# Preventing Cervical Cancer in Eastern Europe and Central Asia

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Cervical Cancer: The Global Situation

Each year, more than 570,000 new cases of cervical cancer and 311,000 deaths from the disease occur globally; these numbers are predicted to increase to more than 700,000 new cases and 400,000 deaths per year by 2030. The vast majority of these new cases and deaths occur among disadvantaged women living in low-, lower-middle- and upper-middle-income countries, which generally lack the effective cervical cancer prevention programmes – namely, HPV vaccination and cervical screening – that are common in high-income countries (see Figure 1).

Almost every case of cervical cancer could be prevented by effective cervical screening and HPV vaccination programmes.

FIGURE 1 Comparison of national HPV vaccination and cervical screening programme implementation vs cervical cancer incidence and mortality

Proven, cost-effective methods to eliminate cervical cancer exist but have not yet been widely implemented in the countries where the disease burden is highest. The World Health Assembly in May 2020 adopted the Global Strategy to Accelerate the Elimination of Cervical Cancer as a Public Health Problem, with the goal of all countries reaching an incidence rate below 4 per 100,000 women. The World Health Organization (WHO) has outlined the necessary steps to attain this goal, which rest on three main pillars of action:

- Prevention through vaccination
- Cervical screening and treatment of precancerous lesions
- Treatment and palliative care for invasive cervical cancer

The Global Strategy recommends a set of targets, known as the 90-70-90 targets, that all countries should achieve by 2030, namely:

- 90% of girls fully vaccinated for HPV by age 15
- 70% of women screened with a high-performance test by age 35 and again by age 45
- 90% of women identified to have cervical disease treated, including
  - 90% of women with pre-cancer treated
  - 90% of women with invasive cancer managed

This WHO triple-intervention strategy is projected to result in mortality-rate reductions of 33.9% by 2030 and 96.2% by 2070, saving more than 62 million women’s lives by 2120. But achieving these targets will only be possible through the adoption of national programmes delivered by health services that address the personal, cultural, social, structural and economic barriers that currently hinder access by women and girls.
Cervical Cancer in Eastern Europe and Central Asia

Compared to Western Europe, the number of new cervical cancer cases and deaths is up to 10 times higher in the UNFPA Eastern Europe and Central Asia region (see Figure 2), where the disease is the second-most common cause of cancer death among women of reproductive age. There is clear evidence that the higher incidence and mortality rates currently seen in the region are primarily due to the lack of:

- Effective cervical screening programmes (that include the treatment of all clinically relevant precancerous lesions);
- Widespread HPV vaccination programmes; and
- Accessible, high-quality cervical cancer treatment.

Figure 2: Cervical cancer incidence and mortality in Eastern Europe and Central Asia compared to Finland

HPV and Cervical Cancer

Cervical cancer can be caused by any one of about 15 carcinogenic (or ‘high-risk’) types of the human papillomavirus (HPV). This is a very common sexually transmitted virus and most adults will have had an HPV infection at some time in their life. Almost 90% of HPV infections are cleared naturally by the immune system; it is only persistent infections that increase the risk of cervical cancer.

HPV infections can lead to the development of precancerous cervical lesions. These lesions will disappear once the HPV infection has been cleared by the immune system but if the infection persists, they can progress to cervical cancer over a period of about 10 years. There are no treatments for persistent HPV infections but the resulting precancerous lesions can be easily removed using simple and effective outpatient procedures so they will not progress to cervical cancer. However, since these precursor lesions do not cause any clinical symptoms, they can only be found by cervical screening.

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8 Wardak S. ‘Human Papillomavirus (HPV) and cervical cancer.’ Medycyna Doswiadczalna i Mikrobiologia. 2016; 68:73.
Almost every case of cervical cancer could be prevented by effective primary and secondary national prevention programmes, focused on HPV vaccination and cervical screening.

