



PROTECT EUROPE.

PROTECTING EUROPE

Eliminating the cancers caused by
HPV through vaccination

PROTECT-EUROPE: Final Project Report

FULL VERSION



Co-funded by
the European Union

FOREWORD

PROTECT-EUROPE has been the right project at the right time. Europe's Beating Cancer Plan, published in 2021, makes HPV vaccination a priority. Not just for tackling cervical cancer but for all the cancers caused by HPV. And not just vaccinations for girls but for all sexes and genders.

The challenge is not simply to **introduce gender-neutral vaccination programmes throughout the European Union**, however. It is also to **ensure that the vaccine reaches as many arms as possible**, ideally immunising at least **90% of all young people**. While a few countries have reached, or almost reached, this target, most have not. In some European countries, vaccination rates are still too low, some under 10%, and have even been declining.

This is sometimes because the vaccine is difficult to access – perhaps because it requires repeated visits to a family doctor or paediatrician – or because young people and their parents/carers can be ill-informed about HPV, the diseases it can cause or the effects of the vaccine itself. In many cases, **citizens are negatively influenced by misinformation and fake news** claiming that the vaccine is dangerous (which it is not) or that it encourages so-called 'promiscuity' (which it does not).

Our project, which is based on extensive research as well as the practical experience of the **more than 30 partner organisations involved**, shows how vaccination uptake could be significantly improved through a combination of **better communication** between healthcare professionals (HCPs) and young



people and their parents/carers as well as by well-designed and targeted **public health messaging**.

PROTECT-EUROPE aims to achieve much more than presenting research findings and recommendations. It has translated the existing evidence on HPV vaccination into [practical online training programmes](#) and a series of [masterclasses](#) as well as making a suite of information available on a newly created [online Hub](#). It has also reinforced the importance of networks as sources of influence and the use of public channels to educate about the protection afforded by vaccination against the effects of HPV exposure.

This end-of-project report sets out the project's key findings. We hope you will find them interesting, informative and, above all, of practical use. If they are not acted on, they are simply words on a page.

We have an opportunity to make a significant difference, preventing about **90,000 HPV-caused cancer cases per year in Europe**.

If we don't work together to get this done now, when will it happen?

Finally, we would like to thank everyone – all consortium partners and individuals – involved in developing and delivering this project. It has been both a pleasure and an honour to have worked with you over the past two years.

Professor Daniel Kelly and Plamena Nikolova

Co-Chairs, PROTECT-EUROPE Steering Committee



ACKNOWLEDGEMENTS

PROTECT-EUROPE would not have been possible without the active support and engagement of the 30+ organisations from 16 countries who have been part of the project consortium. The organisations leading the six Work Packages merit particular thanks and acknowledgement.

The project was generously but not totally funded by [EU4Health](#). It is important to note that 20% of the project's costs were met by consortium partners: a significant sign of their commitment to this project's aims and objectives and their firm belief in its potential to improve cancer outcomes across Europe.

A huge and particular debt is due to the co-chairs of the project's Steering Committee, Professor Daniel Kelly and Plamena Nikolova, and Professor Margaret Stanley who chaired the Advisory Board.

The ECO staff and consultants involved in the project significantly to its success and, out of many, Peter Baker, Giacomo Lazzaro and Alberto Hermosel deserve a special mention for their work as project co-ordinators, as well as Giuseppe Filiti and Silvia Romeo for their communications and policy support.

Finally, fulsome thanks are due to Dr Maren Hunds at the European Health and Digital Executive (HaDEA) for her helpful advice and support throughout the two years of this project.

Suggested citation: PROTECT-EUROPE Consortium. PROTECT EUROPE: Eliminating the cancers caused by HPV through improved vaccination programmes. Final Report. European Cancer Organisation. Brussels, 2024.

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EXECUTIVE SUMMARY

The PROTECT-EUROPE project was developed and delivered by **a consortium of more than 30 organisations from 16 European Union (EU) countries co-ordinated by the European Cancer Organisation (ECO)**. Its key objective was to **improve EU member states' efforts to extend the roll-out of HPV vaccination for boys and girls to eliminate all the cancers caused by HPV**, a key goal of Europe's Beating Cancer Plan in 2021.

HPV causes around [90,000 cancer cases in Europe each year](#), chiefly cervical cancer but also anal, penile, oropharyngeal and other cancers. Up to [30% of HPV-caused cancers are in men](#), rising to [35% in some countries](#). HPV infection is most effectively prevented by the vaccination on a gender-neutral basis reaching at least 90% of all young people between the ages of 9 and 14 years.

All EU member states have now introduced, or are planning to introduce, gender-neutral vaccination (GNV) programmes but many still have sub-optimal rates of HPV vaccination uptake. The major barriers to higher uptake are **poor access and ineffective communication, low vaccine confidence**, as well as the **spread of mis- and dis-information on vaccination**. PROTECT-EUROPE set out to tackle these issues with a focus on engaging and influencing EU member states' health ministries, national agencies and vaccination services, civil society organisations involved in public health promotion, and clinicians with a role in vaccination.



PROTECT-EUROPE was delivered through **six Work Packages** (WP), each co-ordinated by a member of the consortium, under the guidance of a **Steering Committee** and a high-level **Advisory Board**. ECO was responsible for the overall coordination and management of the project.

Health care professionals (HCPs) have a critically important role in vaccination decision-making by young people and their parents/carers. This means that HCPs themselves must be well-informed about vaccination recommendations and able to communicate information effectively on a culturally sensitive basis and with the support of an accessible set of patient information resources. PROTECT-EUROPE identified and developed **26 recommendations** which aim to improve HCPs' knowledge, confidence and skills. These include being equipped to give strong recommendations about the benefits of HPV vaccination to patients, using a presumptive approach (ie. assuming that the young person will be vaccinated) and taking every opportunity to vaccinate. To optimise and normalise uptake, it is also recommended that vaccination is delivered through schools and educational centres.

It is vital that public health messaging promoting HPV vaccination is as effective as possible. Despite a lack of research in this area, PROTECT-EUROPE found that, to challenge vaccine hesitancy, campaigns should provide **clear information about the benefits and safety of the HPV vaccine**. A tailored approach for young people using face-to-face or personal digital devices and/or school initiatives that employ age-appropriate language can also stimulate uptake. 'Reminder and recall' systems that include phone calls, text messages, (e-)mailed letters and/or outreach visits have also been used with success.

The project's research findings were translated into a series of **practical outputs, chiefly training programmes, masterclasses and a range of other tools** aimed primarily at HCPs, civil society organisations and others with an interest in reducing the burden of HPV cancers. The **online training programme** comprises seven modules covering the burden of diseases caused by HPV, the performance of HPV vaccines in the prevention of cervical cancer and other HPV-related diseases, HPV vaccine safety, how to improve one-to-one communication and promote vaccine confidence, among other issues. A train-the-trainers programme adds an eighth module focusing on the skills needed to be an online tutor who can deliver the main programme in local settings.

10 masterclasses (nine offered online, and one held in-person) covered a variety of themes and topics such as HPV epidemiology, improving access to HPV vaccination and single-dose vaccination programmes. Recordings of the masterclasses are available as a permanent resource on the [project's website](#) and its [Hub](#). The latter is a living online repository for HCPs and policymakers to access resources on HPV vaccination, including the project's outputs, best practices, training modules and public awareness tools.

