

Analysis of Capacities for Cervical Cancer Prevention in Eastern Europe and Central Asia

SUMMARY



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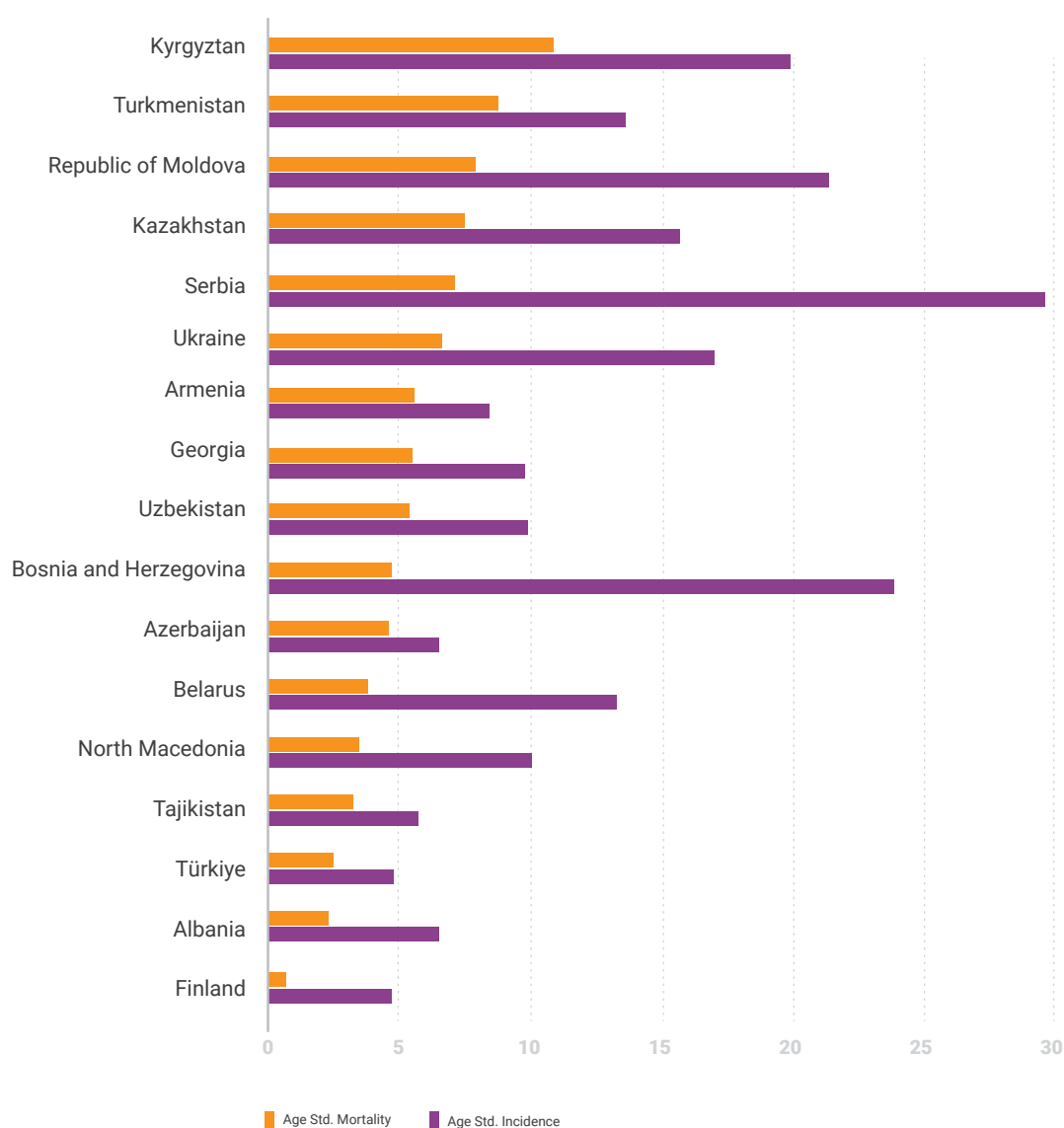


INTRODUCTION

Globally there are more than 570,000 new cases and 311,000 deaths from cervical cancer every year and these numbers are predicted to increase to more than 700,000 new cases and 400,000 deaths per year by 2030.¹ The vast majority of this disease and death occurs among women living in low- and middle-income countries.

