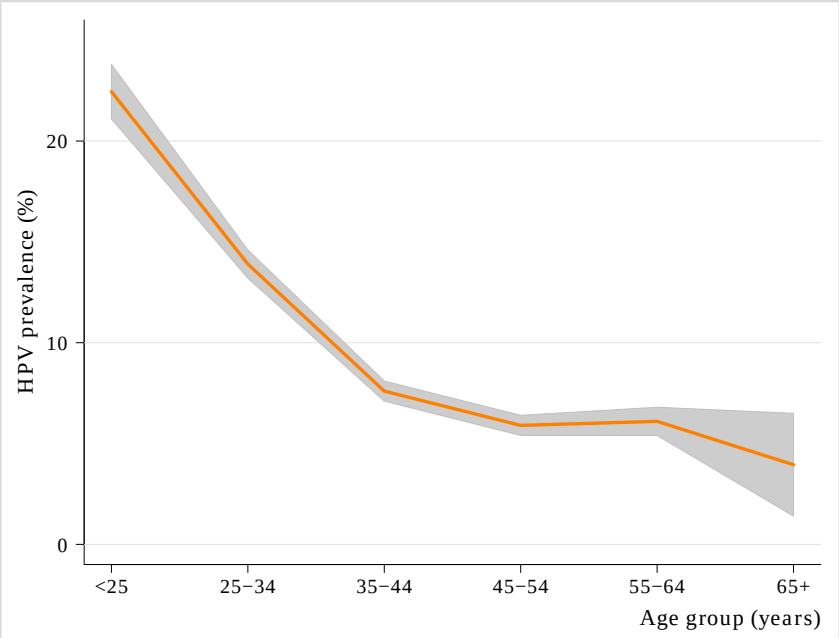
The prevalence of HPV increases with lesion severity. HPV causes virtually 100% of cervical cancer cases, and an underestimation of HPV prevalence in cervical cancer is most likely due to the limitations of study methodologies. Worldwide, HPV16 and 18 (the two vaccine-preventable types) contribute to over 70% of all cervical cancer cases, between 41% and 67% of high-grade cervical lesions and 16-32% of low-grade cervical lesions. After HPV16/18, the six most common HPV types are the same in all world regions, namely 31, 33, 35, 45, 52 and 58; these account for an additional 20% of cervical cancers worldwide (*Clifford G, Vaccine 2006;24(S3):26*).

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

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

4.1.1 HPV prevalence in women with normal cervical cytology

Figure 23: Crude age-specific HPV prevalence (%) and 95% confidence interval in women with normal cervical cytology in the United Kingdom

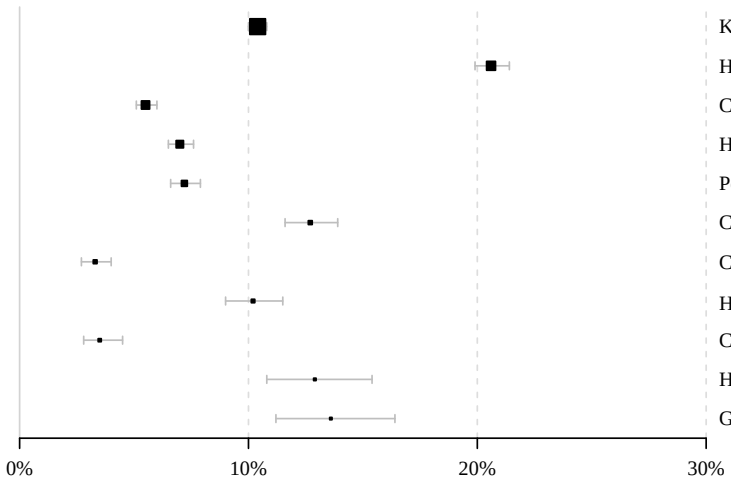


Data updated on 12 Jun 2019 (data as of 30 Jun 2015).

Data 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
Cuschieri KS, J Clin Pathol 2004; 57: 68 | Grainge MJ, Emerging Infect Dis 2005; 11: 1680 | Herbert A, J Fam Plann Reprod Health Care 2007; 33: 171 | Howell-Jones R, Br J Cancer 2010; 103: 209 | Kitchener HC, Br J Cancer 2006; 95: 56 | Peto J, Br J Cancer 2004; 91: 942

Figure 24: HPV prevalence among women with normal cervical cytology in the United Kingdom, by study



Study	Age	N	% (95% CI)
Kitchener 2006 (Manchester)	20−64	21,380	10.4 (10.0−10.8)
Hibbitts 2014 (Wales)	20−22	10,890	20.6 (19.9−21.4)
Cuzick 2003[a]	30−60	9,709	5.5 (5.1−6.0)
Hibbitts 2008 (South Wales)	20−65	8,434	7.0 (6.5−7.6)
Peto 2004 (Manchester)	15−64	6,128	7.2 (6.6−7.9)
Cuschieri 2004 (Edinburgh)	16−78	3,089	12.7 (11.6−13.9)
Cuzick 1999 (London)	34−70	2,855	3.3 (2.7−4.0)
Howell−Jones 2010[b]	25−64	2,404	10.2 (9.0−11.5)
Cuzick 1995 (London)	17−59	1,818	3.5 (2.8−4.5)
Herbert 2007 (London)	20−49	813	12.9 (10.8−15.4)
Grainge 2005 (Nottingham)	21−51	656	13.6 (11.2−16.4)

Data updated on 12 Jun 2019 (data as of 30 Jun 2015).

95% CI: 95% Confidence Interval; N: number of women tested;
The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells).
[a] Birmingham, Edinburg, London, Manchester and Mansfield
[b] Gateshead, Birmingham, London, Gloucestershire and Norfolk

Data 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
Cuschieri KS, J Clin Pathol 2004; 57: 68 | Cuzick J, Br J Cancer 1999; 81: 554 | Cuzick J, Lancet 1995; 345: 1533 | Cuzick J, Lancet 2003; 362: 1871 | Grainge MJ, Emerging Infect Dis 2005; 11: 1680 | Herbert A, J Fam Plann Reprod Health Care 2007; 33: 171 | Hibbitts S, Br J Cancer 2008; 99: 1929 | Hibbitts S, J Clin Virol 2014; 59: 109 | Howell-Jones R, Br J Cancer 2010; 103: 209 | Kitchener HC, Br J Cancer 2006; 95: 56 | Peto J, Br J Cancer 2004; 91: 942

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

Table 14: Prevalence of HPV16 and HPV18 by cytology in the United Kingdom

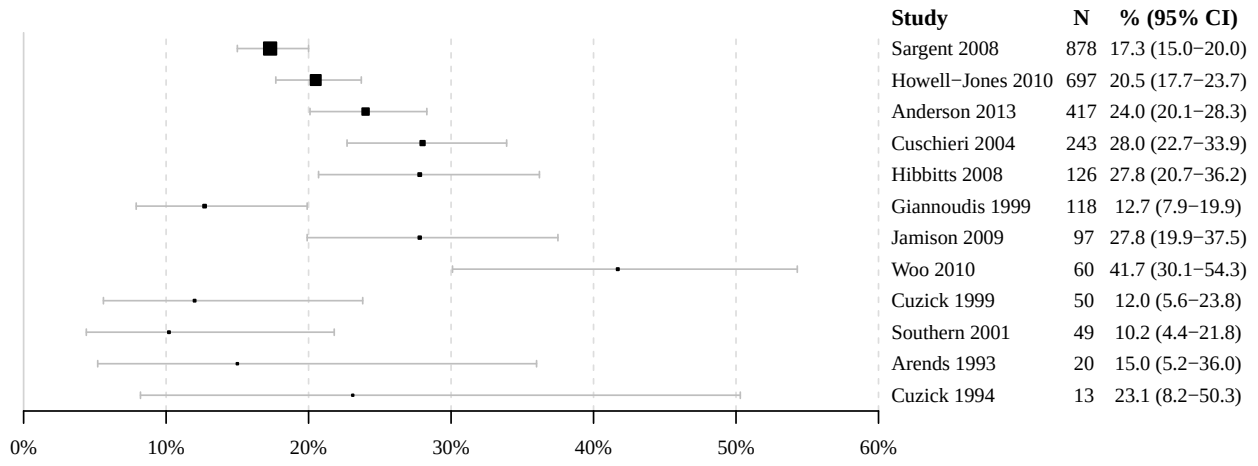
	No. tested	HPV 16/18 Prevalence % (95% CI)
Normal cytology[1,2]	42,449	3.2 (3.0-3.4)
Low-grade lesions[3,4]	2,768	29.6 (27.9-31.3)
High-grade lesions[5,6]	2,927	58.6 (56.8-60.4)
Cervical cancer[7,8]	3,140	79.0 (77.6-80.4)

Data updated on 12 Jun 2019 (data as of 30 Jun 2015 / 30 Jun 2015).
95% CI: 95% Confidence Interval; High-grade lesions: CIN-2, CIN-3, CIS or HSIL; Low-grade lesions: LSIL or CIN-1;
The samples for HPV testing come from cervical specimens (fresh / fixed biopsies or exfoliated cells)
Data sources:
[1]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
[2]Cuschieri KS, J Clin Pathol 2004; 57: 68 | Cuzick J, Br J Cancer 1999; 81: 554 | Cuzick J, Lancet 1995; 345: 1533 | Grainge MJ, Emerging Infect Dis 2005; 11: 1680 | Hibbitts S, Br J Cancer 2006; 95: 226 | Hibbitts S, J Clin Virol 2014; 59: 109 | Sargent A, Br J Cancer 2008; 98: 1704
[3]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
[4]Contributing studies: Anderson L, J Med Virol 2013; 85: 295 | Arends MJ, Hum Pathol 1993; 24: 432 | Cuschieri KS, J Clin Pathol 2004; 57: 68 | Cuzick J, Br J Cancer 1994; 69: 167 | Cuzick J, Br J Cancer 1999; 81: 554 | Giannoudis A, Int J Cancer 1999; 83: 66 | Hibbitts S, Br J Cancer 2008; 99: 1929 | Howell-Jones R, Br J Cancer 2010; 103: 209 | Jamison J, Cytopathology 2009; 20: 242 | Sargent A, Br J Cancer 2008; 98: 1704 | Southern SA, Hum Pathol 2001; 32: 1351 | Woo YL, Int J Cancer 2010; 126: 133
[5]Based on meta-analysis performed by IARC's Infections and Cancer Epidemiology Group up to November 2011, the ICO HPV Information Centre has updated data until June 2015. Reference publications: 1) Guan P, Int J Cancer 2012;131:2349 2) Smith JS, Int J Cancer 2007;121:621 3) Clifford GM, Br J Cancer 2003;89:101.
[6]Contributing studies: Anderson L, J Med Virol 2013; 85: 295 | Arends MJ, Hum Pathol 1993; 24: 432 | Cuschieri KS, J Clin Pathol 2004; 57: 68 | Cuzick J, Br J Cancer 1994; 69: 167 | Cuzick J, J Clin Virol 2014; 60: 44 | Geraets DT, J Clin Microbiol 2014; 52: 3996 | Herrington CS, Br J Cancer 1995; 71: 206 | Hibbitts S, Br J Cancer 2008; 99: 1929 | Howell-Jones R, Br J Cancer 2010; 103: 209 | Jamison J, Cytopathology 2009; 20: 242 | Sargent A, Br J Cancer 2008; 98: 1704 | Southern SA, Diagn Mol Pathol 1998; 7: 114
[7]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.
[8]Contributing studies: Arends MJ, Hum Pathol 1993; 24: 432 | Crook T, Lancet 1992; 339: 1070 | Cuschieri K, Br J Cancer 2010; 102: 930 | Cuschieri K, Int J Cancer 2014; 135: 2721 | Cuzick J, Br J Cancer 2000; 82: 1348 | Giannoudis A, Int J Cancer 1999; 83: 66 | Howell-Jones R, Br J Cancer 2010; 103: 209 | Mesher D, J Clin Pathol 2015; 68: 135 | Powell N, Int J Cancer 2009; 125: 2425 | Tawfik El-Mansi M, Int J Gynecol Cancer 2006; 16: 1025

Figure 25: HPV 16 prevalence among women with normal cervical cytology in the United Kingdom, by study

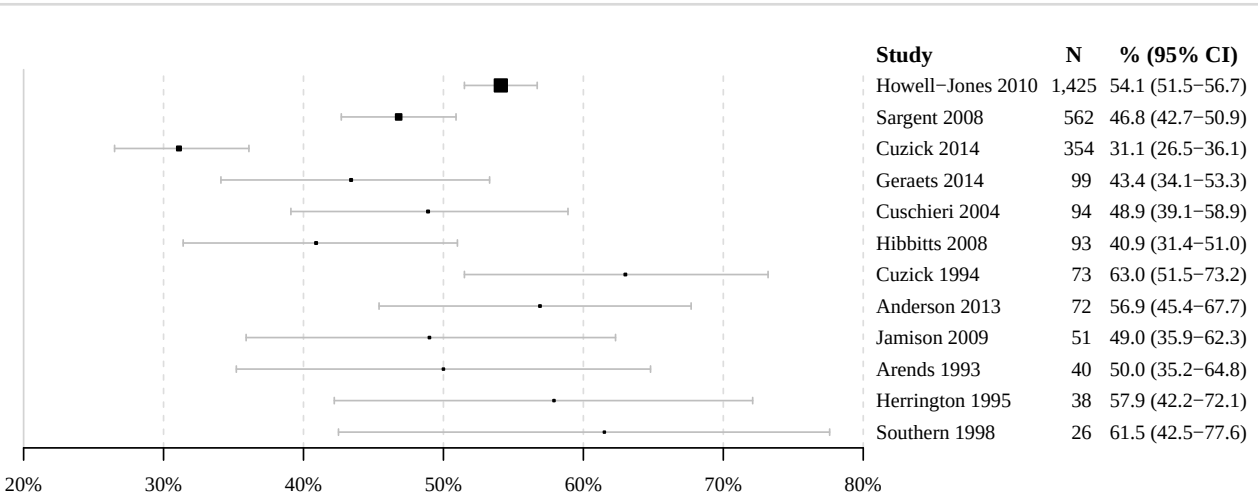
Data updated on 12 Jun 2019 (data as of 30 Jun 2015).
95% CI: 95% Confidence Interval; N: number of women tested;
The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells).
Data sources:
Based on systematic reviews and meta-analysis performed by ICO. The ICO 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
Cuschieri KS, J Clin Pathol 2004; 57: 68 | Cuzick J, Br J Cancer 1999; 81: 554 | Cuzick J, Lancet 1995; 345: 1533 | Grainge MJ, Emerging Infect Dis 2005; 11: 1680 | Hibbitts S, Br J Cancer 2006; 95: 226 | Hibbitts S, J Clin Virol 2014; 59: 109 | Sargent A, Br J Cancer 2008; 98: 1704

Figure 26: HPV 16 prevalence among women with low-grade cervical lesions in the United Kingdom, by study



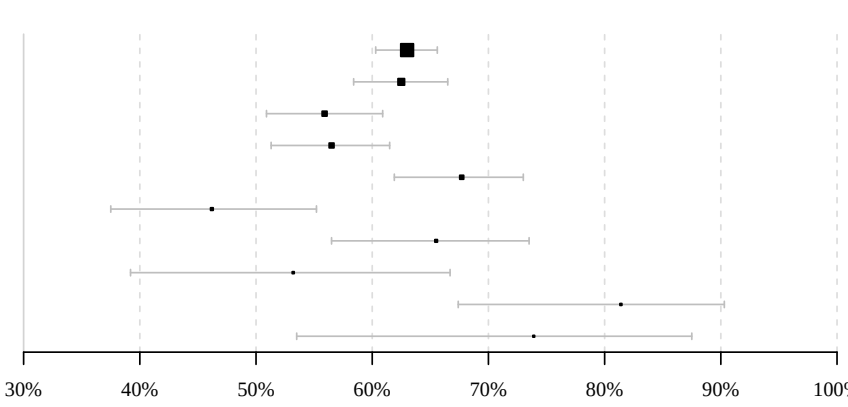
Data updated on 12 Jun 2019 (data as of 30 Jun 2015).
95% CI: 95% Confidence Interval; Low-grade lesions: LSIL or CIN-1; N: number of women tested;
The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells).
Data sources:
Based on meta-analysis performed by IARC's 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
Anderson L, J Med Virol 2013; 85: 295 | Arends MJ, Hum Pathol 1993; 24: 432 | Cuschieri KS, J Clin Pathol 2004; 57: 68 | Cuzick J, Br J Cancer 1994; 69: 167 | Cuzick J, Br J Cancer 1999; 81: 554 | Giannoudis A, Int J Cancer 1999; 83: 66 | Hibbitts S, Br J Cancer 2008; 99: 1929 | Howell-Jones R, Br J Cancer 2010; 103: 209 | Jamison J, Cytopathology 2009; 20: 242 | Sargent A, Br J Cancer 2008; 98: 1704 | Southern SA, Hum Pathol 2001; 32: 1351 | Woo YL, Int J Cancer 2010; 126: 133

Figure 27: HPV 16 prevalence among women with high-grade cervical lesions in the United Kingdom, by study



Data updated on 12 Jun 2019 (data as of 30 Jun 2015).
95% CI: 95% Confidence Interval; High-grade lesions: CIN-2, CIN-3, CIS or HSIL; N: number of women tested;
The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells).
Data sources:
Based on meta-analysis performed by IARC's Infections and Cancer Epidemiology Group up to November 2011, the ICO HPV Information Centre has updated data until June 2015. Reference publications: 1) Guan P, Int J Cancer 2012;131:2349 2) Smith JS, Int J Cancer 2007;121:621 3) Clifford GM, Br J Cancer 2003;89:101.
Anderson L, J Med Virol 2013; 85: 295 | Arends MJ, Hum Pathol 1993; 24: 432 | Cuschieri KS, J Clin Pathol 2004; 57: 68 | Cuzick J, Br J Cancer 1994; 69: 167 | Cuzick J, J Clin Virol 2014; 60: 44 | Geraets DT, J Clin Microbiol 2014; 52: 3996 | Herrington CS, Br J Cancer 1995; 71: 206 | Hibbitts S, Br J Cancer 2008; 99: 1929 | Howell-Jones R, Br J Cancer 2010; 103: 209 | Jamison J, Cytopathology 2009; 20: 242 | Sargent A, Br J Cancer 2008; 98: 1704 | Southern SA, Diagn Mol Pathol 1998; 7: 114

Figure 28: HPV 16 prevalence among women with invasive cervical cancer in the United Kingdom, by study



Study	N	% (95% CI)
Mesher 2015	1,235	63.0 (60.3−65.6)
Howell−Jones 2010	555	62.5 (58.4−66.5)
Cuschieri 2014	370	55.9 (50.9−60.9)
Cuschieri 2010	363	56.5 (51.3−61.5)
Powell 2009	269	67.7 (61.9−73.0)
Tawfik El−Mansi 2006	119	46.2 (37.5−55.2)
Cuzick 2000	116	65.5 (56.5−73.5)
Arends 1993	47	53.2 (39.2−66.7)
Giannoudis 1999	43	81.4 (67.4−90.3)
Crook 1992	23	73.9 (53.5−87.5)

Data updated on 12 Jun 2019 (data as of 30 Jun 2015).

