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ELIMINATING HPV-CAUSED CANCERS IN EUROPE: ACHIEVING THE POSSIBLE

Peter Baker^{1*}
Daniel Kelly¹
Rui Medeiros¹
Mike Morrissey¹
Richard Price¹

¹ *HPV Action Network, European Cancer Organisation, Brussels, Belgium*

* *Corresponding author. peter.baker@europeancancer.org*

The 690,000 cases of cancer caused worldwide [1] each year by HPV (human papillomavirus) are among the easiest of all cancers to prevent. Just two vaccine doses – and, potentially, just one dose if encouraging recent research is confirmed [2] – can protect against almost all cases of cervical cancer and many cases of vaginal and vulval cancers in women, penile cancers in men and anal and several head and neck cancers in both sexes. Most cases affect women but the proportion affecting men – perhaps up to 30%, according to one estimate [3]– is far from negligible. Cervical cancer screening is also an essential prevention tool and could reduce mortality in Europe by up to about 90% [4].

HPV causes almost 100,000 cancer cases in Europe each year. However, the actions taken in terms of both policy and practice so far by health systems in many European states have neither matched the scale of the problem nor seized the opportunities for disease prevention potentially offered by vaccination and screening.

The European Cancer Organisation, in its recent report *Viral Protection: Achieving the Possible. A Four Step Plan for Eliminating HPV Cancers in Europe*, analysed HPV vaccination programmes across Europe and found that a quarter (14 out of 54) of countries across the European region do not currently have a national HPV vaccination programme for girls [5]. Just over half of countries (28 out of 54) do not currently, or have no plans to, vaccinate boys as well as girls. Generally, countries in Northern, Western and some parts of Southern Europe are more likely to have an HPV vaccination programme, as compared to Eastern European countries. With some exceptions, the HPV vaccination programmes that include boys are located in Northern and Western Europe.

Few HPV vaccination programmes met, even before the disruption caused by COVID-19, the widely-accepted target of at least 80% coverage. Lower levels of uptake are usually attributed to the way the vaccine is delivered (school-based systems are generally believed to be the most effective) and by a lack of confi-

dence in vaccine safety. In some countries, such as Bulgaria and France, vaccination rates are particularly low. Vaccination rates can also vary widely within countries themselves and between different population sub-groups.

The *Viral Protection* report argued that the vaccination of boys as well as girls is essential because, even if vaccination rates are high in girls, unvaccinated males remain at risk of infection if they have sex with an unvaccinated woman from their own or another country. Moreover, men who have sex with men are completely unprotected by a girls-only programme. Gender-neutral vaccination increases the resilience of vaccination programmes in case of a fall in vaccination rates. The case for vaccinating boys against HPV is reinforced by the fact that men have a poorer immune response to HPV infection than women: men are less likely to seroconvert following infection, leaving them more vulnerable to re-infection. There is growing evidence that gender-neutral vaccination is cost-effective, especially in the long-term, although cost-effectiveness should always be considered alongside ethical, equity and public health factors in policy decision-making.

A recent analysis of cervical cancer screening across 46 European countries by the European Parliamentary Forum for Sexual and Reproductive Rights found that, with the exception of one country (Azerbaijan), all had a screening programme of some sort [6]. Most countries had an organised population-based programmes but one third (35%) had opportunistic programmes, meaning that their success depends on the initiative of individual women and their healthcare practitioner. Opportunistic programmes result in not only uneven coverage but also less consistent quality assurance, limited impact, and reduced cost-effectiveness.

Screening uptake is highly variable between and within countries, according to *Viral Protection*. Rates vary from over 70% in some EU member states to around 30% in others. The highest recorded rate is in Sweden (83% in 2017) and the lowest in Romania (1% in 2018). It is significant that HPV testing, the most effective and accurate, method of cervical cancer screening, has not yet replaced cytology-based screening in all countries. Europe-wide data on the adoption of HPV testing is not available but it is known that Finland, France, Germany, Italy, The Netherlands, Spain and Sweden, as well as Norway, Turkey and the United Kingdom outside of the EU, have either started to implement HPV testing on a regional or national level or plan to do so. It has also been piloted in several other countries, including Poland and Portugal.