The project included a monitoring and evaluation arm, the results of which will be available once the project is complete. An interim report, looking at the first year of work, found that it was 'progressing well'.

PROTECT-EUROPE leaves a significant legacy which will, especially when combined with two other EU4Health-funded complementary projects and Joint Actions on HPV vaccination (ReThinkHPVaccination and PERCH), provide EU member states, HCPs, civil society organisations and others with access to an evidence-based suite of permanently available resources. There are also opportunities to continue to develop the learning and interventions developed by the project and to extend its reach into other vaccine-preventable infections, including Hepatitis B.

The report concludes with **10 recommendations for policy and practice**. First and foremost, it is vital that all countries' vaccination programmes are delivered on a gender-neutral basis with a target uptake of 90% to ensure effective 'herd protection'. Furthermore, programme resilience, stigma reduction and greater gender equality need to be addressed. The recommendations cover the roles of HCPs, public health communication strategies, school-based delivery programmes, and training and information for the health workforce. It is also recommended that all countries should appoint a national HPV elimination Board or committee comprising a diverse range of specialists tasked with creating, and monitoring the impact of, a national HPV elimination strategy.

PROTECT-EUROPE in numbers:

26

Detailed recommendations to improve the knowledge and skills of healthcare professionals.

6

Project Work Packages under the guidance of a Steering Committee and an Advisory Board.

10

Masterclasses covering a wide variety of themes and topics, from HPV epidemiology to vaccination access.

30+

Organisations from 16 European Union countries, co-ordinated by the European Cancer Organisation.

ABBREVIATIONS

EC	European Commission
ECO	European Cancer Organisation
ESSM	European Society of Sexual Medicine
EU	European Union
EC	European Commission
FISABIO	The Foundation for the Promotion of Health and Biomedical Research of the Valencian Community
GNV	Gender-neutral vaccination
HaDEA	European Health and Digital Executive Agency
HBV	Hepatitis B virus
HCP	Healthcare professional
HPV	Human papillomavirus
ICO	Catalan Institute of Oncology
IPVS	International Papillomavirus Society
MSM	Men who have sex with men
UCC	University College Cork
WP	Work Package

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INTRODUCTION

[Europe's Beating Cancer Plan](#), published by the European Commission (EC) in February 2021, set out 'to leave no stone unturned' to reduce suffering caused by preventable cancers. Structured around the key issues of prevention, early detection, diagnosis and treatment, and quality of life for cancer patients and survivors, the Cancer Plan contained 10 'flagship initiatives'. One of these, Flagship 3, aimed to prevent the cancers caused by HPV infection.

With dedicated funds under the EU4Health programme and other funding instruments, Europe's Beating Cancer Plan will support EU member states' efforts to extend routine vaccination against human papillomaviruses of girls and boys – in order to eliminate cervical cancer and other cancers caused by human papillomaviruses. The objective is to vaccinate at least 90% of the EU target population of girls and to significantly increase the vaccination of boys by 2030. Member states will play a critical role in meeting this target.

To help deliver this ambition, the EU4Health programme funded several projects designed to improve the uptake of HPV vaccination across the 27 EU member states. One of these projects was PROTECT-EUROPE, supported by a total of €1.2 million in funding over two years.

PROTECT-EUROPE was delivered by a consortium of more than 30 organisations from 16 countries. The project set out to support EU member states' efforts to extend the roll-out of HPV vaccination for boys and girls aiming to eliminate all the cancers caused by HPV.

More specifically, the project focused on:



Best clinical practice

Showing how one-to-one communication on HPV vaccination between clinicians and young people and their parents/carers can be improved.



Targeted public health messaging

Identifying effective macro-level public health communications on HPV vaccination.



Guidelines and support

Translating the learning on one-to-one communication and broader public health messaging into practical guidelines and support, including through training programmes.

The project began in January 2023 and was delivered over two years. This report sets out its work and achievements as well as outlining the next steps to secure an impactful legacy of the project.

“This EU4Health project draws on a range of expertise, including young people, to promote the latest scientific evidence about HPV across Europe and prevent all cancers associated with this virus. We will be working to ensure that equity should become the guiding principle to offer protection to both girls and boys and eliminate all HPV Cancers in future generations.”



Daniel Kelly, Co-chair of ECO's HPV and Hep B Action Network



BACKGROUND

Cancer is the **second leading cause of premature mortality and morbidity in the EU** and remains a **major and urgent public health concern**. HPV is directly responsible for around [5% of cancers](#) worldwide. An estimated [90,000 cancer cases](#) are caused by HPV each year in Europe, chiefly cervical, vaginal, vulval, anal, penile and oropharyngeal cancers. Women are most at risk, mainly from cervical cancer, but up to [30% of HPV cancers are in men](#). In [Denmark](#) and [Ireland](#), 35% of all the cancers caused by HPV are in men. HPV also causes anogenital warts and, more rarely, a disabling breathing condition, recurrent respiratory papillomatosis (RRP).

HPV is **primarily transmitted through sexual contact** and **almost all (up to 90%) of sexually active people will acquire HPV at some point in their lives**. There are around 200 different types of HPV and, of these, 12 are associated with a high risk of cancer. The most significant are types 16 and 18. The prevalence of high-risk (ie. oncogenic, or cancer-causing) HPV infection is substantial – at any one time, [22% of men in Europe have a high-risk HPV infection](#); the [equivalent figure for women](#) is about 4% rising to about 21% in Eastern Europe. In men who have sex with men (MSM) specifically, the [prevalence is much higher](#).

Fortunately, most of those with a high-risk HPV infection never experience significant symptoms or medical consequences and their bodies clear the infection within a year or two. But some people, particularly those who are immunocompromised (eg. because they are HIV+), may go on to develop a persistent infection and, subsequently, a pre-cancerous lesion or a cancer caused by HPV.



Preventing HPV Infection

HPV vaccination is a very safe procedure, most effectively administered in early adolescence before exposure to the virus through sexual activity. This means that, ideally, **vaccinations should be given to young people aged 9–14 years**. (Some countries also offer catch-up vaccinations up to the age of 26). The impact of HPV vaccination on cancer incidence is clear and significant with data from [Denmark](#), [Sweden](#), [England](#) and [Scotland](#) showing a major impact on the incidence of pre cancerous changes as well as cancers of the cervix. Data from the [USA](#) also show rising rates of oropharyngeal cancers in men. **HPV vaccination is probably the single most effective means of cancer prevention in the medical armamentarium**, especially when compared with the impact of interventions to control tobacco use, excessive drinking, sedentary behaviour and obesity.

To protect everyone effectively, and more quickly, **HPV vaccination must be delivered on a gender-neutral basis with an uptake rate of at least 90%**. This ensures ‘**herd protection**’ (when enough people are immune to protect the whole population). Vaccinating females alone, as was the case when HPV vaccination was first introduced in Europe in 2006, does not sufficiently protect men who have sex with unvaccinated women and does not at all protect men who have sex with men. There are also no screening programmes available to men to enable the early diagnosis of HPV-related cancers. Female-only programmes also leave unvaccinated women at risk of infection from unvaccinated men.

Gender-neutral HPV vaccination (GNV) removes from females the sole responsibility for preventing HPV infection and helps to overcome stigma and unfounded concerns that it encourages so-called ‘promiscuity’. GNV programmes are additionally more resilient to unexpected falls in uptake, for example as a result of a crisis of vaccine confidence, a pandemic, conflict or a natural disaster.