CERVICAL CANCER IN EASTERN EUROPE AND CENTRAL ASIA

Figure 1: Cervical cancer incidence and mortality in the EECA region compared to Finland



¹ International Agency for Research on Cancer (IARC), Global Cancer Observatory (GLOBOCAN) 2018 Estimates. Available at <http://gco.iarc.fr/>.

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 (EECA) region where the disease is the second-most common cause of cancer death among women of reproductive age (see Figure 1).¹

Proven and cost-effective methods exist to prevent cervical cancer and reduce its mortality:

- **Primary prevention by human papillomavirus (HPV) vaccination:** there is now overwhelming evidence showing that HPV vaccination of adolescent girls is the most effective long-term strategy to reduce HPV infections and prevent the resulting precancerous cervical lesions and cervical cancers.^{2,3,4}
- **Secondary prevention by cervical screening:** screening can reduce cervical cancer rates by up to 80 percent but reductions of this magnitude will only come from well-organized programmes with high coverage of the target population (>70 percent), effective follow-up of all screen-positive women and robust quality assurance (QA).⁵
- **Cervical cancer treatment and palliative care:** while preventing cervical cancer is the main objective, no preventive actions will be completely successful so the timely diagnosis and referral for treatment is essential to reduce morbidity and save lives. In addition, palliative care must be readily available and integrated into the cervical cancer treatment plan for the entire course of the disease.⁶

Effective primary and secondary prevention measures have not been widely implemented in most EECA countries, while the treatment of cervical cancer is often impaired by unaffordable costs, limited access and outdated methodologies, facilities or equipment. In recognition of this, WHO published the Global Strategy to Accelerate the Elimination of Cervical Cancer as a Public Health Problem⁷ (the WHO Global Strategy) specifying 3 key strategies that countries should prioritize and setting the 90-70-90 targets that should be achieved by 2030.

<p>Strategy 1: Prevention through HPV vaccination.</p> <p>Target: 90% of girls fully vaccinated with HPV vaccine by 15 years of age.</p>	<p>Strategy 2: Cervical screening.</p> <p>Target: 70% of women screened with a high-performance test* by age 35 and again by the age of 45.</p> <p>(* Performance equivalent to or better than an HPV DNA amplification test.)</p>	<p>Strategy 3: Treatment of pre-cancer and cancer with palliative care for invasive cancer.</p> <p>Target: 90% of women with cervical disease treated (90% of pre-cancer treated; 90% of invasive cancer managed).</p>
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- Marc Arbyn and others, "Prophylactic vaccination against human papillomaviruses to prevent cervical cancer and its precursors", *Cochrane Database of Systemic Reviews* (May 2018).
- Silvia de Sanjose and others, "Human papillomavirus genotype attribution in invasive cervical cancer: a retrospective cross-sectional worldwide study", *The Lancet Oncology*, vol. 11, No. 11 (November 2010), pp. 1048–1056.
- Davit Bzhalava and others, "A systematic review of the prevalence of mucosal and cutaneous human papillomavirus types", *Virology*, vol. 445, Nos. 1–2 (October 2013), pp. 224–231.
- European Commission, *European guidelines for quality assurance in cervical cancer screening*, 2nd ed. (Luxembourg, Office for Official Publications of the European Communities, 2008).
- Palliative care. In *Comprehensive Cervical Cancer Control: A Guide to Essential Practice*. 2nd edition. 2014. Geneva, World Health Organization.
- WHO, *Global strategy to accelerate the elimination of cervical cancer as a public health problem* (Geneva, 2020).

Supporting the implementation of effective, evidence-based cervical cancer prevention programmes is a key priority for UNFPA. To facilitate this, the UNFPA Regional Office for Eastern Europe and Central Asia together with the UNFPA offices in the countries and territories of the region undertook an analysis of policies, practices and capacities for cervical cancer prevention, treatment and palliative care.

The outcomes of the analyses are being used to inform evidence-based policy dialogue, the implementation of strategies and actions, and ensure harmonized capacity-building, knowledge-sharing and advocacy throughout the region.

This summary focuses on cervical cancer prevention through HPV vaccination and cervical screening.

METHODS

A questionnaire was prepared and distributed to the UNFPA offices in Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Georgia, Kazakhstan, Kyrgyzstan, Republic of Moldova, North Macedonia, Serbia, Tajikistan, Türkiye, Turkmenistan, Ukraine, Uzbekistan and Kosovo⁸ with each then identifying local experts to complete the survey. In the case of Bosnia and Herzegovina, responsibility for health care is devolved to the entities, the Federation of Bosnia and Herzegovina and the Republika Srpska, so an expert was recruited from each and the results are presented separately. Therefore, 18 countries, territories and entities (CTEs) are included in the report. The questionnaire was distributed to the UNFPA offices on 1 April 2021, with data collected during April and May, and data analysis conducted in June and July 2021.

