european cancer ORGANISATION

Putting HPV on the Map:

The State of HPV Prevention Programmes in the WHO European Region

HPV Action Network

The HPV Action Network is one of the European Cancer Organisation's Focused Topic Networks, established as part of our Strategy for 2020-2023. The HPV Action Network was launched in December 2019, following a resolution passed at the 2019 European Cancer Summit in September. This called for effective strategies to eliminate the cancers caused by HPV as a public health problem to be implemented in all European countries by 2030.

The HPV Action Network helped to influence the development of Europe's Beating Cancer Plan. This contains a key strategic commitment to gender-neutral vaccination across the European Union and the Network hopes to see a similar goal for the whole European Region.

Co-chaired by Professor Daniel Kelly and Professor Rui Medeiros, the HPV Action Network convenes Member Societies and Patient Advocacy Groups of the European Cancer Organisation, as well as our Community 365 and other interested stakeholders. The Network currently comprises about 45 organisations.

An up-to-date list of Network participants is available on the Network website www.europeancancer.org/topic-networks and acknowledged on the inside back cover of this report. The website also contains a range of other information about the Network, including publications and reports.

If you would like to find out more about the HPV Action Network, please contact us at: info@europeancancer.org.

Member SOCIETY OF THE EUROPEAN CANCER ORGANISATION

Patient ADVOCACY GROUP OF EUROPEAN CANCER ORGANISATION

Community 365 INITIATIVE OF THE EUROPEAN CANCER ORGANISATION

FOREWORD

HPV causes about 5% of all cancers worldwide. The most common of these cancers is cervical but the virus is also implicated in cancers of the vagina, vulva, anus, penis, head and neck. Up to 30% of the cancers caused by HPV in Europe are in men.

The World Health Organization now has a global strategy for the elimination of cervical cancer. This has three main elements: vaccinating at least 90% of girls, screening 70% of women, and treating at least 90% of precancerous lesions and invasive cancers. Europe's Beating Cancer Plan, published by the European Commission in 2021, is more ambitious. It contains a 'flagship' commitment to gender-neutral HPV vaccination in every Member State and aims to eliminate all the cancers caused by HPV.

The European Cancer Organisation's HPV Action Network is calling for gender-neutral HPV vaccination and nationally-organised, population-based, cervical cancer screening programmes, using HPV DNA testing technologies, to be introduced throughout the WHO European Region. To support this work, we commissioned the Catalan Institute of Oncology (ICO)/IDIBELL to map current vaccination and screening policies across the region.

This mapping exercise has enabled us to identify countries that are already taking the necessary steps to tackle those cancers caused by HPV and, even more importantly, the countries that are falling behind. Several countries in the European Region still have no HPV vaccination or effective cervical cancer screening programmes. Many with vaccination programmes still do not take a gender-neutral approach. Importantly, a significant number of countries with vaccination and screening programmes have sub-optimal levels of service uptake.

There is, clearly, still plenty of work to do to achieve the elimination of all cancers caused by HPV as a public health problem. But, armed with the vital information contained in this report, we will now do what we can to accelerate action at the regional level and also to support advocacy efforts by HPV organisations within individual countries to help ensure that all health systems take the action that is needed to protect their populations effectively.

If all countries in the region emulated the current best-performers, almost 100,000 cancer cases a year could be prevented. That would be a remarkable achievement and a world-leading example for other regions to follow.

Professor Daniel Kelly & Professor Rui Medeiros
Co-Chairs, HPV Action Network

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Acknowledgements

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Thanks are also due to all those members of the HPV Action Network who took the time to comment on this research project.

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1 Community 365 is group of charity, philanthropy and industry contributors to the Focused Topic Networks of the European Cancer Organisation. Community 365 provide ideas, guidance, practical support and resources for our work in convening stakeholders and building consensus in the European cancer community. Community 365 contributors do not have a decision-making role in our policy work. Rather, policies of the European Cancer Organisation, such as those represented in this document, are agreed by our Board after consultation with our Member Societies and Patient Advisory Committee, via our Policy Pathway process. In particular, for this report, we appreciate the support of MSD, BD, Roche and NOMAN is an Island: Race to End HPV who contributed to the cost of this independent research completed by Bruni L, Serrano Carro B. More information here: www.europeancancer.org/community-365

Background

Human Papillomavirus (HPV) is one of the most widespread and common sexually transmitted infections worldwide and is acquired soon after onset of sexual activity. The recognition of the central role of HPV in the etiology of virtually all cervical cancer cases has radically changed the perspective of diagnosis and prevention of cervical cancer and the rest of HPV-related cancers. Few pathologies currently offer such a wide range of prevention tools and strategies: first with cervical cytology, and more recently with HPV vaccines and HPV detection tests. However, despite the unequivocal success of organised population-based screening programmes, still cervical cancer is an important cause of cancer in women in the World Health Organisation (WHO) European Region (hereafter referred to as "WHO EURO").

In November 2020, WHO launched a global initiative to eliminate cervical cancer as a public health problem. WHO proposes an elimination threshold of 4 cases per 100,000 women-year and the implementation of a triple intervention strategy, consisting on at least vaccinating 90% of girls against HPV by age 15 years, screening 70% of women with a high-performance test at least twice in the age range of 35–45 years, and treating at least 90% of identified precancerous lesions and invasive cancers. This strategy is the accelerator needed to complete the introduction of the HPV vaccine worldwide and to improve access to and quality of cervical cancer screening and treatment globally[1]. Although no screening programmes are currently approved for the other HPV-related cancers, the generalization of HPV vaccination can also prevent the development of these cancer types. In this sense, the Europe's Beating Cancer Plan will support Member States' efforts to extend routine HPV vaccination in both, girls and boys in order to eliminate not only cervical cancer but all HPV-related cancers. Its ambitious objective is to vaccinate at least 90% of the Europe target population of girls and to significantly increase the vaccination of boys by 2030.[2]

This technical report aims to summarize, at regional and country level, the status of HPV prevention in the WHO EURO. This report includes a set of indicators on the burden of HPV infections and HPV-related cancers, the introduction of the HPV vaccine and the extension of cervical cancer screening practices, based on official WHO estimates and existing datasets publicly available.

Methodology

Countries included

The report includes the following WHO member states: Albania, Andorra, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Luxembourg, Malta, Monaco, Montenegro, North Macedonia, Norway, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, San Marino, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tajikistan, The Netherlands, Turkey, Turkmenistan, Ukraine, United Kingdom and Uzbekistan.

It does not include territories, state of free-association, or semi-autonomous regions. The boundaries and names shown and the designations used on the report do not imply the expression of any opinion whatsoever concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Burden of HPV infections and HPV-related cancers

HPV prevalence in normal women and men

HPV prevalence in women and men is based on data from the Institut Català d´Oncologia and the International Agency for Research on Cancer (ICO/IARC) Information Centre on HPV and Cancer (HPV Information Centre). The estimates in women with normal cytology are updated until December 2014, and the estimates in anogenital sites in men from the general population are updated until October 2015. The following indicators are included:

1) global HPV prevalence, that represents the proportion of subjects infected by any HPV type according to an HPV DNA test at a given time point. Stratification by age, country and region; and
2) HPV16 prevalence, that represents the proportion of subjects infected by the HPV16 genotype according to a type-specific HPV DNA test at a given time point. Stratification by country and region.

HPV infection statistics at the HPV Information Centre are generated from the findings of systematic reviewes of the literature. Systematic reviews of the literature are performed at ICO or IARC. These reviews have been published in the peer-reviewed literature, and the resulting papers represent the basis of further updates. Once initially published, all these analyses are periodically updated and uploaded in the HPV Information Centre website.

Detailed information at: ICO/IARC Information Centre on HPV and Cancer. Available from: https://hpvcentre.net/index.php[3]

HPV-related cancers age-specific incidence and mortality

The information on burden of HPV-related cancers is based on the IARC Globocan 2020 database.

Incidence is the number of new cases that occurs during a given period of time in a specified population. It can be expressed as an absolute number of cases per year or as a rate per 100,000 persons per year.

Mortality is the number of deaths that occurs in a given period of time 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.

The specific indicators included in this report are:

1) Crude rates, that are calculated by dividing the number of new cancers or deaths observed during a given period of time by the corresponding number of people at risk in the population. The result is usually given as a rate per 100,000 person-years of observation. This indicator cannot be used for comparison purposes as it relates to each population as a whole and is influenced by the age structure of each population;
2) Age-specific incidence rates, that are calculated by dividing the number of new cases or deaths in the age-class by the corresponding population; and
3) Age-standardised rates, that represent a summary of the individual age-specific rates using an external population called a standard population.

This is the incidence/mortality that would be observed if the population had the age structure of the standard population, and corresponds to the crude rate in the standard population. The result is usually given as a rate per 100,000 person-years of observation. The standard worldwide used is the Segi standard population (Segi, 1960). Standardisation allows comparison purposes.

Detailed information at: Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today[4]

Survival of HPV-related cancer sites

The information on cancer survival is based on data from the EUROCARE project, a population based study investigating the survival of cancer patients across Europe and over time. Data from EUROCARE round 5 includes information from 117 Cancer Registries (CRs) from 31 countries for the period 1978-2007. To remove the background mortality (due to causes other than cancer) which can vary widely by country and can bias cancer survival comparisons, the relative survival (RS) is estimated. RS is defined as the ratio of the observed survival in patients with cancer to the expected survival in a comparable group from the general population, and is assessed for the period 2000–2007. Cancer survival trends in 1999–2007 using the period approach are also included. Detailed information at: Rossi S, Baili P, Capocaccia R, et al.. The EUROCARE-5 study on cancer survival in Europe 1999-2007: Database, quality checks and statistical analysis methods. Eur J Cancer. 2015 Oct;51(15):2104-2119.[5]

HPV vaccine introduction

The information included in this report represents the official WHO/UNICEF Estimates of National HPV Immunisation Coverage from 2010 to 2020.

The estimates are derived from administrative and survey data reported annually to WHO through the WHO/UNICEF Joint Reporting Form (JRF). They include two main coverage indicators for HPV vaccination:

1) the HPV vaccination Programme performance coverage which describes the vaccination coverage according to the national schedule and the programme's eligibility criteria for each calendar year (programme's target population up to 14 years of age), and
2) the HPV vaccination coverage by age 15 that represents the proportion of population turning 15 in the reporting year that have been vaccinated against HPV at any time between ages 9 to 14, at any time up to the calendar year in question.

Data are always reported at the national level and may not necessarily show differences at the sub-national level. Both indicators are calculated for the first dose and the full recommended schedule, and by sex.

Global and regional coverages for each calendar year are calculated as the population weighted average of country-specific estimates using the HPV vaccine programme performance coverage indicator and official United Nations (UN) population estimates and projections that are prepared by the Population Division of the Department of Economic and Social Affairs of the UN Secretariat.[6] A WHO Member State is considered to have an HPV vaccination programme when the country reports in the JRF to have officially included HPV vaccination in their national Immunisation schedule either at national or subnational level. Members states considered as not having introduced HPV vaccination or without coverage data have a 0% coverage assigned.

Detailed information at: Bruni L, Saura-Lázaro A, Montoliu A, et al. HPV vaccination introduction worldwide and WHO and UNICEF estimates of national HPV Immunisation coverage 2010-2019. Prev Med. 2021 Mar;144:106399.[7]

Cervical cancer screening practices

The information included in this report represents the first edition of the WHO cervical cancer screening estimates.

Data was retrieved through a systematic review of the literature and official documents to identify information on cervical cancer screening recommendations and coverage by country. Information was cross-checked and supplemented with official responses to the WHO Noncommunicable diseases (NCD) Country Capacity Survey 2019 and unpublished WHO STEPwise Approach to NCD Risk Factor Surveillance (STEPS) surveys data; and finally supplemented with a formal WHO country consultation conducted from 27 November 2020 to 12 February 2021.

A specific methodology was developed to produce comparable estimates of cervical cancer screening coverage for 2019. National age-specific coverages, defined as the proportion of the eligible female population who had a screening test, were estimated for the last year, the last three years, the last five years, and at least once in a lifetime. According to data completeness and representativeness, different statistical models were developed. Iteratively and in this order, the following techniques were applied whenever possible: age coverage distribution correction using the distribution of other screening intervals with more disaggregated data, application of a correction factor based on data from other countries with similar income and programme characteristics for out-of-programme coverages, linear interpolation between screening intervals, multiple imputations (40) per missing datapoint using the Predictive Mean Matching (PMM) method, last observation carried forward or next observation carried backward techniques, application of a ponderation rate using coverage from countries with the same income and same targeted ages. Estimates were finally applied to 2019 UN population estimates,[6] and aggregated by region.

Detailed information at: Bruni, Serrano et al. Submitted.

Burden of HPV infections and HPV-related cancers in the WHO European Region

HPV prevalence in normal women and in men

Although most of sexually active women and men will acquire a cervical HPV infection during their lifetime, most of these infections clear without any clinical significance.[8] Globally, the prevalence of a detectable HPV infection (any HPV infection) in women with normal cervical citology from the general population in the WHO EURO is estimated to be 14.4% (13.2-15.8), although the prevalence is highly dependent on the population and age (Table A 1).[3,9] Type specific HPV16 prevalence in women in the WHO EURO is 3.4% (2.9-3.9). The highest prevalences are observed in Eastern Europe, compared to the other regions (Table 1, Figure 1). Most of WHO EURO populations show a large peak of HPV incidence in the first years after the onset of sexual activity (mostly during adolescence and twenties) to decrease and stabilise thereafter (Figure 2).[3]

In men, the estimated HPV prevalence of a detectable HPV infection (any HPV infection) at any anogenital sites is 18.5% (9.4-29.7), with type specific HPV16 prevalence of 3.9% (2.6-5.5). The limited number of studies available do not allow to produce estimates stratified by age and sex (Table A 2).

Table 1. HPV prevalence in women with normal cervical cytology in the WHO EURO, by region and HPV type.

	ANY HPV				HPV16			
	N° OF WOMEN		HPV PREVALENCE[a]		N° OF WOMEN		HPV PREVALENCE[a]	
POPULATION[b]	TOTAL TESTED	TOTAL POSITIVE	%	95%CI	TOTAL TESTED	TOTAL POSITIVE	%	95%CI
WHO EURO	580,279	69,152	14.4%	(13.2-15.8)	186,269	5,357	3.4%	(2.9-3.9)
Eastern Europe	55,838	12,714	23.4%	(19.4-27.6)	7,818	627	7.5%	(4.7-10.9)
Northern Europe	205,077	23,897	13.5%	(11.2-15.9)	86,821	2,624	2.8%	(2.0-3.7)
Southern Europe	72,019	8,110	14.0%	(11.9-16.4)	31,831	916	2.9%	(2.1-3.8)
Western Europe	219,649	20,682	12.9%	(10.7-15.3)	56,074	1,105	3.2%	(2.3-4.2)
Asian countries	27,698	3,749	13.0%	(8.5-18.3)	3,725	85	2.6%	(1.2-4.6)

Key: HPV: Human Papillomavirus ; WHO: World Health Organization ; 95%CI: 95% Confidence Interval

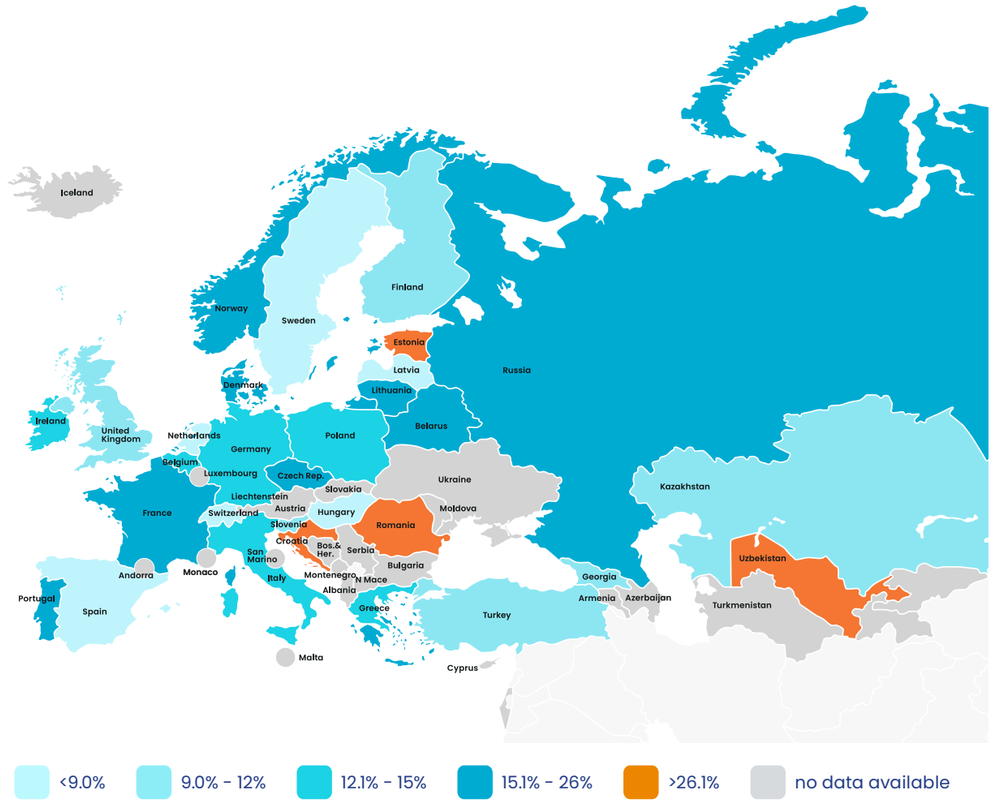
See Supplementary Table A 1 for contributing studies within each region.

a Adjusted HPV prevalence from the random-effects model and standardised by the world's geographical structure.

b WHO EURO member states included in each sub-region: "Eastern Europe": Belarus, Bulgaria, Czechia, Hungary, Poland, Republic of Moldova, Romania, Russian Federation, Slovakia, Ukraine; "Northern Europe": Denmark, Estonia, Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, United Kingdom, "Southern Europe": Albania, Andorra, Bosnia & Herzegovina, Croatia, Cyprus, Greece, Italy , Malta, Montenegro, Portugal, North Macedonia, San Marino, Serbia, Slovenia, Spain, "Western Europe": Austria, Belgium, France, Germany, Luxembourg, Monaco, The Netherlands, Switzerland; "Asian countries":Armenia, Azerbaijan, Georgia, Israel, Turkey, Kazakhstan, Kyrgyzstan, Uzbekistan, Turkmenistan, Tajikistan

Sources: ICO/IARC Information Centre on HPV and Cancer. Available from: https://hpvcentre.net/index.php[3] (data updated to Dec, 2014)

Figure 1. HPV prevalence (any HPV types) in women with normal cervical cytology in the WHO EURO.

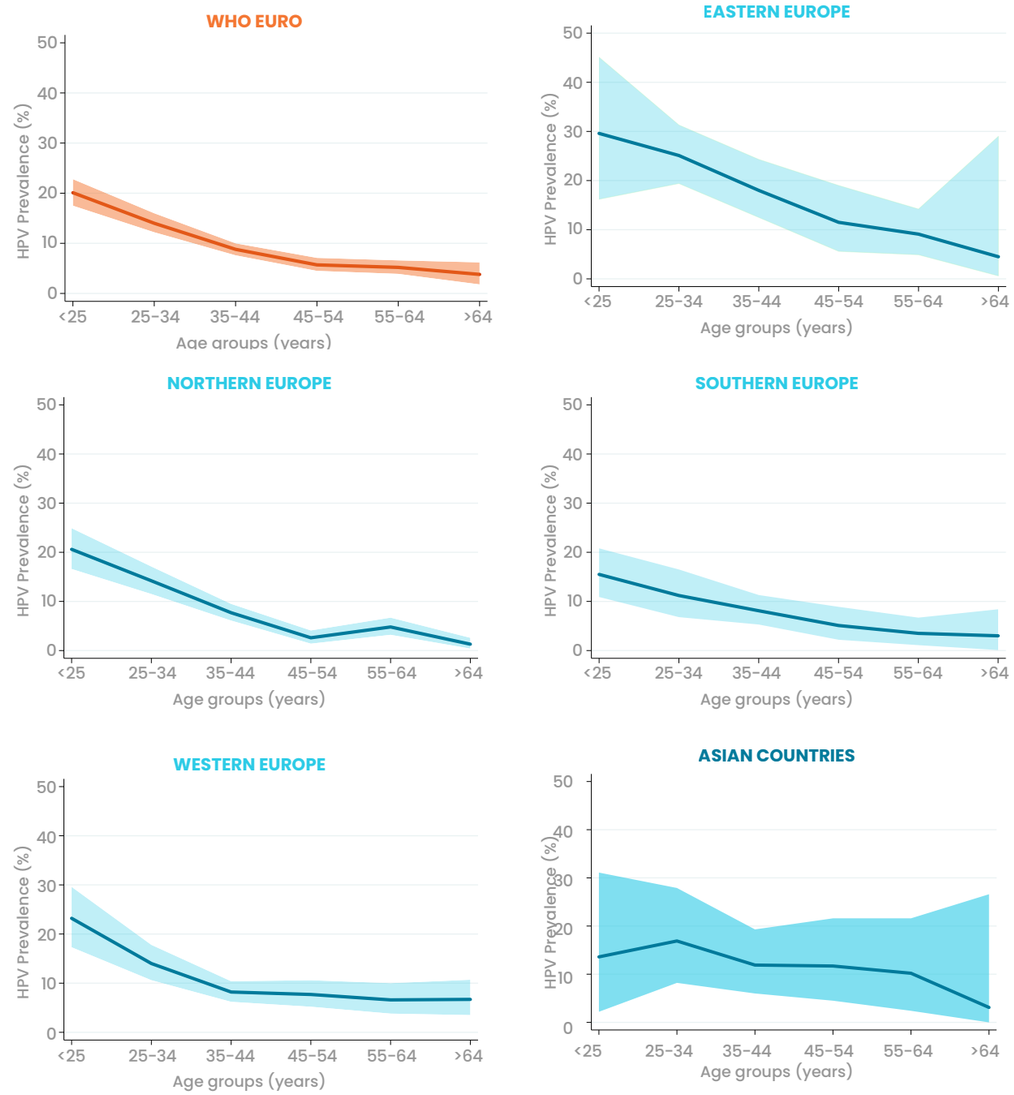


HPV: Human papillomavirus. Data update December 2014.

See Supplementary Table A 1 for contributing studies in each WHO member state.

Sources: ICO/IARC Information Centre on HPV and Cancer. Available from: https://hpvcentre.net/index.php[3] (data updated to Dec, 2014)

Figure 2. Regional and sub-regional age-specific HPV prevalence (any HPV types) in women with normal cervical cytology in the WHO EURO.