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

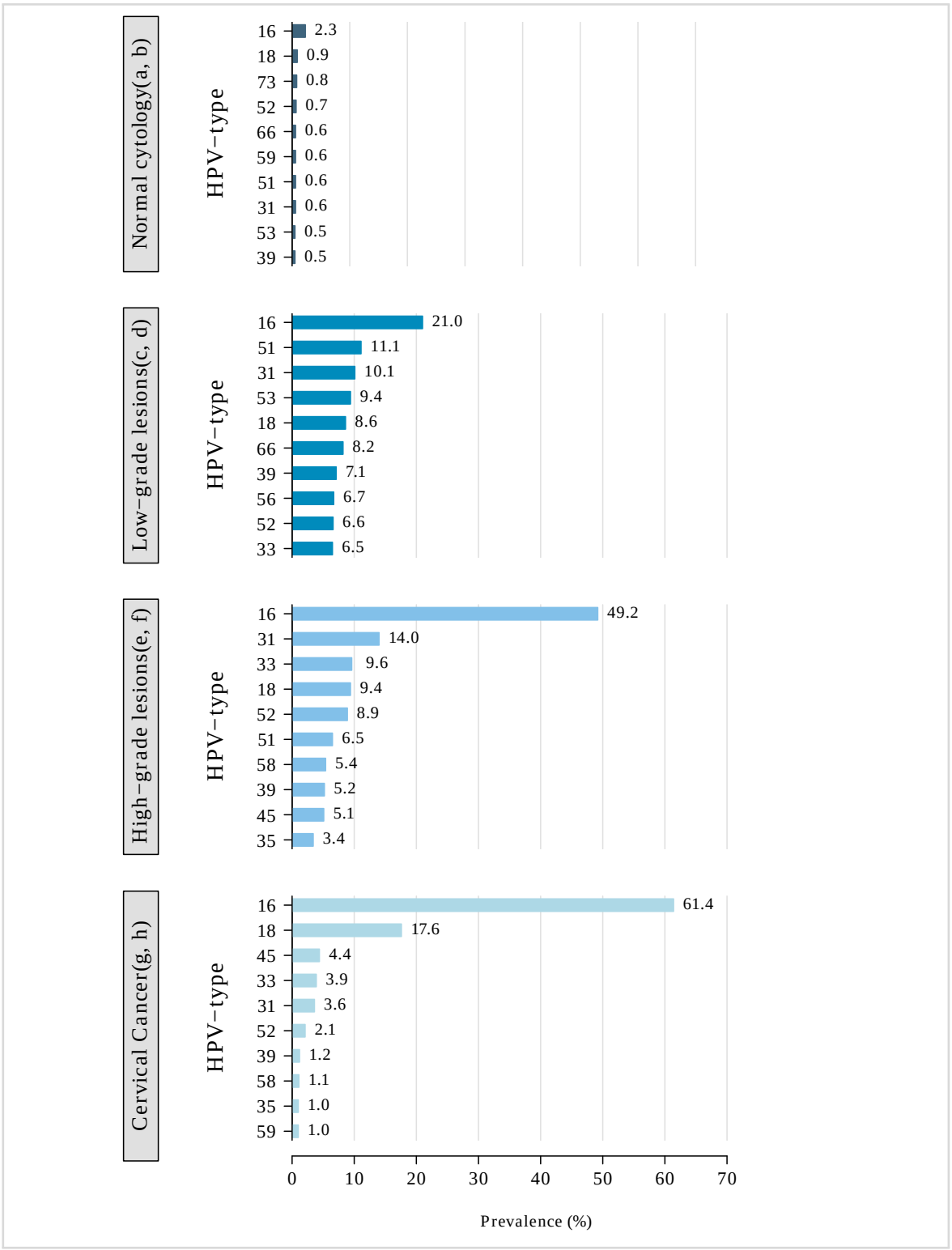
The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells).

Data 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.

Arends MJ, Hum Pathol 1993; 24: 432 | Crook T, Lancet 1992; 339: 1070 | Cuschieri K, Br J Cancer 2010; 102: 930 | Cuschieri K, Int J Cancer 2014; 135: 2721 | Cuzick J, Br J Cancer 2000; 82: 1348 | Giannoudis A, Int J Cancer 1999; 83: 66 | Howell-Jones R, Br J Cancer 2010; 103: 209 | Mesher D, J Clin Pathol 2015; 68: 135 | Powell N, Int J Cancer 2009; 125: 2425 | Tawfik El-Mansi M, Int J Gynecol Cancer 2006; 16: 1025

Figure 29: Comparison of the ten most frequent HPV oncogenic types in the United Kingdom among women with and without cervical lesions



Data updated on 12 Jun 2019 (data as of 30 Jun 2015 / 30 Jun 2015).

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

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

Data sources:

[a] 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

[b] Cuschieri KS, J Clin Pathol 2004; 57: 68 | Cuzick J, Br J Cancer 1999; 81: 554 | Cuzick J, Lancet 1995; 345: 1533 | Grainge MJ, Emerging Infect Dis 2005; 11: 1680 | Hibbitts S, Br J Cancer 2006; 95: 226 | Hibbitts S, J Clin Virol 2014; 59: 109 | Sargent A, Br J Cancer 2008; 98: 1704

[c] 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

[d] Contributing studies: Anderson L, J Med Virol 2013; 85: 295 | Arends MJ, Hum Pathol 1993; 24: 432 | Cuschieri KS, J Clin Pathol 2004; 57: 68 | Cuzick J, Br J Cancer 1994; 69: 167 | Cuzick J, Br J Cancer 1999; 81: 554 | Giannoudis A, Int J Cancer 1999; 83: 66 | Hibbitts S, Br J Cancer 2008; 99: 1929 | Howell-Jones R, Br J Cancer 2010; 103: 209 | Jamison J, Cytopathology 2009; 20: 242 | Sargent A, Br J Cancer 2008; 98: 1704 | Southern SA, Hum Pathol 2001; 32: 1351 | Woo YL, Int J Cancer 2010; 126: 133

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(Figure 29 – continued from previous page)

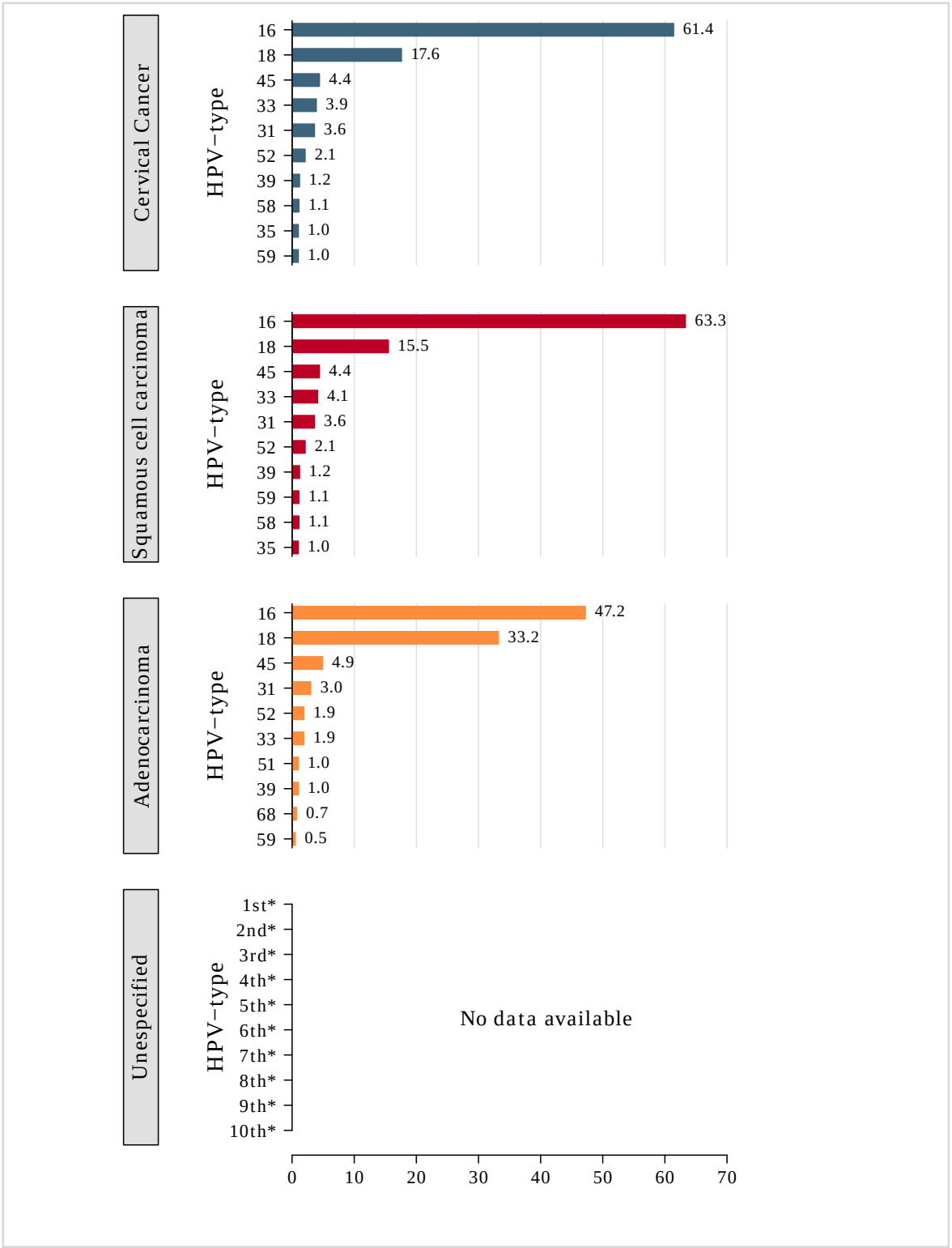
[e] Based on meta-analysis performed by IARC's Infections and Cancer Epidemiology Group up to November 2011, the ICO HPV Information Centre has updated data until June 2015. Reference publications: 1) Guan P, Int J Cancer 2012;131:2349 2) Smith JS, Int J Cancer 2007;121:621 3) Clifford GM, Br J Cancer 2003;89:101.

[f] Contributing studies: Anderson L, J Med Virol 2013; 85: 295 | Arends MJ, Hum Pathol 1993; 24: 432 | Cuschieri KS, J Clin Pathol 2004; 57: 68 | Cuzick J, Br J Cancer 1994; 69: 167 | Cuzick J, J Clin Virol 2014; 60: 44 | Geraets DT, J Clin Microbiol 2014; 52: 3996 | Herrington CS, Br J Cancer 1995; 71: 206 | Hibbitts S, Br J Cancer 2008; 99: 1929 | Howell-Jones R, Br J Cancer 2010; 103: 209 | Jamison J, Cytopathology 2009; 20: 242 | Sargent A, Br J Cancer 2008; 98: 1704 | Southern SA, Diagn Mol Pathol 1998; 7: 114

[g] 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.

[h] Contributing studies: Arends MJ, Hum Pathol 1993; 24: 432 | Crook T, Lancet 1992; 339: 1070 | Cuschieri K, Br J Cancer 2010; 102: 930 | Cuschieri K, Int J Cancer 2014; 135: 2721 | Cuzick J, Br J Cancer 2000; 82: 1348 | Giannoudis A, Int J Cancer 1999; 83: 66 | Howell-Jones R, Br J Cancer 2010; 103: 209 | Mesher D, J Clin Pathol 2015; 68: 135 | Powell N, Int J Cancer 2009; 125: 2425 | Tawfik El-Mansi M, Int J Gynecol Cancer 2006; 16: 1025

Figure 30: Comparison of the ten most frequent HPV oncogenic types in the United Kingdom among women with invasive cervical cancer by histology



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

The samples for HPV testing come from cervical specimens (fresh / fixed biopsies or exfoliated cells). The ranking of the ten most frequent HPV types may present less than ten types beause only a limited number of types were tested or were HPV-positive.

Data 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.

Contributing studies: Arends MJ, Hum Pathol 1993; 24: 432 | Crook T, Lancet 1992; 339: 1070 | Cuschieri K, Br J Cancer 2010; 102: 930 | Cuschieri K, Int J Cancer 2014; 135: 2721 | Cuzick J, Br J Cancer 2000; 82: 1348 | Giannoudis A, Int J Cancer 1999; 83: 66 | Howell-Jones R, Br J Cancer 2010; 103: 209 | Mesher D, J Clin Pathol 2015; 68: 135 | Powell N, Int J Cancer 2009; 125: 2425 | Tawfik El-Mansi M, Int J Gynecol Cancer 2006; 16: 1025

Table 15: Type-specific HPV prevalence in women with normal cervical cytology, precancerous cervical lesions and invasive cervical cancer in the United Kingdom

HPV Type	Normal cytology[1,2] No. tested	Normal cytology[1,2] HPV Prev % (95% CI)	Low-grade lesions[3,4] No. tested	Low-grade lesions[3,4] HPV Prev % (95% CI)	High-grade lesions[5,6] No. tested	High-grade lesions[5,6] HPV Prev % (95% CI)	Cervical cancer[7,8] No. tested	Cervical cancer[7,8] HPV Prev % (95% CI)
ONCOGENIC HPV TYPES								
High-risk HPV types								
16	42,449	2.3 (2.2-2.5)	2,768	21.0 (19.5-22.6)	2,927	49.2 (47.4-51.0)	3,140	61.4 (59.7-63.1)
18	42,449	0.9 (0.8-1.0)	2,708	8.6 (7.6-9.8)	2,927	9.4 (8.4-10.5)	3,140	17.6 (16.3-19.0)
31	30,903	0.6 (0.6-0.7)	2,688	10.1 (9.0-11.3)	2,887	14.0 (12.8-15.3)	2,974	3.6 (3.0-4.3)
33	30,903	0.3 (0.3-0.4)	2,708	6.5 (5.7-7.5)	2,927	9.6 (8.6-10.7)	3,021	3.9 (3.3-4.7)
35	29,085	0.2 (0.2-0.3)	2,688	3.7 (3.0-4.5)	2,849	3.4 (2.8-4.2)	2,951	1.0 (0.7-1.4)
39	26,230	0.5 (0.5-0.6)	2,625	7.1 (6.2-8.1)	2,776	5.2 (4.4-6.0)	2,835	1.2 (0.9-1.7)
45	26,230	0.5 (0.5-0.6)	2,675	5.1 (4.3-6.0)	2,776	5.1 (4.3-6.0)	2,835	4.4 (3.7-5.2)
51	29,085	0.6 (0.5-0.7)	2,675	11.1 (9.9-12.3)	2,776	6.5 (5.6-7.5)	2,835	0.8 (0.5-1.2)
52	29,085	0.7 (0.6-0.8)	2,578	6.6 (5.7-7.6)	2,725	8.9 (7.9-10.0)	2,835	2.1 (1.6-2.7)
56	29,085	0.4 (0.3-0.5)	2,675	6.7 (5.8-7.7)	2,776	2.9 (2.3-3.6)	2,951	0.5 (0.3-0.8)
58	29,085	0.4 (0.3-0.4)	2,675	6.1 (5.3-7.1)	2,776	5.4 (4.6-6.3)	2,951	1.1 (0.7-1.5)
59	26,230	0.6 (0.5-0.7)	2,625	4.9 (4.1-5.8)	2,750	3.2 (2.6-3.9)	2,835	1.0 (0.7-1.5)
Probable/possible carcinogen								
26	3,089	0.0 (0.0-0.1)	1,915	0.3 (0.1-0.7)	1,596	0.4 (0.2-0.9)	918	0.0 (0.0-0.4)
30	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-
53	3,089	0.5 (0.3-0.8)	1,672	9.4 (8.1-10.9)	1,502	2.7 (2.0-3.6)	1,288	0.8 (0.4-1.4)
66	4,866	0.6 (0.4-0.9)	2,382	8.2 (7.2-9.4)	2,120	2.9 (2.2-3.7)	1,600	0.3 (0.1-0.7)
67	-	-	1,672	2.4 (1.8-3.2)	1,476	0.5 (0.3-1.1)	555	0.0 (0.0-0.7)
68	26,230	0.2 (0.2-0.3)	2,576	2.1 (1.6-2.8)	2,750	1.7 (1.3-2.3)	2,472	0.9 (0.6-1.4)
69	-	-	1,672	0.3 (0.1-0.7)	1,476	0.3 (0.1-0.7)	918	0.0 (0.0-0.4)
70	-	-	1,672	4.3 (3.4-5.4)	1,476	1.3 (0.8-2.0)	918	0.2 (0.1-0.8)
73	3,089	0.8 (0.5-1.2)	1,915	5.0 (4.1-6.0)	2,132	2.2 (1.6-2.9)	925	0.5 (0.2-1.3)
82	3,089	0.1 (0.0-0.3)	1,915	1.6 (1.1-2.2)	2,132	1.2 (0.8-1.7)	918	0.0 (0.0-0.4)
85	-	-	-	-	-	-	-	-
97	-	-	-	-	-	-	370	0.3 (0.0-1.5)
NON-ONCOGENIC HPV TYPES								
6	3,089	0.6 (0.3-0.9)	1,872	4.6 (3.8-5.7)	1,615	1.6 (1.1-2.3)	1,401	1.3 (0.8-2.0)
11	3,089	0.2 (0.1-0.4)	1,872	1.4 (0.9-2.0)	1,615	0.3 (0.1-0.7)	1,401	0.3 (0.1-0.7)
32	-	-	-	-	-	-	-	-
40	3,089	0.1 (0.1-0.3)	-	-	-	-	363	0.0 (0.0-1.0)
42	3,089	0.7 (0.5-1.1)	-	-	-	-	370	0.0 (0.0-1.0)
43	-	-	-	-	-	-	363	0.0 (0.0-1.0)
44	3,089	0.4 (0.2-0.7)	-	-	-	-	733	0.3 (0.1-1.0)
54	3,089	0.6 (0.4-1.0)	-	-	-	-	733	1.9 (1.1-3.2)
55	-	-	-	-	-	-	-	-
57	3,089	0.1 (0.0-0.3)	-	-	-	-	-	-
61	-	-	-	-	-	-	-	-
62	-	-	-	-	-	-	-	-
64	-	-	-	-	-	-	-	-
71	-	-	-	-	-	-	363	0.0 (0.0-1.0)
72	-	-	-	-	-	-	-	-
74	-	-	-	-	-	-	363	0.0 (0.0-1.0)
81	-	-	-	-	-	-	-	-
83	3,089	0.3 (0.1-0.5)	-	-	-	-	-	-
84	3,089	0.4 (0.2-0.6)	-	-	-	-	-	-
86	-	-	-	-	-	-	-	-
87	-	-	-	-	-	-	-	-
89	-	-	-	-	-	-	-	-
90	-	-	-	-	-	-	-	-
91	-	-	-	-	-	-	-	-

Data updated on 12 Jun 2019 (data as of 30 Jun 2015 / 30 Jun 2015).

95% CI: 95% Confidence Interval; High-grade lesions: CIN-2, CIN-3, CIS or HSIL; Low-grade lesions: LSIL or CIN-1;
The samples for HPV testing come from cervical specimens (fresh / fixed biopsies or exfoliated cells).

Data sources:

[1]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

[2]Cuschieri KS, J Clin Pathol 2004; 57: 68 | Cuzick J, Br J Cancer 1999; 81: 554 | Cuzick J, Lancet 1995; 345: 1533 | Grainge MJ, Emerging Infect Dis 2005; 11: 1680 | Hibbitts S, Br J Cancer 2006; 95: 226 | Hibbitts S, J Clin Virol 2014; 59: 109 | Sargent A, Br J Cancer 2008; 98: 1704

[3]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

[4]Contributing studies: Anderson L, J Med Virol 2013; 85: 295 | Arends MJ, Hum Pathol 1993; 24: 432 | Cuschieri KS, J Clin Pathol 2004; 57: 68 | Cuzick J, Br J Cancer 1994; 69: 167 | Cuzick J, Br J Cancer 1999; 81: 554 | Giannoudis A, Int J Cancer 1999; 83: 66 | Hibbitts S, Br J Cancer 2008; 99: 1929 | Howell-Jones R, Br J Cancer 2010; 103: 209 | Jamison J, Cytopathology 2009; 20: 242 | Sargent A, Br J Cancer 2008; 98: 1704 | Southern SA, Hum Pathol 2001; 32: 1351 | Woo YL, Int J Cancer 2010; 126: 133

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(Table 15 – continued from previous page)

[5]Based on meta-analysis performed by IARC's Infections and Cancer Epidemiology Group up to November 2011, the ICO HPV Information Centre has updated data until June 2015. Reference publications: 1) Guan P, Int J Cancer 2012;131:2349 2) Smith JS, Int J Cancer 2007;121:621 3) Clifford GM, Br J Cancer 2003;89:101.