**Primary Prevention**

There is now an overwhelming amount of evidence showing that the vaccination of adolescent girls with either of the two WHO pre-qualified HPV vaccines\(^{12}\) is the most effective long-term strategy for reducing HPV infections and preventing precancerous cervical lesions and cervical cancers.\(^{13,14,15}\)

For optimal protection, WHO currently recommends that adolescent girls between 9 and 14 years of age receive two doses of the HPV vaccine six months apart.\(^{16}\) There is also strong evidence that high HPV vaccine coverage produces herd immunity, affording protection to unvaccinated individuals and therefore increasing the benefits for the community as a whole.\(^{17}\)

To achieve high population coverage, HPV vaccination programmes must include strong communication strategies for advocacy and social mobilization to ensure people are aware of the efficacy, safety and benefits of the vaccine. In addition, evidence-based strategies must be developed and implemented to address the myths and misconceptions that have been spread

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12 WHO. ‘Immunization, Vaccines and Biologicals: HPV Vaccines and Safety.’ Available at: https://www.who.int/immunization/hpv/vaccines/en/.
by anti-vaccine campaigns and that have undermined the implementation of these programmes in some countries.

For HPV vaccination and cervical screening programmes to be effective, they must be implemented as well-organized national programmes with high coverage of the target populations. However, this has proven difficult to achieve in low- and middle-income countries.

According to the WHO Immunization, Vaccines and Biologicals database, a total of 105 countries have now included HPV vaccination in their national immunization programmes (as of 2020), but the vast majority of these are high-income countries (Figure 3).  

Among the countries of the Eastern Europe and Central Asia (EECA) region, only five have introduced HPV vaccination into their national immunization schedules, and their coverage rates as of 2019 are still highly variable, ranging from 7% in Armenia to 99% in Turkmenistan, with Georgia (11%), North Macedonia (40%) and Uzbekistan (97%) in between. The Republic of Moldova completed an HPV vaccination pilot in 2017, with the vaccination optional on the Primary Health Care level, and has plans to make it mandatory and integrated into the National Immunization Plan for 2021–2025.

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18 WHO. ‘Vaccines in National Immunization Programme Update, June 2020.’ Available at: https://www.who.int/immunization/monitoring_surveillance/VaccineIntroStatus.pptx?ua=1.
The remaining countries in the region have not yet addressed the issue at all.

Secondary Prevention

The objective of secondary prevention is to identify women with clinically relevant cervical precancerous lesions that can be removed to prevent them progressing to cervical cancer. Cytology-based cervical screening has successfully reduced cervical cancer rates in high-income countries when implemented as part of a national programme with high coverage and effective management of screen-positive women.

FIGURE 4 Countries that have introduced national cervical screening programmes (2019)

Within the European Union, more than 70% of screening-age women have access to well-organized, high-quality cervical screening programmes with high coverage and mechanisms to ensure appropriate follow-up with screen-positive women and recall of screen-negative women within three to five years.\textsuperscript{21} As a result, most of these countries have seen reductions in cervical cancer incidence and mortality of up to 80%.\textsuperscript{22,23}

In contrast, cervical screening in low- and middle-income countries either does not exist at all or is provided in a disorganized manner with low coverage; no mechanisms to ensure that screen-positive women are followed-up or screen-negative women are recalled at the appropriate interval; and no quality assurance of the component services. As a result, cervical cancer rates are still rising in these countries.\textsuperscript{24}

Within the Eastern Europe and Central Asia region, 12 countries (Albania, Armenia, Belarus, Bosnia and Herzegovina, Georgia, Kazakhstan, Republic of Moldova, North Macedonia, Serbia, Turkey, Turkmenistan and Ukraine) reported to WHO that they have implemented national cervical screening programmes (see Figure 4).\textsuperscript{24} However, the high cervical cancer incidence and mortality rates in most of these countries (see Figure 2) indicate that the screening programmes are not producing the intended impact.

Some countries have implemented cervical screening programmes based on visual inspection of the cervix with acetic acid (VIA), followed by treatment. While this is relatively easier and cheaper to implement, the effectiveness of VIA is very dependent upon the training and skills of the providers and its performance is therefore highly variable.