8 References to Kosovo should be understood in the context of UN Security Council Resolution (UNSCR) 1244 (1999).

KEY RESULTS

CERVICAL CANCER PREVENTION INCLUDED IN OFFICIAL STRATEGIES OR PLANS

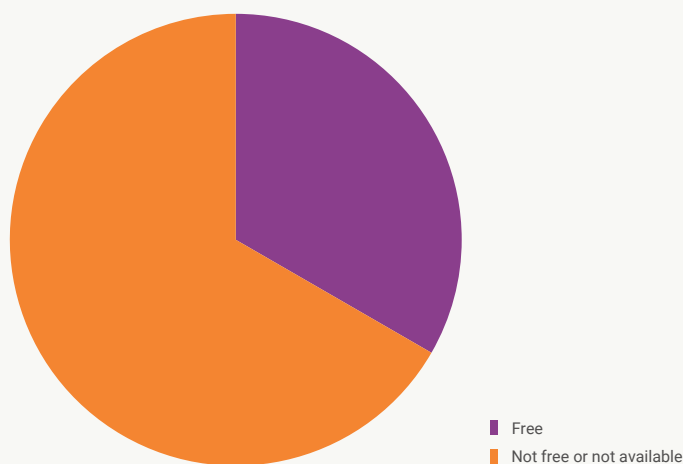
Of the 18 CTEs participating in this assessment, 17 have included cervical cancer screening (not Azerbaijan), and 15 have included HPV vaccination (not Albania, Türkiye and Kosovo). Therefore, the majority of CTEs have officially recognized the importance of cervical cancer prevention.

STATE PAYMENTS FOR HPV VACCINATION AND CERVICAL SCREENING

Out-of-pocket payments (either formal or informal) for cervical cancer prevention services are a recognized barrier to access that particularly affects those from disadvantaged communities. In order to ensure all girls and women have equitable access to cervical cancer prevention, these services must be provided free of charge to all citizens regardless of health insurance status.

HPV vaccination

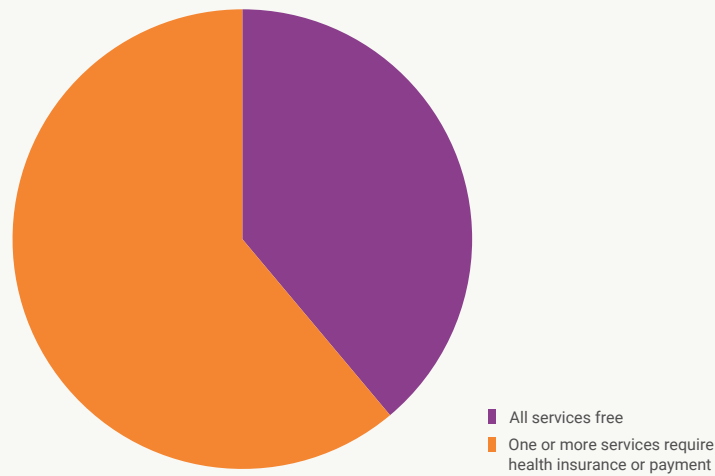
Figure 2: HPV vaccination



Although 15 CTEs have included HPV vaccination in an official strategy or plan, only Armenia, Georgia, Republic of Moldova, North Macedonia, Turkmenistan and Uzbekistan currently provide HPV vaccination free of charge through public sector programmes. In Albania, Azerbaijan, Belarus, Bosnia and Herzegovina (both entities), Serbia, Türkiye and Ukraine, HPV vaccination is only available for a fee that ranges from US\$35 to \$260 depending on the CTE, while in Kazakhstan, Kyrgyzstan, Tajikistan and Kosovo, it is not officially available at all.

Cervical screening

Figure 3: Cervical screening



Cervical screening is a process that starts with the screening test but must then include the follow-up of screen-positive women by colposcopy and biopsy with treatment for any pre-invasive cervical lesions. Therefore, the full process must be provided free of charge to ensure all women have equitable access. Currently, this only happens in Albania, Azerbaijan, Belarus, Serbia, Türkiye, Uzbekistan and Kosovo. Elsewhere, one or more of these services require women to have health insurance and/or pay a fee.