All EU member states have either introduced GNV programmes or are committed to doing so. However, many still have sub-optimal vaccination uptake, such as well below 10% for girls in [Bulgaria](#) and 42% for girls and 9% for boys in [France](#) in 2022 (all figures are for the final dose in under-15 year olds). The primary challenge is now to ensure that vaccination uptake throughout the EU rises to match those of the best-performing countries, and ultimately to reach 90% for all. The major barriers to high uptake rates are **ineffective vaccination systems** and **low vaccine confidence** as a result of **inadequate or inaccurate information**; concerns about **vaccine safety** and **lack of trust in governments and vaccine manufacturers**.

It is these barriers to vaccination that PROTECT-EUROPE set out to overcome.

The PROTECT-EUROPE Consortium

PROTECT-EUROPE was developed and delivered by a consortium of **more than 30 organisation** across **16 EU countries** under the co-ordination of ECO (the consortium members are listed in Appendix 1). Eight of the countries represented in the consortium were designated as low-GNI (gross national income) which not only ensured diversity but also, under [EU4Health funding rules](#), enabled the project to receive a 20% higher level of funding or costs to be reimbursed (a maximum 80% funding rate instead of 60%).

The consortium members were drawn from a wide range of backgrounds and brought multi-disciplinary skills and experience to the project. They included academic, university-based organisations, national and international NGOs (including patient associations), and clinical/professional groups. There was a significant contingent of young people's organisations and a sports body, the Romanian Football Federation.

The contribution of the members varied according to their capacities and areas of expertise. Levels of involvement ranged from being a WP leader to reviewing papers, attending and contributing to consortium meetings and helping to disseminate the project's outputs. The full consortium met four times during the course of the project.



Key Target Groups

To enable progress that is needed to boost HPV vaccination uptake across the EU, PROTECT-EUROPE targeted **three groups in particular**:

- Health ministries and others involved in vaccination planning, promotion and delivery at national and local levels.
- Civil society organisations with a role in public health promotion generally, cancer prevention, sexual health, women's health, men's health, sexual minorities' health, young people's health and other issues.
- Clinicians, especially those with a role in HPV vaccination, including family doctors and general practitioners (GPs), nurses, paediatricians and dentists.

“At ThinkYoung our mission is to improve young people’s lives. The PROTECT-EUROPE project will be the perfect opportunity to do exactly that. We have been working to ensure HPV information campaigns reach young people and their families since 2018 and are placed in the contexts where they are most likely to be engaged. Informing young people is key in enabling them to make conscious and correct choices about HPV vaccination and prevention. This in turn will have a positive impact on their health and well-being.”



Andrea Gerosa, Founder of ThinkYoung

Collaboration

PROTECT-EUROPE was not the only project working to improve HPV vaccination uptake in the period 2023-24. Two other projects – **PERCH** and **ReThinkHPVaccination** – were also funded by the EU to achieve complementary goals. To avoid unnecessary duplication and to share learning wherever possible, PROTECT-EUROPE prioritised collaboration with PERCH and ReThinkHPVaccination through representation at meetings, information sharing, and regular contact between the projects' work package leaders and project coordinators.



PERCH

PartnERship to
Contrast HPV

PERCH (PartnERship to Contrast HPV) is an EU Joint Action composed of a consortium of 18 EU member states working with other organisations to improve the capacity of states to plan and implement HPV vaccination

campaigns by sharing knowledge and experience, to improve data and monitoring systems on HPV vaccination and HPV screening, to improve knowledge and awareness of HPV-related disease and prevention in specific target groups, and to improve the knowledge and skills of HCPs in HPV vaccine communication. The project is ending in April 2025.

ReThinkHPVvaccination is a Romania-based project whose main goal is to support EU member states and associated countries in rethinking their HPV vaccination campaigns, specifically by developing a virtual HPV vaccination knowledge centre for



countries with low vaccination rates and to ensure synergy with the EU Knowledge Centre on Cancer, creating a communication strategy for Romanian needs and an HPV vaccination behaviour matrix, developing and sharing guidelines for combating fake news about HPV vaccination and disseminating a short handbook in Romanian during an online media event, and designing, developing and sharing international training courses for HPV vaccination communication based on the behaviour matrix. The project is ending in January 2025.

PROTECT-EUROPE's Structure

PROTECT-EUROPE was based on six WPs, each co-ordinated by a member of the consortium.

- **WP1. Project management and coordination, co-ordinated by ECO.**
- **WP2. Best clinical practice: From science to delivery, co-ordinated by The Foundation for the Promotion of Health and Biomedical Research of the Valencian Community (FISABIO).**
- **WP3. Getting the message across borders: Targeted public health communications, co-ordinated by the European Society of Sexual Medicine (ESSM).**
- **WP4. EU Member states' guidelines and support, co-ordinated by the Catalan Institute of Oncology (ICO).**
- **WP5. Monitoring and Evaluation, co-ordinated by University College Cork (UCC).**
- **WP6. Communication and Dissemination, co-ordinated by ECO.**

ECO was the overall consortium co-ordinator. The project was supported and guided by a **Steering Committee**, chiefly comprising the WP leaders, which met in Brussels in January 2023 and subsequently online on a mostly monthly basis throughout the two years of the project. The Steering Committee's co-chairs were

Professor Daniel Kelly and **Plamena Nikolova**. Additional advice and support were provided by a high-level **Advisory Board**, chaired by **Professor Margaret Stanley**, which met online twice. (There is a list of Advisory Group members in Appendix 3.)

A risk management strategy, set out in the grant application and revised during the course of the project, assessed ongoing critical risks to the project and set out mitigation measures. A Values-Based Framework, agreed by the consortium, set out five core values which aimed both to inform and facilitate the effective governance and delivery of the project. The central values of the Framework were **Respect, Collaboration, Excellence, Integrity and Innovation.**



PROTECT-EUROPE

Meet the Advisory Board



ALIN MITUȚA



WALTER RICCIARDI



NICOLÁS GONZÁLES CASARES



BERNIE BRENNAN



MARGARET STANLEY



ROB RUITER



DAPHNÉ HOLT



HEIDI LARSON



PAOLO BONANNI

PROTECT-EUROPE'S FINDINGS

The bulk of the research underpinning the project was conducted by WPs 2 and 3. WP2 focused on improving clinical practice in terms of communications between HCPs and young people and their parents/carers. WP3 examined the role of wider public health messaging.

Best clinical practice

HCPs have a critically important role in vaccination decision-making by young people and their parents/carers. The public generally consider them to be reliable sources of medical information and often seek their guidance before agreeing to vaccination, either for themselves or for children in their care. This means that **it is essential for HCPs to be well-informed about vaccination recommendations as well as being able to communicate information effectively.**

While acknowledging that 'one-size-fits-all' approaches to vaccine-related communication are inadequate – every patient has their own experiences, values and beliefs that influence their communication style – PROTECT-EUROPE set out to identify **a broad range of effective strategies to improve the interaction between HCPs and young people and their parents/carers.** This work was informed by an evidence review and a survey of HCPs.