More recently, a number of meta and pooled analyses have shown that screening for HPV infection provides better protection against future cervical precancerous lesions and invasive cancers than cytology-based screening or VIA, while the high negative predictive value of HPV testing means


that the screening interval for women with a negative test can be extended to five years.\textsuperscript{25-27}

Because of this, the WHO now recommends that all countries should either introduce or switch to HPV testing as the primary method for cervical screening.\textsuperscript{4} However, the introduction of HPV-based screening will not provide substantial reductions in cervical cancer incidence and mortality unless accompanied by high screening coverage rates and national mechanisms for quality assurance and client safety. Further, the higher sensitivity of HPV testing will lead to overdiagnosis and overtreatment unless effective triage protocols for HPV-positive women are implemented and enforced. Then, when clinically relevant precancerous lesions have been identified, it is essential to have properly trained colposcopists treating these lesions, following internationally recognized treatment guidelines to maximize treatment success and minimize morbidity.\textsuperscript{28}

**Cervical Cancer Treatment and Palliative Care**

While the prevention of cervical cancer is the primary objective, no preventive actions will be completely effective before the targets for vaccination and screening are achieved. Therefore, the timely assessment of women with suspected or confirmed cervical cancer, followed by referral to appropriate cancer treatment services, is essential to reduce morbidity and save lives. Comprehensive management of invasive cervical cancer requires well-equipped, appropriately qualified health providers and access to surgical care, radiation therapy and chemotherapy services.

In addition to preventative care, gaps in cervical cancer morbidity and mortality are also tied to global treatment distribution. Although stage-based standards of care are well-established for cervical cancer, the national guidelines and practices in many countries do not meet modern international recommendations due to outdated equipment and facilities. In addition, lack of access to adequate surgical care, radiation therapy and systemic therapies often precludes the delivery of potentially curative therapy.


The effective management of cervical cancer depends on the staging of the disease according to the International Federation of Gynaecology and Obstetrics (FIGO) and TNM staging guidelines. Early-stage cervical cancers are highly treatable by surgery and/or radiotherapy, which produce five-year survival rates of over 80% in countries where timely diagnosis and high-quality treatment are available. In addition, palliative care should be made available and integrated into the treatment plan for the entire course of the disease.

Reasons to Prioritize Cervical Cancer Prevention

A key reason to prioritize cervical cancer prevention is because almost every case of cervical cancer could be prevented. Well-organized screening programmes can reduce cervical cancer rates by up to 80% or by up to 90% if combined with HPV vaccination of adolescent girls.\textsuperscript{33,34} The 70th World Health Assembly held in 2017 endorsed HPV vaccination for girls aged 9-13 and cervical screening for women aged 30-49 as the “best buys” to prevent cervical cancer.\textsuperscript{34}

Another crucial reason is because cervical cancer primarily affects younger women, with the majority of cases occurring between 35 and 45 years of age. This is a time when most women are working, caring for their families, or doing both, so the societal and economic impact of cervical cancer is enormous because it removes mothers from their families and workers from the economy.

Achieving the 90-70-90 targets therefore offers substantial societal and economic benefits. For every US $1 invested in cervical cancer prevention through 2050, it is estimated that US $3.20 will be returned to the economy simply because more women will remain in the workforce. And when broader societal benefits are included in the calculations, every dollar invested will yield a return of US $26.\textsuperscript{35} From a global perspective, achieving the 90-70-90 targets means that about 250,000 women will remain productive members of the workforce, making a direct economic contribution of about US $700 million along with almost US $27.3 billion in indirect socioeconomic benefits.\textsuperscript{35}

\textsuperscript{35} Bertram et al. ‘The investment case of the cervical cancer elimination strategy in low and lower-middle income countries.’ In publication.
Key Challenges in the Eastern Europe and Central Asia Region

Achieving the 90-70-90 targets will require countries to address the following key challenges:

Knowledge, Awareness and Attitudes towards Cervical Cancer Prevention

Throughout the EECA region, knowledge and awareness of cervical cancer is low, so women do not give sufficient priority to cervical cancer prevention and care. The problems created by this are then compounded by poor-quality health services that do not address the social, cultural, societal and structural barriers to service uptake, with the end result being that cervical cancer prevention services are not fully utilized by the people they are intended to protect.

It is therefore essential for each country to have a clear understanding of the knowledge, attitude and service barriers so this information can be used to develop demand-creation strategies that are context-specific and culturally appropriate, while simultaneously ensuring that services are delivered through platforms that encourage, rather than discourage, uptake. In this regard, civil society – particularly women’s groups and organizations – must be recruited as partners in the development of strategies, the creation of information campaigns to counter misinformation or stigma, and the support of those undergoing treatment.