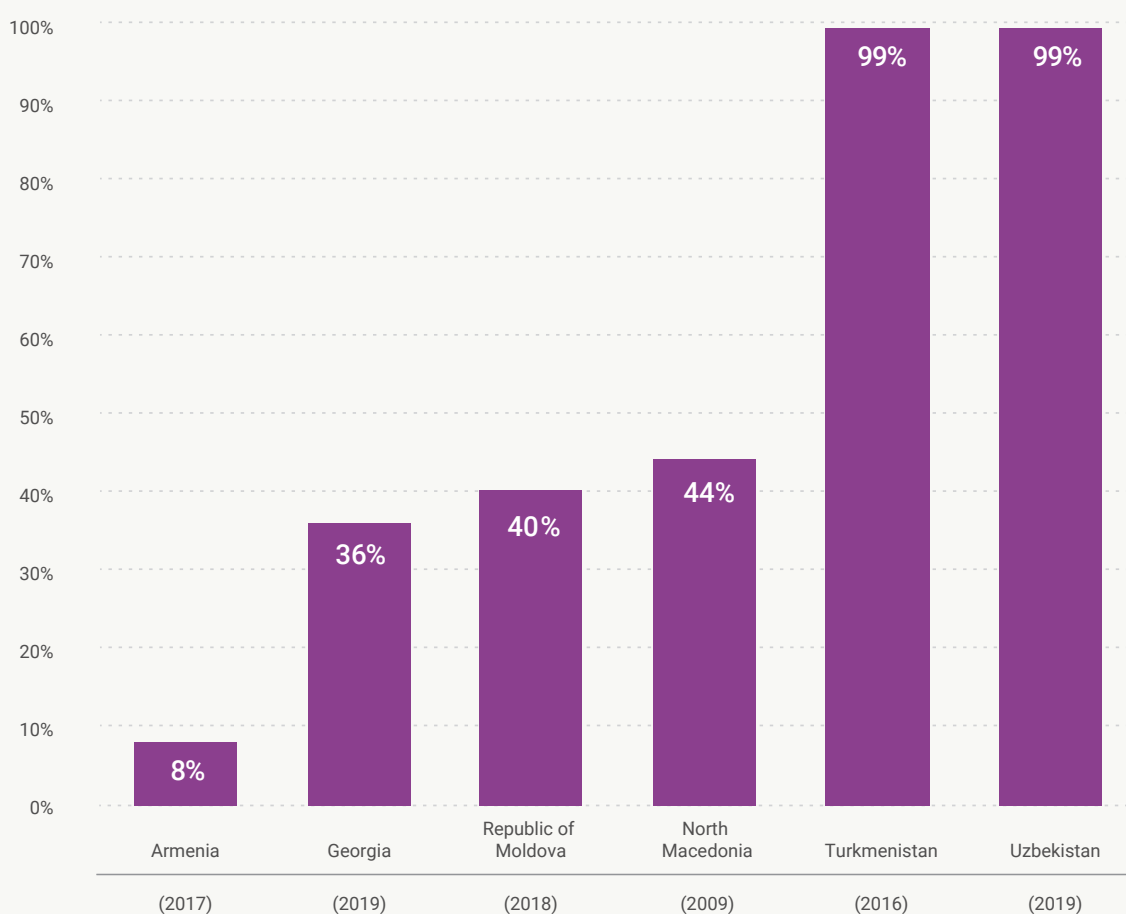
These data show that the majority of girls and women across the EECA region do not have access to free cervical cancer prevention through HPV vaccination and/or cervical screening. The requirement to have health insurance or pay a fee will reduce uptake of these services and also lead to greater inequality with those from disadvantaged communities suffering higher cervical cancer rates.

HPV VACCINATION AND CERVICAL SCREENING COVERAGE RATES

The WHO Global Strategy targets specify that 90 percent of girls should be fully vaccinated with HPV vaccine by the age of 15 and that 70 percent of women should be screened with a high-performance test by the age of 35 and again by the age of 45.