The analysis led to recommendations that can be grouped into four thematic categories:

- **Professional knowledge** (through training) and the provision of reliable information (evidence-based materials that can be shared with patients during consultations) – these can ensure the effective transmission of accurate information and help to dispel myths and unfounded concerns.
- **Communication skills and strategies** – strong communicative abilities are pivotal to addressing uncertainties, offering support and delivering information in a clear, accessible and persuasive manner.
- **Culturally-sensitive and adaptive communication** – messages must be tailored to the individual recipient in a way that respects cultural diversity and promotes inclusion and equity.
- **Accessibility and availability of resources** – ensuring that information, healthcare services and vaccine-related resources are easily accessible and available to all.

More specifically, the project developed **26 detailed recommendations** which aim to improve knowledge and one-to-one communication on HPV vaccination between HCPs and young people and their parents/carers. These recommendations are:

1. Provide comprehensive and understandable information for all levels of literacy

Adapt the language and level of detail of the information, without compromising the content, according to the educational level of patients. Use understandable terms and avoid unnecessary medical technical jargon. Using language that is easily understandable to the patient is essential in conveying the information effectively.

2. Share information from reputable sources and be alert to unofficial messaging

HCPs should be prepared to respond to specific concerns raised by young people or their caregivers. Providing clear and transparent explanations about the vaccine's ingredients, efficacy/effectiveness and safety, recommended schedule, funding and potential side effects can help to reduce mistrust and alleviate fears and misconceptions, such as the false belief that the vaccine causes infertility.

It is crucial to dispel myths and promote accurate understanding. Sharing information from reputable sources, such as national health organisations or respected medical publications, can also contribute to building trust and credibility. Due to the proliferation and potential negative impact of fake news and unreliable sources, it is important to provide the patient with guidelines to identify them.

3. Employ a combination of scientific data and personal experience to address HPV vaccine hesitancy among adolescents, parents and guardians

To overcome the hesitancy of some adolescents, parents and guardians, the use of selective data tailored to their needs and preferences, and ranging from personal experience to population-based information, robust evidence and facts, is recommended. It is important to rely on reliable scientific data not only to promote the HPV vaccine but also to combat misconceptions and myths.

Having HCPs explain that they would give (or have given) the HPV vaccine to their own children, or to have recommended vaccination to family and friends, is also a powerful way to impact uptake. Using other personal stories, such as those of cancer survivors or parents who have already vaccinated their children, can also be useful.

4. Use support materials and offer young people, parents/carers the possibility to choose the most appropriate type

Where appropriate, use support materials to improve the comprehension of information, especially when the target audience has a low educational level or are not fluent in the majority language. Both oral and written information sources should be adjusted to the level of understanding of young people and parents/carers to ensure adequate understanding. If possible, information should be provided in more than one format (eg. orally, leaflets, videos, etc.), allowing individuals to choose the one that best suits their preferences/needs.

5. Use a presumptive approach when presenting HPV vaccination

A presumptive approach (ie. assuming they will vaccinate, e.g. “Well, we have to do some shots”) is more likely to be effective than a participatory approach (ie. asking more questions that involve complicated decision-making, such as “What do you want to do about shots?”) when trying to convince parents/carers to vaccinate their children.

6. Give a strong recommendation

Most parents/carers consider HCPs to be the most trusted information source about vaccination. Because of this, an HCP’s recommendation is critical for vaccine acceptance. HCPs should clearly state their strong recommendation employing a combination of summaries of scientific data and patient experience.

7. Address doubts and questions

Some parents/carers want more information or answers to their questions. This does not mean that they will not accept vaccination, so it is very important that HCPs listen to their worries and try to understand the concerns that underlie their questions. HCPs should respond empathetically, honestly and transparently, respecting parents’/carers’ fears, preferences, values, autonomy and freedom of choice.

8. Don’t give up – think long-term

If parents/carers refuse vaccination when it is offered, HCPs should not be discouraged. If possible, they should inquire about the reasons so that the conversation can be redirected at a later time. It is also important to inform the young person and provide them with relevant informational resources, empowering them to make informed decisions once they have the autonomy to do so.

9. Compare cancers caused by HPV to other cancers

Comparing the cancers caused by HPV with other more familiar forms of cancer, such as breast cancer, can help to educate the public about the potential risks of HPV. In addition, emphasising the fact that, unlike other cancers, HPV-related cancers are associated with an identifiable virus and can be prevented by a vaccine, can be a useful communication strategy.

10. Appeal to moral responsibility

In certain instances, leveraging the sense of duty and moral responsibility that parents/carers have towards their children's well-being can be effective. For instance, employing a rhetorical question that prompts reflection about why anyone would overlook their child's health and framing HPV vaccination as a moral obligation, such as, "Why wouldn't you safeguard your child?", can serve as a compelling strategy. This is also a useful approach to persuade health providers, and politicians, to strengthen vaccine uptake rates.

11. Take every opportunity to vaccinate – and create these opportunities

Approaches such as checking an individual's vaccination status at each visit and systematically recommending and administering the necessary vaccines can be helpful. HCPs can also proactively contact families to remind them of vaccinations if they are overdue or need follow-up doses to complete the series. It may be possible to offer vaccines to younger children accompanying an older sibling to a check-up visit where they received the HPV vaccine. Another valuable strategy is to bundle the delivery of all adolescent vaccines and deliver them in the same way and on the same day.

12. Adapt recommendations for each gender

Provide information on the risks of infection relevant to the young person's sex/gender. Because vaccination information has generally focused more on cervical cancer, it is important that boys and their parents/carers are also aware of the strong arguments for accepting HPV vaccination.

13. Strengthen HCPs' knowledge of and trust in the vaccine

One of the main reasons for non-vaccination is a lack of knowledge among HCPs about the benefits of vaccination, fear of adverse effects and doubts about efficacy/effectiveness as well as safety. HCPs may also be unsure of the case for vaccinating males. It is therefore very important for HCPs to expand their expertise with regard to HPV and vaccination uptake through specialised training courses. These can increase both their confidence in vaccination and their ability to resolve doubts that young people and their parents/carers may have.

14. Learn how to communicate

When recommending vaccination, what is said is clearly important, but so too is how and when it is said. Therefore, in addition to reinforcing their expertise on the diseases caused by HPV and about the vaccine, it is essential that HCPs improve their communication skills, so that the recommendation made is more effective and has the desired impact. HCPs should also pay attention to their own and the recipient's non-verbal communication and also use examples or paraphrases. The use of scripted or semi-scripted scenarios through role-playing with HCPs and actors has proven to be an effective training strategy to improve their communication skills.

15. Get to know the population served

HCPs need to be aware of the characteristics of the population they serve and to understand the potential barriers to vaccination for minority groups, how they communicate, their decision-making processes, and their doubts and concerns.

16. Tailor information to the concerns of patients

The information provided and recommendations given should build on the concerns expressed by individual patients. Generalised messages can provide valuable information, but they do not always address the cultural or other specific concerns of particular groups. When talking to teenagers, for example, discussing genital warts might be more impactful than focusing only on cancer.

17. Explain how the healthcare system works

Some individuals may choose not to participate in the vaccination programme due to their unfamiliarity with how the health system works or a lack of confidence in it.

18. Establish an atmosphere of trust and cultural respect

The primary goal should be to establish a personalised connection with each patient, taking into account individual and cultural differences rather than relying on assumptions. It is crucial to note that HCPs' recommendations and conversations can have community-wide effects, as a patient may influence/inform their peers.