HPV: Human Papillomavirus
95%CI: 95% Confidence Interval
See Supplementary Table A 3 for contributing studies within each region.
a Adjusted HPV prevalence from the random-effects model and standardised by the world's geographical structure.
b WHO EURO member states included in each sub-region: "Eastern Europe": Belarus, Bulgaria, Czechia, Hungary, Poland, Republic of Moldova, Romania, Russian Federation, Slovakia, Ukraine; "Northern Europe": Denmark, Estonia, Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, United Kingdom, "Southern Europe": Albania, Andorra, Bosnia & Herzegovina, Croatia, Cyprus, Greece, Italy , Malta, Montenegro, Portugal, North Macedonia, San Marino, Serbia, Slovenia, Spain, "Western Europe": Austria, Belgium, France, Germany, Luxembourg, Monaco, The Netherlands, Switzerland; "Asian countries":Armenia, Azerbaijan, Georgia, Israel, Turkey, Kazakhstan, Kyrgyzstan, Uzbekistan, Turkmenistan, Tajikistan
Sources: ICO/IARC Information Centre on HPV and Cancer. Available from: https://hpvcentre.net/index.php[3] (data updated to Dec, 2014)

HPV-related cancers age-specific incidence and mortality

Only a small fraction of high risk (HR) HPV infections persist and eventually progress to cancer. The HR HPV prevalence increases with lesion severity. From the more than 200 HPV types identified, only a few are classified as carcinogenic, namely HPV types 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59.[10] HR HPV types are responsible for virtually all cervical cancer cases, but are also causally related with a variable fraction of other anogenital cancers and a subset of head and neck cancers, particularly oropharyngeal cancer sites[11–13] (Table 2). The low-risk (LR) HPV genotypes 6 and 11 are the cause of anogenital warts and recurrent respiratory papillomatosis. HPV16, the most carcinogenic type, is consistently the most frequent type detected in HPV-related cancers both in Europe and worldwide.[14]

In the WHO EURO, each year there are 66,821 new diagnosed cervical cancer cases and 30,608 deaths, with age-standardised incidence and mortality rates of 10.1 cases and 3.8 deaths per 100,000 women, respectively.[4] Within the WHO EURO, the highest incidence and mortality rates are observed in Eastern Europe (Table 3, Figure 3). Particularly, the Russian Federation accounts to aproximately one in four new cervical cancer cases and deaths in WHO EURO (Table A 4).[4] Cervical cancer is the nineth most common occurring cancer and the tenth most common cause of cancer death in women in WHO EURO. However, it ranks as third and second top cancers affecting women younger than 44 years, respectively (Table 3).

Rates for other HPV related anogenital cancer are much lower than that observed for cervical cancer (Table 2).[4] In the WHO EURO, approximately 20,970 annual cases of anogenital cancers other than cervix are attributable to HPV, with 7459 cases diagnosed in men (3950 in the anus and 3509 in the penis) and 13,516 cases diagnosed in women (7345 in the anus, 3671 in the vulva and 2500 in the vagina). Head and neck cancers attributable to HPV also constitute a heavy burden, particularly in men.[4] Further, increasing trends in the incidence of HPV-positive head and neck cancers have been consistently observed in the last decade, concomitant with the decline in tobacco use, in particular for HPV-positive oropharyngeal cancers in young men in Northern Europe.[15] Of note, the variability in the percentage of oropharynx cancer cases attributable to HPV infections among WHO EURO member estates (ranging from 10%-70%), in addition to the inclusion of lip cancers together with cancers of the oral cavity make difficult to estimate a global burden of head and neck cancers in the region (Table 2).

Table 2. Estimated incidence of cancer cases attributable to HPV infection in 2020 in the WHO EURO, by sex.

	WOMEN		MEN		
ANOGENITAL CANCERS	**New cancer cases** (including but not limited to those cases caused by HPV)	**Incidence ASR (W)**	**New cancer cases** (including but not limited to those cases caused by HPV)	**Incidence ASR (W)**	**% OF CANCER CASES ATTRIBUTABLE TO HPV**
Cervix uteri	66,821	10.1	-	-	100%
Anus	8847	0.96	4756	0.63	100% for squamous cell carcinoma
Vulva[a]	17,203	1.5	-	-	15-54 years: 48% (42-58) 55-64 years: 28% (23-33) ≥65 years: 15% (11-18)
Vagina	3206	0.32	-	-	78% (68-86)
Penis	-	-	6881	0.84	51% (47-55)
HEAD & NECK CANCERS					
Oropharynx[b]	6965	0.82	23,096	3.3	10%-70% (Important differences among WHO EURO member states)
Oral cavity[cd]	22,274	2.2	47,582	6.5	4.3% (3.2-5.7)
Larynx[cd]	5441	0.62	40,349	5.4	4.6% (3.3-6.1)

ASR (W): Age-standardised rates per 100,000
a Based on the detection of HPV-DNA, combined with p16INK4a.
b Based on the detection of HPV-DNA, and/or p16INK4a
c Based on the detection of HPV-DNA, combined with E6/E7 mRNA
d Includes lip and oral cavity.
Sources: Global Cancer Observatory 2020; de Martel C., et al., 2020; Stjernstrøm K.D., et al. ; 2019, Carlander A.F. ; et al., 2021[4,16–18]

Table 3. Regional and sub-regional cervical cancer incidence and mortality in 2020 in the WHO EURO.

POPULATION[b]	INCIDENCE ANNUAL NUMBER NEW CASES	CRUDE RATE	ASR (W)	RANKING[a] ALL WOMEN	RANKING[a] 15-44Y	MORTALITY ANNUAL NUMBER NEW DEATHS	CRUDE RATE	ASR (W)	RANKING[a] ALL WOMEN	RANKING[a] 15-44Y
WHO EURO	66,821	13.9	10.1	9	3	30,608	6.4	3.8	10	2
Eastern Europe	32,348	20.8	14.5	5	2	15,854	10.2	6.1	7	2
Northern Europe	6666	12.4	10.4	12	2	2134	4	2.2	16	2
Southern Europe	9053	11.5	7.7	14	4	3705	4.7	2.3	14	2
Western Europe	10,102	10.1	7	14	4	4296	4.3	2	15	3
Asian countries	8652	9.3	8.1	7	3	4619	5	4.2	7	2

ASR (W): Age-standardised rates

Rates per 100,000

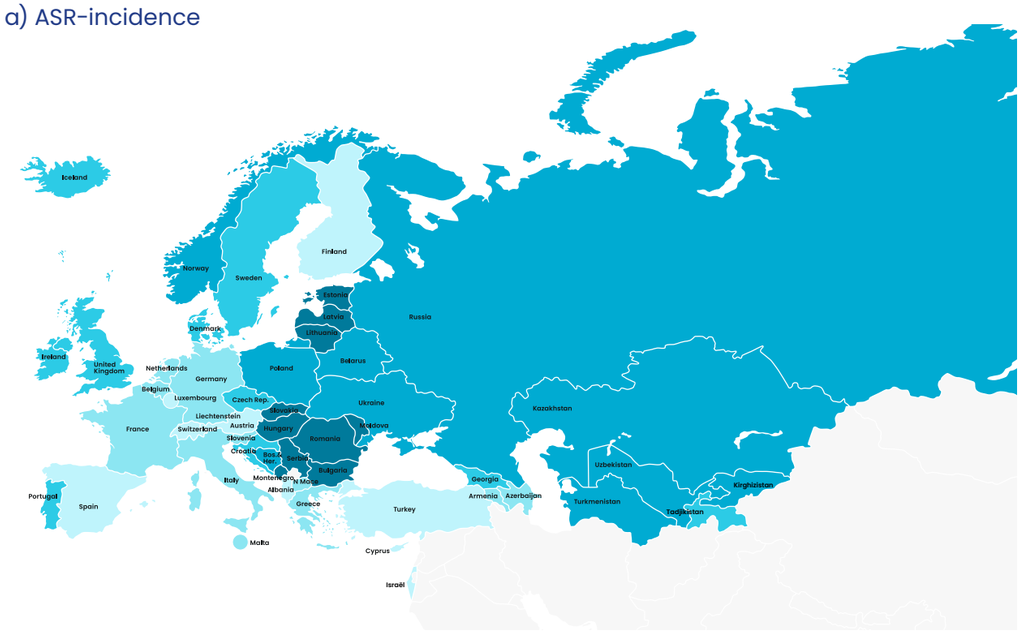
a Ranking of cervical cancer incidence to other cancers among all women ages 15-44 years according to highest incidence rates (ranking 1st). Ranking is based on crude incidence rates (actual number of cervical cancer cases). Ranking using ASR may differ.

b WHO EURO member states included in each sub-region: "Eastern Europe": Belarus, Bulgaria, Czechia, Hungary, Poland, Republic of Moldova, Romania, Russian Federation, Slovakia, Ukraine; "Northern Europe": Denmark, Estonia, Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, United Kingdom, "Southern Europe": Albania, Andorra, Bosnia & Herzegovina, Croatia, Cyprus, Greece, Italy , Malta, Montenegro, Portugal, North Macedonia, San Marino, Serbia, Slovenia, Spain, "Western Europe": Austria, Belgium, France, Germany, Luxembourg, Monaco, The Netherlands, Switzerland; "Asian countries":Armenia, Azerbaijan, Georgia, Israel, Turkey, Kazakhstan, Kyrgyzstan, Uzbekistan, Turkmenistan, Tajikistan

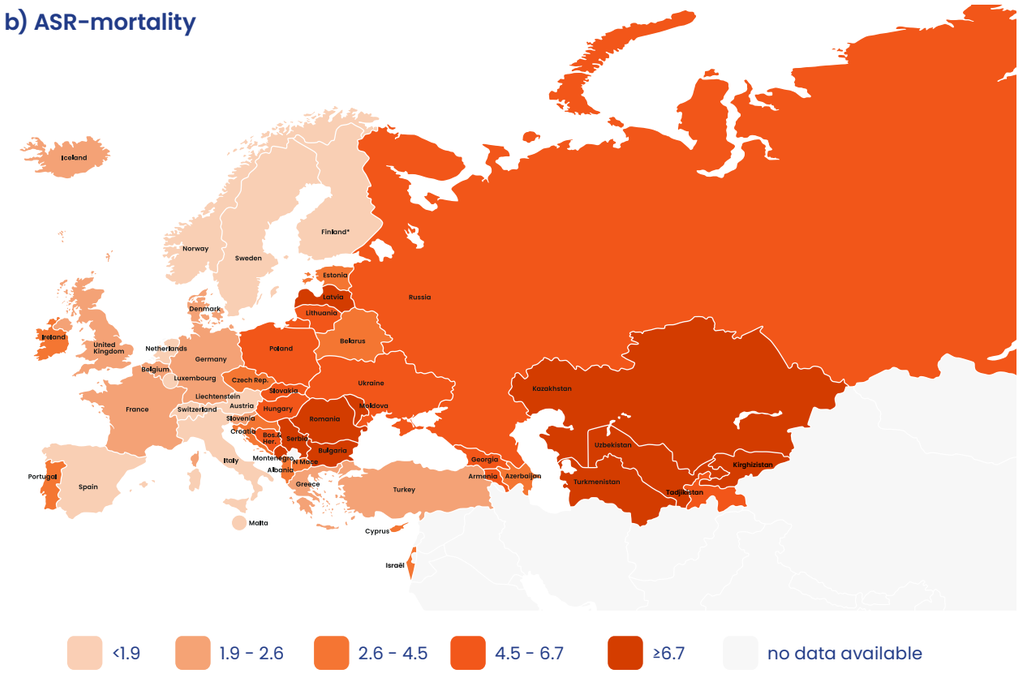
Sources: Global Cancer Observatory 2020[4]

Figure 3. Age standardised (world) incidence and mortality rates (per 100,000) of cervical cancer cases in 2020, in the WHO EURO.

a) ASR-incidence



b) ASR-mortality



Sources: Global Cancer Observatory 2020[4]

Survival rates for cervical cancer and for other HPV-related cancers

Five-year relative survival (RS) for European women diagnosed with cervical cancer in 2000–2007 was 62%, range 57% (Eastern Europe) to 67% (Northern Europe). Five-year RS was particularly low (<55%) in Bulgaria, Latvia and Poland and highest in Norway (71%). Survival decreased with advancing age (from 81% for age group 15-44 years to 34% in women 75 years and older). Survival for patients with cervical cancers globally increased from 1999–2001 to 2005–2007 (61% to 65%, p<0.001), but remained lower in Eastern Europe compared to the other European Regions. Lower survival is probably linked to advanced stage at diagnosis, referral delay and/or suboptimum access to adequate care (Figure A 1).[19]

For European women diagnosed with cancers of vagina and vulva in 2000–2007, 5-year RS was 57%, range 48% (Eastern Europe) to 61% (Central Europe). Survival decreased with advancing age (from 77% for age group 15-44 years to 43% in women 75 years and older). Globally, women with vulvar cancer had better 5-year RS (62%) than those with vaginal cancer (40%) (Figure A 2).[19]

Regarding penile cancer, 5-year RS for European men diagnosed with penile cancer in 2000–2007 was 68%, range 60% (Eastern Europe) to 75% (Northern Europe). Five-year RS was particularly low in Slovakia (50%) and highest in Norway (83%) and Denmark (82%). Survival decreased with increasing age (from 81% for age group 15-44 years to 62% in men 75 years and older). Survival for patients with penile cancers did not improved from 1999–2007 (Figure A 3).[20]

Regarding head and neck cancer sites HPV related, 5-year RS for European men and women was 59% for larynx cancers, 45% for oral cavity cancers and 39% for oropharynx cancers, with the lowest RS observed in Eastern Europe countries. Except for patients with laryngeal cancer, survival was better in women than in men and survival decreased with advancing age. Globally, age-standardised 5-year RS remained stable from 1999 to 2007 for laryngeal cancer, while it increased for the other cancer sites. Five-year RS for localised and metastatic cancer patients by site were 69% and 9% for oral cavity; 58% and 12% for oropharynx; and 74% and 7% for larynx (Figure A 4, Figure A 5, Figure A 6).[21]

HPV vaccine introduction in the WHO European Region

HPV vaccine

Currently there are three HPV vaccines licensed in Europe: the bivalent vaccine, Cervarix® (GlaxoSmithKline Biologicals), that contains virus-like-particles (VLPs) of HPV types 16 and 18, the quadrivalent HPV vaccine, Gardasil® (Merck Sharp & Dohme - MSD), that includes VLPs of HPV types 6, 11, 16 and 18, and the nonavalent vaccine (MSD), that contains VLPs of HPV types 6, 11, 16, 18, 31, 33, 45, 52 and 58. Potentially, the bivalent and the quadrivalent vaccines could prevent 71% of invasive cervical cancer cases worldwide that are attributed to HPV types 16 and 18, while the nonavalent vaccine could increase the preventive potential to 89% of cervical cancer cases.[14]

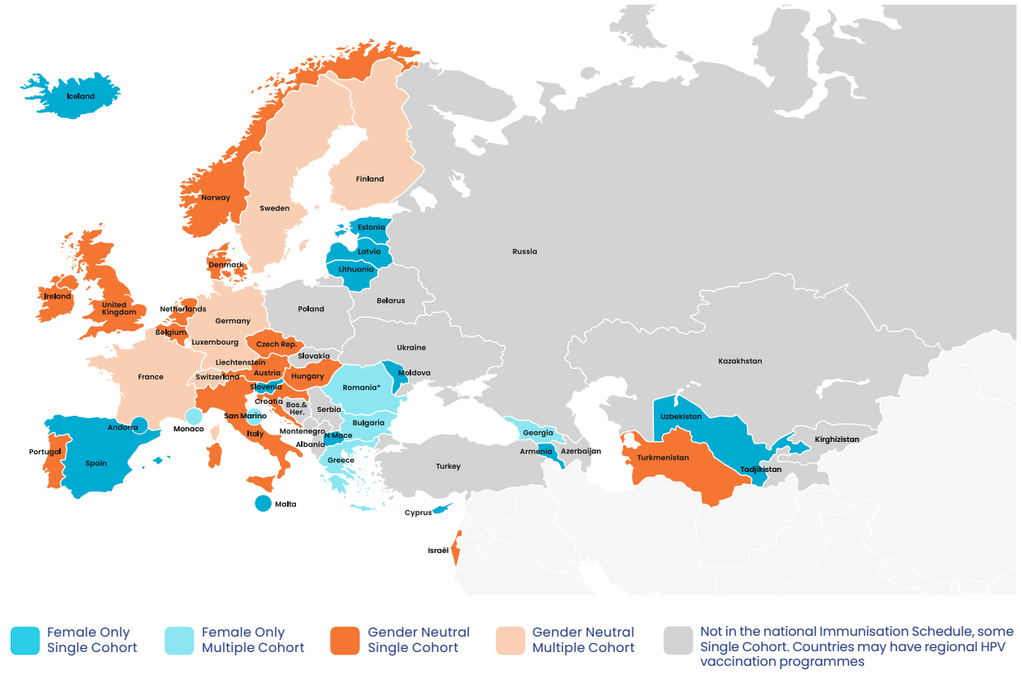
The three vaccines are licensed for the prevention of premalignant anogenital lesions (cervical, vulvar, vaginal and anal), cervical cancers and anal cancers causally related to high-risk types included in the vaccines. In addition, the quadrivalent and nonavalent vaccines are licensed for the prevention of genital warts. All vaccines are approved from the age of 9 years, with a recommended schedule of 2 doses (0-6 months) up to the age of 14 years in the bivalent and nonavalent vaccines and up to the age of 13 years in the quadrivalent vaccine. In older individuals, the recommended schedule is 3 doses administered at months 0, 1 or 2 and 6.[22–24] The use of the HPV vaccines should be in accordance with official recommendations.

Duration of protection has been confirmed for at least 10 years with the quadrivalent vaccine, 9.4 years with the bivalent vaccine, and 5.6 years with nonavalent vaccine.[12]

HPV vaccination programmes

By 2020, 39 out of 53 (74%) WHO EURO member states have introduced at some point HPV vaccination in their national Immunisation programmes. Among the member states that have introduced HPV vaccination, sixteen (41%) countries introduced vaccination within the first three years after the European Medicines Agency (EMA) licensed the first HPV vaccines in 2006/07, and the rest of countries have progressively introduced vaccination during the last 10 years. Table A 5 shows the main characteristics of the HPV vaccination programmes by country, most of them targeting pre-adolescent girls within the age range of 9 to 14 years old through organised school-based plans. Many countries initially introduced vaccination as multiple age-cohort vaccination accompanied by temporary catch-up programmes for older ages, to only maintain afterwards catch-up programmes for already targeted cohorts that missed vaccination at the recommended ages. By 2020, 20 countries (51%) have also expanded vaccination to boys of the same age, namely Austria, Belgium, Croatia, Czechia, Denmark, Finland, France, Germany, Hungary, Ireland, Israel, Italy, Luxembourg, Netherlands, Norway, Portugal, Sweden, Switzerland, Turkmenistan and United Kingdom (Figure 4, Table A 5). Although the information is not included in the present report, Slovenia has also scale-up to gender neutral vaccination recently this year (in September 2021),[25] and Greece, is also moving to gender neutral in 2022.[26] In addition, in 2021-2022, Serbia, Slovakia and Bosnia & Herzegovina , have introduced or plan to introduce national or pilot HPV vaccination programmes[27–29] and, Denmark, Romania and Netherlands have introduced changes in target ages.[30–32]

Figure 4. Introduction of HPV vaccination in national Immunisation programmes in the WHO EURO, as of June 2020.



HPV: Human Papillomavirus

A WHO Member State is considered to have an Human Papilloma Virus (HPV) vaccination programme when the country reports in the Joint Reporting Form (JRF) to have officially included HPV vaccination in their national Immunisation schedule either at national or subnational level.

Catch-up strategies are not included. Single cohort vaccination: only one age or birth cohort is targeted. Multi-age cohort vaccination (MAC): more than one age or birth cohort is targeted.

Source: World Health Organization (WHO). Introduction of HPV vaccine. Available from: https://Immunisationdata.who.int/[33]

HPV vaccination coverage

In the WHO EURO, it is estimated that in 2019 about 27% of girls and 5% of boys were vaccinated with the full course of the HPV vaccine and 35% and 6% received at least one dose of vaccine. In 2020, it is estimated that about 29% of girls and 5% of boys in were vaccinated with the full course of the HPV vaccine and 34% and 10% received at least one dose of vaccine. The reported increase in male vaccination coverage is linked more to the growing number of countries introducing the vaccine in 2020, than to improvement in programme performance.

Unequal distribution exist between countries and regions, with the lowest coverages observed in Eastern Europe countries and the highest in Northern Europe (Table 4, Table 5, Figure 5).

Programmes performance vary considerably across the WHO EURO member states (Figure 5, Figure 6). HPV vaccine uptake varies not only between countries, but also within countries at regional level. Hungary, Iceland, Malta, Norway, Portugal, Spain, Sweden or UK have reported optimal national coverages above 70%. Other countries such as France or Germany have stagnated with coverages below 50%, and lower than 10% in Bulgaria. The Covid-19 pandemic has temporaly disrupted HPV vaccination activities in many WHO EURO countries. Consequently, in some countries, vaccination coverages have been reduced in 2020, as it can be observed in Figure 6 and Table A 6, either for the first or the final dose of the HPV vaccine.

Table 4. Regional and sub-regional female HPV vaccine coverage estimates in the WHO EURO, in 2019 and 2020.

FEMALE

POPULATION[a]	PROGRAMME PERFORMANCE COVERAGE				COVERAGE BY AGE 15			
	FIRST DOSE		FINAL DOSE		FIRST DOSE		FINAL DOSE	
	2019	2020	2019	2020	2019	2020	2019	2020
WHO EURO	35%	34%	27%	29%	28%	29%	25%	26%
Eastern Europe	4%	3%	3%	3%	3%	3%	3%	3%
Northern Europe	83%	82%	78%	68%	76%	78%	72%	75%
Southern Europe	57%	51%	51%	42%	59%	60%	56%	55%
Western Europe	48%	50%	40%	42%	47%	50%	39%	41%
Asian countries	25%	25%	6%	25%	3%	3%	2%	3%

Global and regional coverages for each calendar year are calculated as the population weighted average of country-specific estimates using the HPV vaccine programme performance coverage indicator and official United Nations (UN) population estimates and projections that are prepared by the Population Division of the Department of Economic and Social Affairs of the UN Secretariat.

A WHO Member State is considered to have an HPV vaccination programme when the country reports in the JRF to have officially included HPV vaccination in their national Immunisation schedule either at national or subnational level. Members states considered not have introduced or without coverage data had a 0% coverage assigned.

a WHO EURO member states included in each sub-region: "Eastern Europe": Belarus, Bulgaria, Czechia, Hungary, Poland, Republic of Moldova, Romania, Russian Federation, Slovakia, Ukraine; "Northern Europe": Denmark, Estonia, Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, United Kingdom, "Southern Europe": Albania, Andorra, Bosnia & Herzegovina, Croatia, Cyprus, Greece, Italy , Malta, Montenegro, Portugal, North Macedonia, San Marino, Serbia, Slovenia, Spain, "Western Europe": Austria, Belgium, France, Germany, Luxembourg, Monaco, The Netherlands, Switzerland; "Asian countries":Armenia, Azerbaijan, Georgia, Israel, Turkey, Kazakhstan, Kyrgyzstan, Uzbekistan, Turkmenistan, Tajikistan

Source: World Health Organization (WHO). Introduction of HPV (Human Papilloma Virus) vaccine. Available from: https://Immunisationdata.who.int/[33]

Table 5. Regional and sub-regional male HPV vaccine coverage estimates in the WHO EURO, in 2019 and 2020.