HPV vaccination coverage

Figure 4: HPV vaccination coverage rate



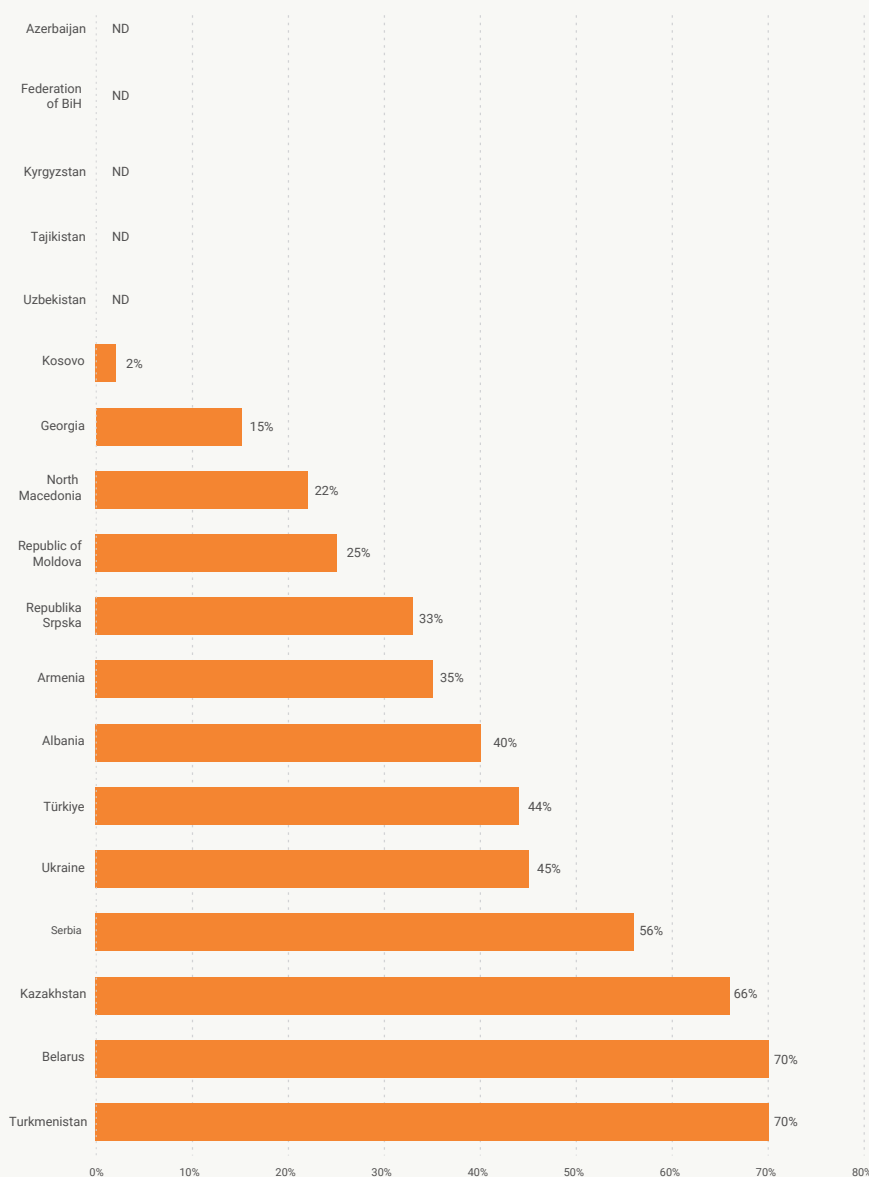
WHO-reported rates for programme coverage

HPV vaccination coverage data are only available for the CTEs that have public sector programmes (Armenia, Georgia, North Macedonia, Republic of Moldova, Turkmenistan, Uzbekistan) and these show a very wide variation (range from 8 percent to 99 percent) (Figure 4).⁹ No robust coverage data could be found for the other CTEs but it is likely to be low in Albania, Azerbaijan, Belarus, Bosnia and Herzegovina (both entities), Serbia, Türkiye and Ukraine where HPV vaccination is only available for a fee, and even lower in Kazakhstan, Kyrgyzstan, Tajikistan and Kosovo because the HPV vaccines are not officially available at all.

⁹ Human papillomavirus (HPV) vaccination coverage. Available at <https://immunizationdata.who.int/pages/coverage/hpv.html>.