19. Adapt the conversation according to the cultural perceptions of the vaccine and of sexual activity

When discussing HPV vaccination, HCPs may encounter rejection from some patients due to its association with sexually transmitted infections (STIs). For this reason, when discussing issues related to sexual health, HCPs should try to create a comfortable and trusting environment so that patients can express their concerns and questions without feeling self-conscious. Reassurance that the vaccine is not focused on promotion of children's current sexual activity but on protecting them in case they do become sexually active in the future may be helpful. In some religious communities, in addition to distancing messages from sexual activity, it could be helpful to frame the vaccine as a great step forward in cancer prevention.

20. Take into account the linguistic limitation of each individual

It is important to communicate with individuals in a language they are familiar with. If possible, ensure you have HCPs who speak the patient's native language or use translation tools to facilitate communication.

21. Adopt a communication style focusing on individuals' personal consequences or on community-related issues

Effective communication requires understanding and adapting to different cultural patterns and communication styles. For example, in an individualistic society, the conversation should be oriented towards the personal health consequences of HPV infection for the individual, such as anogenital warts or cancer, whereas in a collectivist society, the focus should be on community-related issues, such as the impact on group protection or society at large.

22. Engage relevant stakeholders

Some individuals will consult key stakeholders, such as religious or cultural leaders, before making a decision about vaccination. It can therefore be useful to provide influential people with clear information about the benefits of the vaccine.

23. Provide specific and comprehensive training in different formats for HCPs

Training for HCPs should be adapted to their preferences and level of digital skills and should be available in different formats, such as didactic information sessions, use of smartphone apps or videos.

24. The formal health professions curriculum should incorporate training in vaccines, HPV and social and communications skills

Both pre- and post-qualification training for HCPs is essential. Integration of these issues into professional curricula can help facilitate early adoption and implementation.

25. Consider delivery of HPV vaccination through schools and educational centres

To optimise access and equity to HPV vaccination, it is recommended that HPV vaccination be organised and administered through school programmes or educational centres, including sports facilities, whenever possible.

26. Enhance resilience through gender-neutral vaccination programmes and active management of vaccine confidence crises

Even in countries with a high vaccination uptake, rates can fall as a result of a crisis in vaccine confidence, a pandemic, a natural disaster or conflict. Gender-neutral vaccination can help to maintain protection against HPV-related diseases in the target population despite a sudden drop in vaccine coverage. Resilience can also be increased through rapid official responses to counter anti-vaccine sentiment in the population.

Having identified these 26 recommendations, WP2 then made a further set of recommendations about how they could be translated into guidance, training and support for HCPs. This work was completed as part of WP4.

“We all want to prevent cancer. Rarely, however, do we have a vaccine that will actually do that - and against multiple cancers - saving lives. It is essential do everything in our power to get that message across and challenge the skeptics head on based on the wealth of scientific evidence we have at hand. PROTECT-EUROPE is the dynamic approach that we desperately need.”



Andreas Charalambous, Past-President, European Cancer Organisation



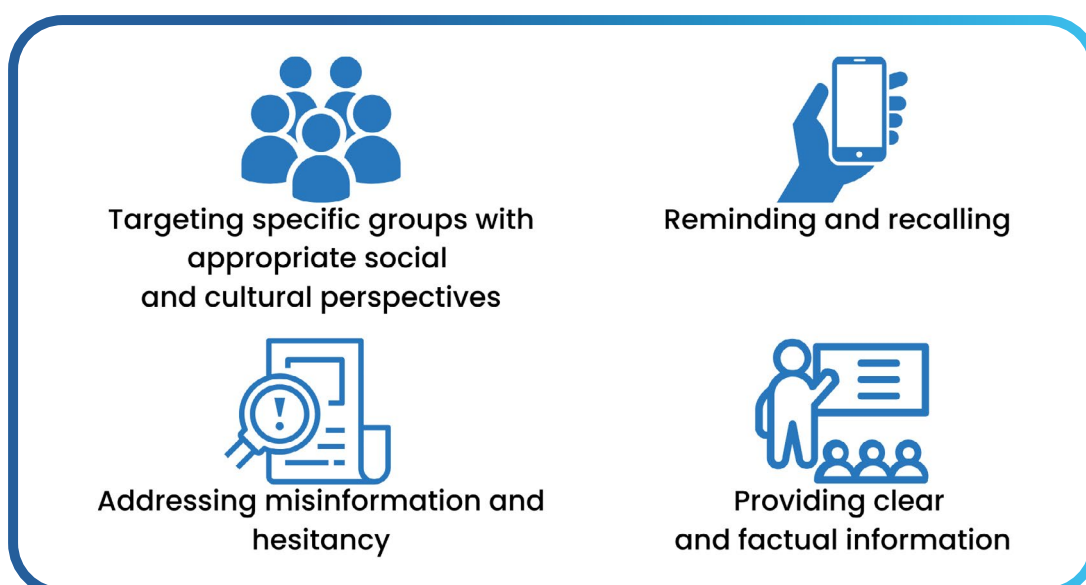
Getting the message across

It is vital that public health messaging that promotes HPV vaccination to young people and their parents/carers is as effective as possible. Drawing on a literature review, including 'grey literature' (ie. literature that has not been formally published in books or journal articles, such as government or civil society organisation reports and conference proceedings) PROTECT-EUROPE's WP3 sought to identify **which interventions improve HPV vaccination uptake and intention in children, adolescents and young adults**. This included a review of campaigns to promote HPV vaccination in **Ireland, Greece and the Netherlands**.

The analysis found that, overall, **there is a scarcity of intervention evaluation research on HPV vaccination uptake in Europe**, but case studies did provide some useful insights and learning. There was also a lack of published research on interventions for specific groups at high risk such as men who have sex with men, sex workers and refugee populations.

Effective public health campaigns share common elements, such as **targeting specific groups** (eg. pre-teens or young adults in catch-up campaigns) as well as attempts to **address barriers**, such as misinformation or vaccine hesitancy, by **promoting the safety and efficacy** features of HPV vaccination. To address vaccine hesitancy, campaigns need to **provide clear information** about the benefits and safety of the HPV vaccine and **promote gender-neutral vaccination** from a gender equality perspective. All the levels of influence on vaccination behaviour need to be considered when developing interventions. This means involving young people (including social influencers or ambassadors), parents and public health organisations at the local and national levels.

What are the hallmarks of effective public health communications campaigns?



CASE-STUDY: IRELAND

HPV vaccination rates in Ireland fell very significantly in 2015–17 because of widespread misinformation about the safety of the HPV vaccine. (At this time, only girls were eligible for vaccination.) In response, the Irish National Immunisation Office established a Steering Committee to encourage relevant partners to promote the vaccination at the microsystem level. The purpose of the initiative was to regain parental trust and to ensure that HPV vaccination uptake increased. The initiative included running focus groups and a social media analysis to understand the attitudes of parents regarding HPV vaccination, which helped the Irish National Immunisation Office to liaise with a range of stakeholders, including parental organisations, educational providers and political organisations.

The focus groups and social media analysis guided the revision of information materials which were posted on a national HPV website (HPValliance.ie) under the auspices of the HPV Vaccination Alliance. The Alliance was launched in 2017 to bring together a range of organisations to support and raise awareness of HPV vaccination. Also significant was the advocacy work of Laura Brennan and her family. Before her death from cervical cancer in 2019, Laura shared her story on television and through other media and made videos with Ireland's Health Services Executive and the WHO Regional Office for Europe (eg. [youtube.com/watch?v=iiidJ5FVvcM](https://www.youtube.com/watch?v=iiidJ5FVvcM)). The interventions succeeded in restoring girls' two-dose vaccination uptake to 81% in 2019–20, up from a low point of 56% in 2016–17.