MALE

POPULATION[a]	PROGRAMME PERFORMANCE COVERAGE				COVERAGE BY AGE 15			
	FIRST DOSE		FINAL DOSE		FIRST DOSE		FINAL DOSE	
	2019	2020	2019	2020	2019	2020	2019	2020
WHO EURO	6%	10%	5%	5%	2%	2%	2%	2%
Eastern Europe	0%	0%	0%	0%	0%	0%	0%	0%
Northern Europe	13%	53%	5%	11%	0%	0%	0%	0%
Southern Europe	20%	14%	16%	11%	8%	9%	7%	8%
Western Europe	1%	2%	1%	1%	1%	2%	1%	1%
Asian countries	6%	6%	6%	6%	2%	3%	2%	2%

Global and regional coverages for each calendar year are calculated as the population weighted average of country-specific estimates using the HPV vaccine programme performance coverage indicator and official United Nations (UN) population estimates and projections that are prepared by the Population Division of the Department of Economic and Social Affairs of the UN Secretariat.

A WHO Member State is considered to have an HPV vaccination programme when the country reports in the JRF to have officially included HPV vaccination in their national Immunisation schedule either at national or subnational level. Members states considered not have introduced or without coverage data had a 0% coverage assigned.

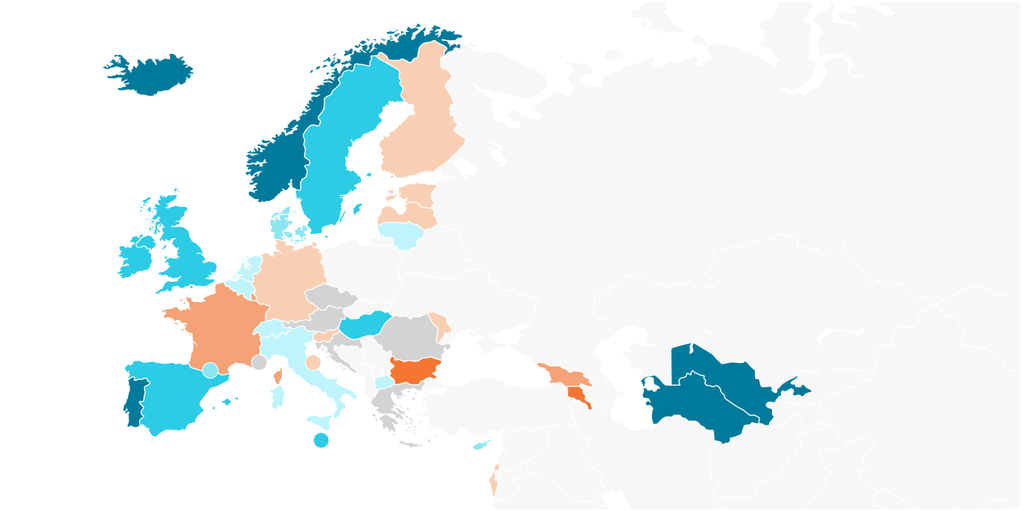
a WHO EURO member states included in each sub-region: "Eastern Europe": Belarus, Bulgaria, Czechia, Hungary, Poland, Republic of Moldova, Romania, Russian Federation, Slovakia, Ukraine; "Northern Europe": Denmark, Estonia, Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, United Kingdom, "Southern Europe": Albania, Andorra, Bosnia & Herzegovina, Croatia, Cyprus, Greece, Italy , Malta, Montenegro, Portugal, North Macedonia, San Marino, Serbia, Slovenia, Spain, "Western Europe": Austria, Belgium, France, Germany, Luxembourg, Monaco, The Netherlands, Switzerland; "Asian countries":Armenia, Azerbaijan, Georgia, Israel, Turkey, Kazakhstan, Kyrgyzstan, Uzbekistan, Turkmenistan, Tajikistan

Source: World Health Organization (WHO). Introduction of HPV (Human Papilloma Virus) vaccine. Available from: https://Immunisationdata.who.int/[33]

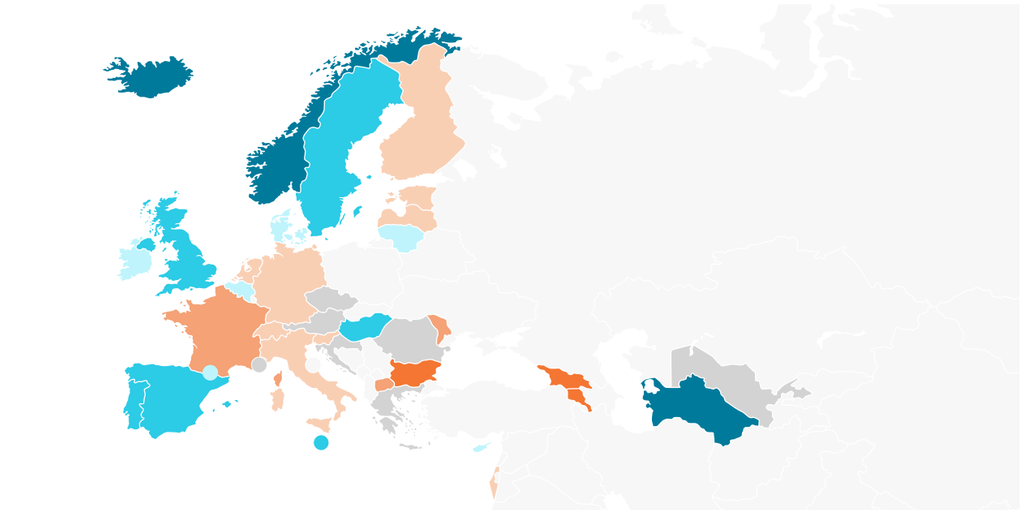
Programmes performance vary considerably across the WHO EURO member states (Figure 5, Figure 6). HPV vaccine uptake varies not only between countries, but also within countries at regional level. Hungary, Iceland, Malta, Norway, Portugal, Spain, Sweden or UK have reported optimal national coverages above 70%. Other countries such as France or Germany have stagnated with coverages below 50%, and lower than 10% in Bulgaria. The Covid-19 pandemic has temporaly disrupted HPV vaccination activities in many WHO EURO countries. Consequently, in some countries, vaccination coverages have been reduced in 2020, as it can be observed in Figure 6 and Table A 6, either for the first or the final dose of the HPV vaccine.

Figure 5. Country-specific HPV vaccination programme coverages for the first and final dose in the WHO EURO, estimates for girls in 2019.

a) Coverage First dose



b) Coverage Final dose

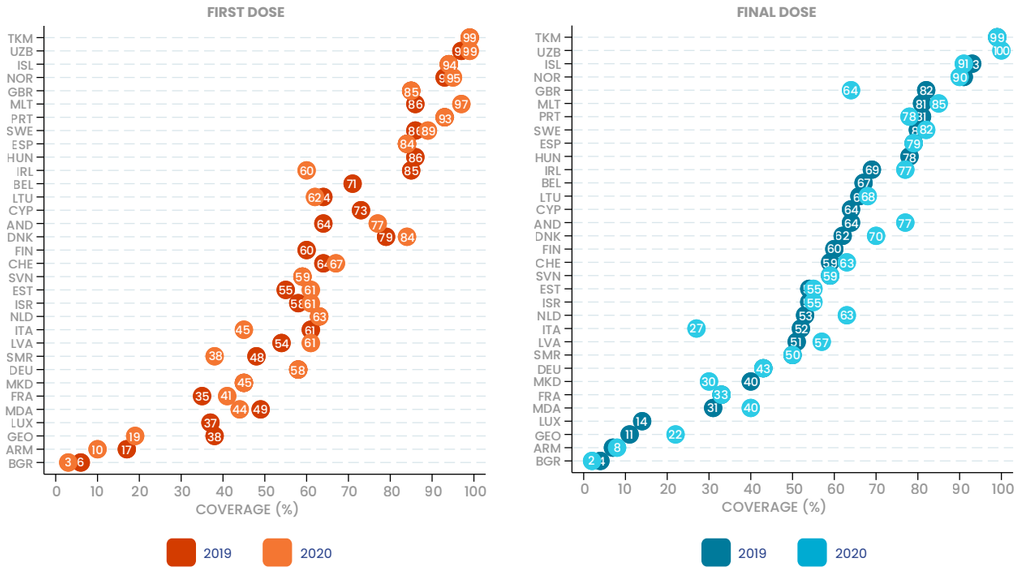


HPV: Human Papillomavirus

A WHO Member State is considered to have an HPV vaccination programme when the country reports in the Joint Reporting Form (JRF) to have officially included HPV vaccination in their national Immunisation schedule either at national or subnational level. Members states considered not have introduced or without coverage data had a 0% coverage assigned.

Source: World Health Organization (WHO). Introduction of HPV (Human Papilloma Virus) vaccine. Available from: https://Immunisationdata.who.int/[33]

Figure 6. Country-specific HPV vaccination programme performance coverages estimates for girls in the WHO EURO, in 2019 and 2020.



HPV: Human Papillomavirus; *Coverage over 100%. Truncated to 99%. May indicate problems with the accuracy of data.

A WHO Member State is considered to have an HPV vaccination programme when the country reports in the Joint Reporting Form (JRF) to have officially included HPV vaccination in their national Immunisation schedule either at national or subnational level. Members states considered not have introduced or without coverage data had a 0% coverage assigned.

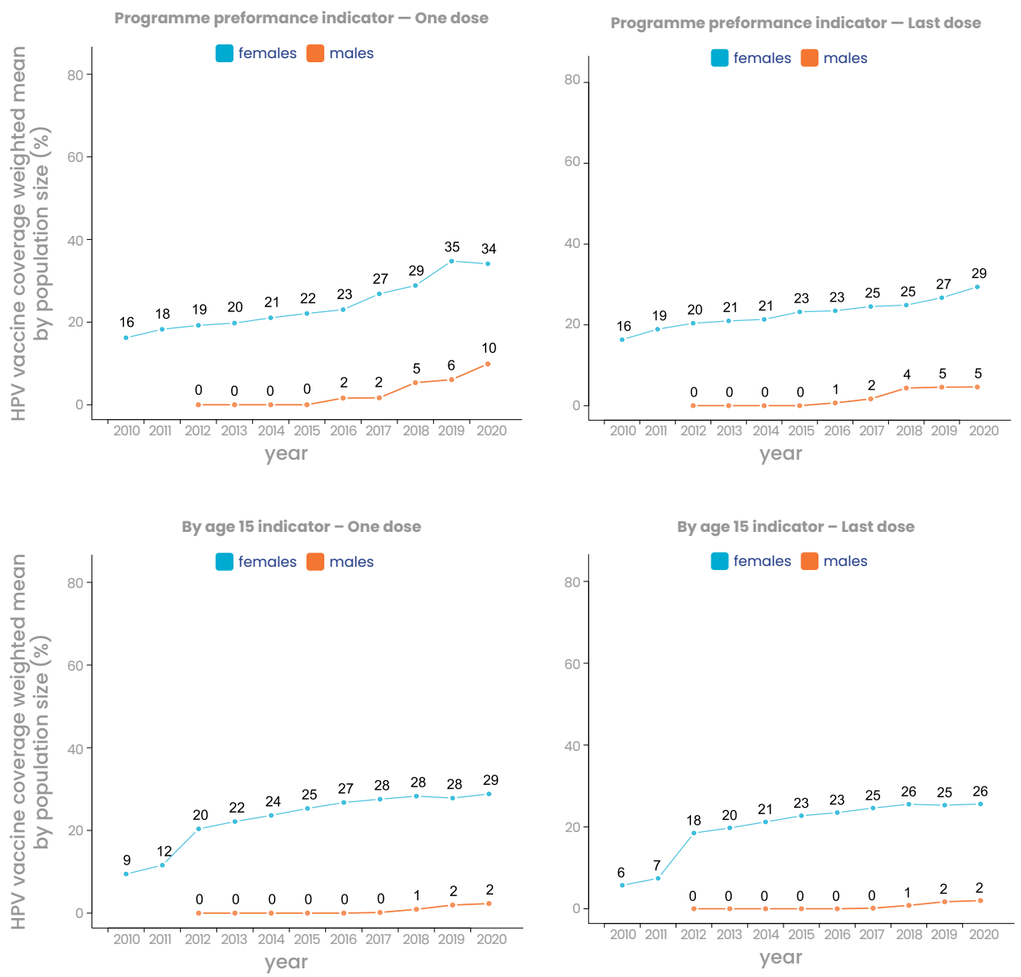
Coverages reflect different ages at vaccination within the 9–14 year of age range recommended by WHO depending on the target population of each programme.

Countries are named using their iso3 coding https://www.iso.org/iso-3166-country-codes.html

Source: World Health Organization (WHO). Introduction of HPV (Human Papilloma Virus) vaccine. Available from: https://Immunisationdata.who.int/[33]

Figure 7 shows a gradual upward trend of global coverages in the WHO EURO, but this increase is linked more to the growing number of countries introducing the vaccine than to improvement in programme performance. Figure A 7, Figure A 8, Figure A 9, Figure A 10 and Figure A 11 show coverage trends by WHO EURO region.

Figure 7. Estimates of HPV vaccination coverage in WHO EURO, over time 2010–2020



HPV: Human Papillomavirus

Global and regional coverages for each calendar year are calculated as the population weighted average of country-specific estimates using the HPV vaccine coverage indicators and official United Nations (UN) population estimates and projections that are prepared by the Population Division of the Department of Economic and Social Affairs of the UN Secretariat.

A WHO Member State is considered to have an HPV vaccination programme when the country reports in the Joint Reporting Form (JRF) to have officially included HPV vaccination in their national Immunisation schedule either at national or subnational level. Members states considered as not having introduced or without coverage data had a 0% coverage assigned.

Source: World Health Organization (WHO). Introduction of HPV (Human Papilloma Virus) vaccine. Available from: https://Immunisationdata.who.int/[33]

Cervical cancer screening practices in the WHO European Region

Cervical cancer prevention in the HPV vaccination era

Cytology-based cervical cancer screening programmes have successfully reduced the incidence and mortality of cervical cancer in many developed countries, but this success has not been achieved in more resource-constrained settings.[34–36] Cytology-based screening programmes require laboratory capacity, clinically trained personnel and social and health systems able to sustain frequently repeated visits for screening, diagnosis and treatment.[37,38] Large European randomized clinical trials have proved that HPV-based screening from age 30 provides 60–70% greater protection against precancerous lesions and invasive cancer than cytology.[39,40] HPV based technologies provide with a more objective, sensitive and reproducible test than cytology, and allows for a safe extension of screening intervals. The WHO and leading scientific societies recommend primary HPV based screening and consequently, many WHO EURO cervical cancer programmes are now transitioning from cytology-based screening to HPV based screening.[41] In addition, following the increasing body of evidence supporting the validity of the self-sampling approach as an alternative to clinician collection for HPV screening, and its potential to reach underscreened women and to scale up screening coverage, both the WHO and IARC recommend its use.[42]

In most WHO EURO member states the transition to HPV-based screening is also accompanied by HPV vaccination programmes that are expected to have a dramatic impact on the burden of disease in the coming years. The reduction in the HPV prevalence, combined with the inerent limitations of cytology, most notably the low sensitivity and poor reproducibility, compared to HPV detection, suggest that cervical cancer screening recommendations should be adapted with the arrival of vaccinated cohorts at the screening age. However, to date (January 2022), there are no clear guidelines on which screening strategy should be used in vaccinated women, and the evidence regarding the age to start and end screening, the tests to be used and the requiered screening interval is limited. Many experts suggest that vaccinated cohorts will require:

1) Less frequent screening,

2) Primary screening with HPV test, and

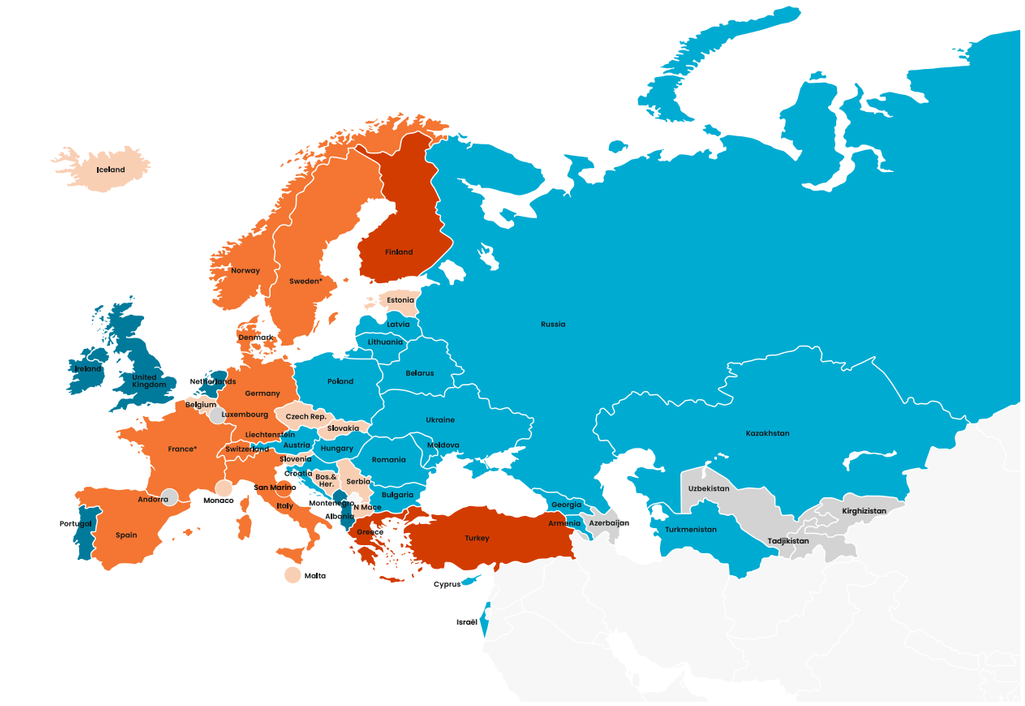
3) Increase the age of onset of screening.[43,44]

Cervical cancer screening programmes

By 2020, 47 out of 53 (89%) WHO EURO member states have identifiable official recommendations for cervical cancer screening. All countries with documented official recommendations for cervical cancer screening report that they provide publicly-funded primary screening tests. Among countries with identified screening recommendations, recommendations had been recently introduced or changed in 23 (49%) countries (in less than five years) and up to 36 (68%) in the last 10 years. Many of these countries are scaling up to population-based screening programmes that include personal invitations to screening. Currently, 29 countries (62%) send personal invitations to participate. Cytology is still used in 43 countries (91%) alone or combined with other tests. 18 countries (38%) now recommend primary HPV based screening, but most of them are still transitioning from cytology-based screening. Although not yet recommended for primary use, HPV testing is already introduced as a triage test for atypical squamous cells of undetermined significance (ASC-US) or for other indications in 11 countries. In addition, Belarus and Belgium announced plans in 2019 for HPV-based screening introduction in the coming year or two. Figure 8 provides an overview of the use of the screening tests by country (cytology and/or HPV test).

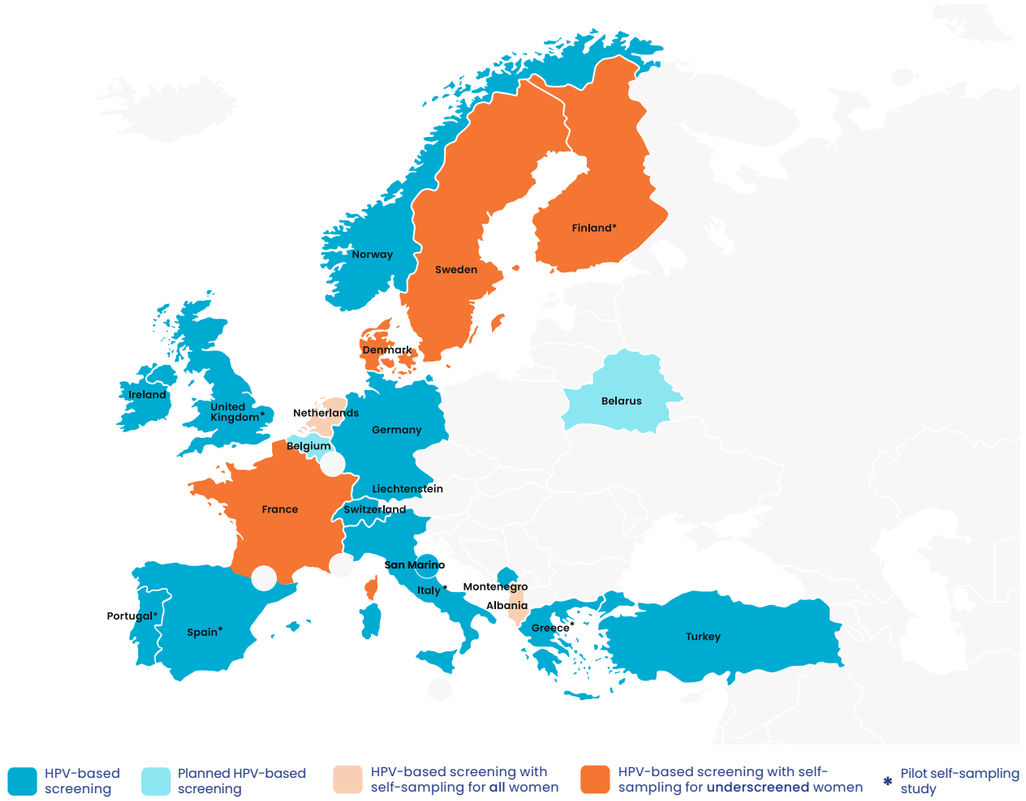
Recommended screening intervals and target screening ages vary widely among countries. Most countries (31, 66%) recommend to begin screening between the ages of 25–30 years, and 43 (91%) recommend to end screening between the ages of 60–69 years. There are 15 (32%) countries that recommend screening in women under 25 years of age. HPV testing is mainly recommended for women aged 30 years and older every five years, although four countries recommend it at frequencies lower than five years, and three in women younger than 30 years. Cytology is indiscriminatingly recommended across all age ranges, usually in a three-year interval, but five countries recommend it every one or two years. In 12 (26%) countries there is more than one screening test recommended, either interchangeably (three countries) or recommended differently according to age (nine countries) Among countries with HPV-based programmes, six (33%) report having introduced self-sampling in their national programmes or guidelines, either for underscreened populations in four countries (Denmark, Finland, France, and Sweden) or as the primary screening option for all women in two countries (Albania and The Netherlands). Five additional countries are also piloting self-sampling to decide whether to include this option in their screening guidelines, either targeting all women (Italy, Spain) or targeting underscreened populations (Greece, Portugal and United Kingdom) (Figure 9). Table A 8 summarizes the characteristics of cervical screening recommendations by WHO EURO member state.

Figure 8. Officially recommended tests for cervical cancer screening in the WHO EURO.



HPV: Human Papillomavirus
Some regions in Italy, Spain, Portugal and United Kingdom recommend cytology alone as primary test.
Source: Adapted from Bruni, Serrano et al. Submitted

Figure 9. Self-sampling approach in WHO EURO member states officially recommending HPV-based screening.