HPV Vaccination

The majority of countries in the EECA region have established track records of successful national vaccination programmes and therefore have the capacities required to implement HPV vaccination. However, HPV vaccination presents some novel challenges that need to be addressed:
Ensuring a sufficient and sustainable supply of affordable vaccines.
- Monitoring vaccination coverage rates to identify under-served groups with low coverage that require targeted interventions.
- Low public awareness of cervical cancer and the role of HPV vaccination in its prevention.
- Anti-vaccination campaigns that spread myths and misconceptions about HPV vaccination and thereby reduce vaccine uptake.

**Cervical Screening**

As noted above, the majority of countries in the EECA region have reported that they have national cervical screening programmes, but the high cervical cancer incidence and mortality rates in many of these countries demonstrate that these programmes are not effective. In these countries, the following key challenges need to be addressed:

- Use of low-sensitivity, subjective screening tests such as VIA and cervical cytology that are difficult to quality assure (QA).
- Lack of IT systems to identify women who are due for screening, to monitor screening coverage and to track the follow-up of screen-positive women.
- Lack of clear algorithms for the follow-up of abnormal screening tests.
- Lack of QA systems covering all aspects of the screening programme.
- Low public awareness of the importance of cervical cancer screening.
Strategic Actions to Meet the 90-70-90 Targets in the Region

HPV Vaccination

In order to achieve the HPV vaccination target of 90% of girls fully vaccinated with HPV vaccine before 15 years of age by 2030, national governments and ministries of health should take the lead on:

- Reviewing and updating national guidelines, policies and strategies to account for new evidence and innovative approaches to HPV vaccination.
- Creating effective partnerships with the private sector to ensure a secure and sufficient supply of affordable HPV vaccines.
- Enhancing multisectoral cooperation to expand the availability of HPV vaccination by inclusion in national immunization calendars and delivery through platforms such as school-based immunization programmes.
- Developing vaccination monitoring systems or registers that are able to track coverage by region and population subgroups so that efforts to improve coverage can be targeted to where they will have the most impact.
- Engaging with civil society (charities, community groups, women’s organizations, advocacy groups, etc.) and partnering with them to develop and implement innovative community-based approaches to reach vulnerable populations, such as adolescent girls who are not in school.
- Developing and launching nationwide, evidence-based communication and social mobilization campaigns that address the social, cultural, societal and other barriers affecting vaccination acceptance and uptake.

Cervical Screening

Cervical screening should be implemented within an organized screening programme that includes identifying target populations, treatment, and monitoring and evaluation. In order to achieve the cervical screening target of 70% of women screened with a high-performance test before the age 35 and again before the age of 45 by 2030, national governments and ministries of health should take the lead on:
Reviewing and updating national guidelines, policies and strategies to account for new evidence and innovative approaches to cervical screening, including the introduction of HPV testing for primary screening.

- Strengthening health systems and national institutional capacities.
- Incorporating the cervical screening into essential SRH services and securing sustainable funding mechanisms for the national screening programmes.
- Creating effective partnerships with the private sector to ensure a secure and sufficient supply of affordable high-performance screening tests and treatment devices.
- Encouraging the creation of efficient, integrated laboratory networks with integrated quality assurance (QA) mechanisms that will optimize the cost-effectiveness of the services.
- Facilitating access by integrating cervical screening and treatment into a variety of existing services that already reach women of screening age, such as primary health care, sexual and reproductive health, HIV care and treatment, antenatal care and well-women clinics.
- Developing IT systems that are able to identify women who are due for screening and track screening coverage and the follow-up of screen-positive women, by region and population subgroup, so that efforts to improve coverage and reduce losses to follow-up can be targeted to where they will have the most impact.
- Engaging with civil society (charities, community groups, women’s organizations, advocacy groups, etc.) and partnering with them to develop and implement innovative community-based approaches to reach underserved women such as those from rural or marginalized communities, including programmes to increase health literacy and knowledge of rights.
- Conducting studies to better understand the social, cultural, societal and structural barriers affecting the uptake of cervical screening services so that context-specific and culturally appropriate demand-creation strategies can be developed and implemented.
- Strengthening intercountry and interagency cooperation for knowledge sharing and maximizing the efficiency of the national programmes and adopting the best experiences for cost-effective, evidence-based, impact-oriented cervical cancer screening programmes.
Cervical Cancer Treatment and Palliative Care

In order to achieve the cervical cancer treatment and palliative care target of 90% of women identified with cervical disease treated (90% of women with pre-cancer treated and 90% of women with invasive cancer managed) by 2030, national governments and ministries of health should take the lead on:

- Working with relevant national medical professional organizations to develop and implement national cervical cancer management guidelines that are evidence-based, in accordance with international best practices and adapted to the national context. These guidelines should clearly specify the relevant care pathways and referral networks linking the different levels of the health system (primary, secondary and tertiary) to ensure the timely management of all patients.
- Strengthening pathology services by the creation of gynaecological pathology centres of expertise with the ability to consult external experts (both national and international) on complex cases via telepathology.
- Strengthening surgical capacities through focused, competency-based training and twinning partnerships with internationally recognized organisations and/or treatment centres.
- Improving access to and ensuring the affordability of radiotherapy (external beam and brachytherapy) and chemotherapy.
- Strengthening and integrating palliative care services, ensuring they include end-of-life care and pain relief for patients, together with psychological support and family support and, where possible, home-based delivery, into primary health care.

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How UNFPA Supports Cervical Cancer Prevention in EECA Countries

UNFPA participates in the UN Joint Global Programme on Cervical Cancer together with other UN agencies (WHO, IAEA, IARC, UNAIDS, UNICEF and UNWomen). The programme is implemented by UNFPA, WHO and IAEA and will run through April 2021. It provides global leadership and technical assistance to support governments and their partners to build and sustain high-quality national programmes to prevent and control cervical cancer, ensuring that all women and girls can access services equitably.

At the regional level, UNFPA supports cervical cancer prevention efforts in the countries of Eastern Europe and Central Asia by:

- Supporting regional and national advocacy efforts to develop evidence-based policies, national roadmaps and action plans for cervical cancer prevention.
- Assessing and strengthening the institutional capacities of countries in the region to plan, develop and operate organized screening programmes that adhere to international standards and best practices.
- Providing technical expertise in all areas of cervical cancer prevention, including supporting the development of necessary tools and mechanisms.
- Supporting regional partnership initiatives and promoting south-south cooperation by catalyzing regional alliances and sub-regional coalitions.
- Developing and implementing innovative training programmes for national experts, including the UNFPA/IFCPC/IARC online training programme for colposcopists.
- Building technical cooperation networks with leading international institutions, including the International Cervical Cancer Association (ICCA), the International Federation of Cervical Pathology and Colposcopy (IFCPC), the International Agency for Research on Cancer (IARC) and the European Board and College of Obstetrics and Gynecology (EBCOG).
Examples of progress in the region

**Albania**
More than 500 health professionals trained to set up screening programmes at primary health centres

**Bosnia and Herzegovina**
HPV vaccination programme developed for Sarajevo Canton

**Serbia**
Awareness-raising and education campaign carried out among students

**Moldova**
First modern colposcopy referral centre established

**Kosovo (UNSCR 1244)**
National action plan on cancer control developed and implemented

**Belarus**
Cervical cancer screening and HPV vaccination included in national health programme

**Ukraine**
Hard-to-reach settlements provided with services related to reproductive cancers via mobile clinics

**Uzbekistan**
Pilot cervical cancer screening project initiated, national standard on colposcopy being developed

**Kyrgyzstan**
Health professionals trained to deliver stigma-free, client-oriented cervical cancer prevention services

**Tajikistan**
Number of primary health-care facilities providing cervical cancer screening increased tenfold

**Georgia**
National cervical cancer screening centre established; national screening registry being developed

**Azerbaijan**
First-ever training on colposcopy conducted in two regions of the country

**Turkmenistan**
Procurement begun on HPV vaccines; cervical-cancer screening rates more than doubled at primary health-care level
Additional publications by UNFPA Eastern Europe & Central Asia

1. **Adolescent Pregnancy** in Eastern Europe and Central Asia (2013)

2. **Investing in Young People** in Eastern Europe and Central Asia (2014)

3. **Child Marriage** in Eastern Europe and Central Asia (2014)

4. **Preventing Gender-biased Sex Selection** in Eastern Europe and Central Asia (2015)

5. **Preventing Cervical Cancer** in Eastern Europe and Central Asia (2015, updated 2021)


7. **Engaging Men in Unpaid Care Work** An Advocacy Brief for Eastern Europe and Central Asia (2018)

Delivering a world where every pregnancy is wanted, every childbirth is safe and every young person’s potential is fulfilled

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