[6]Contributing studies: Anderson L, J Med Virol 2013; 85: 295 | Arends MJ, Hum Pathol 1993; 24: 432 | Cuschieri KS, J Clin Pathol 2004; 57: 68 | Cuzick J, Br J Cancer 1994; 69: 167 | Cuzick J, J Clin Virol 2014; 60: 44 | Geraets DT, J Clin Microbiol 2014; 52: 3996 | Herrington CS, Br J Cancer 1995; 71: 206 | Hibbitts S, Br J Cancer 2008; 99: 1929 | Howell-Jones R, Br J Cancer 2010; 103: 209 | Jamison J, Cytopathology 2009; 20: 242 | Sargent A, Br J Cancer 2008; 98: 1704 | Southern SA, Diagn Mol Pathol 1998; 7: 114

[7]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.

[8]Contributing studies: Arends MJ, Hum Pathol 1993; 24: 432 | Crook T, Lancet 1992; 339: 1070 | Cuschieri K, Br J Cancer 2010; 102: 930 | Cuschieri K, Int J Cancer 2014; 135: 2721 | Cuzick J, Br J Cancer 2000; 82: 1348 | Giannoudis A, Int J Cancer 1999; 83: 66 | Howell-Jones R, Br J Cancer 2010; 103: 209 | Mesher D, J Clin Pathol 2015; 68: 135 | Powell N, Int J Cancer 2009; 125: 2425 | Tawfik El-Mansi M, Int J Gynecol Cancer 2006; 16: 1025

Table 16: Type-specific HPV prevalence among invasive cervical cancer cases in the United Kingdom 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	3,140	61.4 (59.7-63.1)	2,763	63.3 (61.5-65.1)	377	47.2 (42.2-52.3)	-	-
18	3,140	17.6 (16.3-19.0)	2,763	15.5 (14.2-16.9)	377	33.2 (28.6-38.1)	-	-
31	2,974	3.6 (3.0-4.3)	2,737	3.6 (3.0-4.4)	237	3.0 (1.4-6.0)	-	-
33	3,021	3.9 (3.3-4.7)	2,763	4.1 (3.4-4.9)	258	1.9 (0.8-4.5)	-	-
35	2,951	1.0 (0.7-1.4)	2,714	1.0 (0.7-1.5)	237	0.4 (0.1-2.4)	-	-
39	2,835	1.2 (0.9-1.7)	2,629	1.2 (0.9-1.7)	206	1.0 (0.3-3.5)	-	-
45	2,835	4.4 (3.7-5.2)	2,629	4.4 (3.7-5.2)	206	4.9 (2.7-8.7)	-	-
51	2,835	0.8 (0.5-1.2)	2,629	0.8 (0.5-1.2)	206	1.0 (0.3-3.5)	-	-
52	2,835	2.1 (1.6-2.7)	2,629	2.1 (1.6-2.8)	206	1.9 (0.8-4.9)	-	-
56	2,951	0.5 (0.3-0.8)	2,714	0.6 (0.3-0.9)	237	0.0 (0.0-1.6)	-	-
58	2,951	1.1 (0.7-1.5)	2,714	1.1 (0.8-1.6)	237	0.0 (0.0-1.6)	-	-
59	2,835	1.0 (0.7-1.5)	2,629	1.1 (0.7-1.5)	206	0.5 (0.1-2.7)	-	-
Probable/possible carcinogen								
26	918	0.0 (0.0-0.4)	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-
53	1,288	0.8 (0.4-1.4)	-	-	-	-	-	-
66	1,600	0.3 (0.1-0.7)	1,394	0.4 (0.2-0.8)	206	0.0 (0.0-1.8)	-	-
67	555	0.0 (0.0-0.7)	450	0.0 (0.0-0.8)	105	0.0 (0.0-3.5)	-	-
68	2,472	0.9 (0.6-1.4)	2,320	0.9 (0.6-1.4)	152	0.7 (0.1-3.6)	-	-
69	918	0.0 (0.0-0.4)	-	-	-	-	-	-
70	918	0.2 (0.1-0.8)	-	-	-	-	-	-
73	925	0.5 (0.2-1.3)	-	-	-	-	-	-
82	918	0.0 (0.0-0.4)	759	0.0 (0.0-0.5)	159	0.0 (0.0-2.4)	-	-
85	-	-	-	-	-	-	-	-
97	370	0.3 (0.0-1.5)	370	0.3 (0.0-1.5)	-	-	-	-
NON-ONCOGENIC HPV TYPES								
6	1,401	1.3 (0.8-2.0)	-	-	-	-	-	-
11	1,401	0.3 (0.1-0.7)	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-
32	-	-	-	-	-	-	-	-
40	363	0.0 (0.0-1.0)	-	-	-	-	-	-
42	370	0.0 (0.0-1.0)	370	0.0 (0.0-1.0)	-	-	-	-
43	363	0.0 (0.0-1.0)	-	-	-	-	-	-
44	733	0.3 (0.1-1.0)	679	0.3 (0.1-1.1)	54	0.0 (0.0-6.6)	-	-
54	733	1.9 (1.1-3.2)	-	-	-	-	-	-
55	-	-	-	-	-	-	-	-
57	-	-	-	-	-	-	-	-
60	-	-	-	-	-	-	-	-
61	-	-	-	-	-	-	-	-
62	-	-	-	-	-	-	-	-
64	-	-	-	-	-	-	-	-
71	363	0.0 (0.0-1.0)	-	-	-	-	-	-
72	-	-	-	-	-	-	-	-
74	363	0.0 (0.0-1.0)	-	-	-	-	-	-
76	-	-	-	-	-	-	-	-
81	-	-	-	-	-	-	-	-
83	-	-	-	-	-	-	-	-
84	-	-	-	-	-	-	-	-
86	-	-	-	-	-	-	-	-
87	-	-	-	-	-	-	-	-
89	-	-	-	-	-	-	-	-
90	-	-	-	-	-	-	-	-
91	-	-	-	-	-	-	-	-
No Data Available	-	- -	-	- -	-	- -	-	- -

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

95% CI: 95% Confidence Interval;

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

Data 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.

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(Table 16 – continued from previous page)

Contributing studies: Arends MJ, Hum Pathol 1993; 24: 432 | Crook T, Lancet 1992; 339: 1070 | Cuschieri K, Br J Cancer 2010; 102: 930 | Cuschieri K, Int J Cancer 2014; 135: 2721 | Cuzick J, Br J Cancer 2000; 82: 1348 | Giannoudis A, Int J Cancer 1999; 83: 66 | Howell-Jones R, Br J Cancer 2010; 103: 209 | Mesher D, J Clin Pathol 2015; 68: 135 | Powell N, Int J Cancer 2009; 125: 2425 | Tawfik El-Mansi M, Int J Gynecol Cancer 2006; 16: 1025

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

Table 17: Studies on HPV prevalence among HIV women with normal cytology in the United Kingdom

Study[1]	HPV detection method and targeted HPV types	No. Tested	HPV prevalence %	HPV prevalence (95% CI)	Prevalence of 5 most frequent HPVs HPV type (%)
Cubie 2000	HC2 (HPV 6, 11, 16, 18, 31, 33, 35, 39, 42, 43, 44, 45, 51, 52, 56, 58, 59, 68), No genotyping	44	25.0	(13.2-40.3)	-

Data updated on 31 Jul 2013 (data as of 31 Dec 2011). Only for European countries.
95% CI: 95% Confidence Interval;
HC2: Hybrid Capture 2;
Data sources:
Systematic review and meta-analysis were performed by the ICO HPV Information Centre up to December 2011. Selected studies had to include at least 20 HIV positive women who had both normal cervical cytology and HPV test results (PCR or HC2).
[1]Cubie HA, Sex Transm Infect 2000;76:257

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

Table 18: Studies on HPV prevalence among anal cancer cases in the United Kingdom (male and female)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence %	HPV prevalence (95% CI)	Prevalence of 5 most frequent HPVs HPV type (%)
Alemany 2015[a]	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	169	87.6	(81.8-91.7)	HPV 16 (73.4%) HPV 6 (3.6%) HPV 18 (3.6%) HPV 11 (3.0%) HPV 33 (2.4%)
Baricevic 2015	PCR-L1C1/C2, PCR L1-Consensus primer, PCR-E6, PCR-E7, PCR- MULTIPLEX (HPV 6, 11, 16, 18, 31, 33, 45, 52, 58)	151	95.4	(90.7-97.7)	HPV 16 (88.7%) HPV 6 (11.9%) HPV 33 (6.6%) HPV 18 (4.6%) HPV 58 (4.6%)

Data updated on 12 Jun 2019 (data as of 30 Jun 2015).
95% CI: 95% Confidence Interval;
EIA: Enzyme ImmunoAssay; PCR: Polymerase Chain Reaction; SPF: Short Primer Fragment;
[a] Includes cases from Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom
Data 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
Alemany L, Int J Cancer 2015; 136: 98 | Baricevic I, Eur J Cancer 2015; 51: 776

Table 19: Studies on HPV prevalence among cases of AIN2/3 in the United Kingdom

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence %	HPV prevalence (95% CI)	Prevalence of 5 most frequent HPVs HPV type (%)
Alemany 2015[a]	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	23	95.7	(79.0-99.2)	HPV 16 (65.2%) HPV 6 (8.7%) HPV 18 (8.7%) HPV 51 (8.7%) HPV 74 (8.7%)

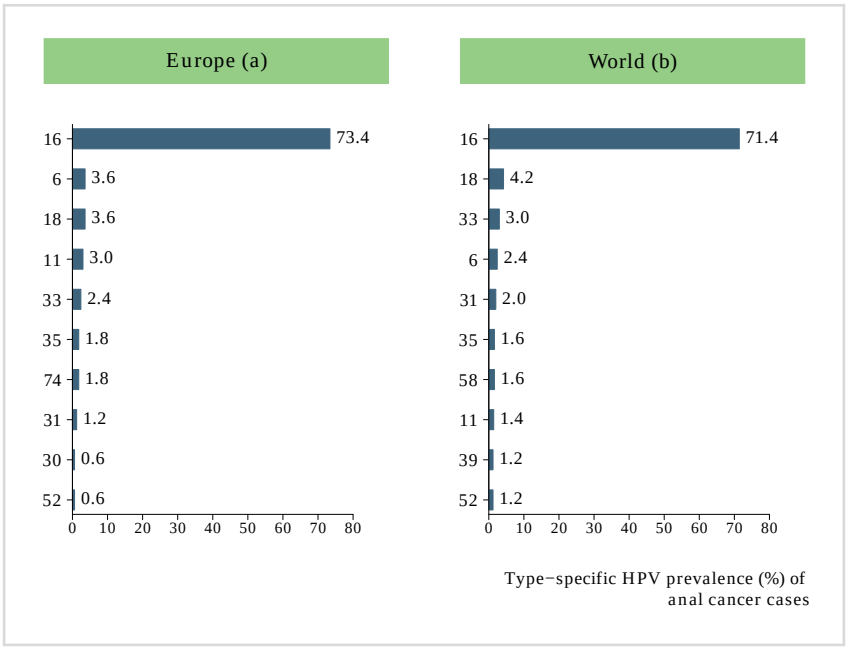
(Continued on next page)

(Table 19 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence %	HPV prevalence (95% CI)	Prevalence of 5 most frequent HPVs HPV type (%)
Fox 2005[b]	, PCR-MY09/11, (HPV 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59)	74	97.3	(90.7-99.3)	HPV 16 (64.9%) HPV 18 (25.7%) HPV 33 (24.3%) HPV 58 (21.6%) HPV 31 (18.9%)

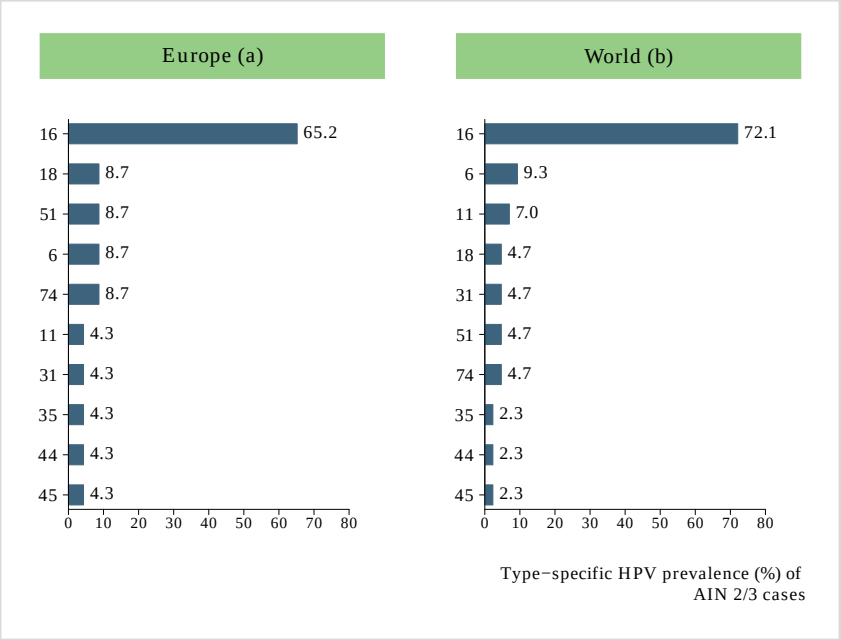
Data updated on 12 Jun 2019 (data as of 30 Jun 2015).
95% CI: 95% Confidence Interval; AIN 2/3: Anal intraepithelial neoplasia of grade 2/3;
EIA: Enzyme ImmunoAssay; PCR: Polymerase Chain Reaction; SPF: Short Primer Fragment;
[a] Includes cases from Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom
[b] HIV positive cases
Data 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
Alemany L, Int J Cancer 2015; 136: 98 | Fox PA, Sex Transm Infect 2005; 81: 142

Figure 31: Comparison of the ten most frequent HPV types in anal cancer cases in Europe and the World



Data updated on 09 Feb 2017 (data as of 30 Jun 2014).
[a] Includes cases from Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom.
[b] Includes cases from Europe (Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom); America (Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay and United States); Africa (Mali, Nigeria and Senegal); Asia (Bangladesh,India and South Korea)
Data sources:
Data from Alemany L, Int J Cancer 2015; 136: 98. This study has gathered the largest international series of anal cancer cases and precancerous lesions worldwide using a standard protocol with a highly sensitive HPV DNA detection assay.

Figure 32: Comparison of the ten most frequent HPV types in AIN 2/3 cases in Europe and the World



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

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

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

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

Data sources:

Data from Alemany L, Int J Cancer 2015; 136: 98. This study has gathered the largest international series of anal cancer cases and precancerous lesions worldwide using a standard protocol with a highly sensitive HPV DNA detection assay.

4.2.2 Vulvar cancer and precancerous vulvar lesions

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

Table 20: Studies on HPV prevalence among vulvar cancer cases in the United Kingdom

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence %	HPV prevalence (95% CI)	Prevalence of 5 most frequent HPVs HPV type (%)
Abdel-Hady 2001	TS (HPV 6, 11, 16, 18, 31, 33)	11	27.3	(9.7-56.6)	HPV 16 (27.3%) HPV 33 (18.2%) HPV 18 (9.1%)
de Sanjosé 2013[a]	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	903	19.3	(16.8-22.0)	HPV 16 (13.8%) HPV 33 (1.2%) HPV 18 (0.6%) HPV 31 (0.6%) HPV 44 (0.4%)

Data updated on 12 Jun 2019 (data as of 30 Jun 2015).
95% CI: 95% Confidence Interval;
EIA: Enzyme ImmunoAssay; PCR: Polymerase Chain Reaction; SPF: Short Primer Fragment; TS: Type Specific;
[a] Includes cases from Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom
Data 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
Abdel-Hady ES, Cancer Res 2001; 61: 192 | de Sanjosé S, Eur J Cancer 2013; 49: 3450

Table 21: Studies on HPV prevalence among VIN 2/3 cases in the United Kingdom

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence %	HPV prevalence (95% CI)	Prevalence of 5 most frequent HPVs HPV type (%)
Abdel-Hady 2001	TS (HPV 06/11, 16, 18, 31, 33)	32	71.9	(54.6-84.4)	HPV 16 (62.5%) HPV 6/11 (18.8%) HPV 31 (3.1%) HPV 33 (3.1%)
Baldwin 2003	PCR L1-Consensus primer, Sequencing (HPV 6, 11, 16, 18, 31, 33)	11	100.0	(74.1-100.0)	HPV 16 (90.9%) HPV 33 (9.1%)
Bryant 2011	PCR- MULTIPLEX (HPV 6, 11, 16, 18, 31, 33, 35, 40, 42, 43, 44, 45, 51, 52, 53, 56, 58, 59, 66, 73)	49	81.6	(68.6-90.0)	HPV 16 (67.3%) HPV 33 (16.3%) HPV 6 (10.2%) HPV 18 (2.0%) HPV 31 (2.0%)
Daayana 2010	EIA, (HPV 6, 11, 16, 26, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 61, 66, 68, 70, 71, 72, 73, 81, 82, 83, 84)	19	78.9	(56.7-91.5)	HPV 16 (73.7%) HPV 33 (5.3%) HPV 42 (5.3%) HPV 84 (5.3%)

(Continued on next page)

(Table 21 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence %	HPV prevalence (95% CI)	Prevalence of 5 most frequent HPVs HPV type (%)
de Sanjosé 2013[a]	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	312	86.9	(82.7-90.2)	HPV 16 (69.6%) HPV 33 (11.2%) HPV 18 (2.2%) HPV 6 (1.6%) HPV 52 (1.3%)
Winters 2008	EIA, (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 61, 66, 68, 70, 71, 72, 73, 81, 82, 83, 84)	20	85.0	(64.0-94.8)	HPV 16 (75.0%) HPV 18 (5.0%) HPV 33 (5.0%)

Data updated on 12 Jun 2019 (data as of 30 Jun 2015).