HPV: Human Papillomavirus
Source: Adapted from Serrano et al., 2021[45]

Cervical cancer screening coverage

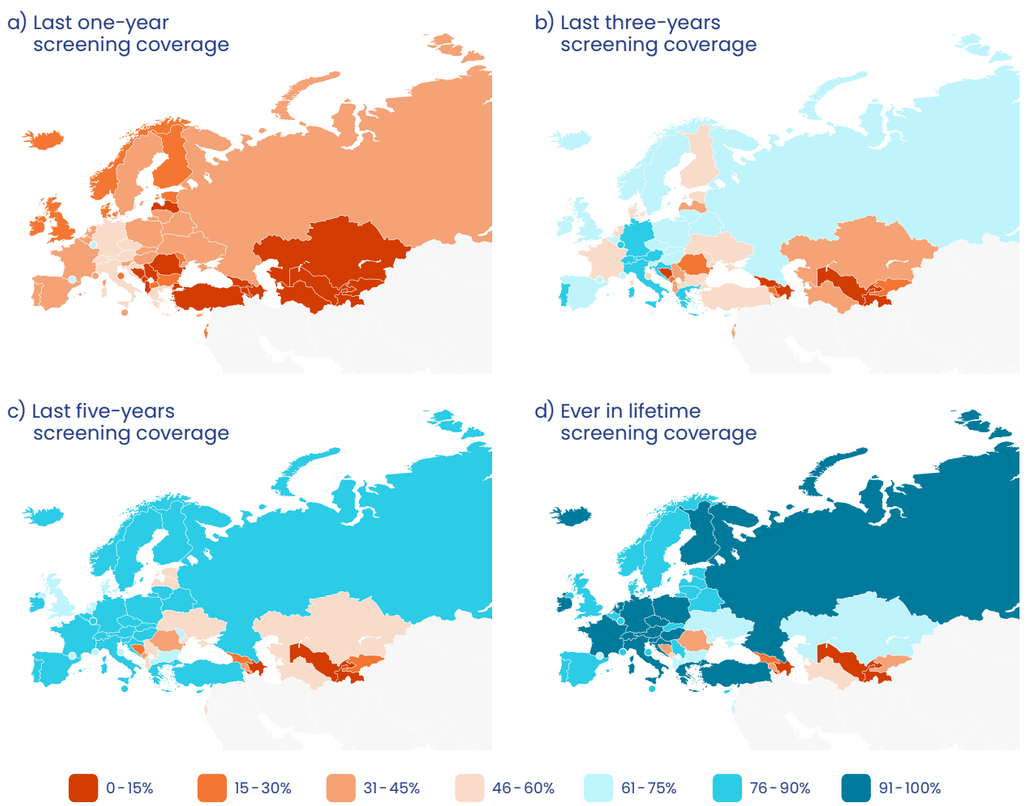
Estimates for 2019 show that globally, in the WHO EURO, 82% (76-89%) of women aged 25-65 years had been screened for cervical cancer at least once in their lifetime, 33% (30-36%) had been screened in the last year, 61% (56-66%) in the last three years, and 72% (66-78%) in the last five years. However, programmes performance vary considerably between European Regions and countries (Table 6, Figure 10, Figure 11), with the lowest coverage observed in Asian countries belonging to the WHO EURO. Table A 9 shows the estimated screening coverages for 2019, by member state and screening interval.

Table 6. Regional and sub-regional Cervical cancer screening coverage estimates in women aged 25-64 years, in the WHO EURO (2019 estimates)

POPULATION[a]	CERVICAL CANCER SCREENING COVERAGE							
	LAST 1 YEAR		LAST 3 YEARS		LAST 5 YEARS		EVER IN A LIFTIME	
WHO EURO	33%	(30-36)	61%	(56-66)	72%	(66-78)	82%	(76-89)
Eastern Europe	36%	(30-42)	66%	(56-76)	75%	(63-87)	84%	(71-97)
Northern Europe	28%	(22-34)	62%	(50-73)	74%	(62-88)	88%	(73-100)
Southern Europe	40%	(34-47)	71%	(60-82)	79%	(68-91)	87%	(75-100)
Western Europe	46%	(39-54)	71%	(61-81)	81%	(70-93)	93%	(81-100)
Asian countries	12%	(9-14)	31%	(25-37)	50%	(40-61)	60%	(48-72)

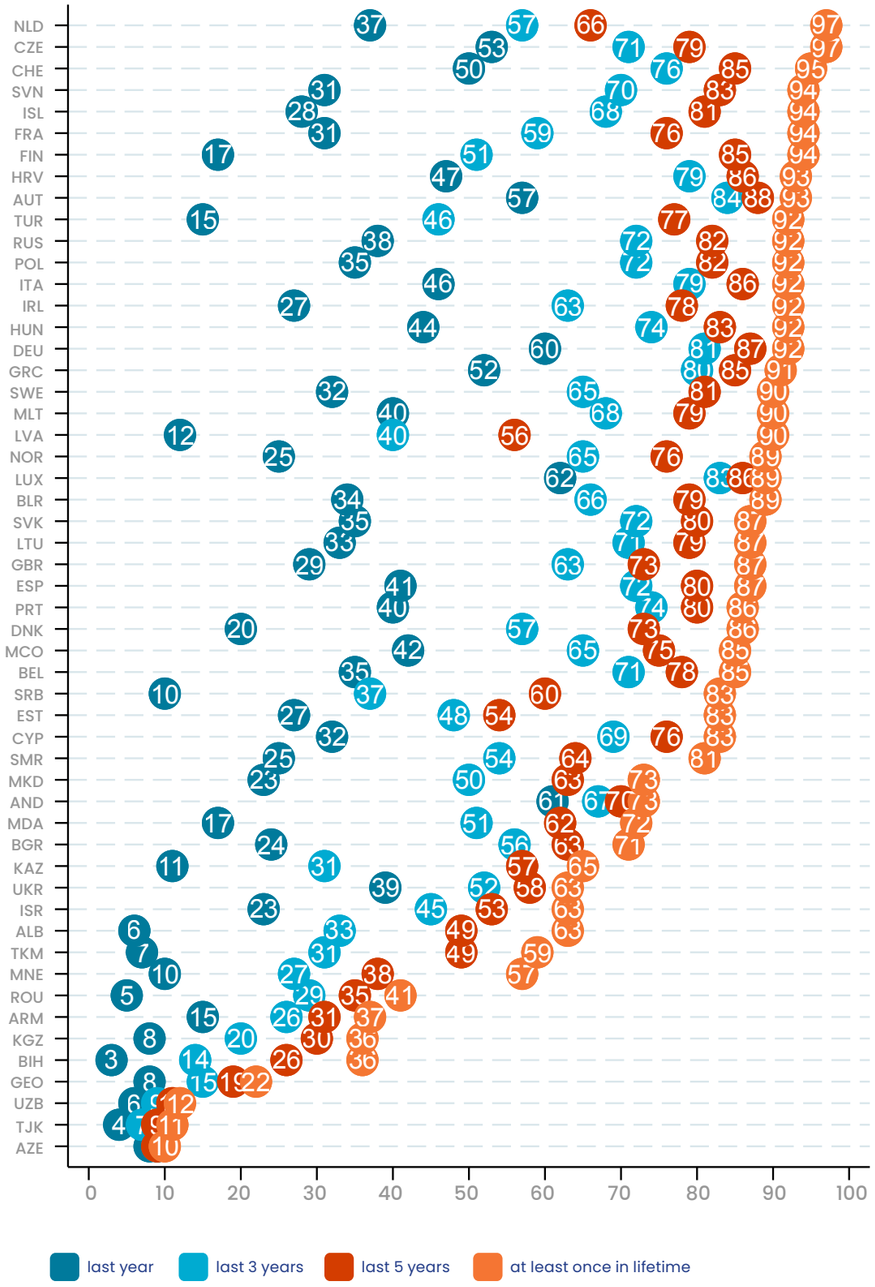
a WHO EURO member states included in each sub-region: "Eastern Europe": Belarus, Bulgaria, Czechia, Hungary, Poland, Republic of Moldova, Romania, Russian Federation, Slovakia, Ukraine; "Northern Europe": Denmark, Estonia, Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, United Kingdom, "Southern Europe": Albania, Andorra, Bosnia & Herzegovina, Croatia, Cyprus, Greece, Italy , Malta, Montenegro, Portugal, North Macedonia, San Marino, Serbia, Slovenia, Spain, "Western Europe": Austria, Belgium, France, Germany, Luxembourg, Monaco, The Netherlands, Switzerland; "Asian countries":Armenia, Azerbaijan, Georgia, Israel, Turkey, Kazakhstan, Kyrgyzstan, Uzbekistan, Turkmenistan, Tajikistan
Source: Bruni, Serrano et al. Submitted

Figure 10. Cervical cancer screening coverage estimates in women aged 25-64 years in the WHO EURO, in 2019.



Source: Adapted from Bruni, Serrano et al. Submitted

Figure 11. Country-specific cervical cancer screening coverage estimates in women aged 25-65 years in the WHO EURO, in 2019, by screening interval.



Countries are named using their iso3 coding https://www.iso.org/iso-3166-country-codes.html
Source: Adapted from Bruni, Serrano et al. Submitted

In the WHO EURO, among the 314 million women aged 20–70 years, 100.6 (92.2-108,8) million women (32%; 29-34%) had been screened in the last year, rising to 181.8 (168.2-195.3) million (58%; 53-62%) in the last three years, 216.1 (200.5-231.7) million (69%; 64-67%) in the last five years, and 248.9 (231.3-266.7 million (79%; 74-85) ever in lifetime. Significant inequities exists within WHO EURO subregion. Asian countries have much lower coverages than the other subregions, and about to half of the population aged 20-70 years have never been screened for cervical cancer.

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Annexes

Table A 1. Studies reporting HPV prevalence in women with normal cervical cytology by WHO EURO member state

COUNTRY	AGE RANGE (YEARS)	ANY HPV PREVALENCE N° OF WOMEN TESTED	ANY HPV PREVALENCE N° OF WOMEN POSITIVE	ANY HPV PREVALENCE %	ANY HPV PREVALENCE 95% CI	HPV16 PREVALENCE N° OF WOMEN POSITIVE	HPV16 PREVALENCE %	HPV16 PREVALENCE 95% CI	REFERENCES
Albania									
Andorra									
Armenia									
Austria									
Azerbaijan									
Belarus	15-63 yrs	322	76	23.6%	(19.3-28.5)	23	7.1%	(4.8-10.5)	Rogovskaya SI, Vaccine 2013; 31 Suppl 7: H46
Belgium	15-85 yrs	8729	1040	11.9%	(11.3-12.6)	205	2.3%	(2.1-2.7)	Arbyn M, Cancer Epidemiol Biomarkers Prev 2009; 18: 321
	17-78 yrs	286	31	10.8%	(7.7-15.0)	8	2.8%	(1.4-5.4)	Baay MF, Eur J Gynaecol Oncol 2001; 22: 204
	20-50 yrs	2293	158	6.9%	(5.9-8.0)	49	2.1%	(1.6-2.8)	Baay MF, Eur J Cancer 2005; 41: 2704
	17-85 yrs	287	69	24.0%	(19.5-29.3)	12	4.2%	(2.4-7.2)	Depuydt CE, Br J Cancer 2003; 88: 560
	14-97 yrs	57,876	8580	14.8%	(14.5-15.1)	-			Depuydt CE, Gynecol Obstet Invest 2010; 70: 273
	30-65 yrs	1139	93	8.2%	(6.7-9.9)	-			Depuydt CE, J Clin Microbiol 2012; 50: 4073
	4-18 yrs	4180	656	15.7%	(14.6-16.8)	-			Merckx M, Eur J Cancer Prev 2014; 23: 288
	15-86 yrs	913	304	33.3%	(30.3-36.4)	51	5.6%	(4.3-7.3)	Schmitt M, Int J Cancer 2013; 132: 2395
	20-. yrs	906	98	10.8%	(9.0-13.0)	19	2.1%	(1.3-3.3)	Weyn C, Cancer Epidemiol 2013; 37: 457
Bosnia and Herzegovina									
Bulgaria									
Croatia	-	205	73	35.6%	(29.4-42.4)	32	15.6%	(11.3-21.2)	Grahovac M, Coll Antropol 2007; 31 Suppl 2: 73
	18-62 yrs	570	200	35.1%	(31.3-39.1)	-			Kaliterna V, Coll Antropol 2007; 31 Suppl 2: 79
Cyprus									
Czechia	14-79 yrs	1302	333	25.6%	(23.3-28.0)	63	4.8%	(3.8-6.1)	Tachezy R, PLoS ONE 2013; 8: e79156
Denmark	16-89 yrs	4671	1562	33.4%	(32.1-34.8)	235	5.3%	(4.7-6)	Bonde J, BMC Infect Dis 2014; 14: 413
	14-95 yrs	37,958	6453	17.0%	(16.6-17.4)	524	4.8%	(4.4-5.2)	Kjær SK, Cancer Causes Control 2014; 25: 179
	20-29 yrs	10,220	1625	15.9%	(15.2-16.6)	450	4.4%	(4-4.8)	Nielsen A, Sex Transm Dis 2008; 35: 276
	40-50 yrs	1443	63	4.4%	(3.4-5.5)	12	0.8%	(0.5-1.4)	Nielsen A, Sex Transm Dis 2008; 35: 276
	14-95 yrs	37,958	2391	6.3%	(6.1-6.5)	-			Nielsen A, Sex Transm Infect 2012; 88: 627
	20-39 yrs	119	26	21.8%	(15.4-30.1)	10	8.4%	(4.6-14.8)	Svare EI, Eur J Cancer 1998; 34: 1230
Estonia	18-35 yrs	326	120	36.8%	(31.8-42.2)	-			Uusküla A, BMC Infect Dis 2010; 10: 63
Finland	19-47 yrs	1469	485	33.0%	(30.7-35.5)	-			Auvinen E, Scand J Infect Dis 2005; 37: 873
	25-65 yrs	16,895	1274	7.5%	(7.2-7.9)	-			Leinonen M, Int J Cancer 2008; 123: 1344
France	15-23 yrs	948	228	24.1%	(21.4-26.9)	-			Baudu A, J Epidemiol Glob Health 2014; 4: 35
	17-77 yrs	613	32	5.2%	(3.7-7.3)	3	1.8%	(0.6-5.1)	Beby-Defaux A, J Med Virol 2004; 73: 262
	20-62 yrs	3617	456	12.6%	(11.6-13.7)	-			Boulanger JC, Gynecol Obstet Fertil 2004; 32: 218
	15-88 yrs	302	146	48.3%	(42.8-54.0)	32	10.6%	(7.6-14.6)	Casalegno JS, Int J Gynaecol Obstet 2011; 114: 116
France	15-76 yrs	7339	773	10.5%	(9.9-11.3)	-			Clavel C, Br J Cancer 2001; 84: 1616
	16-76 yrs	652	176	27.0%	(23.7-30.5)	-			Dalstein V, Int J Cancer 2003; 106: 396
	.-. yrs	3023	414	13.7%	(12.5-15.0)	91	3.0%	(2.5-3.7)	Heard I, PLoS ONE 2013; 8: e79372
	19-79 yrs	221	63	28.5%	(23.0-34.8)	-			Monsonego J, Gynecol Oncol 2005; 99: 160
	20-65 yrs	4004	505	12.6%	(11.6-13.7)	-			Monsonego J, Int J Cancer 2011; 129: 691
	18-78 yrs	289	83	28.7%	(23.8-34.2)	27	9.3%	(6.5-13.3)	Pannier-Stockman C, J Clin Virol 2008; 42: 353
	16-76 yrs	426	107	25.1%	(21.2-29.4)	-			Riethmuller D, Diagn Mol Pathol 1999; 8: 157
	17-86 yrs	980	128	13.1%	(11.1-15.3)	35	3.6%	(2.6-4.9)	Vaucel E, Arch Gynecol Obstet 2011; 284: 989
Georgia	15-59 yrs	1247	143	11.5%	(9.8-13.4)	6	0.5%	(0.2-1)	Alibegashvili T, Cancer Epidemiol 2011; 35: 465
Germany	20-. yrs	1463	436	29.8%	(27.5-32.2)	72	4.9%	(3.9-6.2)	de Jonge M, Acta Cytol 2013; 57: 591
	10-30 yrs	1692	377	22.3%	(20.4-24.3)	111	6.6%	(5.5-7.8)	Iftner T, J Med Virol 2010; 82: 1928
	30-. yrs	16,386	781	4.8%	(4.5-5.1)	-			Luyten A, J Clin Virol 2009; 46 Suppl 3: S5
	30-85 yrs	7832	460	5.9%	(5.4-6.4)	87	1.1%	(0.9-1.4)	Petry KU, Br J Cancer 2003; 88: 1570
	18-70 yrs	4604	326	7.1%	(6.4-7.9)	-			Schneider A, Int J Cancer 2000; 89: 529
Greece	17-69 yrs	1272	26	2.0%	(1.4-3.0)	5	0.4%	(0.2-0.9)	Agorastos T, Eur J Cancer Prev 2004; 13: 145
	.-. yrs	4139	245	5.9%	(5.2-6.7)	-			Agorastos T, Eur J Cancer Prev 2009; 18: 504
	14-70 yrs	2218	348	15.7%	(14.2-17.3)	58	2.6%	(2-3.4)	Argyri E, BMC Infect Dis 2013; 13: 53
	18-48 yrs	639	169	26.4%	(23.2-30.0)	3	0.5%	(0.2-1.4)	Panotopoulou E, J Med Virol 2007; 79: 1898
	17-79 yrs	738	47	6.4%	(4.8-8.4)	-			Paraskevaidis E, Gynecol Oncol 2001; 82: 355
	21-45 yrs	1029	105	10.2%	(8.5-12.2)	0	0.0%	(0-0.4)	Tsiodras S, BMC Cancer 2010; 10: 53
	.-. yrs	1348	532	39.5%	(36.9-42.1)	54	4.0%	(3.1-5.2)	Tsiodras S, Clin Microbiol Infect 2011; 17: 1185
Hungary	20-60 yrs	491	27	5.5%	(3.8-7.9)	-			Nyári T, Eur J Obstet Gynecol Reprod Biol 2006; 126: 246
Iceland									
Ireland	20-64 yrs	5068	670	13.2%	(12.3-14.2)	162	3.2%	(2.7-3.7)	Anderson L, J Med Virol 2013; 85: 295
	16-72 yrs	886	101	11.4%	(9.5-13.7)	10	1.7%	(0.9-3.1)	Keegan H, Br J Biomed Sci 2007; 64: 18
Israel									
Italy	15-73 yrs	9148	1037	11.3%	(10.7-12.0)	275	3.0%	(2.7-3.4)	Agarossi A, J Med Virol 2009; 81: 529
	18-24 yrs	894	200	22.4%	(19.8-25.2)	-			Ammatuna P, Cancer Epidemiol Biomarkers Prev 2008; 17: 2002
	18-67 yrs	197	40	20.3%	(15.3-26.5)	10	5.1%	(2.8-9.1)	Astori G, Virus Res 1997; 50: 57
	25-64 yrs	332	17	5.1%	(3.2-8.0)	-			Carozzi F, Br J Cancer 2000; 83: 1462
	20-81 yrs	500	77	15.4%	(12.5-18.8)	44	8.8%	(6.6-11.6)	Centurioni MG, BMC Infect Dis 2005; 5: 77
	20-. yrs	871	202	23.2%	(20.5-26.1)	-			Del Prete R, J Clin Virol 2008; 42: 211
	18-26 yrs	907	123	13.6%	(11.5-15.9)	-			Giambi C, BMC Infect Dis 2013; 13: 74
	25-64 yrs	3151	307	9.7%	(8.8-10.8)	67	2.1%	(1.7-2.7)	Giorgi Rossi P, Infect Agents Cancer 2011; 6: 2
	18-46 yrs	309	55	17.8%	(13.9-22.5)	-			Masia G, Vaccine 2009; 27 Suppl 1: A11
	16-26 yrs	566	103	18.2%	(15.2-21.6)	16	2.8%	(1.7-4.5)	Panatto D, BMC Infect Dis 2013; 13: 575
	15-54 yrs	242	78	32.2%	(26.7-38.4)	16	6.6%	(4.1-10.4)	Piana A, BMC Public Health 2011; 11: 785
	25-70 yrs	997	78	7.8%	(6.3-9.7)	27	2.7%	(1.9-3.9)	Ronco G, Eur J Cancer 2005; 41: 297
	35-60 yrs	15,361	845	5.5%	(5.2-5.9)	-			Ronco G, J Natl Cancer Inst 2006; 98: 765
	25-34 yrs	5334	510	9.6%	(8.8-10.4)	-			Ronco G, Lancet Oncol 2006; 7: 547