Cervical screening coverage

Figure 5: Cervical screening coverage rates



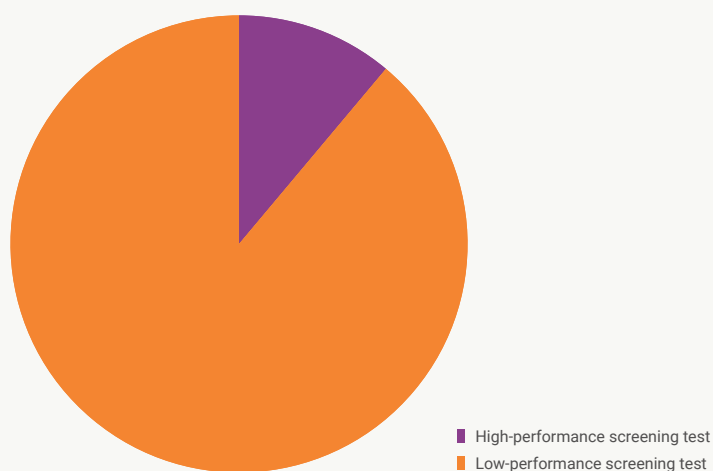
ND = no data

The cervical screening coverage rates reported by the CTEs vary from a low of 2 percent in Kosovo to a high of 70 percent in Belarus and Turkmenistan (Figure 5). However, most CTEs calculate screening coverage on the number of screening tests that have been conducted without linkage to any identification of the women screened, so the rates could be inflated by factors such as screening women outside the recommended age range and/or more often than the recommended interval. Only Albania, Georgia and North Macedonia have systems to calculate screening recruitment based on the number of women who were actually screened so their data should be more accurate: the coverage rates for Albania, Georgia (Tbilisi) and North Macedonia are 40 percent, 15 percent and 22 percent respectively.

These data indicate that only 2 CTEs have achieved the WHO target of 90 percent for HPV vaccination coverage while the rates in the other 4 CTEs that have public sector programmes are much lower and the rates in the remaining 12 CTEs are unknown but probably very low. Meanwhile, only 3 CTEs have met or come close to meeting the target of 70 percent for cervical screening coverage, with rates elsewhere showing considerable variation and possibly being overestimated in some CTEs.

CERVICAL SCREENING METHODOLOGIES

Figure 6: hrHPV primary screening



The WHO Global Strategy notes that nucleic acid amplification tests targeting high-risk human papillomavirus (hrHPV) provide better protection than cytology or visual inspection with acetic acid (VIA), and recommends that all countries should use hrHPV testing as the primary screening test (HPV primary screening). Only Albania and Türkiye have implemented HPV primary screening, while the primary cervical screening test in Armenia, Azerbaijan, Bosnia and Herzegovina (both entities), Georgia, Kazakhstan, Republic of Moldova, North Macedonia, Serbia and Kosovo is cervical cytology, and in Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan is VIA. However, North Macedonia and Uzbekistan are conducting HPV primary screening pilots, while Turkmenistan and Serbia are planning pilots. Therefore, the vast majority of cervical screening in the EECA region uses low-performance screening tests, although interest in using a high-performance test is starting to grow with two CTEs having implemented hrHPV primary screening and four CTEs either conducting or planning pilots.

ORGANIZATION OF SCREENING

Regardless of the screening test that is used, screening will not produce substantial reductions in cervical cancer rates unless it is delivered through well-organized programmes with strict QA. The European Guidelines for Quality Assurance in Cervical Screening set out the key organizational elements that are required for cervical screening to be effective (Table 1).⁵

Table 1: Key organizational elements required for effective cervical screening

1	A central administrative unit responsible for coordinating all elements of the screening process, including recruitment and recall, follow-up of screen-positive women, treatment of clinically relevant cervical disease and QA.
2	Access to a current database of the target population with sufficient detail to coordinate recruitment and recall.
3	A central screening registry or linked registries to record the results of screening, follow-up and treatment, that can be used for recruitment and recall, monitoring the follow-up of screen-positive women and QA.
4	Access to a population-based cancer registry for QA and programme audit.
5	Evidence-based guidelines covering the entire screening process and clinical protocols for each component service.
6	A QA system covering the entire screening process and each of the component services.
7	Public health education and knowledge- and awareness-raising campaigns.
8	Mechanisms to identify and recruit underserved women from rural, remote and disadvantaged communities.

All of the participating CTEs understand the benefits of organized screening and are working to implement the elements that are most compatible with their health care systems and budgets, but none have implemented all of these elements (Table 2).