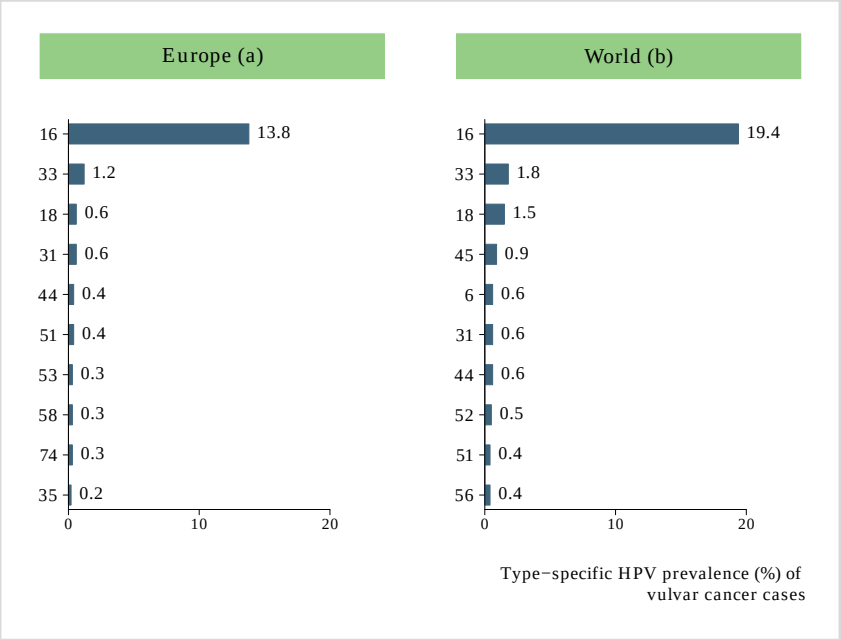
95% CI: 95% Confidence Interval; VIN 2/3: Vulvar intraepithelial neoplasia of grade 2/3;
EIA: Enzyme ImmunoAssay; PCR: Polymerase Chain Reaction; SPF: Short Primer Fragment; TS: Type Specific;
[a] Includes cases from Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom

Data 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

Abdel-Hady ES, Cancer Res 2001; 61: 192 | Baldwin PJ, Clin Cancer Res 2003; 9: 5205 | Bryant D, J Med Virol 2011; 83: 1358 | Daayana S, Br J Cancer 2010; 102: 1129 | de Sanjosé S, Eur J Cancer 2013; 49: 3450 | Winters U, Clin Cancer Res 2008; 14: 5292

Figure 33: Comparison of the ten most frequent HPV types in cases of vulvar cancer in Europe and the World



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

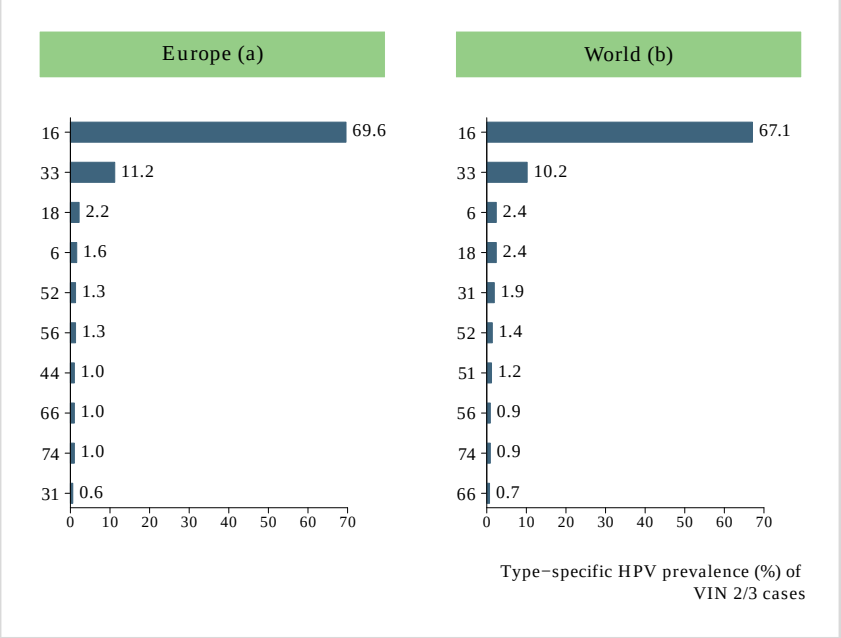
[a] Includes cases from Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom.

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

Data sources:

Data from de Sanjosé S, Eur J Cancer 2013; 49: 3450. This study has gathered the largest international series of vulva cancer cases and precancerous lesions worldwide using a standard protocol with a highly sensitive HPV DNA detection assay.

Figure 34: Comparison of the ten most frequent HPV types in VIN 2/3 cases in Europe and the World



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

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

[b] Includes cases from America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay 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:

Data from de Sanjosé S, Eur J Cancer 2013; 49: 3450. This study has gathered the largest international series of vulva cancer cases and precancerous lesions worldwide using a standard protocol with a highly sensitive HPV DNA detection assay.

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

Table 22: Studies on HPV prevalence among vaginal cancer cases in the United Kingdom

Study[a]	HPV detection method and targeted HPV types	No. Tested	HPV prevalence %	HPV prevalence (95% CI)	Prevalence of 5 most frequent HPVs HPV type (%)
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)	152	71.1	(63.4-77.7)	HPV 16 (47.4%) HPV 18 (3.3%) HPV 73 (3.3%) HPV 33 (2.6%) HPV 56 (2.6%)

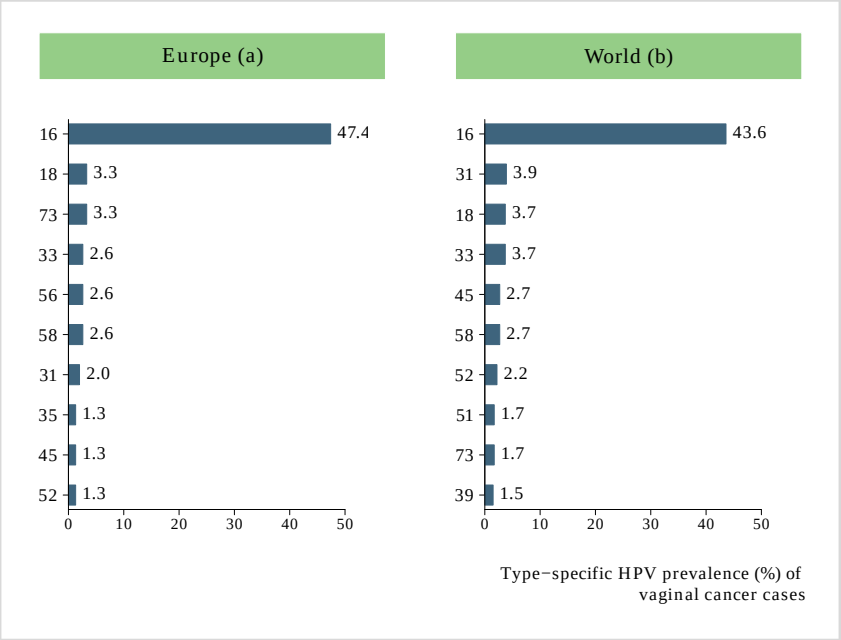
Data updated on 12 Jun 2019 (data as of 30 Jun 2015).
95% CI: 95% Confidence Interval;
EIA: Enzyme ImmunoAssay; PCR: Polymerase Chain Reaction; SPF: Short Primer Fragment;
[a] Includes cases from Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom
Data sources:
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
Alemany L, Eur J Cancer 2014; 50: 2846

Table 23: Studies on HPV prevalence among VaIN 2/3 cases in the United Kingdom

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence %	HPV prevalence (95% CI)	Prevalence of 5 most frequent HPVs HPV type (%)
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)	96	97.9	(92.7-99.4)	HPV 16 (65.6%) HPV 33 (7.3%) HPV 18 (5.2%) HPV 52 (3.1%) HPV 73 (3.1%)

Data updated on 12 Jun 2019 (data as of 30 Jun 2015).
95% CI: 95% Confidence Interval; VAIN 2/3: Vaginal intraepithelial neoplasia of grade 2/3;
EIA: Enzyme ImmunoAssay; PCR: Polymerase Chain Reaction; SPF: Short Primer Fragment;
Based on systematic reviews (up to 2008) performed by ICO for the IARC Monograph on the Evaluation of Carcinogenic Risks to Humans volume 100B and IARC's Infections and Cancer Epidemiology Group. The ICO HPV Information Centre has updated data until June 2015. Reference publications: 1) Bouvard V, Lancet Oncol 2009;10:321 2) De Vuyst H, Int J Cancer 2009;124:1626
Alemany L, Eur J Cancer 2014; 50: 2846
Data 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
Alemany L, Eur J Cancer 2014; 50: 2846

Figure 35: Comparison of the ten most frequent HPV types in cases of vaginal cancer in Europe and the World



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

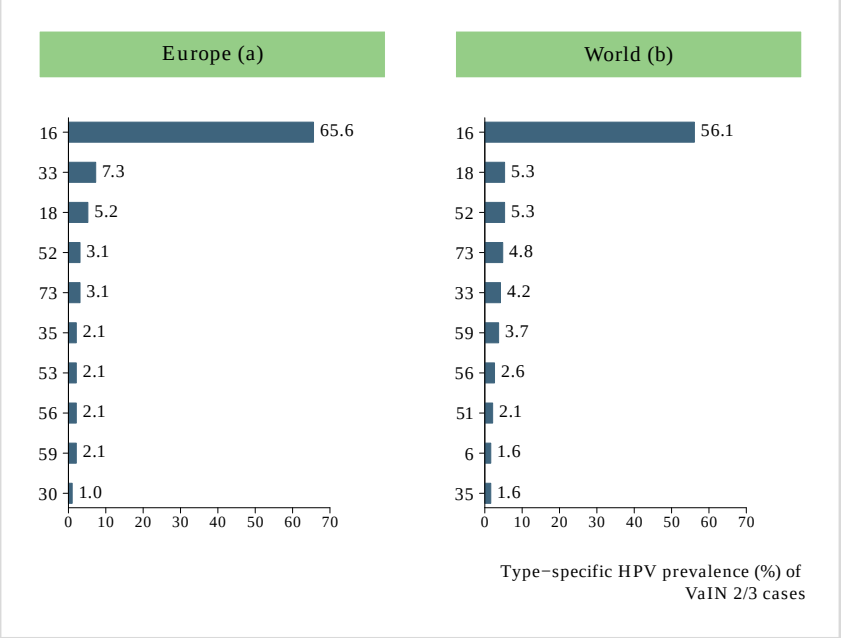
[a] Includes cases from Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom.

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

Data sources:

Data from Alemany L, Eur J Cancer 2014; 50: 2846. This study has gathered the largest international series of vaginal cancer cases and precancerous lesions worldwide using a standard protocol with a highly sensitive HPV DNA detection assay.

Figure 36: Comparison of the ten most frequent HPV types in VaIN 2/3 cases in Europe and the World



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

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

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

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

Data sources:

Data from Alemany L, Eur J Cancer 2014; 50: 2846. This study has gathered the largest international series of vaginal cancer cases and precancerous lesions worldwide using a standard protocol with a highly sensitive HPV DNA detection assay.

4.2.4 Penile cancer and precancerous penile lesions

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

Table 24: Studies on HPV prevalence among penile cancer cases in the United Kingdom

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence %	HPV prevalence (95% CI)	Prevalence of 5 most frequent HPVs HPV type (%)
Stankiewicz 2011	PCR L1-Consensus primer, PCR-SPF10 (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 82)	102	55.9	(46.2-65.1)	HPV 16 (45.1%) HPV 11 (9.8%) HPV 6 (5.9%) HPV 45 (5.9%) HPV 31 (4.9%)

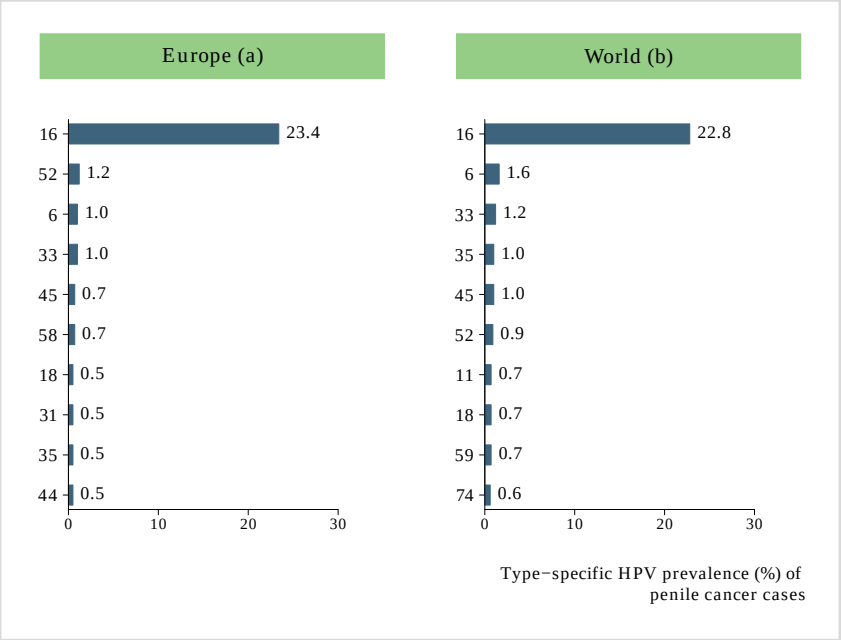
Data updated on 12 Jun 2019 (data as of 30 Jun 2015).
95% CI: 95% Confidence Interval;
PCR: Polymerase Chain Reaction; SPF: Short Primer Fragment;
Data sources:
The ICO HPV Information Centre has updated data until June 2015. Reference publications (up to 2008): 1) Bouvard V, Lancet Oncol 2009;10:321 2) Miralles-Guri C,J Clin Pathol 2009;62:870
Stankiewicz E, Histopathology 2011; 58: 433

Table 25: Studies on HPV prevalence among PeIN 2/3 cases in the United Kingdom

Study	HPV detection method and targeted Method	No. Tested	HPV prevalence %	HPV prevalence (95% CI)	Prevalence of 5 most frequent HPVs HPV type (%)
No Data Available	-	-	-	-	-

Data updated on 12 Jun 2019 (data as of 30 Jun 2015).
95% CI: 95% Confidence Interval; PeIN 2/3: Penile intraepithelial neoplasia of grade 2/3;
Data sources:
The ICO HPV Information Centre has updated data until June 2014. Reference publication (up to 2008): Bouvard V, Lancet Oncol 2009;10:321

Figure 37: Comparison of the ten most frequent HPV types in cases of penile cancer in Europe and the World



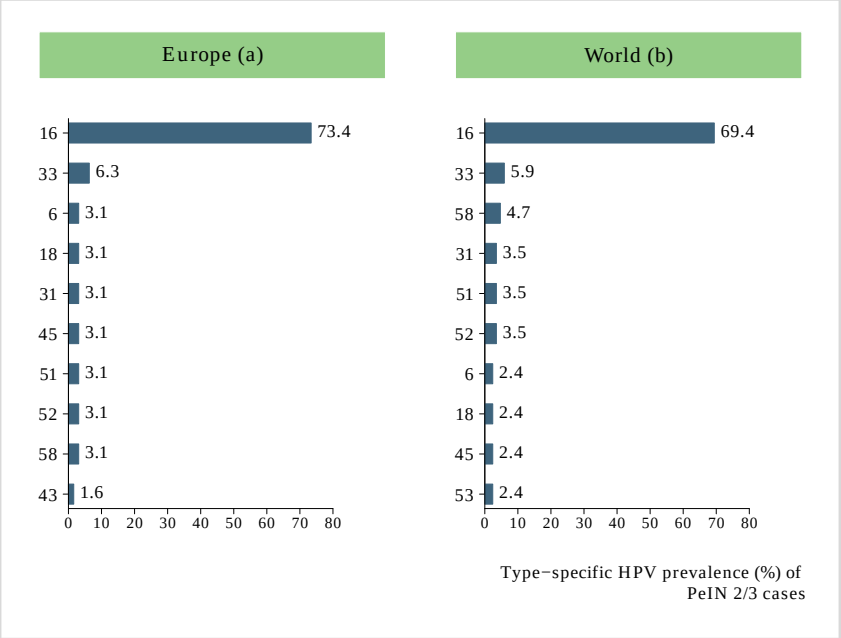
Data updated on 09 Feb 2017 (data as of 30 Jun 2015).

[a] Includes cases from Czech Republic, France, Greece, Poland, Portugal, Spain and United Kingdom

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

Data sources:
Alemany L, Eur Urol 2016; 69: 953

Figure 38: Comparison of the ten most frequent HPV types in PeIN 2/3 cases in Europe and the World



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

[a] Includes cases from Czech Republic, France, Greece, Poland, Portugal, Spain and United Kingdom

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

Data sources:
Alemany L, Eur Urol 2016; 69: 953

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 United Kingdom 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 26: Studies on HPV prevalence among men in the United Kingdom

Study	Anatomic sites samples	HPV detection method	Population	Age (years)	HPV prevalence		
					No	%	(95% CI)
No Data Available	-	-	-	-	-	-	-

Data updated on 12 Jun 2019 (data as of 31 Oct 2015).
95% CI: 95% Confidence Interval;
Data 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.

Table 27: Studies on HPV prevalence among men from special subgroups in the United Kingdom

Study	Anatomic sites samples	HPV detection method	Population	Age (years)	HPV prevalence		
					No	%	(95% CI)
Bissett 2011	Glans, prepuce, shaft, scrotum	PCR-General primers (GP5 + /6+), Bio-Plex array technology for typing	Genitourinary clinic attendees with multiple sexual partners or diagnosis of genital warts within 6 months	-	87	49.4	(38.5-60.4)
Cuschieri 2011	Shaft	PCR-INNO-LiPA	Drop-in sexual health service attendees	16-25	117	29.1	(21.0-38.2)
Hillman 1993	Urethra	PCR-GP5+/6+	Men infected with gonorrhea	17-55.6	100	18	(11.0-26.9)

(Table 27 – continued from previous page)

(Table 27 – continued from previous page)

Study	Anatomic sites samples	HPV detection method	Population	Age (years)	HPV prevalence		
					No	%	(95% CI)
Jalal 2007	Urethra	PCR-General primers for L1 (MY09/11, GP5 + /6+) and RLH	Genitourinary clinic attendees	15-77	437	20.8	(17.1-24.9)
King 2015	Anus	PCR-Multiplex and Bio-Plex Any nonavalent vaccine HPV types	MSM	Median 30 (IQR=25-35)	454	40.1	(35.5-44.8)
King 2015	Coronal sulcus, glans, penis shaft, scrotum and perianal area	PCR-Multiplex and Bio-Plex Any nonavalent vaccine HPV types	MSM	Median 30 (IQR=25-35)	446	36.1	(31.6-40.7)
Lacey 1999	Anal canal	PCR-GP5+/6+	HIV+ MSM	19-62	57	84.2	(72.1-92.5)

Data updated on 12 Jun 2019 (data as of 31 Oct 2015).