COUNTRY	AGE RANGE (YEARS)	ANY HPV PREVALENCE Nº OF WOMEN TESTED	Nº OF WOMEN POSITIVE	%	95% CI	HPV16 PREVALENCE Nº OF WOMEN POSITIVE	%	95% CI	REFERENCES
Italy	18-63 yrs	398	129	32.4%	(28.0-37.2)	-			Sammarco ML, Eur J Obstet Gynecol Reprod Biol 2013; 168: 222
	16-47 yrs	1064	131	12.3%	(10.5-14.4)	-			Tenti P, J Infect Dis 1997; 176: 277
	18-63 yrs	183	36	19.7%	(14.6-26.0)	16	8.7%	(5.5-13.7)	Tornesello ML, J Med Virol 2006; 78: 1663
	.-. yrs	107	12	11.2%	(6.5-18.6)	3	2.8%	(1-7.9)	Tornesello ML, J Gen Virol 2008; 89: 1380
	17-57 yrs	737	160	21.7%	(18.9-24.8)	-			Verteramo R, BMC Infect Dis 2009; 9: 16
	21-64 yrs	220	14	6.4%	(3.8-10.4)	-			Zappacosta B, New Microbiol 2009; 32: 351
Kazakhstan	35-60 yrs	17,000	1870	11.0%	(10.5-11.5)	-			Buleshov 2011: reported in De Vuyst H, Vaccine 2013; 31 Suppl 5: F32
Kyrgyzstan									
Latvia	18-89 yrs	237	19	8.0%	(5.2-12.2)	-			Silins I, Gynecol Oncol 2004; 93: 484
Lithuania	16-64 yrs	332	80	24.1%	(19.8-29.0)	23	6.9%	(4.7-10.2)	Gudleviciene Z, Medicina (Kaunas) 2005; 41: 910
	18-50 yrs	1001	251	25.1%	(22.5-27.9)	-			Kliucinskas M, Gynecol Obstet Invest 2006; 62: 173
	18-81 yrs	277	67	24.2%	(19.5-29.6)	12	4.3%	(2.5-7.4)	Simanaviciene V, J Med Virol 2014
Luxembourg									
Malta									
Monaco									
Montenegro									
Netherlands	30-60 yrs	900	34	3.8%	(2.7-5.2)	-			Boers A, PLoS ONE 2014; 9: e101930
	30-60 yrs	21,245	763	3.6%	(3.3-3.9)	210	1.0%	(0.9-1.1)	Bulkmans NW, Int J Cancer 2004; 110: 94
	31-60 yrs	858	70	8.2%	(6.5-10.2)	-			Hesselink AT, J Clin Microbiol 2013; 51: 2409
	16-68 yrs	3299	146	4.4%	(3.8-5.2)	31	0.9%	(0.7-1.3)	Jacobs MV, Int J Cancer 2000; 87: 221
	18-29 yrs	2065	393	19.0%	(17.4-20.8)	-			Lenselink CH, PLoS ONE 2008; 3: e3743
	30-56 yrs	19,373	766	4.0%	(3.7-4.2)	-			Rijkaart DC, Lancet Oncol 2012; 13: 78
	29-61 yrs	25,196	1021	4.1%	(3.8-4.3)	-			Rijkaart DC, Br J Cancer 2012; 106: 975
	34-54 yrs	2250	121	5.4%	(4.5-6.4)	60	2.7%	(2.1-3.4)	Rozendaal L, J Clin Pathol 2000; 53: 606
	34-54 yrs	114	7	6.1%	(3.0-12.1)	2	1.8%	(0.5-6.2)	Zielinski GD, Br J Cancer 2001; 85: 398
North Macedonia									
Norway	20-44 yrs	222	34	15.3%	(11.2-20.6)	14	6.3%	(3.8-10.3)	Gjøoen K, APMIS 1996; 104: 68
	30-69 yrs	3970	368	9.3%	(8.4-10.2)	53	1.3%	(1-1.7)	Molden T, Cancer Epidemiol Biomarkers Prev 2005; 14: 367
	.-30 yrs	275	85	30.9%	(25.7-36.6)	-			Molden T, Gynecol Oncol 2006; 100: 95
	16-24 yrs	896	232	25.9%	(23.1-28.9)	-			Skjeldestad FE, Acta Obstet Gynecol Scand 2008; 87: 81
Poland	18-59 yrs	799	115	14.4%	(12.1-17.0)	22	2.8%	(1.8-4.1)	Bardin A, Eur J Cancer 2008; 44: 557
Portugal	16-81 yrs	286	30	10.5%	(7.4-14.6)	-			Dutra I, Infect Agents Cancer 2008; 3: 6
	18-67 yrs	425	108	25.4%	(21.5-29.8)	22	5.2%	(3.4-7.7)	Pista A, Clin Microbiol Infect 2011; 17: 941
	18-64 yrs	2172	358	16.5%	(15.0-18.1)	-			Pista A, Int J Gynecol Cancer 2011; 21: 1150
	18-76 yrs	464	79	17.0%	(13.9-20.7)	-			Vieira L, Eur J Microbiol Immunol (Bp) 2013; 3: 61
Republic of Moldova									
Romania	17-57 yrs	801	275	34.3%	(31.1-37.7)	60	7.5%	(5.9-9.5)	Moga MA, Asian Pac J Cancer Prev 2014; 15: 6887
	.-. yrs	164	42	25.6%	(19.5-32.8)	-			Ursu RG, Virol J 2011; 8: 558

COUNTRY	AGE RANGE (YEARS)	ANY HPV PREVALENCE Nº OF WOMEN TESTED	Nº OF WOMEN POSITIVE	%	95% CI	HPV16 PREVALENCE Nº OF WOMEN POSITIVE	%	95% CI	REFERENCES
Russian Federation	15-45 yrs	309	90	29.1%	(24.3-34.4)	23	7.4%	(5-10.9)	Alexandrova YN, Cancer Lett 1999; 145: 43
	15-69 yrs	33,112	8500	25.7%	(25.2-26.1)	-			Bdaizieva 2010: reported in De Vuyst H, Vaccine 2013; 31 Suppl 5: F32
	15-77 yrs	5182	695	13.4%	(12.5-14.4)	-			Goncharevskaya 2011: reported in De Vuyst H, Vaccine 2013; 31 Suppl 5: F32
	16-76 yrs	352	170	48.3%	(43.1-53.5)	62	24.1%	(19.3-29.7)	Komarova 2010: reported in De Vuyst H, Vaccine 2013; 31 Suppl 5: F32
	.-. yrs	8533	1284	15.0%	(14.3-15.8)	-			Kubanov 2005: reported in De Vuyst H, Vaccine 2013; 31 Suppl 5: F32
	16-76 yrs	833	216	25.9%	(23.1-29.0)	59	7.1%	(4.8-10.5)	Rogovskaya SI, Vaccine 2013; 31 Suppl 7: H46
	18-30 yrs	266	75	28.2%	(23.1-33.9)	-			Shargorodskaya 2011: reported in De Vuyst H, Vaccine 2013; 31 Suppl 5: F32
	30-65 yrs	741	73	9.9%	(7.9-12.2)	20	2.7%	(1.8-4.1)	Shipitsyna E, Cancer Epidemiol 2011; 35: 160
	13-19 yrs	177	71	40.1%	(33.2-47.5)	-			Shipulina 2011: reported in De Vuyst H, Vaccine 2013; 31 Suppl 5: F32
San Marino									
Serbia									
Slovakia									
Slovenia	20-64 yrs	4199	451	10.7%	(9.8-11.7)	155	3.7%	(3.2-4.3)	Ucakar V, Vaccine 2012; 30: 116
	20-64 yrs	944	83	8.8%	(7.1-10.8)	-			Ucakar V, J Med Virol 2014; 86: 1772
Spain	.-. yrs	1200	210	17.5%	(15.5-19.8)	-			Bernal M, Infect Agents Cancer 2008; 3: 8
	18-65 yrs	3059	398	13.0%	(11.9-14.2)	76	2.5%	(2-3.1)	Castellsagué X, J Med Virol 2012; 84: 947
	14-75 yrs	847	11	1.3%	(0.7-2.3)	3	0.4%	(0.1-1)	de Sanjose S, Sex Transm Dis 2003; 30: 788
	14-82 yrs	939	69	7.3%	(5.8-9.2)	22	3.1%	(2-4.6)	Dillner J, BMJ 2008; 337: a1754
	.-. yrs	703	55	7.8%	(6.1-10.0)	6	1.3%	(0.6-2.9)	González C, Sex Transm Infect 2006; 82: 260
	18-64 yrs	1956	254	13.0%	(11.6-14.5)	-			Martorell M, Scand J Infect Dis 2010; 42: 549
	18-75 yrs	329	17	5.2%	(3.3-8.1)	6	1.8%	(0.8-3.9)	Muñoz N, Sex Transm Dis 1996; 23: 504
	14-67 yrs	818	88	10.8%	(8.8-13.1)	-			Ortiz M, J Clin Microbiol 2006; 44: 1428
Sweden	32-38 yrs	5772	562	9.7%	(9.0-10.5)	-			Elfström KM, BMJ 2014; 348: g130
	20-63 yrs	295	12	4.1%	(2.3-7.0)	3	1.0%	(0.3-2.9)	Kjellberg L, Am J Obstet Gynecol 1998; 179: 1497
	29-46 yrs	5877	323	5.5%	(4.9-6.1)	99	1.7%	(1.4-2)	Naucler P, N Engl J Med 2007; 357: 1589
	35-50 yrs	117	30	25.6%	(18.6-34.2)	-			Stenvall H, Acta Derm Venereol 2007; 87: 243
	15-49 yrs	617	36	5.8%	(4.2-8.0)	36	5.8%	(4.2-8)	Ylitalo N, Cancer Res 2000; 60: 6027
Switzerland	17-93 yrs	13,349	841	6.3%	(5.9-6.7)	-			Bigras G, Br J Cancer 2005; 93: 575
Tajikistan									
Turkey	.-. yrs	410	35	8.5%	(6.2-11.6)	-			Akcali S, Asian Pac J Cancer Prev 2013; 14: 503
	20-68 yrs	460	24	5.2%	(3.5-7.6)	8	1.7%	(0.9-3.4)	Altun 2011: reported in Vaccarella S, Vaccine 2013; 31 Suppl 6: G32
	18-56 yrs	502	76	15.1%	(12.3-18.5)	6	2.6%	(1.2-5.5)	Bayram A, J Med Virol 2011; 83: 1997
	15-68 yrs	530	95	17.9%	(14.9-21.4)	19	3.6%	(2.3-5.5)	Demir ET, J Med Virol 2012; 84: 1242
	20-67 yrs	310	61	19.7%	(15.6-24.5)	22	7.1%	(4.7-10.5)	Dursun P, BMC Infect Dis 2009; 9: 191
	19-85 yrs	469	64	13.6%	(10.8-17.0)	-			Eren F, Int J Gynaecol Obstet 2010; 109: 235
	15-45 yrs	1344	20	1.5%	(1.0-2.3)	-			Inal MM, Int J Gynecol Cancer 2007; 17: 1266
	15-65 yrs	546	175	32.1%	(28.3-36.1)	-			Kasap B, Eur J Obstet Gynecol Reprod Biol 2011; 159: 168

COUNTRY	AGE RANGE (YEARS)	N° OF WOMEN TESTED	ANY HPV PREVALENCE N° OF WOMEN POSITIVE	%	95% CI	HPV16 PREVALENCE N° OF WOMEN POSITIVE	%	95% CI	REFERENCES
Turkey	-·. yrs	564	19	3.4%	(2.2-5.2)	8	1.4%	(0.7-2.8)	Ozalp SS, J Turk Ger Gynecol Assoc 2012; 13: 8
	16-64 yrs	480	17	3.5%	(2.2-5.6)	-			Özcan ES, J Obstet Gynaecol 2011; 31: 656
	18-62 yrs	206	10	4.9%	(2.7-8.7)	-			Oztürk S, Mikrobiyol Bul 2004; 38: 223
	17-74 yrs	315	62	19.7%	(15.7-24.4)	-			Sahiner F, J Microbiol Methods 2014; 97: 44
	18-76 yrs	380	72	18.9%	(15.3-23.2)	16	4.2%	(2.6-6.7)	Tezcan S, Asian Pac J Cancer Prev 2014; 15: 3997
	30-70 yrs	640	137	21.4%	(18.4-24.7)	-			Yuce K, Arch Gynecol Obstet 2012; 286: 203
Turkmenistan									
Ukraine									
United Kingdom	16-78 yrs	3089	392	12.7%	(11.6-13.9)	136	4.4%	(3.7-5.2)	Cuschieri KS, J Clin Pathol 2004; 57: 68
	17-59 yrs	1818	64	3.5%	(2.8-4.5)	24	1.3%	(0.9-2.0)	Cuzick J, Lancet 1995; 345: 1533
	34-70 yrs	2855	93	3.3%	(2.7-4.0)	3	0.1%	(0.0-0.3)	Cuzick J, Br J Cancer 1999; 81: 554
	30-60 yrs	9709	536	5.5%	(5.1-6.0)	-			Cuzick J, Lancet 2003; 362: 1871
	21-51 yrs	656	89	13.6%	(11.2-16.4)	9	1.4%	(0.7-2.6)	Grainge MJ, Emerging Infect Dis 2005; 11: 1680
	20-49 yrs	813	105	12.9%	(10.8-15.4)	-			Herbert A, J Fam Plann Reprod Health Care 2007; 33: 171
	20-65 yrs	8434	590	7.0%	(6.5-7.6)	24	1.4%	(0.9-2.0)	Hibbitts S, Br J Cancer 2008; 99: 1929
	20-22 yrs	10,890	2244	20.6%	(19.9-21.4)	465	4.3%	(3.9-4.7)	Hibbitts S, J Clin Virol 2014; 59: 109
	25-64 yrs	2404	245	10.2%	(9.0-11.5)	-			Howell-Jones R, Br J Cancer 2010; 103: 209
	20-64 yrs	21,380	2226	10.4%	(10.0-10.8)	320	1.5%	(1.3-1.7)	Kitchener HC, Br J Cancer 2006; 95: 56
	15-64 yrs	6128	444	7.2%	(6.6-7.9)	-			Peto J, Br J Cancer 2004; 91: 942
Uzbekistan	18-40 yrs	2295	869	37.9%	(35.9-39.9)	-			Inamova 2009: reported in De Vuyst H, Vaccine 2013; 31 Suppl 5: F32
***Russia/ Belarus/ Latvia**	15-85 yrs	2454	672	27.4%	(25.7-29.2)	295	12.0%	(10.8-13.4)	Kulmala SM, J Med Virol 2007; 79: 771

yrs: years; HPV: Human Papillomavirus; 95%CI: 95% Confidence Interval

Sources: ICO/IARC Information Centre on HPV and Cancer. Available from: https://hpvcentre.net/index.php[3] (data updated to Dec, 2014).

Table A 2. Studies reporting HPV prevalence in men, by WHO EURO member state

COUNTRY	AGE RANGE (YEARS)	POPULATION	ANATOMIC SITES SAMPLED	N° OF MEN TESTED	ANY HPV PREVALENCE N° OF MEN POSITIVE	%	95% CI	HPV16 PREVALENCE N° OF MEN POSITIVE	%	95% CI	REFERENCES
Albania											
Andorra											
Armenia											
Austria											
Azerbaijan											
Belarus											
Belgium											
Bosnia and Herzegovina											
Bulgaria											
Croatia	- yrs	Family planning clinic attendees	Urethra	79	21	26.6%	(18.1-37.2)	6	7.6%	(3.5-15.6)	Grce M, Anticancer Res 1996; 16: 1039
Cyprus											
Czechia											
Denmark	Mean 23 yrs (18-65)	Male employees and conscripts at military barracks	Coronal sulcus, glans, preputial cavity, scrotum, shaft and perineum	2436	1018	41.8%	(39.8-43.8)	141	5.8%	(4.9-6.8)	Hebnes JB, Sex Transm Dis 2015; 42: 463
	18-29 yrs	Military Conscripts	Glans and corona sulcus	337	114	33.8%	(29.0-39.0)	5	3.0%	(1.3-6.8)	Kjaer SK, Cancer Epidemiol Biomarkers Prev 2005; 14: 1528
Estonia											
Finland	Mean 20 yrs	Voluntary conscripts	Glans, prepuce, corona sulcus, urethral meatus	285	47	16.5%	(12.6-21.2)				Hippeläinen M, Sex Transm Dis 1993; 20: 321
	19-46 yrs	Sexual partners of pregnant women	Urethra	128	29	22.7%	(16.3-30.6)	5	3.9%	(1.7-8.8)	Kero K, J Sex Med 2011; 8: 2522
France											
Georgia											
Germany	16-79 yrs	Blood donors or patients from department of dermatology	Coronal sulcus and glans	530	31	5.8%	(4.2-8.2)	23	4.3%	(2.9-6.4)	Grussendorf-Conen EI, Arch Dermatol Res 1987; 279 Suppl: S73
Greece											
Hungary											
Iceland											
Ireland											
Israel											
Italy	18-68 yrs	Heterosexual men for routine HPV testing	Coronal sulcus, shaft, prepuce, and urethral	378	153	40.5%	(35.6-45.5)	34	9.0%	(6.5-12.3)	Lorenzon L, J Clin Virol 2014; 60: 264
	27-79 yrs	Hospital based controls attending clinic for nongenital complaints	Penis	46	4	8.7%	(3.4-20.3)	2	4.3%	(1.2-14.5)	Nasca MR, Int J Dermatol 2006; 45: 681

COUNTRY	AGE RANGE (YEARS)	POPULATION	ANATOMIC SITES SAMPLED	ANY HPV PREVALENCE: N° OF MEN TESTED	ANY HPV PREVALENCE: N° OF MEN POSITIVE	ANY HPV PREVALENCE: %	ANY HPV PREVALENCE: 95% CI	HPV16 PREVALENCE: N° OF MEN POSITIVE	HPV16 PREVALENCE: %	HPV16 PREVALENCE: 95% CI	REFERENCES
Kazakhstan											
Kyrgyzstan											
Latvia											
Lithuania											
Luxembourg											
Malta											
Monaco											
Montenegro											
Netherlands											
North Macedonia											
Norway											
Poland											
Portugal											
Republic of Moldova											
Romania											
Russian Federation											
San Marino											
Serbia											
Slovakia											
Slovenia											
Spain	24-78 yrs	Husbands of control women	Glans, corona, urethra	168	6	3.6%	(1.3-7.6)	1	0.6%	(0.1-3.3)	Franceschi S, Br J Cancer 2002; 86: 705
Sweden	20-23 yrs	Military conscripts	Urethra	138	12	8.7%	(5.0-14.6)	5	3.6%	(1.6-8.2)	Forslund O, J Clin Microbiol 1993; 31: 1975-9
	18-23 yrs	Army conscripts with normal epithelium	Urethra	66	8	12.1%	(6.3-22.1)	0	0.0%		Kataoka A, J Med Virol 1991; 33: 159
Switzerland											
Tajikistan											
Turkey											
Turkmenistan											
Ukraine											
United Kingdom											
Uzbekistan											
***Croatia, Finland, Germany, Netherlands, Norway, Portugal, Spain, and Sweden**	Median 20 (16-24) yrs	Heterosexual men enrolled in a HPV vaccine trial	Penis	353	-	-	-	13	3.7%	(2.2-6.2)	Vardas E, J Infect Dis 2011; 203: 58

yrs: years; HPV: Human Papillomavirus; 95%CI: 95% Confidence Interval

Sources: ICO/IARC Information Centre on HPV and Cancer. Available from: https://hpvcentre.net/index.php[3] (data updated to Oct, 2015)

Table A 3. Studies reporting HPV prevalence by age in women with normal cervical cytology, by WHO EURO member state

COUNTRY	REFERENCES
Albania	
Andorra	
Armenia	
Austria	
Azerbaijan	
Belarus	
Belgium	Baay MF, Eur J Gynaecol Oncol 2001; 22: 204
	Baay MF, Eur J Cancer 2005; 41: 2704
	Weyn C, Cancer Epidemiol 2013; 37: 457
Bosnia and Herzegovina	
Bulgaria	
Croatia	Grahovac M, Coll Antropol 2007; 31 Suppl 2: 73
Cyprus	
Czechia	Tachezy R, PLoS ONE 2013; 8: e79156
Denmark	Svare EI, Eur J Cancer 1998; 34: 1230
Estonia	
Finland	Leinonen M, Int J Cancer 2008; 123: 1344
France	Beby-Defaux A, J Med Virol 2004; 73: 262
	Dalstein V, Int J Cancer 2003; 106: 396
	Monsonego J, Gynecol Oncol 2005; 99: 160
	Monsonego J, Int J Cancer 2011; 129: 691
	Pannier-Stockman C, J Clin Virol 2008; 42: 353
	Vaucel E, Arch Gynecol Obstet 2011; 284: 989
Georgia	
Germany	Iftner T, J Med Virol 2010; 82: 1928
Greece	Agorastos T, Eur J Cancer Prev 2004; 13: 145
	Argyri E, BMC Infect Dis 2013; 13: 53
Hungary	
Iceland	
Ireland	Keegan H, Br J Biomed Sci 2007; 64: 18
Israel	
Italy	Carozzi F, Br J Cancer 2000; 83: 1462
	Centurioni MG, BMC Infect Dis 2005; 5: 77
	Panatto D, BMC Infect Dis 2013; 13: 575
	Ronco G, Eur J Cancer 2005; 41: 297
	Tornesello ML, J Med Virol 2006; 78: 1663
Kazakhstan	
Kyrgyzstan	
Latvia	
Lithuania	Gudleviciene Z, Medicina (Kaunas) 2005; 41: 910
Luxembourg	
Malta	
Monaco	

COUNTRY	REFERENCES
Montenegro	
Netherlands	Bulkmans NW, Int J Cancer 2004; 110: 94
	Jacobs MV, Int J Cancer 2000; 87: 221
	Rozendaal L, J Clin Pathol 2000; 53: 606
North Macedonia	
Norway	Gjøoen K, APMIS 1996; 104: 68
Poland	Bardin A, Eur J Cancer 2008; 44: 557
Portugal	Pista A, Int J Gynecol Cancer 2011; 21: 1150
Republic of Moldova	
Romania	
Russian Federation	Alexandrova YN, Cancer Lett 1999; 145: 43
San Marino	
Serbia	
Slovakia	
Slovenia	
Spain	Castellsagué X, J Med Virol 2012; 84: 947
	de Sanjose S, Sex Transm Dis 2003; 30: 788
	Dillner J, BMJ 2008; 337: a1754
	González C, Sex Transm Infect 2006; 82: 260
	Muñoz N, Sex Transm Dis 1996; 23: 504
Sweden	Naucler P, N Engl J Med 2007; 357: 1589
	Ylitalo N, Cancer Res 2000; 60: 6027
Switzerland	Bigras G, Br J Cancer 2005; 93: 575
Tajikistan	
Turkey	Altun 2011: reported in Vaccarella S, Vaccine 2013; 31 Suppl 6: G32
	Demir ET, J Med Virol 2012; 84: 1242
	Dursun P, BMC Infect Dis 2009; 9: 191
Turkmenistan	
Ukraine	
United Kingdom	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
Uzbekistan	

Sources: ICO/IARC Information Centre on HPV and Cancer. Available from: https://hpvcentre.net/index.php[3] (data updated to Dec, 2014).