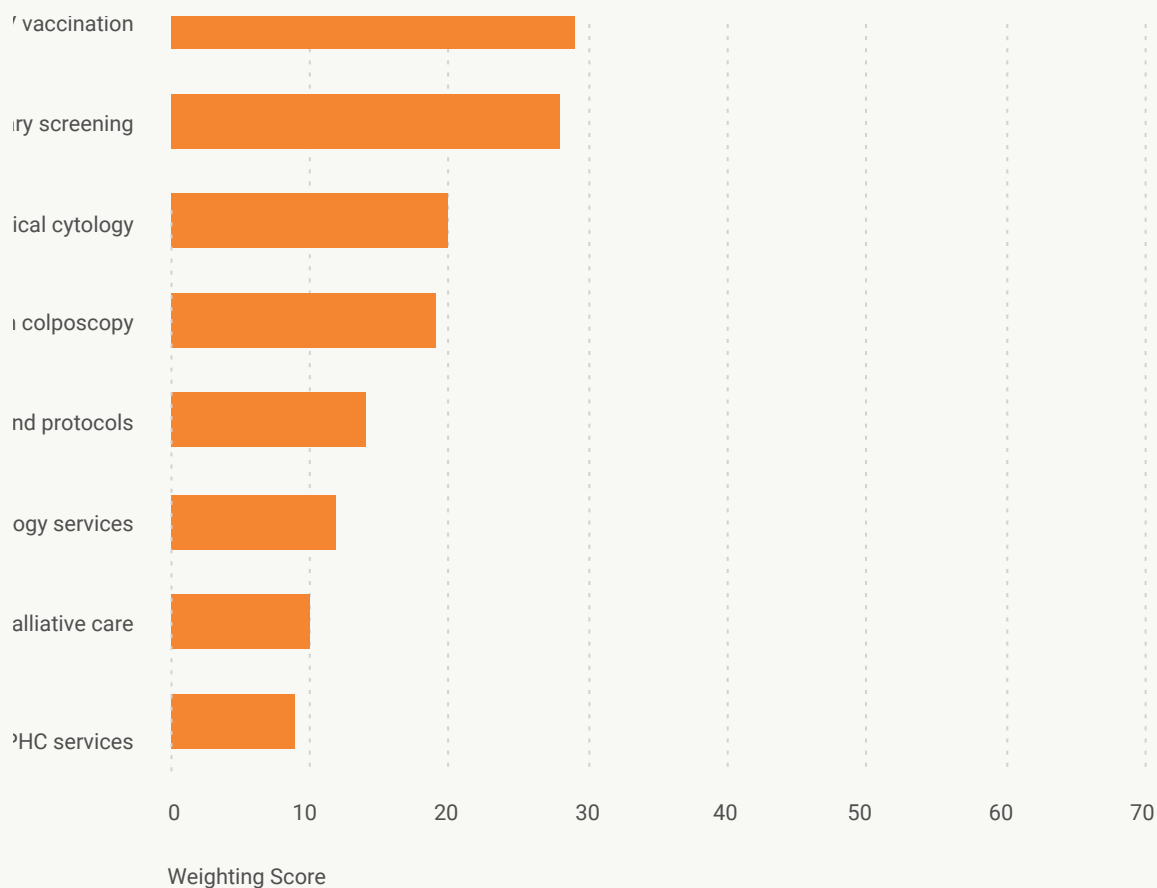
Therefore, screening throughout the region cannot be considered as 'organized' according to the European Guidelines and the absence of these elements will have decreased the effectiveness of cervical screening, even to the point that it has no effect at all but still consumes substantial health care resources.

Table 2: Cervical screening organizational elements that have been implemented

	Bosnia and Herzegovina																	
	Albania	Armenia	Azerbaijan	Belarus	Federation of BiH	Republika Srpska	Georgia	Kazakhstan	Kyrgyzstan	Republic of Moldova	North Macedonia	Serbia	Tajikistan	Türkiye	Turkmenistan	Ukraine	Uzbekistan	Kosovo
Central administration	Yes	No	No	Yes	No	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	No	No	No	No
Access to population data	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No
Cervical screening registry	(Yes)	No	No	No	No	No	Yes	No	No	No	(Yes)	No	No	No	No	No	No	No
Access to a cancer registry	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No
Screening guidelines - year	Yes 2019	Yes 2014	No	No	Yes 2008	Yes 2003	Yes 2010	Yes 2012	Yes 2015	Yes 2020	No	No	No	Yes 2017	No	Yes 2014	No	Yes 2018
QA of screening process	Yes	No	No	No	No	No	No	Yes	No	No	No	Yes	No	No	No	No	No	No
Knowledge- and awareness-raising	No	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	No	No	Yes	Yes
Programmes to reach vulnerable groups	Yes	Yes	No	No	No	Yes	No	No	No	No	No	Yes	No	Yes	No	Yes	Yes	Yes

PRIORITIES FOR CERVICAL CANCER PREVENTION

Figure 7: Priorities for cervical cancer prevention



All CTEs were asked to provide and rank their development priorities for cervical cancer prevention and results for the top eight priorities are presented in Figure 7.