95% CI: 95% Confidence Interval;

LiPA: Line Probe Assay; PCR: Polymerase Chain Reaction; RLH: Reverse Line Hybridisation;

Data 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.
Bissett SL, J Med Virol 2011; 83: 1744 | Cuschieri K, J Med Virol 2011; 83: 1983 | Hillman RJ, Genitourin Med 1993; 69: 187 | Jalal H, Int J STD AIDS 2007; 18: 617 | King EM, Br J Cancer 2015; 112: 1585 | Lacey HB, Sex Transm Infect 1999; 75: 172

4.4 HPV burden in the head and neck

The last evaluation of the International Agency for Research in Cancer (IARC) on the carcinogenicity of HPV in humans concluded that (a) there is enough evidence for the carcinogenicity of HPV type 16 in the oral cavity, oropharynx (including tonsil cancer, base of tongue cancer and other oropharyngeal cancer sites), and (b) limited evidence for laryngeal cancer *(IARC Monograph Vol 100B)*. There is increasing evidence that HPV-related oropharyngeal cancers constitute an epidemiological, molecular and clinical distinct form as compared to non HPV-related ones. Some studies indicate that the most likely explanation for the origin of this distinct form of head and neck cancers associated with HPV is a sexually acquired oral HPV infection that is not cleared, persists and evolves into a neoplastic lesion. The most recent figures estimate that 25.6% of all oropharyngeal cancers are attributable to HPV infection with HPV16 being the most frequent type *(de Martel C. Lancet Oncol. 2012;13(6):607). In this section, the HPV burden in the head and neck in United Kingdom is presented..*

4.4.1 Burden of oral HPV infection in healthy population

Table 28: Studies on oral HPV prevalence among healthy in the United Kingdom

Study[1]	Method specimen collection and anatomic site	HPV detection method and targeted HPV types	Population	Age (years)	No. Tested	HPV prevalence %	HPV prevalence (95% CI)	Prev. of 5 most frequent HPVs HPV type (%)
MEN								
Kujan 2006	Two brushes: 1.-cervex brush into each side of buccal mucosa and 2.-cytobrush lateral border of the tongue	PCR-Roche master mix and HC2 digene (both able to detect the following HR types: 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59 and 68). No further genotyping	Healthy volunteers from university dental hospital.	-	26	3.9	(0.1-19.6)	-
WOMEN								
Kujan 2006	Two brushes: 1.-cervex brush into each side of buccal mucosa and 2.-cytobrush lateral border of the tongue	PCR-Roche master mix and HC2 digene (both able to detect the following HR types: 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59 and 68). No further genotyping	Healthy volunteers from university dental hospital.	-	24	12.5	(2.7-32.4)	-
BOTH OR UNSPECIFIED								
Kujan 2006	Two brushes: 1.-cervex brush into each side of buccal mucosa and 2.-cytobrush lateral border of the tongue	PCR-Roche master mix and HC2 digene (both able to detect the following HR types: 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59 and 68). No further genotyping	Healthy volunteers from university dental hospital.	-	50	8.0	(2.2-19.2)	-

Data as of 29 Feb 2012. Only for European countries.
95% CI: 95% Confidence Interval;
HC2: Hybrid Capture 2; PCR: Polymerase Chain Reaction;
Data 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.
[1]Kujan O, Oral Oncol 2006;42:810

4.4.2 HPV burden in head and neck cancers

Table 29: Studies on HPV prevalence among cases of oral cavity cancer in the United Kingdom

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence %	HPV prevalence (95% CI)	Prevalence of 5 most frequent HPVs HPV type (%)
MEN					

(Continued on next page)

(Table 29 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence %	HPV prevalence (95% CI)	Prevalence of 5 most frequent HPVs HPV type (%)
No Data Available	-	-	-	-	-
WOMEN					
No Data Available	-	-	-	-	-
BOTH OR UNSPECIFIED					
Lopes 2011	GP5+/GP6+ (L1) and qPCR for 16/18 Hybridization with TS probes (16. 18)	142	3.5	(1.5-8.0)	HPV 16 (2.1%) HPV 18 (2.1%)
Snijders 1996	GP5+/GP6+ (L1) Amplification with TS primers and SBH with TS probes (6. 11. 16. 18. 31. 33)	25	20.0	(8.9-39.1)	HPV 16 (20.0%)
Yeudall 1991	TS-PCR E6/E7 for 16. E6 for 18 and specific for 4 Hybridization with TS probes (4. 16. 18)	39	46.2	(31.6-61.4)	HPV 16 (25.6%) HPV 18 (20.5%)

Data as of 31 Dec 2015. Only for European countries.
95% CI: 95% Confidence Interval;
PCR: Polymerase Chain Reaction; SBH: Southern Blot Hybridization; TS: Type Specific;
Data 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
Lopes V, Oral Oncol 2011; 47: 698 | Snijders PJ, Int J Cancer 1996; 66: 464 | Yeudall WA, J Gen Virol 1991; 72 (Pt 1): 173

Table 30: Studies on HPV prevalence among cases of oropharyngeal cancer in the United Kingdom

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence %	HPV prevalence (95% CI)	Prevalence of 5 most frequent HPVs HPV type (%)
MEN					
No Data Available	-	-	-	-	-
WOMEN					
No Data Available	-	-	-	-	-
BOTH OR UNSPECIFIED					
Anderson 2007	GP5+/GP6+ (L1) Hybridization with Roche LBA (6. 11. 16. 18. 26. 31. 33. 35. 39. 40. 42. 45. 51. 52. 53. 54. 55. 56. 58. 59. 61. 62. 64. 66. 67. 68. 69. 70. 71. 72. 73. 81. 82. 83. 84. 89)	36	22.2	(11.7-38.1)	HPV 16 (19.4%) HPV 11 (2.8%)
Conway 2012	PCR-GP5+/6+, TS, Sequencing (HPV 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 34, 35, 38, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 74, 80, 81, 82, 83, 84, 85, 86, 87, 89, 90, 91)	20	40.0	(21.9-61.3)	HPV 16 (40.0%)
Evans 2013	PCR-GP5+/6+, EIA (HPV 6, 11, 16, 18, 31, 33, 35, 39, 40, 42, 43, 44, 45, 51, 52, 56, 58, 59, 66, 68)	83	83.1	(73.7-89.7)	HPV 16 (80.7%) HPV 18 (1.2%) HPV 33 (1.2%) HPV 56 (1.2%)
Schache 2011	TS-PCR E6 for 16 Amplification with TS primers (16)	98	40.8	(31.6-50.7)	HPV 16 (40.8%)
Thavaraj 2011	GP5+/GP6+ (L1) Luminex 200 IS (16. 18. 26. 31. 33. 35. 39. 45. 51. 52. 53. 56. 58. 59. 66. 68. 73. 82)	142	70.4	(62.5-77.3)	HPV 16 (64.1%) HPV 33 (2.1%) HPV 18 (0.7%) HPV 35 (0.7%)

(Continued on next page)

(Table 30 – continued from previous page)

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence %	HPV prevalence (95% CI)	Prevalence of 5 most frequent HPVs HPV type (%)
Wells 2015	PCR- MULTIPLEX (HPV 16, 18, 35, 51, 82)	57	50.9	(38.3-63.4)	HPV 16 (45.6%) HPV 18 (5.3%) HPV 35 (1.8%) HPV 51 (1.8%) HPV 82 (1.8%)

Data as of 31 Dec 2015. Only for European countries.
95% CI: 95% Confidence Interval;
EIA: Enzyme ImmunoAssay; LBA: Line-Blot Assay; PCR: Polymerase Chain Reaction; TS: Type Specific;
Data 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
Anderson CE, J Clin Pathol 2007; 60: 439 | Conway C, J Mol Diagn 2012; 14: 104 | Evans M, BMC Cancer 2013; 13: 220 | Schache AG, Clin Cancer Res 2011; 17: 6262 | Thavaraj S, J Clin Pathol 2011; 64: 308 | Wells LA, J Clin Pathol 2015; 68: 849

Table 31: Studies on HPV prevalence among cases of hypopharyngeal or laryngeal cancer in the United Kingdom

Study	HPV detection method and targeted HPV types	No. Tested	HPV prevalence %	HPV prevalence (95% CI)	Prevalence of 5 most frequent HPVs HPV type (%)
MEN					
No Data Available	-	-	-	-	-
WOMEN					
No Data Available	-	-	-	-	-
BOTH OR UNSPECIFIED					
Anderson 2007	GP5+/GP6+ (L1) Hybridization with Roche LBA (6. 11. 16. 18. 26. 31. 33. 35. 39. 40. 42. 45. 51. 52. 53. 54. 55. 56. 58. 59. 61. 62. 64. 66. 67. 68. 69. 70. 71. 72. 73. 81. 82. 83. 84. 89)	64	0.0	-	-
Conway 2012	PCR-GP5+/6+, TS, Sequencing (HPV 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 34, 35, 38, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 74, 80, 81, 82, 83, 84, 85, 86, 87, 89, 90, 91)	12	0.0	-	-
Salam 1995	MY09/MY11 (L1) RFLP (6. 11. 16. 18. 33)	36	22.2	(11.7-38.1)	HPV 6 (8.3%) HPV 16 (5.6%) HPV 11 (2.8%)
Snijders 1996	GP5+/GP6+ (L1) Amplification with TS primers and SBH with TS probes (6. 11. 16. 18. 31. 33)	31	19.4	(9.2-36.3)	HPV 16 (19.4%)

Data as of 31 Dec 2015. Only for European countries.
95% CI: 95% Confidence Interval;
LBA: Line-Blot Assay; PCR: Polymerase Chain Reaction; RFLP: Restriction Fragment Length Polymorphism; SBH: Southern Blot Hybridization; TS: Type Specific;
Data 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
Anderson CE, J Clin Pathol 2007; 60: 439 | Conway C, J Mol Diagn 2012; 14: 104 | Salam M, Eur J Surg Oncol 1995; 21: 290 | Snijders PJ, Int J Cancer 1996; 66: 464

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 United Kingdom are presented.

Table 32: Factors contributing to cervical carcinogenesis (cofactors) in the United Kingdom

INDICATOR[a]		MALE	FEMALE	TOTAL
Smoking				
Smoking of any tobacco adjusted prevalence (%) [95% CI]	Current[1,b,c,d,±]	21.1 [16.5-27.0]	19.5 [15.4-25.1]	20.3 [15.9-26.1]
	Daily[1,b,e,d,±]	21.1 [15.9-27.0]	19.5 [14.9-25.1]	20.3 [15.4-26.1]
Cigarette smoking adjusted prevalence (%) [95% CI]	Current[1,b,c,d,±]	21.1 [16.5-27.0]	19.5 [15.4-25.1]	20.3 [15.9-26.1]
	Daily[1,b,e,d,±]	21.1 [15.9-27.0]	19.5 [14.9-25.1]	20.3 [15.4-26.1]
Parity				
Total fertility rate per woman[2,f,∓]		-	1.9	-
Age-specific fertility rate (per 1000 women)	15-19 years[3,f,*]	-	19.3	-
	20-24 years[3,f,*]	-	69.4	-
	25-29 years[3,f,*]	-	104.3	-
	30-34 years[3,f,*]	-	118.9	-
	35-39 years[3,f,*]	-	62.6	-
	40-44 years[3,f,*]	-	13.5	-
	45-49 years[3,f,*]	-	0.8	-
Hormonal contraception				
Oral contraceptive use (%) among women16-49yrs who are married or in union[4,g,⋆]		-	28.0	-
Hormonal contraception use (%) (pill, injectable or implant), among women16-49yrs who are married or in union[4,g,h,⋆]		-	31.0	-
HIV				
Estimated percent of adults aged 15-49 who are living with HIV [low estimate - high estimate][5,i]		-	-	-
Estimated percent of young adults aged 15-24 who are living with HIV [low estimate - high estimate][5,i]		-	-	-
HIV prevalence (%) among female sex workers in the capital city[5,j]		-	-	-
HIV prevalence (%) among men who have sex with men in the capital city[5,6,∓]		2.5	-	-
Estimated number of adults (15+ years) living with HIV [low estimate - high estimate][5,k]		-	-	-
Estimated number of adults and children living with HIV [low estimate - high estimate][5,k]		-	-	-
Estimated number of AIDS deaths in adults and children [low estimate - high estimate][5,l]		-	-	-

Data accessed on 22 Mar 2017.

[a] Please refer to original source for methods of estimation of the following indicators.

[b] Adjusted and age-standardized prevalence estimates of tobacco use by country, for the year 2013. These rates are constructed solely for the purpose of comparing tobacco use prevalence estimates across countries, and should not be used to estimate the number of smokers in the population.

[c] "Current" means smoking at the time of the survey, including daily and non-daily smoking. "Tobacco smoking" means smoking any form of tobacco, including cigarettes, cigars, pipes, hookah, shisha, water-pipe, etc. and excluding smokeless tobacco.

[d] Data refer to cigarette smoking only.

[e] "Daily" means smoking every day at the time of the survey. "Tobacco smoking" means smoking any form of tobacco, including cigarettes, cigars, pipes, hookah, shisha, water-pipe, etc. and excluding smokeless tobacco.

[f] The number of women by age is estimated by the United Nations Population Division and published in World Population Prospects: the 2015 Revision.

[g] Excluding Northern Ireland.

[h] Proportion (%) of women using hormonal contraception (pill, injectable or implant), among those of reproductive age who are married or in union.

[i] Estimates include all people with HIV infection, regardless of whether they have developed symptoms of AIDS.

[j] Data on key populations at higher risk from country progress reports typically derive from surveys in capital cities and are not representative of the entire country. In particular, surveys in capital cities are likely to overestimate national HIV prevalence and service coverage.

[k] The number of people with HIV infection, whether or not they have developed symptoms of AIDS, estimated to be alive at the end of a specific year.

[l] The estimated number of adults and children that have died due to HIV/AIDS in a specific year.

Year of estimate: ±2013; ∓2015; *2012; ⋆2009;

Data sources:

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(Table 32 – continued from previous page)

[1]WHO report on the global tobacco epidemic, 2015: The MPOWER package. Geneva, World Health Organization, 2015. Available at http://www.who.int/tobacco/global_report/2015/en/index.html

[2]Eurostat - Statistical office of the European Comission [web site]. Luxembourg: European Commission; 2015. Available at: http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tsdde220&plugin=1. [Accessed on March 22, 2017].

[3]United Nations, Department of Economic and Social Affairs, Population Division (2015). World Fertility Data 2015 (POP/DB/Fert/Rev2015). Available at: http://www.un.org/en/development/desa/population/publications/dataset/fertility/wfd2015.shtml. [Accessed on March 22, 2017].

[4]United Nations, Department of Economic and Social Affairs, Population Division (2016). World Contraceptive Use 2016 (POP/DB/CP/Rev2016). http://www.un.org/en/development/desa/population/publications/dataset/contraception/wcu2016.shtml. Available at: [Accessed on March 22, 2017].

[5]UNAIDS database [internet]. Available at: http://aidsinfo.unaids.org/ [Accessed on March 22, 2017]

[6] SGGS 2007

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 United Kingdom are presented.

Table 33: Percentage of 15-year-olds who have had sexual intercourse in the United Kingdom

Indicator	Area, registry[a]	Male	Female
Percentage of 15-year-old subjects who report sexual intercourse	Wales	21	32
	Scotland	24	27
	England	18	23

Data accessed on 16 Mar 2017.
Fifteen-year-olds teenagers only were asked whether they had ever had sexual intercourse.
Year of estimation: 2013-2014
Please refer to original source for methods of estimation
[a] Indicates a significant gender difference (at p<0.05).
Data sources:
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

Table 34: Median age at first sex in the United Kingdom

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
Hubert 1998[1]	1991	1932-1941[a]	1,318	19.1	1,980	20.9	-	-
		1942-1951[a]	1,924	18.3	2,306	19.5	-	-
		1952-1961[a]	2,268	17.5	3,031	18.2	-	-
		1962-1966[a]	1,202	17.2	1,629	17.9	-	-
		1967-1971[a]	864	17.1	1,125	17.4	-	-
		1972-1973[a]	288	17.0	350	17.3	-	-
Wellings 2001[2]	2001	1957-1961[b]	578	17.0	613	17.0	-	-
		1957-1985[b]	4,743	17.0	6,364	17.0	-	-
		1962-1966[b]	646	17.0	824	17.0	-	-
		1967-1971[b]	808	17.0	1,160	17.0	-	-
		1972-1976[b]	981	17.0	1,357	17.0	-	-
		1977-1981[b]	903	17.0	1,279	16.0	-	-
		1982-1985[b]	827	16.0	1,131	16.0	-	-
Wellings 2013[3]	2010-2012	1936-1945[b]	657	18.0	850	19.0	-	-
		1936-1994[b]	6,207	17.0	8,746	17.0	-	-
		1946-1955[b]	758	18.0	1,015	18.0	-	-
		1956-1965[b]	780	17.0	1,106	17.0	-	-
		1966-1975[b]	792	17.0	1,196	17.0	-	-
		1976-1985[b]	1,508	17.0	2,469	16.0	-	-
		1986-1994[b]	1,712	16.0	2,110	16.0	-	-

Data accessed on 16 Mar 2017.
N: number of subjects;
[a] Not especified if estimations are among sexually active or surveyed.
[b] Number of subjects refers to the number of surveyed men/women (not all sexually active).
Data sources:
[1] Hubert M, Bajos N, Sandfort T. Sexual behaviour and HIV/AIDS in Europe: comparisons of national surveys. London: UCL Press; 1998.
[2] Wellings K, Nanchahal K, Macdowall W, McManus S, Erens B, Mercer CH, Johnson AM, Copas AJ, Korovessis C, Fenton KA, Field J. Sexual behaviour in Britain: early heterosexual experience. Lancet. 2001 Dec 1;358(9296):1843-50.
[3] Wellings K, Jones KG, Mercer CH, Tanton C, Clifton S, Datta J, et al. The prevalence of unplanned pregnancy and associated factors in Britain: fi ndings from the third National Survey of Sexual Attitudes and Lifestyles (Natsal-3). Lancet 2013; 382: 1807-16.

Table 35: Marriage patterns in the United Kingdom

Indicator		Male	Female
Average age at first marriage[1]		28.7	27

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(Table 35 – continued from previous page)

Indicator		Male	Female
Age-specific % of ever married[2]	15-19 years	1.24	2.97
	20-24 years	15.1	26.2
	25-29 years	44.1	57.5
	30-34 years	65.7	73.7
	35-39 years	76.0	80.9
	40-44 years	81.0	85.1
	45-49 years	84.5	88.5

Data accessed on 16 Mar 2017.
Year of estimate: 2011;
Please refer to original source for methods of estimation.
Data sources:
[1]The world bank: health nutrition and population statistics. Updated 16-Dec-2016. Accessed on March 16 2017. Available at http://data.worldbank.org/data-catalog/health-nutrition-and-population-statistics
[2]United Nations, Department of Economic and Social Affairs, Population Division (2015). World Marriage Data 2015 (POP/DB/Marr/Rev2015). Available at: http://www.un.org/en/development/desa/population/theme/marriage-unions/WMD2015.shtml Accessed on April 3, 2017.

Table 36: Average number of sexual partners in the United Kingdom

Study	Period of estimate	Year/Period	Birth cohort	Male	Female	Total
				Mean(N)	Mean(N)	Mean(N)
Almonte 2011[1,a,b]	Lifetime	2003-2007	(1959-1972)	-(-)	5.6(195)	-(-)
	Lifetime	2003-2007	(1959-1990)	-(-)	7.5(436)	-(-)
	Lifetime	2003-2007	(1969-1982)	-(-)	7.7(168)	-(-)
	Lifetime	2003-2007	(1979-1990)	-(-)	12.0(73)	-(-)
Hubert 1998[2,a]	Lifetime	1990-1991	(1941-1973)	10.4(6,414)	3.7(8,049)	-(-)
	Last year	1990-1991	(1941-1973)	1.3(6,134)	1.1(7,790)	-(-)
Johnson 2001[3,d]	Lifetime	1999-2001	(1955-1966)	16.0(1,691)	6.8(2,356)	-(-)
	Last 5 years	1999-2001	(1955-1966)	2.2(1,669)	1.5(2,332)	-(-)
	Lifetime	1999-2001	(1955-1985)	12.7(4,762)	6.5(6,399)	-(-)
	Last 5 years	1999-2001	(1955-1985)	3.8(4,762)	2.4(6,399)	-(-)
	Lifetime	1999-2001	(1965-1976)	13.6(1,759)	7.3(2,486)	-(-)
	Last 5 years	1999-2001	(1965-1976)	4.2(1,751)	2.2(2,474)	-(-)
	Lifetime	1999-2001	(1975-1985)	6.9(1,211)	5.0(1,433)	-(-)
	Last 5 years	1999-2001	(1975-1985)	5.3(1,200)	3.8(1,422)	-(-)
Mercer 2009[4,d]	Last year	1999-2001	(1955-1985)	1.8(4,762)	1.3(6,399)	-(-)

Data accessed on 08 Aug 2013.
N: number of subjects sexually active;
[a]Number of surveyed people (not all sexually active).
[b]The authors used the following formula to estimate the Number of lifetime partners in year 2000 in women aged 17-45 years= Number of lifetime partners - Number of new partners in the last 5 years.
[c]Data among responders who ever had a heterosexual partner.
[d]Number of heterosexual partners among surveyed (not all sexually active).
Data sources:
[1]Almonte M, Silva Idos S, Asare A, Gilham C, Sargent A, Bailey A, Turner A, Desai M, Kitchener HC, Peto J. Sexual behavior and HPV infection in British women, by postal questionnaires and telephone interviews. J Med Virol. 2011 Jul;83(7):1238-46.
[2]Hubert M, Bajos N, Sandfort T. Sexual behaviour and HIV/AIDS in Europe: comparisons of national surveys. London: UCL Press; 1998.
[3]Johnson AM, Mercer CH, Erens B, Copas AJ, McManus S, Wellings K, et al. Sexual behaviour in Britain: partnerships, practices, and HIV risk behaviours. Lancet. 2001 Dec 1;358(9296):1835-42.
[4]Mercer CH, Copas AJ, Sonnenberg P, Johnson AM, McManus S, Erens B, Cassell JA. Who has sex with whom? Characteristics of heterosexual partnerships reported in a national probability survey and implications for STI risk.Int J Epidemiol. 2009 Feb;38(1):206-14.