HPV self-sampling, which women can undertake at home, is now an option and greater use of this tool could undoubtedly help to improve access to screening programmes and improve uptake. It may be particularly suitable for women who are unable to access standard screening facilities, perhaps because they live in countries with less provision or in remote areas or have a disability, or where there are cultural barriers or previous traumatic experiences. Self-sampling has already been incorporated into the cervical cancer screening programme in the

Netherlands and in the Capital Region of Denmark and could help mitigate the disruption caused to cervical cancer screening programmes by COVID-19.

Health literacy concerning HPV is a major barrier to progress. Many people currently lack basic knowledge about HPV and the associated risks. *Viral Protection* cites one study of men and women in the United Kingdom, where HPV vaccination for girls began in 2008 and systematic cervical cancer screening in 1988, which found that just over one third (37%) had even heard of HPV. Of these, 70% were aware that HPV could be transmitted during sex, and about 40% recognized that HPV could cause oropharyngeal cancer. Only two thirds (64%) knew that a preventive vaccine existed. A study of some 17,000 Europeans across 10 countries found that over two thirds (70%) were not aware that HPV could cause cancer in males. There is evidence that some women are deterred from screening because of a fear that it is a test for cancer rather than primarily a means of preventing cancer.

In 2019, over 300 representatives from the cancer community attending the European Cancer Summit supported a resolution calling for the implementation, by 2030, of effective strategies to eliminate cancers caused by HPV as a public health problem in all European countries. The European Cancer Organisation subsequently convened the HPV Action Network which is actively supported by a large, diverse and growing group of professional and patient organisations with an interest in HPV prevention, early detection and effective treatment.

Viral Protection sets out the HPV Action Network's policy plan. It contains 28 recommendations which, if implemented, would create a Europe free from the cancers and other diseases caused by HPV. The four key recommendations are:

- Universal (or 'gender-neutral') HPV vaccination for adolescents should be introduced along with efforts to maximise uptake.
- National organised population-based cervical cancer screening programmes are needed with higher levels of uptake. Screening programmes should use HPV testing technologies which are much more accurate than cytology.
- Cancer treatments must be consistently and equitably offered across all European countries in line with best practice guidelines and with care and support that maximises patients' quality of life.
- Action is needed to improve public and professional awareness and education about HPV in order to improve vaccination and screening uptake and to tackle misinformation.

The World Health Organisation's new global strategy for the elimination of cervical cancer (launched in November 2020)[7], together with Europe's Beating Cancer Plan (February 2021)[8], together provide a major opportunity to tackle

decisively all the cancers caused by HPV. The Beating Cancer Plan, which was significantly influenced by evidence provided by the HPV Action Network, contains two critically important 'Flagship' commitments related to HPV.

The first is to use dedicated funds under the EU4Health programme and other funding instruments to support member states' efforts to extend routine vaccination of girls *and* boys in order to eliminate all the cancers caused by HPV. The Plan's objective is to vaccinate at least 90% of the EU target population of girls and to increase significantly the vaccination of boys by 2030.

The second 'Flagship' commitment is to create a new EU-supported Cancer Screening Scheme to help Member States ensure that 90% of the EU population who qualify for cervical cancer screening are offered it by 2025. The scheme will be supported by EU funding and focus on making improvements in three key areas: access, quality and diagnostics. The Plan additionally aims to tackle inequalities in access and outcomes for all cancers across Europe and to improve health literacy on cancer risks and prevention, creating a new opportunity to challenge misunderstanding and misinformation about HPV vaccination and screening. Vaccine hesitancy could also be addressed through the Commission's commitment to propose a Council Recommendation on vaccine-preventable cancers.

The HPV Action Network will continue to review and respond to all opportunities created by the Plan, at all times conscious that effort will be required on many fronts. It is clear, however, that the policy framework in Europe is now more supportive than ever of the Network's agenda. The goal of HPV cancer elimination is both possible and achievable. The challenge is to ensure implementation and delivery by EU member states and more widely across the European region. The question is – if not now, when?

More information about the European Cancer Organisation's HPV Action Network and how individuals and organisations can get involved, is available at www.europeancancer.org

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