Table A 4. Rates (per 100,000) of cervical cancer in 2020, by WHO EURO member state

POPULATION	INCIDENCE			MORTALITY		
	ANNUAL NUMBER OF NEW CASES		INCIDENCE ASR (W)*	ANNUAL NUMBER OF NEW DEATHS		MORTALITY ASR (W)*
Albania	133	[92.4-191.4]	6.6	74	[53.0-103.3]	3.3
Andorra	-	-	-	-	-	-
Armenia	178	[166.5-190.3]	7.8	115	[78.8-167.9]	4.6
Austria	385	[298.5-496.5]	5.3	170	[132.2-218.6]	1.8
Azerbaijan	425	[374.5-482.3]	6.7	256	[220.1-297.8]	4
Belarus	835	[777.5-896.8]	11.4	358	[316.1-405.4]	4.2
Belgium	639	[562.4-726.1]	7.7	236	[189.2-294.4]	2
Bosnia and Herzegovina	312	[253.1-384.6]	14.3	153	[127.9-183.0]	5.2
Bulgaria	1009	[863.5-1179.0]	18.0	503	[409.0-618.6]	7.1
Croatia	336	[271.9-415.2]	10.1	150	[115.8-194.3]	3.2
Cyprus	46	[30.8-68.7]	5.6	33	[20.7-52.5]	2.9
Czechia	769	[654.5-903.5]	9.3	398	[338.6-467.8]	3.6
Denmark	384	[322.7-456.9]	10.2	140	[79.8-245.6]	2.2
Estonia	196	[145.7-263.7]	18.5	62	[43.8-87.7]	4.3
Finland	185	[133.7-256.1]	5.2	67	[50.8-88.3]	1.1
France	3379	[2994.8-3812.5]	7.0	1452	[1320.9-1596.1]	2.2
Georgia	327	[305.8-349.6]	10.6	204	[160.4-259.4]	5.9
Germany	4666	[4366.3-4986.3]	7.6	2075	[1939.0-2220.5]	2.2
Greece	697	[530.0-916.6]	8.0	282	[226.4-351.2]	2.2
Hungary	1251	[1025.9-1525.5]	17.2	482	[414.6-560.4]	4.9
Iceland	16	[9.6-26.6]	8.3	5	[1.9-12.9]	1.9
Ireland	342	[252.9-462.6]	10.7	106	[73.0-154.0]	2.8
Israel	245	[194.0-309.3]	4.9	121	[86.8-168.8]	2
Italy	3152	[2648.0-3751.9]	6.9	1011	[884.5-1155.6]	1.6
Kazakhstan	1777	[1677.0-1882.9]	15.7	834	[769.0-904.4]	7.2
Kyrgyzstan	498	[392.0-632.7]	15.4	286	[234.6-348.6]	9.1
Latvia	267	[197.5-361.0]	18.4	136	[98.6-187.5]	6.8
Lithuania	412	[351.2-483.3]	18.7	193	[160.1-232.7]	6.7
Luxembourg	24	[10.1-57.1]	5.2	10	[4.8-20.9]	1.8
Malta	13	[6.6-25.8]	3.7	5	[1.9-13.3]	1.1
Monaco	-	-	-	-	-	-
Montenegro	113	[90.9-140.5]	26.2	54	[38.5-75.8]	10.5
Netherlands	773	[670.4-891.3]	6.9	253	[202.2-316.6]	1.4
North Macedonia	113	[78.8-162.0]	7.5	62	[45.7-84.1]	3.6
Norway	397	[336.3-468.6]	12.0	96	[57.5-160.4]	1.7
Poland	3862	[3582.6-4163.2]	12.3	2137	[2012.2-2269.5]	5.9
Portugal	865	[705.9-1060.0]	10.7	379	[323.2-444.5]	3.2
Republic of Moldova	480	[375.3-614.0]	16.3	248	[206.1-298.4]	7.4
Romania	3380	[3019.0-3784.1]	22.6	1805	[1653.6-1970.2]	9.6
Russian Federation	15,308	[14910.1-15716.5]	14.1	7550	[7313.9-7793.7]	6.1
San Marino	-	-	-	-	-	-
Serbia	1205	[1024.7-1417.0]	18.7	634	[559.1-718.9]	7.9

COUNTRY	INCIDENCE			MORTALITY		
	ANNUAL NUMBER OF NEW CASES		INCIDENCE ASR (W)*	ANNUAL NUMBER OF NEW DEATHS		MORTALITY ASR (W)*
Slovakia	698	[638.6-762.9]	16.6	284	[233.3-345.7]	5.3
Slovenia	104	[65.1-166.3]	6.7	54	[34.8-83.8]	2.4
Spain	1957	[1697.1-2256.8]	5.4	814	[728.8-909.1]	1.6
Sweden	656	[585.4-735.1]	10.4	200	[159.6-250.6]	1.8
Switzerland	236	[166.4-334.7]	3.4	100	[74.2-134.7]	1
Tajikistan	322	[262.7-394.7]	8.2	190	[159.7-226.0]	5.2
Turkey	2532	[2042.5-3138.9]	4.8	1245	[1101.3-1407.5]	2.2
Turkmenistan	461	[385.7-551.0]	14.9	265	[226.6-310.0]	8.9
Ukraine	4756	[4386.8-5156.3]	14.3	2089	[1938.8-2250.9]	5.6
United Kingdom	3791	[3562.9-4033.7]	9.9	1121	[1035.8-1213.2]	1.9
Uzbekistan	1887	[1616.8-2202.3]	11.0	1103	[969.5-1254.9]	6.7

ASR: Age-standardised rate, W: World
*Rates per 100,000 women
Sources: Global Cancer Observatory 2020[4]

Table A 5. Status of HPV National Immunisation Programmes in 2020, by WHO EURO member state.

COUNTRY OR TERRITORY	YEAR OF INTRODUCTION	STRATEGY/ CURRENT AGE TARGETS IN YEARS FEMALE, MALE					DELIVERY
		PRIMARY		CATCH-UP			
		FEMALES	MALES	FEMALES	MALES		PRIMARY
Albania	Not in the national Immunisation scheadule						
Andorra	2014	12	-	-	-		Sch (7th grade)
Armenia	2017	13	-	-	-		Health C.
Austria	2014	9	9	9-15	9-15		Sch (4th grade) Health C. (Catch-up)
Azerbaijan	Not in the national Immunisation scheadule						
Belarus	Not in the national Immunisation scheadule						
Belgium							
Brussels	2007	13-14	13-14 (2019)	-	-		Sch. (2nd year 2ry sch.)
Flanders	2007	12	12 (2019)	-	-		Sch. (1st year 2ry sch.)
Wallonia	2007	13-14	13-14 (2019)	-	-		Sch. (2nd year 2ry sch.)
Bosnia & Herzegovina	Not in the national Immunisation scheadule						
Bulgaria	2012	12-13	-	-	-		Health C.
Croatia	2016	14	14				Sch (8th grade)
Cyprus	2016	12-13	-	-	-		Sch. (1st year 2ry sch.)
Czechia	2012	13	13 (2018)	-	-		Health C.
Denmark	2007	12	12-14 (2019)	13-17	15-17 (MSM<25)		Health C.
Estonia	2018	12-14	-	-	-		Sch.
Finland	2013	10-12	10-12 (2020)		13-16		Sch (5th, 6th grade) Sch (7th-9th grade - Catch-up)
France	2007	11-14	11-14 (2020)	15-19	15-19		Health C.
Georgia	2019	10-12	-	-	-		Health C.
Germany	2007	9-14	9-14 (2019)	<18	<18		Health C.
Greece	2008	11-12	-	<18	-		Health C.
Hungary	2014	12	12 (2020)	-	-		Sch (7th grade)

COUNTRY OR TERRITORY	YEAR OF INTRODUCTION	STRATEGY/ CURRENT AGE TARGETS IN YEARS FEMALE, MALE				DELIVERY
		PRIMARY		CATCH-UP		
		FEMALES	MALES	FEMALES	MALES	PRIMARY
Iceland	2011	12	-	-	-	Sch (7th grade)
Ireland	2010	12	12 (2019)	-	-	Sch. (1st year 2ry sch.)
Israel	2013	13	13 (2015)	<18	<18	Sch (8th grade) Sch. & Health C. (Catch-up)
Italy	2008	11	11 (2018)	Variable by region	Variable by region	Variable by region
Kazakhstan	Not in the national Immunisation scheadule					
Kyrgyzstan	Not in the national Immunisation scheadule					
Latvia	2010	12	-	-	-	Health C.
Lithuania	2016	11	-	-	-	Health C.
Luxemboourg	2008	9-13	9-13 (2019)	-	-	Health C.
Malta	2013	12	-	-	-	Health C. by invitation
Monaco	2011	11-14	-	<20		Health C.
Montenegro	Not in the national Immunisation scheadule					
Netherlands	2010	12	12 (2020)			Health C.
North Macedonia	2009	12				Sch.
Norway	2009	12	12 (2018)	<20		Sch (7th grade)
Poland	Not in the national Immunisation scheadule					
Portugal	2008	10	10 (2020)			Health C.
Republic of Moldova	2018	10				Sch.
Romania	2020	11-14				Health C.
Russian Federation	Not in the national Immunisation scheadule					
San Marino	2008	11-14				Health C.
Serbia	Not in the national Immunisation scheadule					
Slovakia	Not in the national Immunisation scheadule					
Slovenia	2009	11				Sch (6th grade)
Spain	2007	12				Sch. & Health C.
Sweden	2010	10-12	10-12 (2020)	<18		Sch (5th grade)
Switzerland	2008	11-14	11-14 (2016)	15-19	15-19	Sch. & Health C.
Tajikistan	Not in the national Immunisation scheadule					
Turkey	Not in the national Immunisation scheadule					
Turkmenistan	2016	9	9			Sch. & Health C.
Ukraine	Not in the national Immunisation scheadule					
United Kingdom	2008	12-13	12-13 (2019)	<26	<26 (MSM<46)	Sch (8th grade)
Uzbekistan	2019	9				Sch.

Health C: health centre; Sch: school; MSM: Men who have sex with men
a: Funded vaccination programmes
Source: World Health Organization (WHO). Introduction of HPV (Human Papilloma Virus) vaccine. Available from: https://Immunisationdata.who.int/[33]

Table A 6. Female HPV vaccine coverage estimates in 2019 and 2020 in countries with female HPV National Immunisation Programmes, by WHO EURO member state.

POPULATION	PROGRAMME PERFORMANCE COVERAGE				COVERAGE BY AGE 15			
	FIRST DOSE		FINAL DOSE		FIRST DOSE		FINAL DOSE	
	2019	2020	2019	2020	2019	2020	2019	2020
Andorra	64%[a]	77%[a]	64%	77%	-	-	-	-
Armenia	17%	10%	7%	8%	-	7%	-	2%
Austria	-	-	-	-	-	-	-	-
Belgium[b]	71%	-	67%	-	71%	71%	67%	67%
Bulgaria	6%	3%	4%	2%	9%	12%	6%	8%
Croatia	-	-	-	-	-	-	-	-
Cyprus	73%[c]	-	64%[b]	-	56%	58%	59%	64%
Czechia	-	-	-	-	-	-	-	-
Denmark	79%	84%[d]	62%	70%[d]	85%[d]	86%[d]	75%[d]	79%[d]
Estonia	55%	61%	54%[e]	55%[e]	60%	59%	48%	59%[f]
Finland	60%[a]	60%[g]	-	-	-	-	-	-
France	35%[h]	41%[h]	33%[h]	33%[a]	35%[i]	41%[i]	33% [i]	33%[b]
Georgia	38%[k]	19%	11%[k]	22%	-	-	-	-
Germany[b]	58%	58%	43%	43%	58%	58%	43%	43%
Greece	-	-	-	-	-	-	-	-
Hungary	86%	-	78%	-	72%	71%	72%	71%
Iceland	94%	94%	93%	91%	94%	90%	88%	88%
Ireland	85%[l]	60%[l]	69%[l]	77%[l]	66%	70%	60%	64%
Israel	58%	61%	54%	55%	55%	55%	50%	52%
Italy	61%[e]	45%[m]	52%[e]	27%[m]	66%[f]	65%[f]	62%[f]	60%[f]
Latvia	54%	61%	51%	57%	43%	49%	39%	40%
Lithuania	64%[l]	62%[l]	66%[l]	68%[l]			55%	35%
Luxembourg[b]	37%	-	14%	-	60%	60%	43%	43%
Malta	86%	97%[n]	81%	85%	83%	85%	82%	84%
Monaco	-	-	-	-	-	-	-	-
Netherlands	63%[e]	63%[b]	53%[q]	63%[q]	51%	61%	43%[j]	52%
North Macedonia	45%[b]	45%	40%[b]	30%	44%	44%	44%	38%
Norway	93%	95%	91%	90%	90%	91%	87%	88%
Portugal	93%[b]	93%[b]	81%[n]	78%[n]	91%[n]	96%[n]	95%[n]	95%[n]
Republic of Moldova	49%[o]	44%	31%	40%	-	-	-	-
Romania	-	-	-	-	-	-	-	-
San Marino	48%	38%	50%	50%	36%	25%	32%	20%
Slovenia	59%[a]	59%[a]	59%[n]	59%[n]	40%[a]	40%[a]	40%	40%
Spain	84%	84%[b]	79%[e]	79%[b]	85%[f]	90%[f]	80%[f]	80%[f]
Sweden	86%[g]	89%[g]	80%[n]	82%[n]	81%[n]	86%[n]	75%[n]	80%[n]
Switzerland[p]	64%	67%	59%	63%	64%	67%	59%	63%
Turkmenistan	99%[r]	99%[br]	99%[r]	99%[s]	-	-	-	-
United Kingdom	85%	85%	82%	64%	84%	84%	81%	81%
Uzbekistan	97%	99%	-	100%	-	-	-	-

a Estimate based on reported official coverage for the final dose. Coverage may be underestimated
b Estimate extrapolated from previous years.
c Denominator as reported by national authorities (Government Controlled Area).
d Estimate based on national vaccination registry birth cohort data.
e Proxy estimate based on reported data by age 13 (registry).
f Proxy estimate based on reported data by age 15 (registry).
g Estimate based on reported coverage from the national vaccination registry.
h Proxy estimate based on cumulative coverage by age 15.
i Proxy estimate based on estimated coverage by age 15. Estimate based on health insurance data reported by national government as national coverage estimate.
j Proxy estimate based on reported coverage by age 16 (health insurance data).
k Reflects population vaccinated before the implementation of the HPV programme (pilot/demo projects).
l First and final dose correspond to different cohorts (school year/campaigns).
m Proxy estimate based on reported data by age 12 (registry).
n Estimate based on reported official coverage.
o Estimate based on interpolation.
p Estimate based on survey data. Females 16 year of age at time of the survey.
q Proxy estimate based on reported coverage by age 14 (registry).
r Proxy estimate based on reported data for both sexes together. Coverage over 100%. Truncated to 99%. May indicate problems with the accuracy of data.
s Estimate based on reported official coverage for both sexes together.
Source: World Health Organization (WHO). Introduction of HPV (Human Papilloma Virus) vaccine. Available from: https://Immunisationdata.who.int/[33]

Table A 7. Male HPV vaccine coverage estimates in 2019 and 2020 in countries with male HPV National Immunisation Programmes, by WHO EURO member state.

POPULATION	PROGRAMME PERFORMANCE COVERAGE				COVERAGE BY AGE 15			
	FIRST DOSE		FINAL DOSE		FIRST DOSE		FINAL DOSE	
	2019	2020	2019	2020	2019	2020	2019	2020
Austria	-	-	-	-	-	-	-	-
Belgium	-	-	-	-	-	-	-	-
Croatia	-	-	-	-	-	-	-	-
Czechia	-	-	-	-	-	-	-	-
Denmark[a]	65%	62%		41%	-	-	-	-
Finland	-	-	-	-	-	-	-	-
Germany	-	-	-	-	-	-	-	-
Hungary	-	-	-	-	-	-	-	-
Ireland[b]	74%	58%	-	72%				
Israel	55%	58%	48%	48%	49%	55%	45%	47%
Italy	52%[c]	38%[d]	43%[d]	22%[d]	21%[e]	23%[e]	18%[e]	20%[e]
Luxemboourg	-	-	-	-	-	-	-	-
Norway	92%	94%	88%	88%	-	-	-	-
Portugal	-	-	-	38%[f]	-	-	-	-
Sweden	-	78%[g]	-	-	-	-	-	-
Switzerland[h]	20%	41%	17%	37%	20%	41%	17%	37%
Turkmenistan	99%[i]	99%[ij]	99%[i]	99%[k]	-	-	-	-
United Kingdom	-	53%	-	-	-	-	-	-

a Estimate based on national vaccination registry birth cohort data.
b First and final dose correspond to different cohorts (school year/campaigns)
c Proxy estimate based on reported data by age 13 (registry).
d Proxy estimate based on reported data by age 12 (registry).
e Estimate based on reported coverage by age 15 (registry).f Estimate based on reported official coverage.
g Estimate based on reported coverage from the national vaccination registry.
h Estimate based on national survey. Males who were 16 at the age of the interview.
i *Proxy estimate based on reported data for both sexes together. Coverage over 100%. Truncated to 99%. May indicate problems with the accuracy of data.
j Estimate extrapolated from previous years.
k Estimate based on reported official coverage for both sexes together.
Source: World Health Organization (WHO). Introduction of HPV (Human Papilloma Virus) vaccine. Available from: https://Immunisationdata.who.int/[33]

Table A 8. Characteristics of public cervical cancer screening recommendations in 2020, by WHO EURO member state.

POPULATION	YEAR OF MODIFICATION	PERSONAL INVITATION	PRIMARY TEST	TARGET AGES	SCREENING INTERVAL	TRIAGE TEST	SELF-SAMPLING
Albania	2019	Yes	HPV test	40-50	5	No	Yes
	The HPV-based national screening programme started in Tirana district and gradually expands over 3 years through the country						
Andorra	No public screening policy						
Armenia	2007	No	Cytology	30-60	3	No	No
Austria	1970	No	Cytology	>=18	1	No	No
Azerbaijan	No public screening policy						
Belarus	2019	No	Cytology	>=18	2	No	No
	Planing transition to HPV-based screening in the coming one or two years						
Belgium							
Flemish region	2013	Yes	Cytology	25-64	3	Yes (HPV test)	No
Walloon region	1992	No	Cytology	25-64	3	Yes (HPV test)	No
	Belgium is planning to transition from cytology to HPV screening (Approved in March 2020. Implementation plan 2 years). The new recommendations will include cytology every 3 years for women aged 25-29 years, and HPV test every 5 years for women aged 30-64 years.						
Bosnia and Herzegovina	-	No	Cytology	25-60	3	Yes (HPV test)	No
Bulgaria	1990	No	Cytology	30-40	3	No	No
Croatia	2012	No	Cytology	25-64	3	No	No
Cyprus	-	No	Cytology	>=18	-	-	No
Czechia	2014	Yes	Cytology	25-60	1	Yes (HPV test)	No
Denmark	2012	Yes	Cytolo	23-49	3	Yes (HPV test)	Yes (underscreen)
			Cytology	50-59	5	Yes (HPV test)	
			HPV test	60-64	5	Yes (HPV genot/ Cyto)	
	There is a national plan for a controlled, differentiated implementation of HPV screening to enable a comparison of cytology and HPV screening in Denmark. This differentiated HPV implementation will being January 1st, 2021. It includes the following recommendations: Women aged 23-29 years - Cytology every 3 years; Women aged 30-49 years: Cytology every 3 years or HPV test every 5 years; Women aged 50-59 years: Cytology or HPV test every 5 years, Women aged 60–64 years - exit" HPV DNA test followed with continued surveillance for HPV-positive women.						
Estonia	2015	Yes	Cytology	30-59	5	Yes (HPV test)	No
Finland	2017	Yes	Cytology or HPV test	30-60	5	No	Yes (underscreen)
France	2020	Yes	Cytology	25-29	3	Yes (HPV test)	Yes (underscreen)
			HPV test	30-65	5	Yes (Cytology)	
Georgia	2011	Yes	Cytology	25-60	3	No	No
Germany	2020	Yes	Cytology	20-34	1	Yes (HPV test)	No
			Cytology + HPV test	35-65	3		
Greece	2018	No	Cytology	>=18	1	-	No
			or HPV test	21-60	5		
	Pilot study with self-sampling in underserved rural areas of Northern Greece						
Hungary	2003	Yes	Cytology	25-65	3	-	No
Iceland	2015	Yes	Cytology	23-65	3	Yes (HPV test)	No
Ireland	2020	Yes	HPV test	25-29	3	Yes (Cytology)	No
			HPV test	30-65	5		
Israel	2019	No	Cytology	30-64	3	No	No

POPULATION	YEAR OF MODIFICATION	PERSONAL INVITATION	PRIMARYTEST	TARGET AGES	SCREENING INTERVAL	TRIAGE TEST	SELF-SAMPLING
Italy							
Piemonte	2013	Yes	Cytology	25-29	3	Yes (HPV test)	No
			HPV test	30-64	5	Yes (Cytology)	
Trento	2017	Yes	Cytology	25-29	3	Yes (HPV test)	No
			HPV test	30-64	5	Yes (Cytology)	
Veneto	2014	Yes	Cytology	25-29	3	Yes (HPV test)	No
			HPV test	30-64	5	Yes (Cytology)	
	Pilot study with self-sampling in women residing in a specific area in Verona						
Liguria	2013	Yes	Cytology	25-29	3	Yes (HPV test)	No
			HPV test	30-64	5	Yes (Cytology)	
Emilia Romagna	2013	Yes	Cytology	25-29	3	Yes (HPV test)	No
			HPV test	30-64	5	Yes (Cytology)	
Toscana	2013	Yes	Cytology	25-34	3	Yes (HPV test)	No
			HPV test	35-64	5	Yes (Cytology)	
Umbria	2013	Yes	Cytology	25-34	3	Yes (HPV test)	No
			HPV test	35-64	5	Yes (Cytology)	
Lazio	2017	Yes	Cytology	25-29	3	Yes (HPV test)	No
			HPV test	30-64	5	Yes (Cytology)	
Abbruzzo	2015	Yes	Cytology	25-29	3	Yes (HPV test)	No
			HPV test	30-64	5	Yes (Cytology)	
Campania	1996	Yes	Cytology	25-64	3	-	No
Friuli-Venezia Giulia	1996	Yes	Cytology	25-64	3	-	No
Lombardia	1996	Yes	Cytology	25-64	3	-	No
Marche	1996	Yes	Cytology	25-64	3	-	No
Molise	1996	Yes	Cytology	25-64	3	-	No
Val d'Aoste	1996	Yes	Cytology	25-64	3	-	No
Puglia	2018	Yes	Cytology	25-29	3	Yes (HPV test)	No
			HPV test	30-64	5	Yes (Cytology)	
Basilicata	2012	Yes	Cytology	25-34	3	Yes (HPV test)	No
			HPV test	35-64	5	Yes (Cytology)	
Calabria	2016	Yes	Cytology	25-29	3	Yes (HPV test)	No
			HPV test	30-64	5	Yes (Cytology)	
Sicilia	2017	Yes	Cytology	25-33	3	Yes (HPV test)	No
			HPV test	34-64	5	Yes (Cytology)	
Sardegna	2018	Yes	Cytology	25-29	3	Yes (HPV test)	No
			HPV test	30-64	5	Yes (Cytology)	
Kazakhstan	2018	Yes	Cytology	30-70	4	No	No
Kyrgyzstan	No public screening policy						
Latvia	2009	Yes	Cytology	25-69	3	No	No
Lithuania	2008	Yes	Cytology	25-60	3	No	No
Luxembourg	No public screening policy						
Malta	2016	Yes	Cytology	25-49	3	Yes (HPV test)	No
			Cytology	50-64	5	Yes (HPV test)	
Monaco	-	No	Cytology	21-65	3	Yes (HPV test)	No
Montenegro	2018	Yes	HPV test	30-64	5	-	No