Table 37: Lifetime prevalence of anal intercourse among women in the United Kingdom

Study[a]	Year/Period	Birth cohort	FEMALE		
			N surveyed	N sexual active	% among sexually active
Johnson 2001[1,b]	1990-1991	(1946-1975)	7,765	-	6.5
	1999-2001	(1955-1985)	6,399	-	11.3
Stone 2006[2,c]	2003-2005	(1984-1990)	765	-	9.3

Data accessed on 08 Aug 2013.
N: number of subjects.
[a]Instead of number of women sexually active, this time was number of women who answered the question on anal intercourse.

(Continued on next page)

(Table 37 – continued from previous page)

[b] Data pertain to heterosexual women.
[c] Data pertain to full and part time students.

Data sources:

[1] Johnson AM, Mercer CH, Erens B, Copas AJ, McManus S, Wellings K, et al. Sexual behaviour in Britain: partnerships, practices, and HIV risk behaviours. Lancet. 2001 Dec 1;358(9296):1835-42.
[2] Stone N, Hatherall B, Ingham R, McEachran. J Oral sex and condom use among young people in the United Kingdom. Perspect Sex Reprod Health. 2006 Mar;38(1):6-12.

7 HPV preventive strategies

It is established that well-organised cervical screening programmes or widespread good quality cytology can reduce cervical cancer incidence and mortality. The introduction of HPV vaccination could also effectively reduce the burden of cervical cancer in the coming decades. This section presents indicators on basic characteristics and performance of cervical cancer screening, status of HPV vaccine licensure and introduction in the United Kingdom.

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.

Table 38: Main characteristics of cervical cancer screening in the United Kingdom

Availability of a cervical cancer screening programme[α]	Yes
Quality assurance structure and mandate to supervise and to monitor the screening process[A,β]	Yes
Active invitation to screening[γ]	Yes
Main screening test used for primary screening	Cytology/HPV test
Undergoing demonstration projects	
Screening ages (years)	25-64
Screening interval or frequency of screenings	3 years (ages 25-49), 5 years (ages 50-64)

Data accessed on 31 Dec 2016.

[A] Information about performance indicators in organized and population-based cervical cancer screening programmes in European countries is found in the following document "Cancer Screening in the European Union (2017). Report on the implementation of the Council: Recommendation on cancer screening. International Agency for Research on Cancer. European Commission. January 2017. Available at: https://ec.europa.eu/health/sites/health/files/major_chronic_diseases/docs/2017_cancerscreening_2ndreportimplementation_en.pdf."

[α] Public national cervical cancer screening program in place (Cytology/VIA/HPV testing). Countries may have clinical guidelines or protocols, and cervical cancer screening services in a private sector but without a public national program. Publicly mandat

[β] Self-reported quality assurance: Organised programmes provide for a national or regional team responsible for implementation and require providers to follow guidelines, rules, or standard operating procedures. They also define a quality assurance structur

[γ] Self-reported active invitation or recruitment, as organised population-based programmes, identify and personally invite each eligible person in the target population to attend a given round of screening.

Data sources:

Cervical cancer screening in Europe: Quality assurance and organisation of programmes. Elfström KM, Arnheim-Dahlström L, von Karsa L, Dillner J. Eur J Cancer. 2015 May;51(8):950-68. doi: 10.1016/j.ejca.2015.03.008. Epub 2015 Mar 25. PMID: 25817010

Public health England. Cervical screening: professional guidance. Human papillomavirus (HPV): primary screening protocol. https://www.gov.uk/government/publications/human-papillomavirus-hpv-primary-screening-protocol

Table 39: Estimated coverage of cervical cancer screening in the United Kingdom

Reference	Year	Population	Urban vs rural or both (all)	N Women	Age range	Within the last year(s)	Coverage (%)[b]
Cervical Screening Programme England 2006-07[1,α,a]	2005	National screening programme	All	12,886,400	25-64	5y	80 .3
	2006	National screening programme	All	13,099,200	25-64	5y	79 .5
	2007	National screening programme	All	13,192,905	25-64	5y	79 .2
Cervical Screening Programme England 2007-08[2,β,c]	2008	National screening programme	All	13,305,200	25-64	3y	69
						5y	78 .6
EUROSTAT UK[3,d]	2000	National screening programme	All	-	25-64	5y	83 .7
	2001	National screening programme	All	-	25-64	5y	82 .9
	2002	National screening programme	All	-	25-64	5y	81 .6
	2003	National screening programme	All	-	25-64	5y	81 .2
	2004	National screening programme	All	-	25-64	5y	80 .6
	2005	National screening programme	All	-	25-64	5y	80 .2
	2006	National screening programme	All	-	25-64	5y	79 .4
	2007	National screening programme	All	-	25-64	5y	79
	2008	National screening programme	All	-	25-64	5y	78 .1
	2009	National screening programme	All	-	25-64	5y	78 .6
	2010	National screening programme	All	-	25-64	5y	78 .6
	2011	National screening programme	All	-	25-64	5y	78 .3
	2012	National screening programme	All	-	25-64	5y	78 .4
	2013	National screening programme	All	-	25-64	5y	78 .1
	2014	National screening programme	All	-	25-64	5y	77 .5
WHS 2003 United Kingdom[4,e]	2002-2003	General female population	All	758	18-69	3y	53 .4
				471	25-64	3y	60 .7
			Rural	51	18-69	3y	51 .2
			Urban	672	18-69	3y	53

Data accessed on 31 Dec 2016.

[a] National cervical screening programme with invitation of all eligible women aged 25-64 years. National policy for the screening programme is that eligible women aged 25-49 are to be screened every 3 years between the ages of 25-49 and women aged 50-64 every 5 years between 50-64 years. Registry data. For the coverage calculation the numerator used in calculating the percentage is number of women less than 5 years (in the 50-64 age group) and less than 3 years (in the 25-49 age group) since last test with an adequate result. The denominator is the eligible female population (aged 25-64) that is the resident population less those women with recall ceased for clinical reasons.

[b] Proportion of women in the total sample of the mentioned age range in the country or region that reported having a Pap smear during a given time period (e.g., last year, last 2, 3, 5 years or ever).

[c] National cervical screening programme with invitation of all eligible women aged 25-64 years. National policy for the screening programme is that eligible women aged 25-49 are to be screened every 3 years between the ages of 25-49 and women aged 50-64 every 5 years between 50-64 years.

[d] Programme data. Calculated by the Health & Social Care Information Centre (HSCIC) (www.hscic.gov.uk) using data from: England: Health & Social Care Information Centre (HSCIC), Wales: 2001 onwards: Public Health Wales, Scotland: 2000 onwards: NHS National Services Scotland, Northern Ireland: Unable to supply coverage data but hope to have this in place by 2015. Coverage: England and Scotland for 2000, 2001 onwards includes England, Wales & Scotland, except 2012 which is only England & Wales. England data based on age groups of 25-64 years (screened within 5 years) from 2000 onwards. Scotland data based on age groups of 20-60 years (screened within 5.5 years) from 2000 onwards. Wales data based on age groups of 25-64 years (screened within 5 years) from 2001 onwards. Cervical screening rates do not differentiate between uptake and coverage rates as with breast cancer screening data. Data are therefore based on coverage. England: reason for revising data based on ccoverage instead of uptake from 2000 onwards: Coverage is defined as the percentage of women in a population who were eligible for screening at a given point in time (31st March in any given year), who were screened adequately within a specified period. Coverage for women aged 25-64 is calculated as the number of women in this age group who have had an adequate screening test within the last 5 years as a percentage of the eligible population aged 25 to 64. In England at least, smear tests are no longer used. Instead you could refer to women tested which is a catch all.

[e] WHO Household Surveys with multistage cluster sampling. Screening coverage among women aged 18-69. World Health Surveys. Geneva: World Health Organization (WHO); 2003.

[α] National cervical screening programme with invitation of all eligible women aged 25-64 years. National policy for the screening programme is that eligible women aged 25-49 are to be screened every 3 years between the ages of 25-49 and women aged 50-64 ev

[β] National cervical screening programme with invitation of all eligible women aged 25-64 years. National policy for the screening programme is that eligible women aged 25-49 are to be screened every 3 years between the ages of 25-49 and women aged 50-64 eve

Data sources:

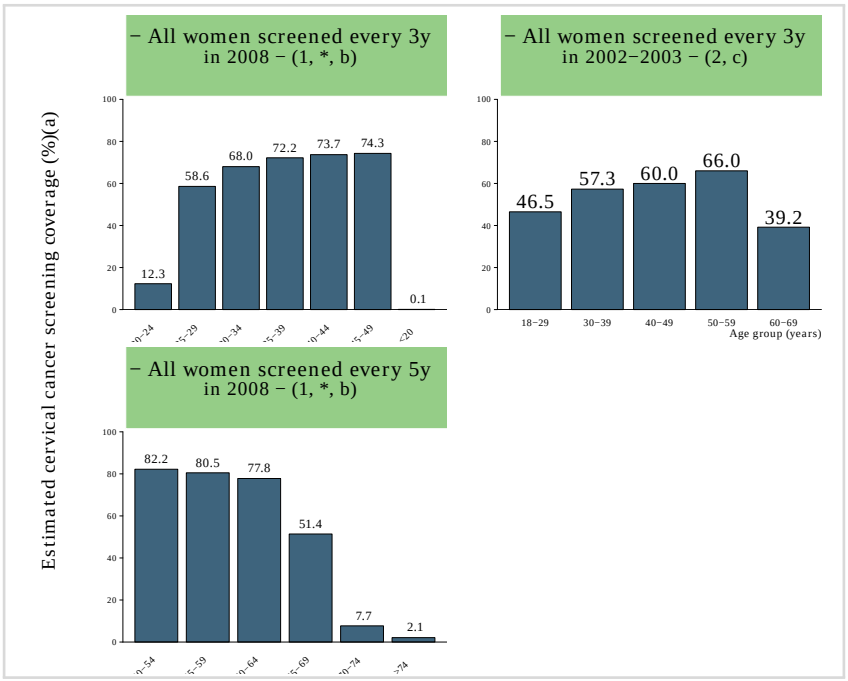
[1] Cervical Screening Programme England 2006-07. National Health System; 2008.

[2] Cervical Screening Programme England 2007/08. National Health System. England (October, 28, 2008). Available at: http://www.ic.nhs.uk/statistics-and-data-collections/screening/cervical-cancer/cervical-screening [Accessed by July 2009]

[3] European Commision (2015). EUROSTAT, the statistical office of the European Union (internet). Luxembourg. Available at: http://ec.europa.eu/eurostat/web/main/home [accessed by October 2015]

[4] World Health Organization (WHO). United Kingdom-World Health Survey 2003 (GBR_2003_WHS_v01_M). Available at: http://apps.who.int/healthinfo/systems/surveydata/index.php/catalog/127 [Accessed by October 2015]

Figure 39: Estimated coverage of cervical cancer screening in the United Kingdom, by age and study



Data accessed on 31 Dec 2016.

[a] Proportion of women in the total sample of the mentioned age range in the country or region that reported having a Pap smear during a given time period (e.g., last year, last 2, 3, 5 years or ever).

[b] National cervical screening programme with invitation of all eligible women aged 25-64 years. National policy for the screening programme is that eligible women aged 25-49 are to be screened every 3 years between the ages of 25-49 and women aged 50-64 every 5 years between 50-64 years.

[c] WHO Household Surveys with multistage cluster sampling. Screening coverage among women aged 18-69. World Health Surveys. Geneva: World Health Organization (WHO); 2003.

[*] National cervical screening programme with invitation of all eligible women aged 25-64 years. National policy for the screening programme is that eligible women aged 25-49 are to be screened every 3 years between the ages of 25-49 and women aged 50-64 eve

Data sources:

ICO Information Centre on HPV and Cancer. Country-specific references identified in each country-specific report as general recommendation from relevant scientific organizations and/or publications.

[1] Cervical Screening Programme England 2007/08. National Health System. England (October, 28, 2008). Available at: http://www.ic.nhs.uk/statistics-and-data-collections/screening/cervical-cancer/cervical-screening [Accessed by July 2009]

[2] World Health Organization (WHO). United Kingdom-World Health Survey 2003 (GBR_2003_WHS_v01_M). Available at: http://apps.who.int/healthinfo/systems/surveydata/index.php/catalog/127 [Accessed by October 2015]

Table 40: Estimated coverage of cervical cancer screening in the United Kingdom , by region

Region	N Women	Age range	LY[a]	Population	Coverage (%)[b]	Year(s) studied	Reference
	-	20-60	5.5y	National screening programme	78.9	2014-2015	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	71.7	2014-2015	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	79.7	2013-2014	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	72.1	2013-2014	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	72.7	2012-2013	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	80.4	2012-2013	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	80.4	2011-2012	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	74.2	2011-2012	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	74.6	2010-2011	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	80.2	2010-2011	NHS Scotland[1]
(Former) Argyll and Clyde Scotland	-	20-60	3.5y	National screening programme	74.2	2009-2010	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	80.1	2009-2010	NHS Scotland[1]

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(Table 40 – continued from previous page)

Region	N Women	Age range	LY[a]	Population	Coverage (%)[b]	Year(s) studied	Reference
	-	20-60	3.5y	National screening programme	72.4	2008-2009	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	78.7	2008-2009	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	67.1	2007-2008	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	76.2	2007-2008	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	74.8	2006-2007	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	81.1	2006-2007	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	82.2	2005-2006	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	76.2	2005-2006	NHS Scotland[1]
Abertawe Bro Morgannwg UHB Wales	129,841	25-64	3.5y	National screening programme	70.2	2014-2015	NHS Wales[2]
	129,841	25-64	5y	National screening programme	77.4	2014-2015	NHS Wales[2]
Aneurin Bevan UHB Wales	142,217	25-64	5y	National screening programme	79.2	2014-2015	NHS Wales[2]
	142,217	25-64	3.5y	National screening programme	72.4	2014-2015	NHS Wales[2]
Ayrshire and Arran Scotland	-	20-60	3.5y	National screening programme	72.9	2014-2015	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	79.5	2014-2015	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	73.1	2013-2014	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	80.2	2013-2014	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	80.8	2012-2013	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	73.0	2012-2013	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	81.1	2011-2012	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	74.7	2011-2012	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	75.3	2010-2011	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	81.2	2010-2011	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	81.4	2009-2010	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	75.6	2009-2010	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	81.1	2008-2009	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	75.1	2008-2009	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	70.4	2007-2008	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	79.0	2007-2008	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	78.3	2006-2007	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	84.6	2006-2007	NHS Scotland[1]

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(Table 40 – continued from previous page)

Region	N Women	Age range	LY[a]	Population	Coverage (%)[b]	Year(s) studied	Reference
	-	20-60	3.5y	National screening programme	79.5	2005-2006	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	85.7	2005-2006	NHS Scotland[1]
Betsi Cadwaladr UHB Wales	161,830	25-64	3.5y	National screening programme	72.1	2014-2015	NHS Wales[2]
	161,830	25-64	5y	National screening programme	78.6	2014-2015	NHS Wales[2]
Borders Scotland	-	20-60	5.5y	National screening programme	80.2	2014-2015	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	75.0	2014-2015	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	80.6	2013-2014	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	75.0	2013-2014	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	75.2	2012-2013	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	81.2	2012-2013	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	77.0	2011-2012	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	82.6	2011-2012	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	83.9	2010-2011	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	77.9	2010-2011	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	84.6	2009-2010	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	78.4	2009-2010	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	84.2	2008-2009	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	78.4	2008-2009	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	75.8	2007-2008	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	83.1	2007-2008	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	84.6	2006-2007	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	88.2	2006-2007	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	88.7	2005-2006	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	85.7	2005-2006	NHS Scotland[1]
Cardiff and Vale UHB Wales	123,290	25-64	5y	National screening programme	76.6	2014-2015	NHS Wales[2]
	123,290	25-64	3.5y	National screening programme	70.0	2014-2015	NHS Wales[2]
Cwm Taf UHB Wales	72,491	25-64	3.5y	National screening programme	71.8	2014-2015	NHS Wales[2]
	72,491	25-64	5y	National screening programme	78.5	2014-2015	NHS Wales[2]
	-	20-60	5.5y	National screening programme	80.9	2014-2015	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	75.2	2014-2015	NHS Scotland[1]

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(Table 40 – continued from previous page)

Region	N Women	Age range	LY[a]	Population	Coverage (%)[b]	Year(s) studied	Reference
	-	20-60	5.5y	National screening programme	81.5	2013-2014	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	75.5	2013-2014	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	76.1	2012-2013	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	82.0	2012-2013	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	76.6	2011-2012	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	81.8	2011-2012	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	76.6	2010-2011	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	81.9	2010-2011	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	76.8	2009-2010	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	82.7	2009-2010	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	76.7	2008-2009	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	83.0	2008-2009	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	73.8	2007-2008	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	82.2	2007-2008	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	83.6	2006-2007	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	88.0	2006-2007	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	89.2	2005-2006	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	85.0	2005-2006	NHS Scotland[1]
East Midlands	1,072,700	25-64	5y	National screening programme	82.9	2007	Cervical Screening Programme England 2006-07[3,α]
East of England	1,419,800	25-64	5y	National screening programme	79.9	2007	Cervical Screening Programme England 2006-07[3,α]
	4,240,000	25-64	5y	National screening programme	77.8	2014	NHS England[4]
	4,240,000	25-64	3.5y	National screening programme	68.3	2014	NHS England[4]
	-	25-49	3.5y	National screening programme	71.9	2014	NHS England[4]
	4,240,000	25-64	5y	National screening programme	78.3	2013	NHS England[4]
	4,240,000	25-64	3.5y	National screening programme	68.3	2013	NHS England[4]
	-	25-49	3.5y	National screening programme	71.5	2013	NHS England[4]
	4,690,000	25-64	3.5y	National screening programme	69.4	2012	NHS England[4]
	4,690,000	25-64	5y	National screening programme	78.6	2012	NHS England[4]
	-	25-49	3.5y	National screening programme	73.5	2012	NHS England[4]
	4,330,000	25-64	5y	National screening programme	78.6	2011	NHS England[4]

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(Table 40 – continued from previous page)

Region	N Women	Age range	LY[a]	Population	Coverage (%)[b]	Year(s) studied	Reference
	-	25-49	3.5y	National screening programme	73.7	2011	NHS England[4]
	4,330,000	25-64	3.5y	National screening programme	69.0	2011	NHS England[4]
	4,070,000	25-64	5y	National screening programme	78.9	2010	NHS England[4]
	4,070,000	25-64	3.5y	National screening programme	69.3	2010	NHS England[4]
	-	25-49	3.5y	National screening programme	74.0	2010	NHS England[4]
	4,020,000	25-64	3.5y	National screening programme	69.3	2009	NHS England[4]
	4,020,000	25-64	5y	National screening programme	78.9	2009	NHS England[4]
	-	25-49	3.5y	National screening programme	72.5	2009	NHS England[4]
	4,180,000	25-64	5y	National screening programme	78.6	2008	NHS England[4]
	4,180,000	25-64	3.5y	National screening programme	69.0	2008	NHS England[4]
	-	25-49	3.5y	National screening programme	69.3	2008	NHS England[4]
	4,010,000	25-64	3.5y	National screening programme	69.4	2007	NHS England[4]
	-	25-49	3.5y	National screening programme	69.2	2007	NHS England[4]
	4,010,000	25-64	5y	National screening programme	79.2	2007	NHS England[4]
	4,060,000	25-64	3.5y	National screening programme	69.8	2006	NHS England[4]
	4,060,000	25-64	5y	National screening programme	79.5	2006	NHS England[4]
	-	25-49	3.5y	National screening programme	69.6	2006	NHS England[4]
	4,150,000	25-64	3.5y	National screening programme	69.7	2005	NHS England[4]
	-	25-49	3.5y	National screening programme	69.6	2005	NHS England[4]
	4,150,000	25-64	5y	National screening programme	80.3	2005	NHS England[4]
	-	25-64	5y	National screening programme	80.6	2004	NHS England[4]
	-	25-64	3.5y	National screening programme	70.3	2004	NHS England[4]
	-	25-49	3.5y	National screening programme	70.6	2004	NHS England[4]
	-	20-60	3.5y	National screening programme	70.4	2014-2015	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	76.6	2014-2015	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	77.3	2013-2014	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	70.5	2013-2014	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	70.8	2012-2013	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	77.8	2012-2013	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	77.6	2011-2012	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	72.1	2011-2012	NHS Scotland[1]