Ireland introduced gender-neutral HPV vaccination in 2019 and a single dose programme from 2022/23. 80% of girls and 77% of boys were vaccinated in 2022/23.

80%

Percentage of girls vaccinated against HPV infection in Ireland in 2022/23.

77%

Percentage of boys vaccinated against HPV infection in Ireland in 2022/23.

The analysis suggested that a tailored approach for young people prior to sexual debut, using face-to-face or personal digital devices and/or school initiatives linked to vaccination, and employing age-appropriate language, would promote HPV vaccine uptake. The most commonly used single-method strategy is a **'reminder and recall system'** which includes phone calls, text messages, (e-) mailed letters, and/or outreach visits. The design of digital interventions for adolescents' sexual health should reflect the end users' specific needs and young people need to have confidence in the platform's privacy and confidentiality. School-based vaccination programmes can achieve high uptakes and are generally considered to be the best approach.

Interventions to promote HPV vaccination **must be appropriate and expedient from a social and cultural perspective**. Social media and eHealth platforms may be useful in this context as they can easily be adapted to specific cultures by tailoring messages that resonate with values and beliefs. To reach young people, platforms popular within their communities can be used to share information, testimonials, and positive stories about vaccination, with a specific focus on interactive content. Collaboration with social media influencers who have a strong following within the community can be utilised to advocate for vaccination.

There is a need for more research on the development of theoretically driven, evidence-based interventions promoting HPV vaccination that can be applied in all types of settings. Future research should implement a systematic survey to identify determinants of HPV awareness and hesitancy in different countries. This would enable the tailoring of effective interventions for different contexts.

WP3 also recommended that all countries should have a national HPV elimination Board or committee, which should comprise of specialists (eg. gynaecologists, gynae-oncologists, school nurses, sexologists, andrologists, epidemiologists, pathologists, public health professionals, general practitioners, patient experts, young generation representatives, the government, and other authorities). Each Board would be tasked to create a national HPV elimination strategy which would include communications.

"HPV causes 5% of cancers worldwide. That need not be. More and better communication is paramount, and PROTECT-EUROPE will help provide that. It is hard to overstate the importance of this new initiative and why I have worked closely with ECO to launch it. I look forward to further collaboration on such matters, especially as I am now part of ECO's National and European Parliamentarians for Cancer Action."

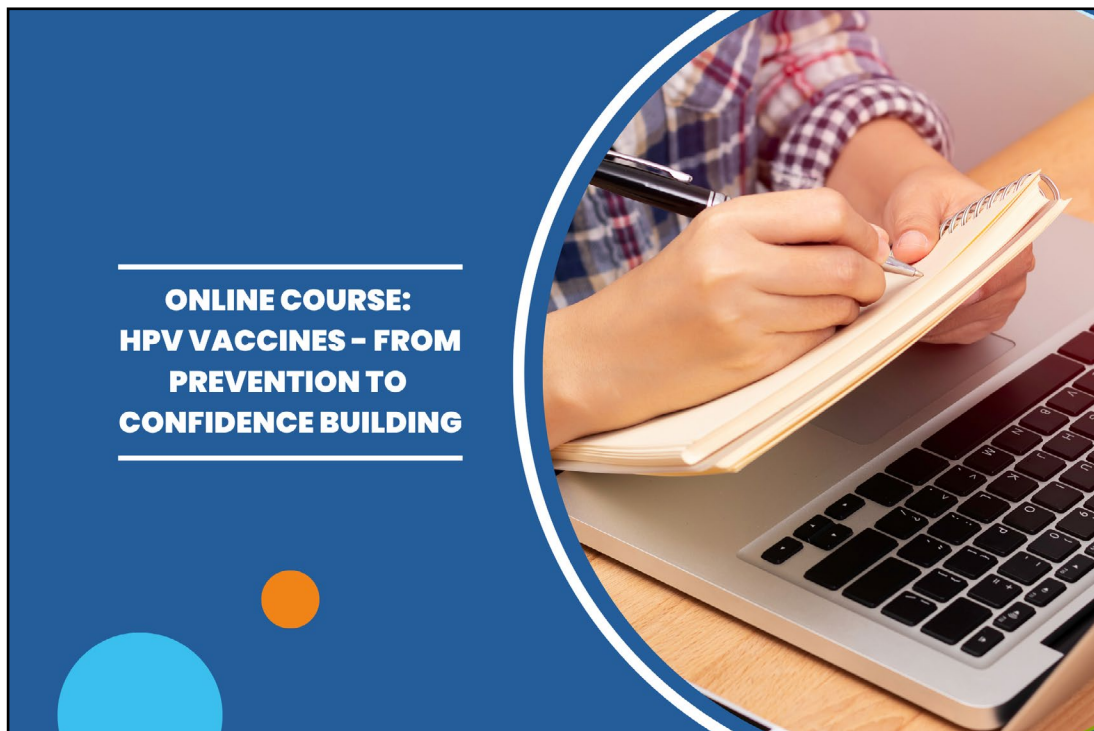


Alin Mituta, Former MEP, Member of National and European Parliamentarians for Cancer Action

GUIDELINES AND SUPPORT

The findings from WPs 2 and 3 were passed to WP4 for translation into practical outputs, chiefly training programmes, masterclasses and a range of tools aimed primarily at HCPs and others with an interest in the HPV field.

Online training



**ONLINE COURSE:
HPV VACCINES - FROM
PREVENTION TO
CONFIDENCE BUILDING**

HCPs are the main and most trusted source of information on vaccination topics. Appropriate training of those professionals involved in HPV vaccination can therefore contribute to improving HPV vaccination coverage by increasing HPV vaccine acceptance by young people and their parents/carers.

PROTECT-EUROPE developed an [online training course about HPV vaccines](#) designed to enhance the knowledge and communication skills of HCPs as well as those delivering broader public health messaging about HPV vaccination. There was also a [train-the-trainer course](#) developed which enabled the delivery of the course in local contexts. The first course is a 20-hour, seven-module, online programme and while the train-the-trainer course contains the same content but has an additional module focusing on the skills needed to deliver the 20-hour course locally. Both courses are free, self-paced, delivered in English and hosted on a virtual learning platform, [e-oncologia.org \(e-oncologia.org/cursos/hpv-vaccines-from-prevention-to-confidence-building/\)](https://e-oncologia.org/cursos/hpv-vaccines-from-prevention-to-confidence-building/), which is managed by the Catalan Institute of Oncology (ICO).

The courses are assessed and certificates available on completion if students pass an exam which tests their knowledge after each module. The exams comprise five or 10 multiple-choice questions to be answered in 15 or 30 minutes respectively. Students are also required to complete a pre- and post-course assessment questionnaire which assesses their communication skills. Students on the train-the-trainers course have an additional exam focusing on their training skills.

These courses drew on the insights generated by WPs 2 and 3 as well as a previously existing HPV vaccine course delivered by the ICO. The PROTECT-EUROPE course was accredited by the European Accreditation Council for Continuing Medical Education (EACCME) with 1.5–3 CME credits per module up to a total of 19.5 CME credits for those completing the full course.