POPULATION	YEAR OF MODIFICATION	PERSONAL INVITATION	PRIMARYTEST	TARGET AGES	SCREENING INTERVAL	TRIAGE TEST	SELF-SAMPLING
Netherlands	2017	Yes	HPV test	30-60	5	Yes (Cytology)	Yes
North Macedonia	2006	Yes	Cytology	24-60	3	Yes (HPV test)	No
Norway	2019	Yes	Cytology	25-33	3	Yes (HPV test)	
			HPV test	34-69	5	-	
Poland	2016	No	Cytology	25-59	3	No	No
Portugal							
ARS Centro	2019	Yes	HPV test	25-64	5	Yes (Cytology)	No
	Pilot study with self-sampling in underscreened women						
ARS Alentejo	2020	Yes	HPV test	25-64	5	Yes (Cytology)	No
ARS Norte	2017	Yes	HPV test	25-64	5	Yes (Cytology)	No
ARS Lisboa	2017	Yes	HPV test	25-64	5	Yes (Cytology)	No
Madeira	2010	Yes	Cytology	25-64	3	Yes (HPV test)	No
	Plans implementation of a population based Cervical Cancer Programme using HPV as primary test each 5 years						
Azores	-	-	Cytology	25-64	3	-	No
	In 2020 iniciated the transition to HPV as primary test.						
Algarve	2019	Yes	HPV test	25-64	5	Yes (Cytology)	No
Republic of Moldova	2017	No	Cytology	25-61	3	-	No
Romania	2012	No	Cytology	25-64	5	-	No
Russian Federation	2019	No	Cytology	18-64	3	-	No
San Marino	2006	Yes	Cytology	25-30	3		No
			HPV tes	31-65	5		
Serbia	2013	Yes	Cytology	25-64	3	Yes (HPV test)	No
Slovakia	2020	No	Cytology	23-64	3	Yes (HPV test)	No
Slovenia	2011	Yes	Cytology	20-64	3	Yes (HPV test)	No
Spain							
Andalusia	-	No	Cytology	25-65	3	Yes (HPV test)	No
Aragon	2019	No	Cytology	25-34	3	Yes (HPV test)	No
			HPV test	35-65	5	Yes (Cytology)	
Asturias	2017	No	Cytology	25-65	3	Yes (HPV test)	No
Balearic islands	2004	No	Cytology	25-64	3	No	No
Canary islands	2013	No	Cytology	25-65	3	-	No
Cantabria	2015	No	Cytology	25-65	3	Yes (HPV test)	No
Castilla-La Mancha	2019	Yes	Cytology	25-34	3	-	No
			HPV test	35-64	5		
Castile and León	2008	Yes	Cytology	25-34	3	Yes (HPV test)	No
			Cytology + HPV test	35-65	5	-	
Catalonia	2019	Yes	Cytology	25-29	3	Yes (HPV test)	No
			zHPV test	30-65	5	Yes (Cytology)	
	Pilot study with self-sampling						
Valencian Community	2020	Yes	Cytology	20-65	3	Yes (HPV test)	No
Extremadura	2017	No	Cytology	20-65	3	Yes (HPV test)	No
Galicia	2019	Yes	Cytology	25-34	3	Yes (HPV test)	No
			HPV test	35-65	5	Yes (Cytology)	
	Pilot study with self-sampling						

POPULATION	YEAR OF MODIFICATION	PERSONAL INVITATION	PRIMARYTEST	TARGET AGES	SCREENING INTERVAL	TRIAGE TEST	SELF-SAMPLING
La Rioja	2018	Yes	Cytology	25-65	3	Yes (HPV test)	No
Community of Madrid	2019	No	Cytology	25-34	3	Yes (HPV test)	No
			HPV test	35-65	5	Yes (Cytology)	
Region of Murcia	2012	No	Cytology	25-65	3	No	No
Navarre	2021	Yes	Cytology	25-29	3	Yes (HPV test)	No
			HPV test	30-65	5		
Basque country	2018	Yes	Cytology	25-34	3	Yes (HPV test)	No
			HPV test	35-65	5		
Ceuta	-	No	Cytology	25-65	3	-	No
Melilla	-	No	Cytology	25-65	3	-	No
Sweden	2015	Yes	Cytology	25-29	3	Yes (HPV test)	Yes (underscreen)
			HPV test	30-50	3	Yes (Cytology)	
			HPV test	51-70	7	Yes (Cytology)	
Switzerland	2018	No	Cytology	21-29	3	Yes (HPV test)	No
			Cytology or HPV test	30-70	3	Yes (HPV test)	
Tajikistan	No public screening policy						
Turkey	2014	Yes	Cytology or HPV test	30-65	5	Yes (HPV test/ Cytology)	No
Turkmenistan	2018	No	Cytology	21-69	3	No	No
Ukraine	2014	No	Cytology	18-65	3	No	No
United Kingdom							
England	2020	Yes	HPV test	25-49	3	Yes (Cytology)	No
			HPV test	50-64	5	Yes (Cytology)	
	Pilot study with self-sampling in underscreened women living in selected areas in London						
Northern Ireland	2011	Yes	Cytology	25-49	3	Yes (HPV test)	No
			Cytology	50-64	5	Yes (HPV test)	
Scotland	2020	Yes	HPV test	25-64	5	Yes (Cytology)	No
Walles	2019	Yes	HPV test	25-49	3	Yes (Cytology)	No
			HPV test	50-64	5	Yes (Cytology)	
Uzbekistan	No public screening policy						

HPV: Human papillomavirus
Official cervical cancer screening recommendations (either as a law, or a governmental regulation, decision, directive, or recommendation). Countries with no identifiable official recommendations are considered to have no screening programmes.
Source: Adapted from Bruni, Serrano et al. Submitted

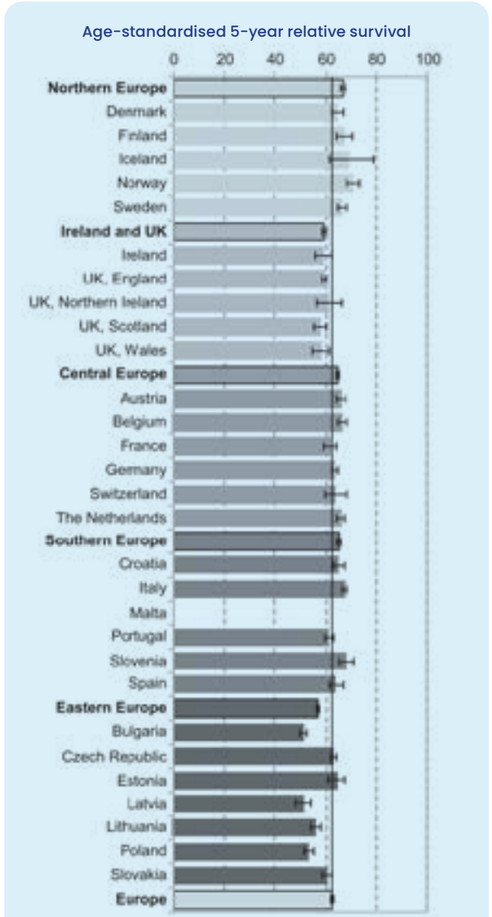
Table A 9. Cervical cancer screening coverage estimates in women 25–65 years in 2019, by screening interval and by WHO EURO member state.

	LAST 1 YEAR		LAST 3 YEAR		LAST 5 YEAR		EVER IN LIFETIME	
POPULATION	%	(95%CI)	%	(95%CI)	%	(95%CI)	%	(95%CI)
Albania	6%	(5-8)	33%	(28-37)	49%	(43-56)	63%	(55-72)
Andorra	61%	(56-66)	67%	(61-73)	70%	(64-77)	73%	(66-81)
Armenia	15%	(14-17)	26%	(23-28)	31%	(29-33)	37%	(35-39)
Austria	57%	(55-59)	84%	(81-87)	88%	(85-92)	93%	(89-96)
Azerbaijan	8%	(6-9)	9%	(7-10)	9%	(8-10)	10%	(9-10)
Belarus	34%	(28-39)	66%	(61-71)	79%	(75-82)	89%	(87-92)
Belgium	35%	(33-37)	71%	(68-74)	78%	(76-81)	85%	(83-87)
Bosnia and Herzegovina	3%	(3-4)	14%	(12-15)	26%	(23-28)	36%	(31-42)
Bulgaria	24%	(22-26)	56%	(53-59)	63%	(61-66)	71%	(68-73)
Croatia	47%	(45-49)	79%	(77-81)	86%	(84-89)	93%	(90-97)
Cyprus	32%	(29-35)	69%	(65-73)	76%	(72-79)	83%	(80-86)
Czechia	53%	(50-57)	71%	(66-75)	79%	(74-84)	97%	(93-100)
Denmark	20%	(18-22)	57%	(52-61)	73%	(68-77)	86%	(81-91)
Estonia	27%	(25-29)	48%	(45-50)	54%	(52-56)	83%	(81-84)
Finland	17%	(16-17)	51%	(49-53)	85%	(81-88)	94%	(91-98)
France	31%	(28-35)	59%	(57-61)	76%	(75-78)	94%	(92-95)
Georgia	8%	(5-11)	15%	(13-17)	19%	(17-20)	22%	(21-24)
Germany	60%	(58-62)	81%	(78-84)	87%	(83-90)	92%	(88-96)
Greece	52%	(48-56)	80%	(74-85)	85%	(80-90)	91%	(85-96)
Hungary	44%	(42-46)	74%	(70-77)	83%	(79-87)	92%	(87-97)
Iceland	28%	(26-31)	68%	(67-70)	81%	(80-83)	94%	(92-96)
Ireland	27%	(21-33)	63%	(56-69)	78%	(72-84)	92%	(87-98)
Israel	23%	(21-26)	45%	(41-49)	53%	(49-58)	63%	(59-67)
Italy	46%	(42-51)	79%	(74-84)	86%	(81-91)	92%	(87-97)
Kazakhstan	11%	(10-12)	31%	(29-33)	57%	(54-60)	65%	(59-71)
Kyrgyzstan	8%	(4-13)	20%	(15-26)	30%	(24-36)	36%	(29-42)
Latvia	12%	(12-13)	40%	(38-42)	56%	(53-59)	90%	(86-93)
Lithuania	33%	(31-34)	71%	(68-75)	79%	(75-83)	87%	(81-92)
Luxembourg	62%	(59-66)	83%	(79-87)	86%	(82-90)	89%	(86-93)
Malta	40%	(35-44)	68%	(62-74)	79%	(75-83)	90%	(87-92)
Monaco	42%	(35-49)	65%	(57-74)	75%	(66-84)	85%	(75-95)
Montenegro	10%	(9-12)	27%	(24-30)	38%	(32-43)	57%	(48-66)
Netherlands	37%	(31-43)	57%	(51-63)	66%	(59-72)	97%	(94-100)
North Macedonia	23%	(17-30)	50%	(42-58)	63%	(54-71)	73%	(64-81)
Norway	25%	(24-27)	65%	(63-67)	76%	(74-79)	89%	(86-91)
Poland	35%	(32-39)	72%	(68-76)	82%	(79-86)	92%	(89-96)
Portugal	40%	(37-43)	74%	(70-78)	80%	(76-84)	86%	(81-90)
Republic of Moldova	17%	(15-19)	51%	(45-56)	62%	(56-69)	72%	(65-80)
Romania	5%	(4-5)	29%	(27-32)	35%	(33-37)	41%	(38-43)
Russian Federation	38%	(34-42)	72%	(69-76)	82%	(79-86)	92%	(88-96)
San Marino	25%	(19-31)	54%	(45-62)	64%	(56-73)	81%	(72-90)
Serbia	10%	(8-12)	37%	(35-39)	60%	(56-63)	83%	(78-87)
Slovakia	35%	(33-37)	72%	(69-76)	80%	(77-82)	87%	(85-90)

POPULATION	LAST 1 YEAR		LAST 3 YEAR		LAST 5 YEAR		EVER IN LIFETIME	
	%	(95%CI)	%	(95%CI)	%	(95%CI)	%	(95%CI)
Slovenia	31%	(28-33)	70%	(67-73)	83%	(80-86)	94%	(90-97)
Spain	41%	(36-45)	72%	(67-77)	80%	(74-85)	87%	(82-93)
Sweden	32%	(26-38)	65%	(58-72)	81%	(75-87)	90%	(84-95)
Switzerland	50%	(45-54)	76%	(72-79)	85%	(82-88)	95%	(92-98)
Tajikistan	4%	(1-6)	7%	(6-9)	9%	(8-11)	11%	(10-12)
Turkey	15%	(14-17)	46%	(42-50)	77%	(71-83)	92%	(85-99)
Turkmenistan	7%	(4-12)	31%	(26-36)	49%	(43-54)	59%	(53-65)
Ukraine	39%	(38-40)	52%	(47-58)	58%	(51-66)	63%	(55-72)
United Kingdom	29%	(25-33)	63%	(58-66)	73%	(70-76)	87%	(84-91)
Uzbekistan	6%	(3-9)	9%	(7-11)	11%	(9-12)	12%	(11-14)

95%CI: 95% Confidence Interval
Source: Adapted from Bruni, Serrano et al. Submitted

Figure A 1. Age-specific and age-standardised relative survival for cervical cancers diagnosed in 2000-2007, by European Region and country.

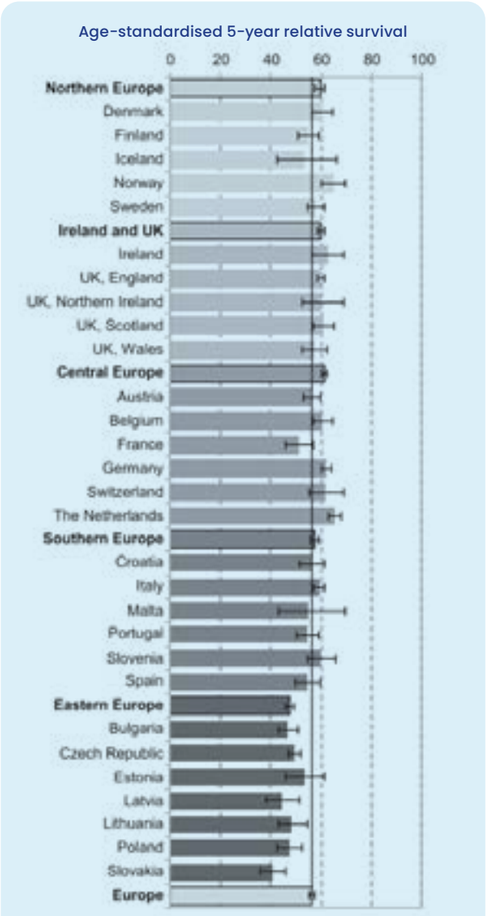


European age-specific and age-standardised observed (obs %) and relative (rel %) survival

Age group	Number of cases		1-year	3-year	5-year
15-44	39,114	obs	94.2	83.6	80.3
		rel	94.3	83.9	80.6
45-54	22,337	obs	88.7	74.1	69.3
		rel	88.9	74.7	70.3
55-64	16,534	obs	85.4	66.4	59.0
		rel	85.8	67.5	60.8
65-74	13,346	obs	77.4	56.8	47.2
		rel	78.5	59.4	51.3
75+	13,365	obs	59.1	33.5	24.4
		rel	63.1	40.8	34.4
All cases	104,696	obs	83.1	66.0	59.5
		rel	84.1	68.0	62.4

The figure includes countries included in the EUROCARE study, with information on cervical cancer survival.
Source: Sant et al. 2015[19].

Figure A 2. Age-specific and age-standardised relative survival for vaginal and vulvar cancers diagnosed in 2000-2007, by European Region and country.



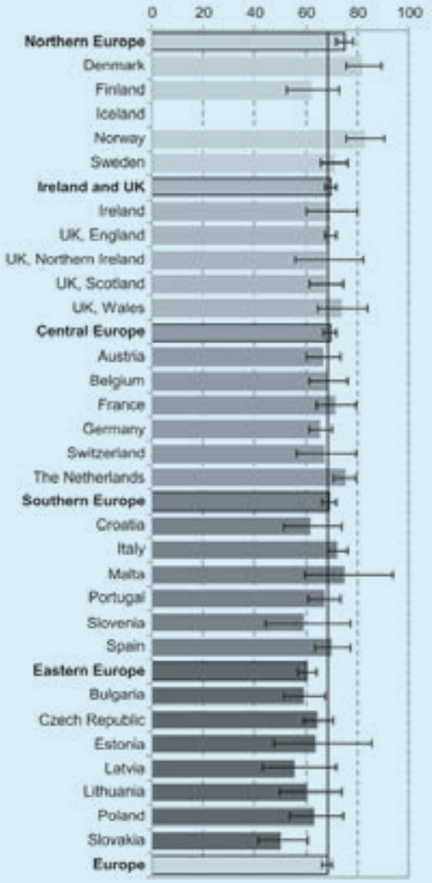
European age-specific and age-standardised observed (obs %) and relative (rel %) survival

Age group	Number of cases		1-year	3-year	5-year
15-44	2,327	obs	91.5	81.0	76.9
		rel	91.6	81.2	77.3
45-54	3,558	obs	88.8	74.1	69.7
		rel	89.0	74.7	70.7
55-64	5,282	obs	84.6	67.3	61.0
		rel	85.1	68.5	63.1
65-74	8,939	obs	77.4	57.2	49.3
		rel	78.6	60.1	53.9
75+	17,191	obs	61.8	37.6	28.5
		rel	66.9	48.0	43.4
All cases	37,297	obs	76.9	57.5	50.4
		rel	78.9	61.7	56.6

The figure includes countries included in the EUROCARE study, with information on cervical cancer survival.
Source: Sant et al. 2015[19].

Figure A 3. Age-specific and age-standardised relative survival penile cancers diagnosed in 2000-2007, by European Region and country.

Age-standardised 5-year relative survival



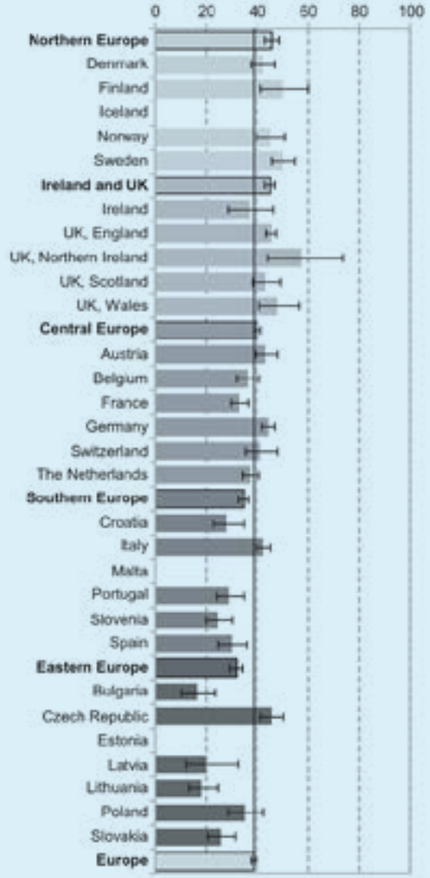
European age-specific and age-standardised observed (obs %) and relative (rel %) survival

Age group	Number of cases		1-year	3-year	5-year
15-44	958	obs	92.8	83.1	79.8
		rel	92.9	83.6	80.7
45-54	1,729	obs	88.3	74.8	71.1
		rel	88.8	76.1	73.3
55-64	2,942	obs	85.8	71.3	66.5
		rel	86.9	74.2	71.2
65-74	3,621	obs	83.9	66.0	57.3
		rel	86.3	72.3	67.6
75+	3,956	obs	73.8	49.2	36.3
		rel	81.3	66.8	62.0
All cases	13,206	obs	82.5	64.6	56.6
		rel	85.8	72.4	68.4

The figure includes countries included in the EUROCARE study, with information on cervical cancer survival.
Source: Sant et al. 2015[19].

Figure A 4. Age-specific and age-standardised relative survival for oropharynx and tonsil cancers diagnosed in 2000-2007, by European Region, country and sex.

Age-standardised 5-year relative survival



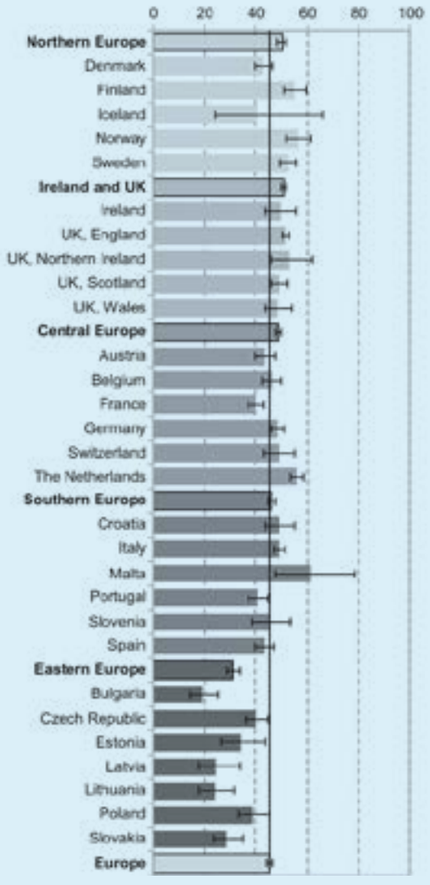
European age-specific and age-standardised observed (obs %) and relative (rel %) survival

Age group	Number of cases		1-year	3-year	5-year
15-44	2,430	obs	78.7	55.8	49.5
		rel	78.9	56.2	50.1
45-54	10,225	obs	75.7	52.1	44.3
		rel	76.1	52.8	45.4
55-64	12,291	obs	72.7	48.5	39.7
		rel	73.5	50.0	42.0
65-74	7,080	obs	64.6	41.9	33.4
		rel	66.2	45.2	38.2
75+	3,293	obs	52.6	29.7	21.0
		rel	56.6	37.1	31.1
All cases	35,319	obs	65.3	42.1	33.7
		rel	67.2	45.7	38.7
Men (79%)					
15-44	1,922	obs	77.1	53.0	46.5
		rel	77.3	53.4	47.1
45-54	8,376	obs	74.8	50.1	42.3
		rel	75.2	51.0	43.6
55-64	9,882	obs	71.1	46.3	37.2
		rel	71.9	47.9	39.6
65-74	5,558	obs	63.3	39.0	30.7
		rel	65.0	42.5	35.7
75+	2,205	obs	50.3	27.7	19.0
		rel	54.4	35.3	29.0
All cases	27,943	obs	63.7	39.7	31.3
		rel	65.6	43.4	36.4
Women (21%)					
15-44	508	obs	84.7	66.5	61.6
		rel	84.8	66.8	62.0
45-54	1,849	obs	79.7	60.9	53.5
		rel	79.9	61.4	54.3
55-64	2,409	obs	81.5	60.3	54.0
		rel	82.0	61.4	55.7
65-74	1,522	obs	69.9	55.0	44.4
		rel	70.8	57.4	48.1
75+	1,087	obs	57.1	35.1	27.0
		rel	60.7	42.1	37.8
All cases	7,375	obs	71.1	52.0	43.9
		rel	72.5	55.0	48.6

The figure includes countries included in the EUROCARE study, with information on cervical cancer survival.
Source: Sant et al. 2015[19].

Figure A 5. Age-specific and age-standardised relative survival for oral cavity cancers diagnosed in 2000-2007, by European Region, country and sex.