Priority 1: Cervical screening organization

The most important priority at the regional level is the organization of cervical screening with CTEs expressing interest in improving screening recruitment and in ensuring that all screen-positive women are fully followed up.

Priority 2: Public knowledge- and awareness-raising

The second highest priority is public knowledge- and awareness-raising both for HPV vaccination to improve uptake in CTEs with low coverage or to prepare for the implementation of new programmes and for cervical screening to improve low coverage rates.

Priority 3: Introduce HPV vaccination

The third highest priority is the introduction of HPV vaccination. Although 14 CTEs have included HPV vaccination in an official strategy or plan, only 6 have so far launched vaccination programmes and 7 of the remaining CTEs prioritized the implementation of new programmes.

Priority 4: Introduce hrHPV primary screening

The fourth highest priority is the introduction of HPV testing for primary cervical screening, with CTEs expressing interest both in switching to a high-performance screening test and in having a technology that would allow self-sampling.

Priorities 5, 6 and 8: Strengthening clinical and/or laboratory services

These priorities all relate to the strengthening of the services that are involved in cervical screening. Although strengthening cervical cytology could be irrelevant given priority four above, implementing hrHPV primary screening will take many years with cervical cytology being the main screening test in most CTEs during this period so ensuring its quality is essential.

Priority 7: Updating cervical screening guidelines and related clinical protocols

Finally, priority seven relates to updating cervical screening guidelines and related clinical protocols that are an integral part of an organized cervical screening programme and therefore are included in priority one.

KEY OUTCOMES AND RECOMMENDATIONS

Almost every case of cervical cancer could be prevented by the implementation of effective programmes for HPV vaccination and cervical screening. This potential has been recognized in almost all CTEs as demonstrated by the inclusion of HPV vaccination and/or cervical screening in official strategies and plans. However, implementing the programmes to operationalize these strategies and plans has, in most cases, not yet been achieved.

Two of the main reasons for this are the related issues of money and competing priorities that lead governments to address problems with an immediate impact instead of preventing problems with a future impact. Fortunately, the WHO Global Strategy has raised the priority of cervical cancer prevention and governments across the EECA region are showing increased interest in implementing HPV vaccination programmes and in improving cervical screening.

All CTEs across the EECA region have the mechanisms and expertise to implement an HPV vaccination programme but most have not because they judged the balance between the cost and priority to be unfavourable. Now, the priority has increased and the cost of the vaccines has decreased so more CTEs will proceed. However, a problem remains in that few CTEs will have experience with introducing a vaccine against a sexually transmitted infection to adolescents and dealing with the resulting problems that can produce substantial reductions in vaccination uptake.

Therefore, the implementation of HPV vaccination programmes must be accompanied by knowledge- and awareness-raising programmes for adolescents and their parents, as well as educational programmes for the health care providers who will be delivering the vaccinations so they can effectively support the public programmes.

The situation with cervical screening is more complicated. All CTEs currently provide some form of cervical screening so the respective governments are likely to think they have programmes in place to prevent cervical cancer. However, no CTEs provide screening in a way that will produce substantial reductions in cervical cancer rates because:

- Most CTEs still require girls and women to have health insurance and/or pay a fee for some or all of the services that are involved in the screening process.
- No CTEs have implemented all of the organizational elements that are required for cervical screening to be effective.
- 16 of 18 CTEs are using low-performance screening tests (cervical cytology or VIA).

Therefore, cervical screening across the EECA region needs to be strengthened and will require:

- Advocacy to raise awareness and gain political support to strengthen cervical screening by implementing the required organizational elements, making all the services free for all

women and switching to a high-performance screening test.

- Implementing the organizational elements listed in Table 1.
- Switching to a high-performance screening test.
- Updating the national guidelines for HPV vaccination, cervical screening and treatment and advancing the capacities of the national institutions to deliver the services in line with the best evidence and practices.
- Providing the health sector with the necessary equipment and supplies, in line with internationally recognized standards and specifications.