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(Table 40 – continued from previous page)

Region	N Women	Age range	LY[a]	Population	Coverage (%)[b]	Year(s) studied	Reference
	-	20-60	3.5y	National screening programme	72.6	2010-2011	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	78.4	2010-2011	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	72.6	2009-2010	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	78.8	2009-2010	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	73.8	2008-2009	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	79.9	2008-2009	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	79.0	2007-2008	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	71.2	2007-2008	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	73.2	2006-2007	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	81.2	2006-2007	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	82.6	2005-2006	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	74.9	2005-2006	NHS Scotland[1]
Forth Valley Scotland	-	20-60	5.5y	National screening programme	78.4	2014-2015	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	72.6	2014-2015	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	79.2	2013-2014	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	72.7	2013-2014	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	73.0	2012-2013	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	79.6	2012-2013	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	75.0	2011-2012	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	80.6	2011-2012	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	80.8	2010-2011	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	75.1	2010-2011	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	76.2	2009-2010	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	82.2	2009-2010	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	76.8	2008-2009	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	82.9	2008-2009	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	82.6	2007-2008	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	75.5	2007-2008	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	84.5	2006-2007	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	77.5	2006-2007	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	77.6	2005-2006	NHS Scotland[1]

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(Table 40 – continued from previous page)

Region	N Women	Age range	LY[a]	Population	Coverage (%)[b]	Year(s) studied	Reference
	-	20-60	5.5y	National screening programme	85.0	2005-2006	NHS Scotland[1]
Grampian Scotland	-	20-60	5.5y	National screening programme	78.4	2014-2015	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	72.9	2014-2015	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	78.9	2013-2014	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	73.1	2013-2014	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	79.6	2012-2013	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	73.5	2012-2013	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	80.3	2011-2012	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	75.3	2011-2012	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	80.6	2010-2011	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	75.9	2010-2011	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	76.1	2009-2010	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	81.1	2009-2010	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	81.2	2008-2009	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	75.7	2008-2009	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	79.6	2007-2008	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	72.2	2007-2008	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	79.7	2006-2007	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	84.3	2006-2007	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	81.4	2005-2006	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	85.9	2005-2006	NHS Scotland[1]
Greater Glasgow Scotland	-	20-60	5.5y	National screening programme	71.5	2014-2015	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	65.1	2014-2015	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	73.3	2013-2014	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	66.3	2013-2014	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	67.4	2012-2013	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	74.5	2012-2013	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	75.2	2011-2012	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	69.5	2011-2012	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	70.1	2010-2011	NHS Scotland[1]

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(Table 40 – continued from previous page)

Region	N Women	Age range	LY[a]	Population	Coverage (%)[b]	Year(s) studied	Reference
	-	20-60	5.5y	National screening programme	75.5	2010-2011	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	76.0	2009-2010	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	70.1	2009-2010	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	68.7	2008-2009	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	75.2	2008-2009	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	64.2	2007-2008	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	72.9	2007-2008	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	73.5	2006-2007	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	79.5	2006-2007	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	80.9	2005-2006	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	75.4	2005-2006	NHS Scotland[1]
Highland Scotland	-	20-60	3.5y	National screening programme	73.5	2014-2015	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	79.6	2014-2015	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	80.4	2013-2014	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	73.8	2013-2014	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	81.1	2012-2013	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	74.2	2012-2013	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	81.6	2011-2012	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	75.9	2011-2012	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	81.9	2010-2011	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	76.4	2010-2011	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	82.4	2009-2010	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	76.5	2009-2010	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	81.6	2008-2009	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	75.8	2008-2009	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	79.5	2007-2008	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	71.4	2007-2008	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	81.7	2006-2007	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	86.3	2006-2007	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	87.3	2005-2006	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	82.8	2005-2006	NHS Scotland[1]

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(Table 40 – continued from previous page)

Region	N Women	Age range	LY[a]	Population	Coverage (%)[b]	Year(s) studied	Reference
Hywel Dda UHB Wales	88,388	25-64	5y	National screening programme	76.5	2014-2015	NHS Wales[2]
	88,388	25-64	3.5y	National screening programme	69.6	2014-2015	NHS Wales[2]
Lanarkshire Scotland	-	20-60	3.5y	National screening programme	72.3	2014-2015	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	79.2	2014-2015	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	79.3	2013-2014	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	72.1	2013-2014	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	72.4	2012-2013	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	79.9	2012-2013	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	80.1	2011-2012	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	73.7	2011-2012	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	73.9	2010-2011	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	80.0	2010-2011	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	80.2	2009-2010	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	74.0	2009-2010	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	72.6	2008-2009	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	79.2	2008-2009	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	77.2	2007-2008	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	67.9	2007-2008	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	82.5	2006-2007	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	76.6	2006-2007	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	77.5	2005-2006	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	83.2	2005-2006	NHS Scotland[1]
London	2,294,000	25-64	5y	National screening programme	74.0	2007	Cervical Screening Programme England 2006-07[3,a]
Lothian Scotland	-	20-60	3.5y	National screening programme	67.9	2014-2015	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	73.9	2014-2015	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	74.5	2013-2014	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	68.5	2013-2014	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	69.2	2012-2013	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	75.5	2012-2013	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	71.3	2011-2012	NHS Scotland[1]

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(Table 40 – continued from previous page)

Region	N Women	Age range	LY[a]	Population	Coverage (%)[b]	Year(s) studied	Reference
	-	20-60	5.5y	National screening programme	76.7	2011-2012	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	77.7	2010-2011	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	72.5	2010-2011	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	78.1	2009-2010	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	72.5	2009-2010	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	73.1	2008-2009	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	78.9	2008-2009	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	77.7	2007-2008	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	70.3	2007-2008	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	77.4	2006-2007	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	81.6	2006-2007	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	82.6	2005-2006	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	78.6	2005-2006	NHS Scotland[1]
North East	646,100	25-64	5y	National screening programme	80.2	2007	Cervical Screening Programme England 2006-07[3,a]
North West	1,739,500	25-64	5y	National screening programme	79.0	2007	Cervical Screening Programme England 2006-07[3,a]
	-	20-60	5.5y	National screening programme	82.7	2014-2015	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	77.6	2014-2015	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	82.6	2013-2014	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	78.2	2013-2014	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	84.0	2012-2013	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	79.5	2012-2013	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	84.1	2011-2012	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	79.9	2011-2012	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	84.2	2010-2011	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	80.2	2010-2011	NHS Scotland[1]
Orkney Scotland	-	20-60	3.5y	National screening programme	79.3	2009-2010	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	83.4	2009-2010	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	79.0	2008-2009	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	83.6	2008-2009	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	82.6	2007-2008	NHS Scotland[1]

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(Table 40 – continued from previous page)

Region	N Women	Age range	LY[a]	Population	Coverage (%)[b]	Year(s) studied	Reference
	-	20-60	3.5y	National screening programme	75.7	2007-2008	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	83.4	2006-2007	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	88.0	2006-2007	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	84.6	2005-2006	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	88.7	2005-2006	NHS Scotland[1]
Powys Teaching HB Wales	30,664	25-64	5y	National screening programme	80.8	2014-2015	NHS Wales[2]
	30,664	25-64	3.5y	National screening programme	74.3	2014-2015	NHS Wales[2]
Scotland	-	20-60	3.5y	National screening programme	70.4	2014-2015	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	76.6	2014-2015	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	70.7	2013-2014	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	77.3	2013-2014	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	78.1	2012-2013	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	71.2	2012-2013	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	78.7	2011-2012	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	73.0	2011-2012	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	79.1	2010-2011	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	73.6	2010-2011	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	73.7	2009-2010	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	79.5	2009-2010	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	73.4	2008-2009	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	79.4	2008-2009	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	77.9	2007-2008	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	69.7	2007-2008	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	76.5	2006-2007	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	82.6	2006-2007	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	78.0	2005-2006	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	83.8	2005-2006	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	83.2	2014-2015	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	78.2	2014-2015	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	78.8	2013-2014	NHS Scotland[1]

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(Table 40 – continued from previous page)

Region	N Women	Age range	LY[a]	Population	Coverage (%)[b]	Year(s) studied	Reference
	-	20-60	5.5y	National screening programme	83.9	2013-2014	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	78.2	2012-2013	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	83.6	2012-2013	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	84.7	2011-2012	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	80.1	2011-2012	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	85.5	2010-2011	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	80.6	2010-2011	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	85.4	2009-2010	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	81.0	2009-2010	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	85.9	2008-2009	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	81.4	2008-2009	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	85.3	2007-2008	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	77.9	2007-2008	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	85.8	2006-2007	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	89.6	2006-2007	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	86.3	2005-2006	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	89.8	2005-2006	NHS Scotland[1]
South Central	1,035,100	25-64	5y	National screening programme	79.4	2007	Cervical Screening Programme England 2006-07[3,α]
South East Coast	1,081,400	25-64	5y	National screening programme	81.2	2007	Cervical Screening Programme England 2006-07[3,α]
South West	1,272,500	25-64	5y	National screening programme	81.0	2007	Cervical Screening Programme England 2006-07[3,α]
	-	20-60	5.5y	National screening programme	77.5	2014-2015	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	71.6	2014-2015	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	77.8	2013-2014	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	71.7	2013-2014	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	78.5	2012-2013	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	71.8	2012-2013	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	73.3	2011-2012	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	78.9	2011-2012	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	74.0	2010-2011	NHS Scotland[1]
Tayside Scotland							

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(Table 40 – continued from previous page)

Region	N Women	Age range	LY[a]	Population	Coverage (%)[b]	Year(s) studied	Reference
	-	20-60	5.5y	National screening programme	79.4	2010-2011	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	74.2	2009-2010	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	79.8	2009-2010	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	75.0	2008-2009	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	80.8	2008-2009	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	72.5	2007-2008	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	80.1	2007-2008	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	73.5	2006-2007	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	81.3	2006-2007	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	75.1	2005-2006	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	82.8	2005-2006	NHS Scotland[1]
Wales	450,674	<25	3.5y	National screening programme	9.0	2014-2015	NHS Wales[2]
	-	25-64	5y	National screening programme	78.0	2014-2015	NHS Wales[2]
	450,674	<25	5y	National screening programme	9.5	2014-2015	NHS Wales[2]
	491,833	25-49	3.5y	National screening programme	71.8	2014-2015	NHS Wales[2]
	270,419	>=65	5y	National screening programme	14.1	2014-2015	NHS Wales[2]
	1,474,897	All ages	3.5y	National screening programme	40.6	2014-2015	NHS Wales[2]
	753,804	25-64	5y	National screening programme	78.0	2014-2015	NHS Wales[2]
	753,804	25-64	3.5y	National screening programme	71.2	2014-2015	NHS Wales[2]
	270,419	>=65	3.5y	National screening programme	8.0	2014-2015	NHS Wales[2]
	1,474,897	All ages	5y	National screening programme	45.3	2014-2015	NHS Wales[2]
	491,833	25-49	5y	National screening programme	78.8	2014-2015	NHS Wales[2]
	-	25-64	5y	National screening programme	78.6	2013-2014	NHS Wales[2]
	-	25-64	5y	National screening programme	79.5	2012-2013	NHS Wales[2]
	-	25-64	5y	National screening programme	79.7	2011-2012	NHS Wales[2]
	-	25-64	5y	National screening programme	79.6	2010-2011	NHS Wales[2]
	-	25-64	5y	National screening programme	79.7	2009-2010	NHS Wales[2]
	-	25-64	5y	National screening programme	79.0	2008-2009	NHS Wales[2]
	-	25-64	5y	National screening programme	78.1	2007-2008	NHS Wales[2]
	-	25-64	5y	National screening programme	78.4	2006-2007	NHS Wales[2]
	-	25-64	5y	National screening programme	79.0	2005-2006	NHS Wales[2]

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(Table 40 – continued from previous page)

Region	N Women	Age range	LY[a]	Population	Coverage (%)[b]	Year(s) studied	Reference
	-	25-64	5y	National screening programme	79.1	2004-2005	NHS Wales[2]
West Midlands	1,350,800	25-64	5y	National screening programme	79.3	2007	Cervical Screening Programme England 2006-07[3,α]
Western Isles Scotland	-	20-60	5.5y	National screening programme	79.4	2014-2015	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	72.6	2014-2015	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	79.7	2013-2014	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	72.8	2013-2014	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	79.7	2012-2013	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	72.6	2012-2013	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	80.6	2011-2012	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	74.1	2011-2012	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	81.2	2010-2011	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	74.7	2010-2011	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	81.5	2009-2010	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	74.7	2009-2010	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	81.6	2008-2009	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	74.0	2008-2009	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	70.8	2007-2008	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	80.3	2007-2008	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	84.7	2006-2007	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	79.8	2006-2007	NHS Scotland[1]
	-	20-60	3.5y	National screening programme	82.7	2005-2006	NHS Scotland[1]
	-	20-60	5.5y	National screening programme	87.2	2005-2006	NHS Scotland[1]
Yorkshire and Humber	1,281,000	25-64	5y	National screening programme	80.2	2007	Cervical Screening Programme England 2006-07[3,α]

Data accessed on 31 Dec 2016.

[a] LY: Within the last year(s).

[b] Proportion of women in the total sample of the mentioned age range in the country or region that reported having a Pap smear during a given time period (e.g., last year, last 2, 3, 5 years or ever).

[α] National cervical screening programme with invitation of all eligible women aged 25-64 years. National policy for the screening programme is that eligible women aged 25-49 are to be screened every 3 years between the ages of 25-49 and women aged 50-64 ev

Data sources:

[1] Information Services Division. National Health Services Scotland.Scottish Cervical Screening Programme. Available at: http://www.isdscotland.org/Health-Topics/Cancer/Cervical-Screening/ [Accessed by October 2015]

[2] Screening division of public health. Cervical screening programme Wales. Annual Statistical Report 2014-2015. Available at: http://www.cervicalscreeningwales.wales.nhs.uk/home [Accessed by October 2015]

[3] Cervical Screening Programme England 2006-07. National Health System; 2008.

[4] Health & Social care Information Centre. National Statistics. Cervical Screening Programme, England -Statistics for 2013-2014 (November 2014). Available at: http://www.hscic.gov.uk/catalogue/PUB15968 [Accessed October 2015]

7.2 HPV vaccination

Table 41: National HPV Immunization programme in United Kingdom

	Female	Male
Year of introduction	2008	-
Primary target age (years)	12-13	-
Organized catch-up age (years)	-	-
Opportunistic catch-up age (years)	-	-
Strategy	Sch. (Grade 8)	-
Schedule[a,b]	2-doses <14/15 (since sep-2014) 3-doses standard the rest	-

Girls who missed HPV vaccination first time around, can receive a catch up HPV vaccination up to age of 18. At the start of the programme there was a catch-up for girls born between 1991-1995.

Data updated on 11 Jul 2017 (data as of 31 Dec 2016)

[a] 2 doses: 0-6m if not otherwise stated. Since 2014, based on clinical trials results several agencies responsible for the scientific evaluation of medicines, like the European Medicines Agency, aproved a two-dose schedule for girls aged less than 15 or 14 depending on the vaccine (Cervarix or Gardasil).

[b] 3-doses standard: administration of three doses following the standard vaccination schedule as 0-2-6 months for the quadrivalent vaccine or 0-1-6 months for the bivalent vaccine.

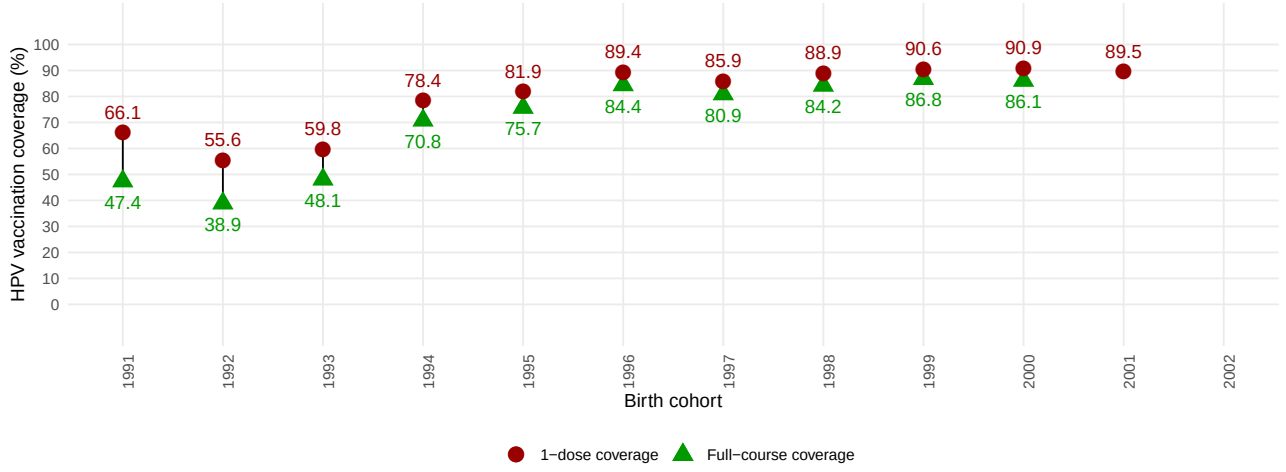
Data sources:

[1] Adapted from Bruni et al 2016 Lancet Global Health (data up to October 2014).

Specifically, data from UK was extracted from:

[2] National Health Service. Human papilloma virus (HPV) cervical cancer vaccine [Internet]. Available from: http://www.nhs.uk/Conditions/vaccinations/Pages/hpv-human-papillomavirus-vaccine.aspx

Figure 40: Reported HPV vaccination coverage in females by birth cohort in National HPV Immunization programme in England (UK)



Data updated on 11 Jul 2017 (data as of 31 Oct 2014)

Data sources:

[1] Adapted from Bruni et al 2016 Lancet Global Health (data up to October 2014).