The first set of course were delivered from September to November 2024. Each module is unlocked on a weekly basis with two weeks allocated at the end for catch-up, aimed at students who joined the course after the start date or who were not able to complete a module on time.

The attendance target was 1,000 students on the main course. The train-the-trainers course aimed to recruit institutions from 10 different EU member states.

Once students have registered with e-oncologia, they can enter a virtual classroom (one for each course) which has three main elements:

- **Course information. Including details on the course dates, schedule and methodology.**
- **Course materials, providing access to each module, any supplementary materials, the exams and certificates.**
- **Forums, with one for technical assistance and a second for content-related questions and interaction with tutors to resolve any issues.**

The main seven-module course, entitled 'HPV vaccines: from prevention to confidence building', covers:

- **M1. HPV and related diseases (3hrs)**
- **M2. HPV vaccines: an overview (3hrs)**
- **M3. Prevention of cervical cancer (3hrs)**
- **M4. Prevention of other HPV-related diseases (3hrs)**
- **M5. Single-dose schedule and special populations (1.5hrs)**
- **M6. HPV vaccine safety (3hrs)**
- **M7. How can a healthcare worker promote and sustain vaccine confidence (3hrs)**

To provide a comprehensive and engaging learning experience, all the modules follow the same structure:

- **Introduction.** An overview of the topics to be covered and the relevance of the module to the participant's professional development. It also outlines the expected learning objectives for that module.
- **Units.** The core contents of the module are divided into different units, each addressing specific concepts, theories, or practical applications relevant to the module's theme. Topics are organised logically to facilitate sequential learning and comprehension.
- **References.** A curated list of references is included at the end of each unit, providing learners with additional resources for further exploration and a deeper understanding of the topics covered. These references may include academic journals and textbooks.
- **Conclusions.** All modules conclude with a summary and synthesis of the key concepts covered. Learners are guided through a reflection on their learning journey within the module, highlighting the most important takeaways and insights gained.
- **Supplementary material.** Additional, and more detailed, content is provided to complement the core content of the module.

Each module contains an index on the left-hand side of the screen that facilitates navigation through the content. To enhance student engagement with the learning materials, the training includes interactive and multimedia elements.

The train-the-trainers course concludes with an additional 90-minute module. The course is part of a train-the-trainers programme, a specialised training initiative that goes beyond traditional instruction, enabling participants to impart knowledge to others. In essence, trainees become facilitators, learning not only about HPV vaccination but also effective training methodologies, communication techniques, and strategies to engage diverse audiences. This creates a multiplier effect, allowing them to train HCPs through local delivery of trainings, fostering a cascading impact on a broader community or professional network.

After completion of the train-the-trainers course, the participating institutions were asked to fill out a form to assess the feasibility of their conducting local training and what support they might need to do so. More specifically, they were asked to:

- Identify the targeted population.
- Assess any required adaptations to the existing training materials based on duration, targeted students, language or format, etc.
- Provide an estimated date of delivery of local training.

The local editions of the training in EU member states were not delivered during the lifespan of the PROTECT-EUROPE project due to time and budgetary constraints. However, they will be taken into account in future calls for proposals.

The attendance target was 1,000 students. The train-the-trainers course aimed to recruit institutions from 10 different EU member states.

Masterclasses



PROTECT-EUROPE delivered 10 masterclasses covering a wide variety of themes and topics, all connected with the project's aim of **improving HCPs' knowledge of HPV vaccination and their communication with young people and their parents/carers**. The first nine masterclasses were each 60 minutes long, free and online on an open-access basis. Video recordings of the completed online masterclasses are available on the [project Hub](#) and [website](#).

The masterclass programme was launched during European Immunisation Week in April 2024. The 10 masterclasses were:

1. Breaking Barriers: Understanding HPV Epidemiology and Reaching Equity Through Gender-Neutral Vaccination (22 April 2024). Speakers: Professor **Margaret Stanley** (University of Cambridge, UK) and Dr **Beatriz Serrano Carro** (ICO).
2. Improving Access: What are the Optimal Settings for Delivering HPV Vaccination? (23 May 2024). Speakers: Professor **Rui Medeiros** (ECO Board member) and **Ida Enskär** (Uppsala University, Sweden).
3. Achieving Impact: Strategies for Running Effective HPV Vaccination Campaigns (17 June 2024). Speakers: **Anastasiia Mazur** (ThinkYoung) and **Janne Bigaard** (Danish Cancer Society).
4. Exploring a Single-dose Approach for HPV vaccination (8 July 2024). Speakers: **Paul Bloem** (WHO) and **Amy Nolan** (Irish Cancer Society).

5. All You Need to Know About HPV Vaccine Safety (25 July 2024). Speakers: Professor **Alex Vorsters** (University of Antwerp) and **Marta López Fauqued** (European Medicines Agency).
6. Let's Talk HPV 1: How to Enhance Communication Between Parents and Healthcare Professionals (10 October 2024). Speakers: **Hüsna Sarıca Çevik** (WONCA Europe) and **Ana Maita** (Mothers for Mothers).
7. Let's Talk HPV 2: Empowering Young People to Shape a Healthier Tomorrow (10 October 2024). Speakers: **Gary Finnegan** (Vaccines Today) and **Radosveta Stamenkova** (Bulgarian Family Planning and Sexual Health Association).
8. The Economic Case for HPV Vaccination: Securing Health, Saving Lives (29 October 2024). Speakers: **Giampiero Favato** (Kingston University, London) and **Margherita Nerl** (Office of Health Economics, London).
9. Eliminating HPV Cancers: Key Strategies for a Cancer-Free Generation through Vaccination (22 November 2024). Speakers: **Katja Čič** (Moderator, WHO Youth Council), **Ida Enskär** (Uppsala University), **Marta López Fauqued** (European Medicines Agency), **Anastasiia Mazur** (ThinkYoung), **Amy Nolan** (Irish Cancer Society), **Janne Villemoes Bigaard** (Danish Cancer Society) and **Alex Vorsters** (University of Antwerp).
10. No One Left Behind: Reaching Marginalised Communities with HPV Protection (27 November 2024).

DISSEMINATION

PROTECT-EUROPE utilised a wide range of tactics to ensure that its target audiences – chiefly health ministries, civil society organisations and clinicians – were aware of the project and its findings. A key goal was to drive traffic to the Hub.

Branding








The first step was to create a strong visual identity for the project to help ensure its profile and credibility with stakeholders, target audiences and more widely. With many players in the HPV field, it also enabled easier identification of the project and its outputs.

A logo (below) was developed along with a style guide and branded Word and PowerPoint templates. The logo's shield forms the central part of the iconography and represents protection. The different layers of protection that the HPV vaccine affords, against both HPV and cancer, are represented by the concentric circles. The coloured dots represent cancer and HPV. A dot at the end of the accompanying text ties the text back to the iconography of the graphical element.



The **Poppins** font was chosen, with **Calibri** as an alternative, to ensure maximum compatibility among the consortium.