Age-standardised 5-year relative survival



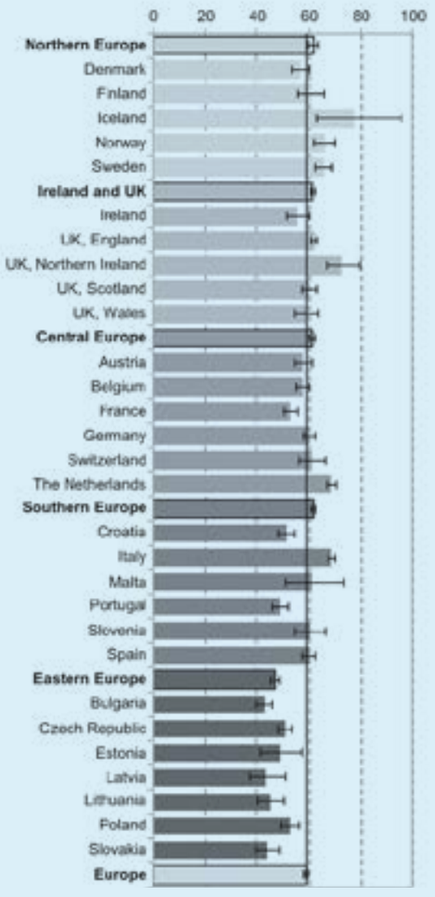
European age-specific and age-standardised observed (obs %) and relative (rel %) survival

Age group	Number of cases		1-year	3-year	5-year
15-44	3,138	obs	84.0	66.6	61.0
		rel	84.1	67.0	61.6
45-54	10,090	obs	79.7	56.9	47.9
		rel	80.0	57.7	49.2
55-64	13,734	obs	77.1	54.2	44.5
		rel	77.9	55.9	47.1
65-74	10,388	obs	71.8	47.5	38.5
		rel	73.5	51.1	43.9
75+	8,856	obs	57.6	34.6	25.8
		rel	62.5	44.4	40.0
All cases	46,206	obs	70.7	47.8	38.9
		rel	72.8	52.2	45.4
Men (67%)					
15-44	2,226	obs	80.9	62.5	56.0
		rel	81.1	62.9	56.7
45-54	7,765	obs	78.3	53.8	44.6
		rel	78.7	54.7	45.9
55-64	10,231	obs	75.7	51.4	41.4
		rel	76.5	53.3	44.1
65-74	6,850	obs	69.5	43.8	34.0
		rel	71.4	47.7	39.8
75+	3,888	obs	57.3	31.7	22.6
		rel	62.5	41.5	36.5
All cases	30,960	obs	69.2	44.5	35.2
		rel	71.6	49.1	41.7
Women (33%)					
15-44	912	obs	91.0	77.3	74.7
		rel	91.0	77.5	75.0
45-54	2,325	obs	85.1	69.0	61.2
		rel	85.4	69.5	62.1
55-64	3,503	obs	82.6	64.5	56.5
		rel	83.0	65.6	58.3
65-74	3,538	obs	77.1	56.1	49.2
		rel	78.3	58.8	53.5
75+	4,967	obs	58.1	37.6	29.0
		rel	62.8	47.3	43.5
All cases	15,245	obs	74.8	55.7	48.2
		rel	76.6	59.6	54.3

The figure includes countries included in the EUROCARE study, with information on cervical cancer survival.
Source: Sant et al. 2015[19].

Figure A 6. Age-specific and age-standardised relative survival for larynx cancers diagnosed in 2000-2007, by European Region, country and sex.

Age-standardised 5-year relative survival

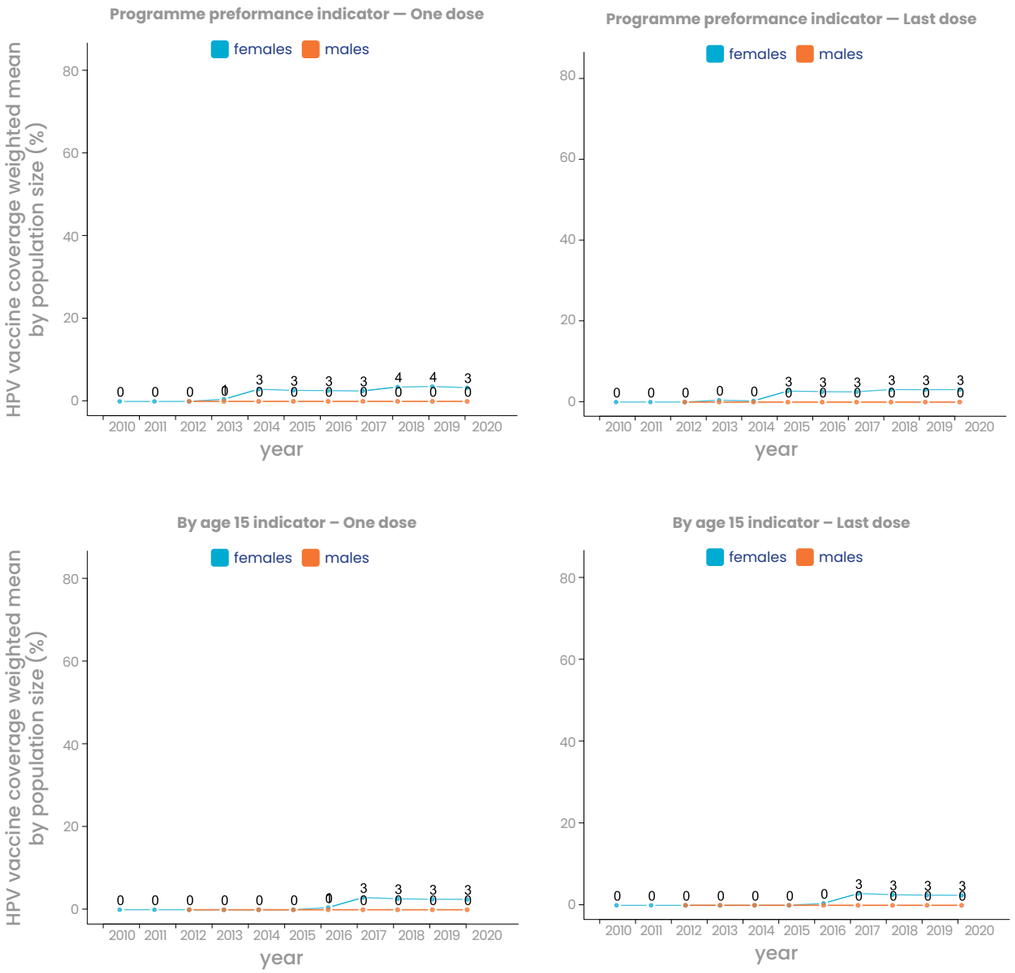


European age-specific and age-standardised observed (obs %) and relative (rel %) survival

Age group	Number of cases		1-year	3-year	5-year
15-44	2,847	obs	87.8	70.7	65.7
		rel	88.0	71.2	66.5
45-54	14,318	obs	86.0	67.9	60.8
		rel	86.5	69.0	62.7
55-64	25,717	obs	85.6	67.3	58.3
		rel	86.6	69.8	62.2
65-74	23,645	obs	81.3	61.7	50.6
		rel	83.5	67.2	59.0
75+	14,465	obs	70.5	46.8	34.3
		rel	76.2	59.6	52.8
All cases	80,992	obs	80.2	60.1	49.9
		rel	82.8	66.1	58.9
Men (88%)					
15-44	2,365	obs	86.8	69.0	63.9
		rel	87.0	69.5	64.8
45-54	12,694	obs	86.0	67.5	60.4
		rel	86.5	68.7	62.3
55-64	23,020	obs	85.7	67.2	58.3
		rel	86.7	69.8	62.3
65-74	21,142	obs	81.5	61.7	50.5
		rel	83.8	67.4	59.2
75+	12,300	obs	70.8	47.0	34.1
		rel	76.8	60.4	53.3
All cases	71,521	obs	80.3	59.9	49.6
		rel	83.0	66.3	59.0
Women (12%)					
15-44	482	obs	92.4	79.2	75.7
		rel	92.4	79.5	76.1
45-54	1,624	obs	86.7	71.6	65.1
		rel	86.9	72.2	66.1
55-64	2,697	obs	85.6	70.0	60.5
		rel	86.0	71.2	62.4
65-74	2,503	obs	80.6	64.2	54.5
		rel	81.8	67.2	59.3
75+	2,165	obs	68.2	46.5	37.0
		rel	72.4	55.9	50.9
All cases	9,471	obs	79.7	62.3	53.6
		rel	81.4	66.3	59.6

The figure includes countries included in the EUROCARE study, with information on cervical cancer survival.
Source: Sant et al. 2015[19].

Figure A 7. Estimates of HPV vaccination coverage in Easthern Europe, over time 2010–2020

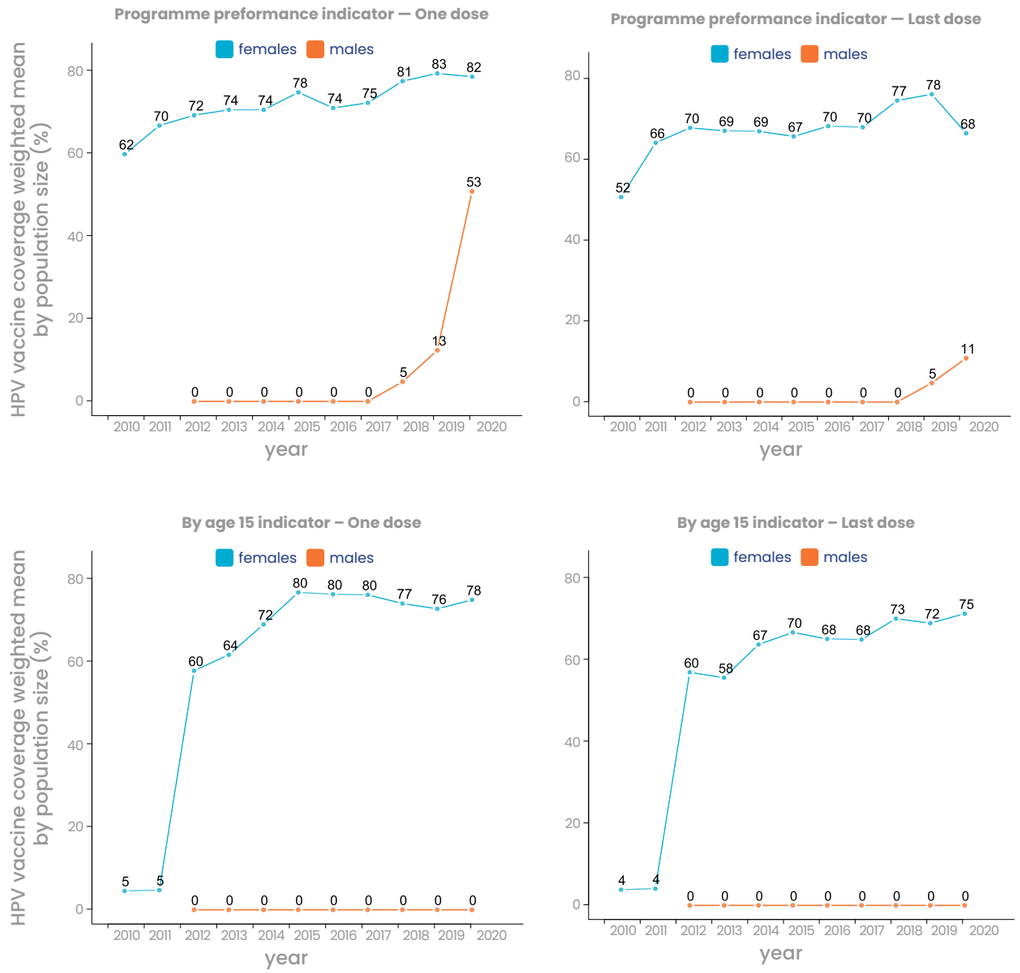


Global and regional coverages for each calendar year are calculated as the population weighted average of country-specific estimates using the HPV vaccine coverage indicators and official United Nations (UN) population estimates and projections that are prepared by the Population Division of the Department of Economic and Social Affairs of the UN Secretariat.

A WHO Member State is considered to have an HPV vaccination programme when the country reports in the Joint Reporting Form (JRF) to have officially included HPV vaccination in their national Immunisation schedule either at national or subnational level. Members states considered as not having introduced or without coverage data had a 0% coverage assigned.

Source: World Health Organization (WHO). Introduction of HPV (Human Papilloma Virus) vaccine. Available from: https://Immunisationdata.who.int/[33]

Figure A 8. Estimates of HPV vaccination coverage in Northern Europe, over time 2010–2020



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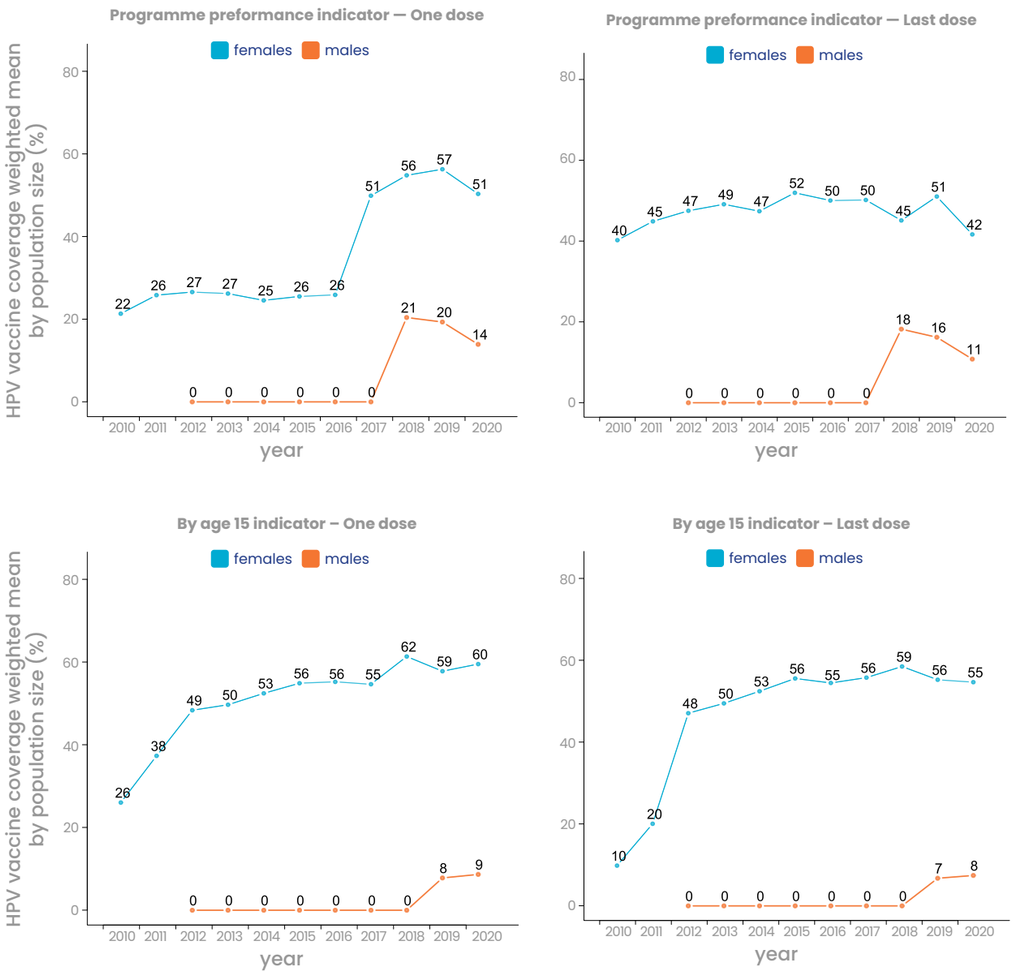
Source: World Health Organization (WHO). Introduction of HPV (Human Papilloma Virus) vaccine. Available from: https://Immunisationdata.who.int/[33]

Figure A 9. Estimates of HPV vaccination coverage in Southern Europe, over time 2010–2020



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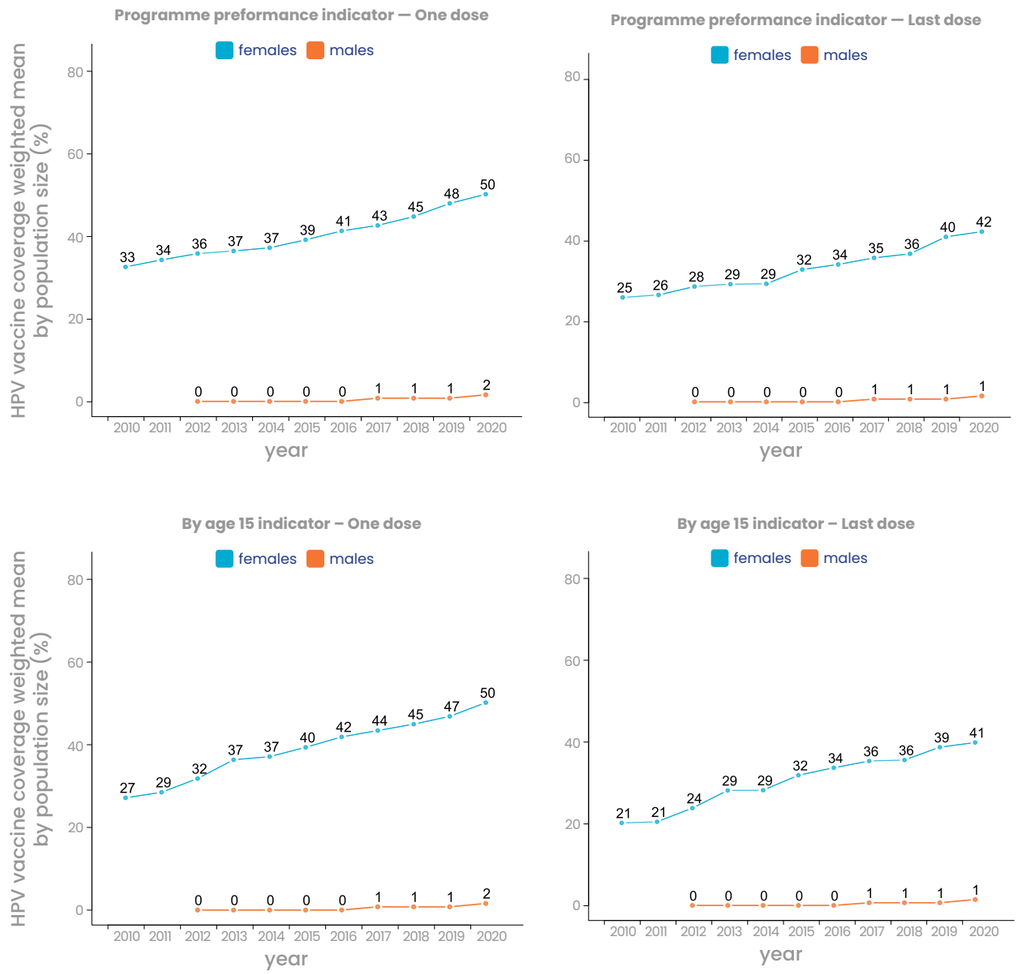
Source: World Health Organization (WHO). Introduction of HPV (Human Papilloma Virus) vaccine. Available from: https://Immunisationdata.who.int/[33]

Figure A 10. Estimates of HPV vaccination coverage in Western Europe, over time 2010–2020



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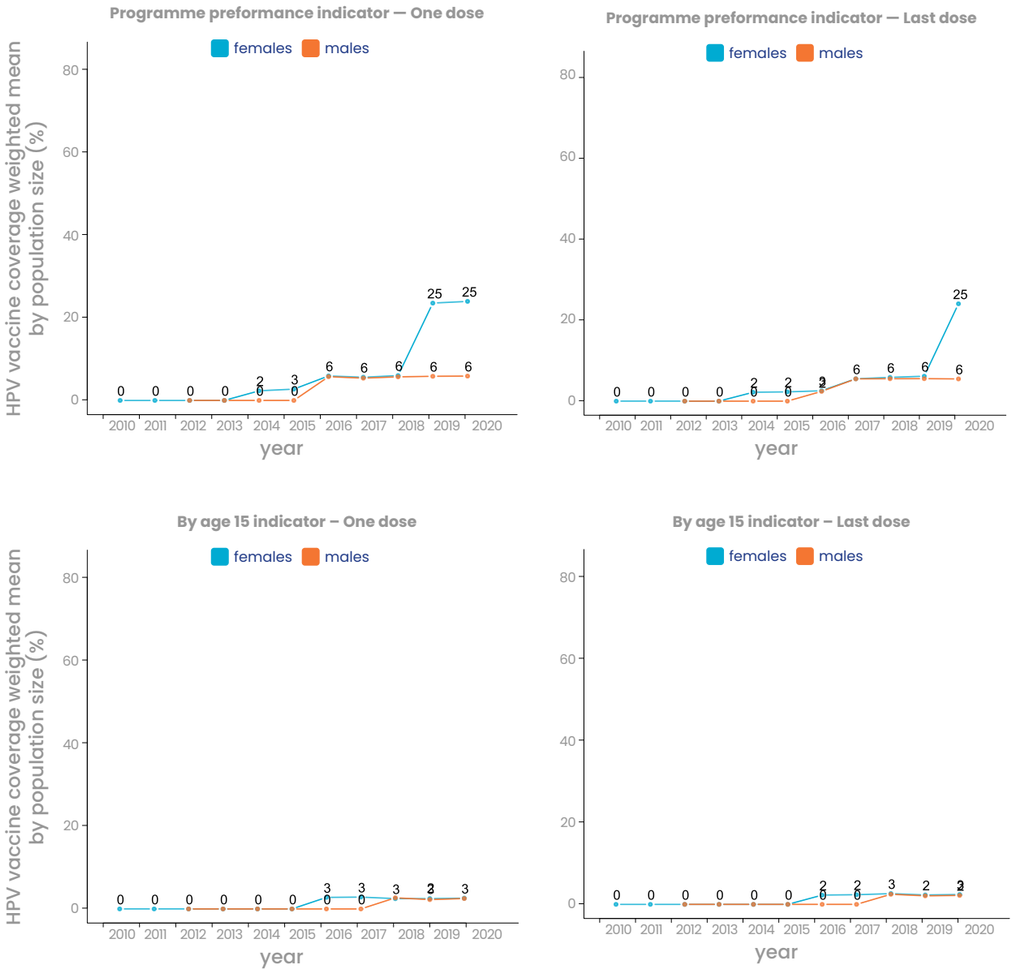
Source: World Health Organization (WHO). Introduction of HPV (Human Papilloma Virus) vaccine. Available from: https://Immunisationdata.who.int/[33]

Figure A 11. Estimates of HPV vaccination coverage in Asian countries from WHO EURO, over time 2010–2020



Global and regional coverages for each calendar year are calculated as the population weighted average of country-specific estimates using the HPV vaccine coverage indicators and official United Nations (UN) population estimates and projections that are prepared by the Population Division of the Department of Economic and Social Affairs of the UN Secretariat.

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Source: World Health Organization (WHO). Introduction of HPV (Human Papilloma Virus) vaccine. Available from: https://Immunisationdata.who.int/[33]

HPV Action Network Participants

Member Organisations Part of this Network

European Association of Urology
ECL Association of European Cancer Leagues
European Federation For Colposcopy
European Oncology Nursing Society
ESGO European Society of Gynaecological Oncology
European Society of Pathology
ESOP
European Society for Sexual Medicine
ESTRO
IPOS International Psycho-Oncology Society

Charities and Foundations Part of this Network

NOMAN IS AN ISLAND – RACE TO END HPV AND PREVENT 5% OF CANCERS
FORUM FOR MÆNDS SUNDHED
Community 365 INITIATIVE OF THE EUROPEAN CANCER ORGANISATION

Invited Stakeholders in this Network

CECDO
CED COUNCIL OF EUROPEAN DENTISTS
HPV Prevention and Control Board
oral health
Oral Health Foundation
SAPHNA

Patient Organisations Part of this Network

Childhood Cancer International
European Cancer Patient Coalition

To view the latest list of the HPV Action Network participants, visit: www.europeancancer.org/topic-networks/1:hpv-action

If you would like to find out more about the HPV Action Network, please contact us at: info@europeancancer.org.

As the not-for-profit federation of member organisations working in cancer at a European level, the European Cancer Organisation convenes oncology professionals and patients to agree policy, advocate for positive change and speak up for the European cancer community.

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