[2] Health Protection Agency, Immunisation Section. Annual HPV vaccine coverage in England in 2009/2010. Available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/215800/dh_123826.pdf

[3] Health Protection Agency, Immunisation Section. Annual HPV vaccine coverage in England in 2010/11. Routine programme for school year 8 females (12 to 13 years old). Available at http://media.dh.gov.uk/network/211/files/2012/03/120319_HPV_UptakeReport2010-11-revised_acc.pdf

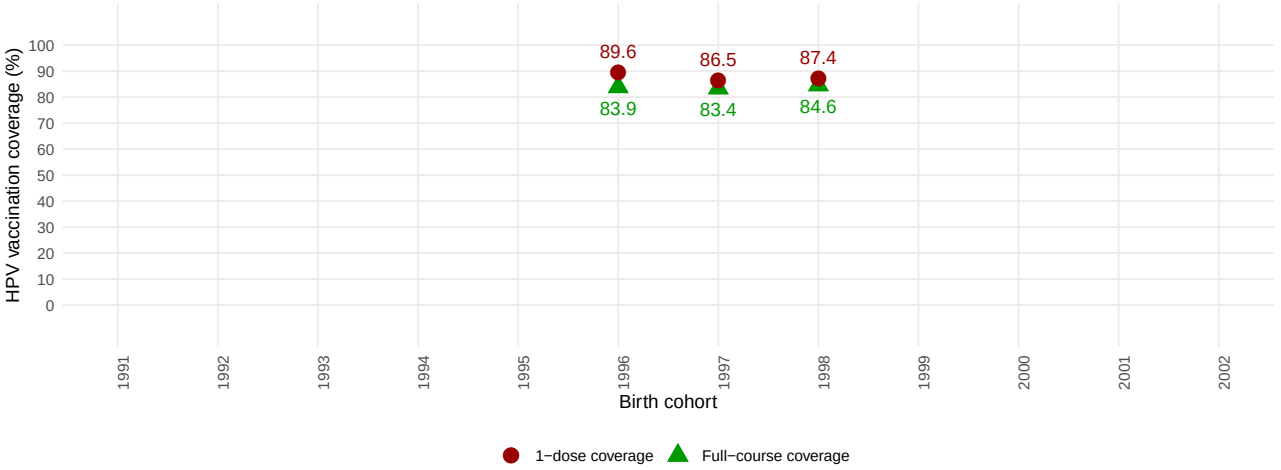
[4] ISD Scotland. HPV Immunisation Uptake Statistics. HPV Immunisation Programme – School Year 2013/14. Publication date – 30 September 2014 [Internet]. Available from: https://isdscotland.scot.nhs.uk/Health-Topics/Child-Health/Publications/2014-09-30/2014-09-30-HPV-Immunisation-Publication-Report.pdf?50365847350

[5] NHS National Services Scotland. HPV Immunisation Coverage by Year of Birth as at 31 December 2010. Available at http://www.isdscotlandarchive.scot.nhs.uk/isd/servlet/FileBuffer?namedFile=HPV_by_YOB_Feb11.xls&pContentDispositionType=attachment

[6] Public Health England. Vaccine uptake guidance and the latest coverage data [Internet]. Available from: https://www.gov.uk/government/collections/vaccine-uptake#hpv-vaccine-uptake

[7] Public Health Wales Health Protection Division. National immunisation uptake data [Internet]. Available from: http://www.wales.nhs.uk/sites3/page.cfm?orgid=457&pid=54144

Figure 41: Reported HPV vaccination coverage in females by birth cohort in National HPV Immunization programme in Northern Ireland (UK)



Data updated on 11 Jul 2017 (data as of 31 Oct 2014)

Data sources:

[1] Adapted from Bruni et al 2016 Lancet Global Health (data up to October 2014).

[2] Health Protection Agency, Immunisation Section. Annual HPV vaccine coverage in England in 2009/2010. Available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/215800/dh_123826.pdf

[3] Health Protection Agency, Immunisation Section. Annual HPV vaccine coverage in England in 2010/11. Routine programme for school year 8 females (12 to 13 years old). Available at http://media.dh.gov.uk/network/211/files/2012/03/120319_HPV_UptakeReport2010-11-revised_acc.pdf

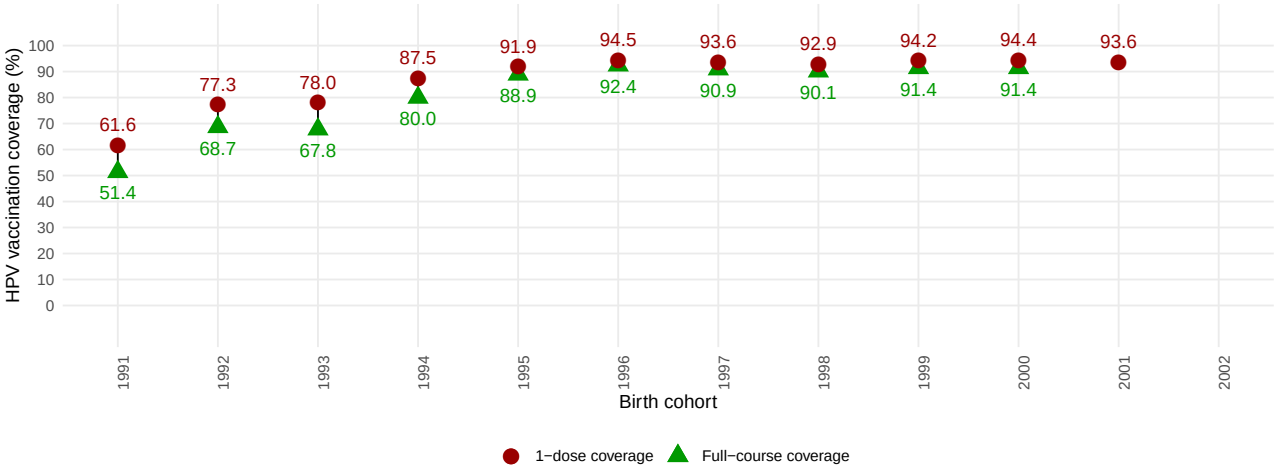
[4] ISD Scotland. HPV Immunisation Uptake Statistics. HPV Immunisation Programme – School Year 2013/14. Publication date – 30 September 2014 [Internet]. Available from: https://isdscotland.scot.nhs.uk/Health-Topics/Child-Health/Publications/2014-09-30/2014-09-30-HPV-Immunisation-Publication-Report.pdf?50365847350

[5] NHS National Services Scotland. HPV Immunisation Coverage by Year of Birth as at 31 December 2010. Available at http://www.isdscotlandarchive.scot.nhs.uk/isd/servlet/FileBuffer?namedFile=HPV_by_YOB_Feb11.xls&pContentDispositionType=attachment

[6] Public Health England. Vaccine uptake guidance and the latest coverage data [Internet]. Available from: https://www.gov.uk/government/collections/vaccine-uptake#hpv-vaccine-uptake

[7] Public Health Wales Health Protection Division. National immunisation uptake data [Internet]. Available from: http://www.wales.nhs.uk/sites3/page.cfm?orgid=457&pid=54144

Figure 42: Reported HPV vaccination coverage in females by birth cohort in National HPV Immunization programme in Scotland (UK)



Data updated on 11 Jul 2017 (data as of 31 Oct 2014)

Data sources:

[1] Adapted from Bruni et al 2016 Lancet Global Health (data up to October 2014).

[2] Health Protection Agency, Immunisation Section. Annual HPV vaccine coverage in England in 2009/2010. Available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/215800/dh_123826.pdf

[3] Health Protection Agency, Immunisation Section. Annual HPV vaccine coverage in England in 2010/11. Routine programme for school year 8 females (12 to 13 years old). Available at http://media.dh.gov.uk/network/211/files/2012/03/120319_HPV_UptakeReport2010-11-revised_acc.pdf

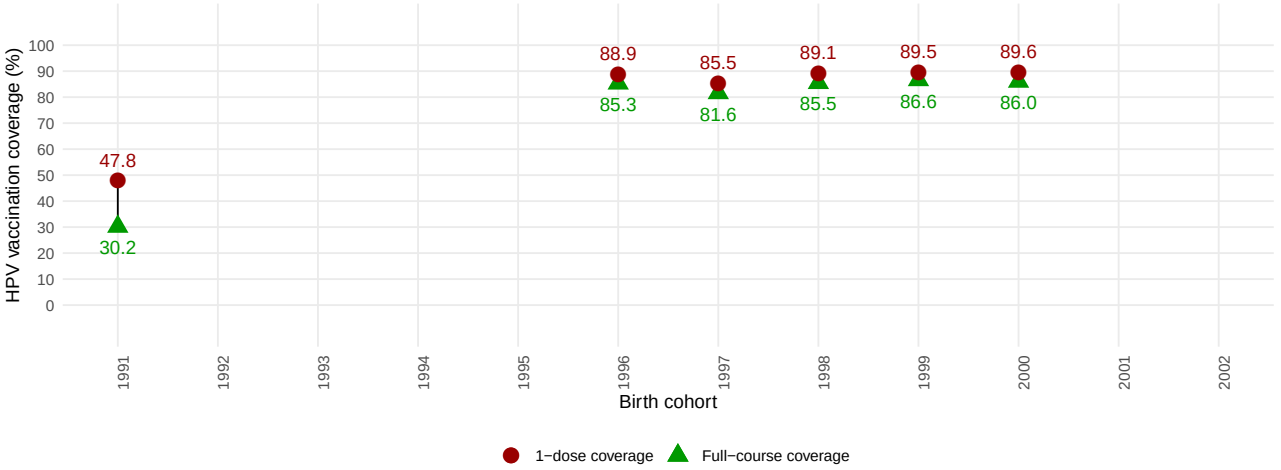
[4] ISD Scotland. HPV Immunisation Uptake Statistics. HPV Immunisation Programme – School Year 2013/14. Publication date – 30 September 2014 [Internet]. Available from: https://isdscotland.scot.nhs.uk/Health-Topics/Child-Health/Publications/2014-09-30/2014-09-30-HPV-Immunisation-Publication-Report.pdf?50365847350

[5] NHS National Services Scotland. HPV Immunisation Coverage by Year of Birth as at 31 December 2010. Available at http://www.isdscotlandarchive.scot.nhs.uk/isd/servlet/FileBuffer?namedFile=HPV_by_YOB_Feb11.xls&pContentDispositionType=attachment

[6] Public Health England. Vaccine uptake guidance and the latest coverage data [Internet]. Available from: https://www.gov.uk/government/collections/vaccine-uptake#hpv-vaccine-uptake

[7] Public Health Wales Health Protection Division. National immunisation uptake data [Internet]. Available from: http://www.wales.nhs.uk/sites3/page.cfm?orgid=457&pid=54144

Figure 43: Reported HPV vaccination coverage in females by birth cohort in National HPV Immunization programme in Wales (UK)



Data updated on 11 Jul 2017 (data as of 31 Oct 2014)

Data sources:

[1] Adapted from Bruni et al 2016 Lancet Global Health (data up to October 2014).

[2] Health Protection Agency, Immunisation Section. Annual HPV vaccine coverage in England in 2009/2010. Available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/215800/dh_123826.pdf

[3] Health Protection Agency, Immunisation Section. Annual HPV vaccine coverage in England in 2010/11. Routine programme for school year 8 females (12 to 13 years old). Available at http://media.dh.gov.uk/network/211/files/2012/03/120319_HPV_UptakeReport2010-11-revised_acc.pdf

[4] ISD Scotland. HPV Immunisation Uptake Statistics. HPV Immunisation Programme – School Year 2013/14. Publication date – 30 September 2014 [Internet]. Available from: https://isdscotland.scot.nhs.uk/Health-Topics/Child-Health/Publications/2014-09-30/2014-09-30-HPV-Immunisation-Publication-Report.pdf?50365847350

[5] NHS National Services Scotland. HPV Immunisation Coverage by Year of Birth as at 31 December 2010. Available at http://www.isdscotlandarchive.scot.nhs.uk/isd/servlet/FileBuffer?namedFile=HPV_by_YOB_Feb11.xls&pContentDispositionType=attachment

[6] Public Health England. Vaccine uptake guidance and the latest coverage data [Internet]. Available from: https://www.gov.uk/government/collections/vaccine-uptake#hpv-vaccine-uptake

[7] Public Health Wales Health Protection Division. National immunisation uptake data [Internet]. Available from: http://www.wales.nhs.uk/sites3/page.cfm?orgid=457&pid=54144

8 Protective factors for cervical cancer

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

Table 42: Prevalence of male circumcision in the United Kingdom

Reference	Prevalence % (95% CI)	Methods
Cathcart 2006	(2.1/1,000 boys)	N=75,868: General population, boys below 15 years of age (2003)
Dave 2003	15.8 (14.7-17.1)	N=5,746: British National Survey of Sexual Attitudes and Lifestyles (Natsa 2000), british men aged 16-44 years old
Doerner 2013	16.7 (14.9-18.7)	N=1,521: White men who have sex with men
Oriel 1971	24.0 (18.9-29.6)	N=263: STD Clinics patients
Rickwood 2000	3.8	Data fron National Health System (NHS), medically indicated operative circumcisions, circumcision rate about 12200 procedures annually in boys by 15 years old

(Table 42 – continued from previous page)

Reference	Prevalence % (95% CI)	Methods

(Continued on next page)

Thornton 2011	28.9 (25.5-32.6)	N=653: Men who have sex with men
WHO 2007	<20	Data from Demographic and Health Surveys (DHS) and other publications to categorize the country-wide prevalence of male circumcision as <20%, 20-80%, or >80%.

Data accessed on 31 Aug 2015.
95% CI: 95% Confidence Interval;
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.
Cathcart P, Br J Surg 2006; 93: 885 | Dave SS, Sex Transm Infect 2003; 79: 499 | Doerner R, Arch Sex Behav 2013; 42: 1319 | Oriel JD, Br J Vener Dis 1971; 47: 1 | Rickwood AM, BMJ 2000; 321: 792 | Thornton AC, Sex Transm Dis 2011; 38: 928 | WHO 2007: Male circumcision: Global trends and determinants of prevalence, safety and acceptability

Table 43: Prevalence of condom use in the United Kingdom

Indicator	Year of estimate	Prevalence %[a]
Condom use	2008-2009	27.0

Data accessed on 21 Mar 2017.
Please refer to original source for methods of estimation.
Excluding Northern Ireland.
[a] Condom use: Proportion of male partners who are using condoms with their female partners of reproductive age (15-49 years) to whom they are married or in union by country.
Data sources:
United Nations, Department of Economic and Social Affairs, Population Division (2016). World Contraceptive Use 2016 (POP/DB/CP/Rev2016). http://www.un.org/en/development/desa/population/publications/dataset/contraception/wcu2016.shtml. Available at: [Accessed on March 22, 2017].
United Kingdom 2008-2009 National Statistics Opinions Survey

9 Indicators related to immunisation practices other than HPV vaccines

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

9.1 Immunisation schedule

Table 44: General immunization schedule in the United Kingdom

Vaccine	Schedule	Coverage[a]	Comment
Bacille Calmette-Guérin vaccine	birth;	entire	At birth to high risk groups only, but some areas with high proportion of risk groups offer it universally at birth
Diphtheria and tetanus toxoid with acellular pertussis, Hib and IPV vaccine	8, 12, 16 weeks;	entire	-
Diphtheria and tetanus toxoid with acellular pertussis, and IPV vaccine	3 years and 4 months;	entire	and pregnant women
Hepatitis B pediatric dose vaccine	-	entire	High risk groups only
Haemophilus influenza type b, Meningococcal C vaccine	1 year;	entire	-
Human Papillomavirus vaccine	12-13 years (x2);	entire	-
Influenza vaccine	2-3 years; >=65 years;	entire	and risk groups
Meningococcal ACWY vaccine	-	-	Issued for use in specific groups (e.g. asplenics)
Meningococcal C conjugate vaccine	12 weeks; 14 years;	entire	-
Measles mumps and rubella vaccine	12 months; 3 years and 4 months;	entire	Additional screening offered to susceptible women identified through antenatal services.
Pneumococcal conjugate vaccine	8, 16 weeks;	entire	-
Pneumococcal polysaccharide vaccine	>=65 years;	entire	-
Rabies vaccine	st contact; +7, +28 days;	entire	-
Rotavirus vaccine	8, 12 weeks;	-	-
Tetanus and diphtheria toxoid for older children / adults with inactivated Polio vaccine	14 years;	entire	-
Varicella vaccine	1st contact;	-	Non-immune HCW

Data accessed on 27 Jan 2017.
The shedules are the country official reported figures
[a] Entire:introduced in the entire country. Part:partially introduced.
Data sources:
Annual WHO/UNICEF Joint Reporting Form (Update of 2015/July/15). Geneva, Immunization, Vaccines and Biologicals (IVB), World Health Organization. Available at: http://www.who.int/immunization/monitoring_surveillance/en/

9.2 Immunisation coverage estimates

Table 45: Immunization coverage estimates in the United Kingdom

Indicator	Year of estimation	Coverage (%)
Third dose of diphtheria toxoid, tetanus toxoid and pertussis vaccine	2015	96
Third dose of hepatitis B vaccine administered to infants	2015	-
Third dose of Haemophilus influenzae type B vaccine	2015	96
Measles-containing vaccine	2015	95
Third dose of polio vaccine	2015	96

Data accessed on 27 Jan 2017.
The coverage figures (%) are the country official reported figures. Immunization coverage levels are presented as a percentage of a target population that has been vaccinated.
Data sources:
Annual WHO/UNICEF Joint Reporting Form and WHO Regional offices reports (Update of 2015/July/16). Geneva, Immunization, Vaccines and Biologicals (IVB),World Health Organization.
Available at: http://www.who.int/immunization/monitoring_surveillance/en/

10 Glossary

Table 46: 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.

(Continued)

Table 46 – Continued

Term	Definition
Cervical Intraepithelial Neoplasia (CIN) / Squamous Intraepithelial Lesions (SIL)	SIL and CIN are two commonly used terms to describe precancerous lesions or the abnormal growth of squamous cells observed in the cervix. SIL is an abnormal result derived from cervical cytological screening or Pap smear testing. CIN is a histological diagnosis made upon analysis of cervical tissue obtained by biopsy or surgical excision. The condition is graded as CIN 1, 2 or 3, according to the thickness of the abnormal epithelium (1/3, 2/3 or the entire thickness).
Low-grade cervical lesions (LSIL/CIN-1)	Low-grade cervical lesions are defined by early changes in size, shape, and number of ab-normal cells formed on the surface of the cervix and may be referred to as mild dysplasia, LSIL, or CIN-1.
High-grade cervical lesions (HSIL / CIN-2 / CIN-3 / CIS)	High-grade cervical lesions are defined by a large number of precancerous cells on the sur-face of the cervix that are distinctly different from normal cells. They have the potential to become cancerous cells and invade deeper tissues of the cervix. These lesions may be referred to as moderate or severe dysplasia, HSIL, CIN-2, CIN-3 or cervical carcinoma in situ (CIS).
Carcinoma in situ (CIS)	Preinvasive malignancy limited to the epithelium without invasion of the basement membrane. CIN 3 encompasses the squamous carcinoma in situ.
Invasive cervical cancer (ICC) / Cervical cancer	If the high-grade precancerous cells invade the basement membrane is called ICC. ICC stages range from stage I (cancer is in the cervix or uterus only) to stage IV (the cancer has spread to distant organs, such as the liver).
Invasive squamous cell carcinoma	Invasive carcinoma composed of cells resembling those of squamous epithelium
Adenocarcinoma	Invasive tumour with glandular and squamous elements intermingled.
Eastern Europe	References included in Belarus, Bulgaria, Czech Republic, Hungary, Poland, Republic of Moldova, Romania, Russian Federation, Slovakia, and Ukraine.
Northern Europe	References included in Denmark, Estonia, Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, and United Kingdom of Great Britain and Northern Ireland.
Southern Europe	References included in Albania, Bosnia and Herzegovina, Croatia, Greece, Italy, Malta, Montenegro, Portugal, Serbia, Slovenia, Spain, The former Yugoslav Republic of Macedonia.
Western Europe	References included in Austria, Belgium, France, Germany, Liechtenstein, Luxembourg, Netherlands, and Switzerland.
Europe PREHDICT	References included in Albania, Austria, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Montenegro, Netherlands, Norway, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, The former Yugoslav Republic of Macedonia, Turkey, Ukraine, and United Kingdom of Great Britain and Northern Ireland.

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(http://cordis.europa.eu/projects/rcn/94423_en.html)

7th Framework Programme grant HPV AHEAD project: Role of human papillomavirus infection and other co-factors in the aetiology of head and neck cancer in India and Europe. Coordinated by Dr. Massimo Tommasino at IARC, International Agency of Research on Cancer, Lyon, France.
(http://cordis.europa.eu/project/rcn/100268_en.html)

International Agency for Research on Cancer (IARC)

Note to the reader

Anyone who is aware of relevant published data that may not have been included in the present report is encouraged to contact the HPV Information Centre for potential contributions.

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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