A colour palette was designed to ensure coherent communication. See the chart below:

Primary colours	Secondary colours
 CMYK C90 M62 Y13 K1 RGB R37 G93 B154 HEX 255d9a	 CMYK C51 M23 Y0 K0 RGB R136 G175 B222 HEX 88afde
 CMYK C82 M47 Y0 K0 RGB R40 G119 B189 HEX 2877bd	 CMYK C34 M15 Y0 K0 RGB R179 G202 B234 HEX b3caea
 CMYK C66 M0 Y2 K0 RGB R59 G191 B237 HEX 3bbfed	 CMYK C17 M8 Y0 K0 RGB R218 G227 B245 HEX dae3f5
 CMYK C0 M57 Y94 K0 RGB R241 G132 B24 HEX f18418	

Website

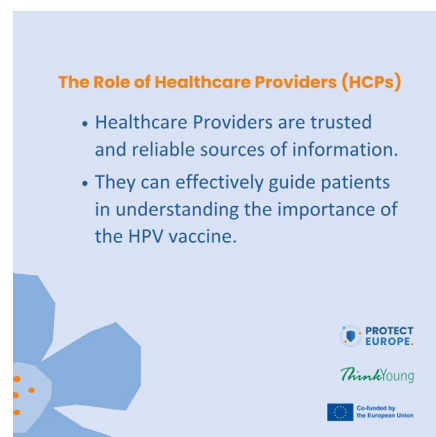
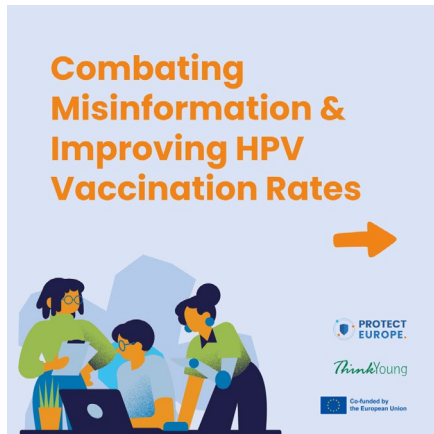
A PROTECT-EUROPE website (protect-europe.org) was created and hosted on ECO's main website. Separate from the online Hub, the website aimed to:

- Be the public face of PROTECT-EUROPE.
- Provide clear information about PROTECT-EUROPE and its partners, story and purpose.
- Deliver updates on the project activities and findings as they are developed and released.
- Be a clear point of contact with the project consortium.
- Provide information on the project's structure (eg. how the committees managing the project are organised, the distribution of responsibilities across the WPs, etc.).
- Maximise engagement by leveraging all the ECO activities that are connected with HPV, prevention, vaccination and screening.
- Promote project activities and events.

The main page of the website is easily reachable from the EU Projects page of the main ECO website. Between its launch in January 2023 and the date of this writing – November 2024 – the website has been viewed more than 7,000 times.

Toolkit

The project developed a series of **flyers, leaflets, videos, infographics, social media assets, webinars** and other collaterals designed to support communication and dissemination. These assets can be found on the official website of the project under the ECO website, as well as in the project's Hub. See some examples below:





Social media

ECO used its strong social media presence and large audience to promote, disseminate and amplify the project's key messages and outputs, including the training courses. The platforms used were **LinkedIn, X (formerly Twitter), Instagram, Facebook, and YouTube**. Consortium members were encouraged to share content through their own networks. All project posts used the hashtag #PROTECTEUROPE. Between January 2023 and November 2024, the social media reach out of PROTECT-EUROPE can count on more than 300 posts across the above-mentioned channels, totalling 800,000+ impressions and 4,100+ engagements.

Newsletters

Four newsletters, produced every six months, to which anyone could subscribe at no cost, have been produced over the course of the project. These provided updates on PROTECT-EUROPE's progress and other relevant news in the HPV field. They are available on the project Hub and website.

PROTECT-EUROPE
NEWSLETTERS



Promotion at events

PROTECT-EUROPE was launched at an event at the **European Parliament in Brussels** on **26 January 2023** chaired by Alin Mituța MEP.

Consortium members have regularly promoted PROTECT-EUROPE at a range of other events such as conferences and seminars. This occurred at more than 15 events in 2023 alone.



The completion of PROTECT-EUROPE was celebrated at a special hybrid **'Showcase Event'** held in Brussels on **22 November 2024**, immediately after the **European Cancer Summit**.

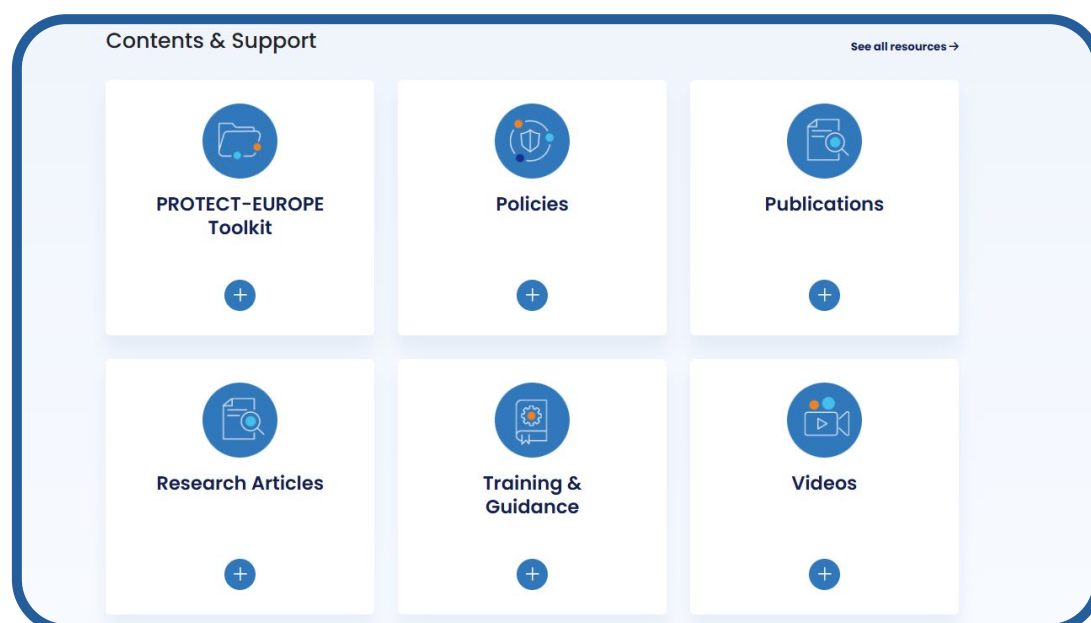
The event began with a Masterclass (the 9th in the series) with six speakers who had participated in previous Masterclasses. This was followed by a session on best practice in HCP conversations with young people and their parents/carers about HPV vaccination, a 'Discover the Hub' forum, and a discussion about effective public health communication. There was also a special video address by Marcia Cross (a Golden Globe nominee with lived experience of anal cancer) and Lillian Kreppel from the HPV Cancers Alliance. The meeting concluded with a presentation on the project's legacy.

Academic papers

Consortium members were encouraged to publish the project's findings in process. It is expected that, over time (and beyond the lifetime of the project), several papers will also be published. The first was a paper in the journal **Vaccines on Healthcare Professionals' Perspectives on HPV Recommendations: Themes of Interest to Different Population Groups and Strategies for Approaching Them** (Vaccines 2024;12[7]:748). A list of the papers published by November 2024 is shown in Appendix 4.

The PROTECT-EUROPE Hub

The Hub was launched on **4 March 2024**, on **International HPV Awareness Day**. An online repository for HCPs, stakeholders, parents, young people, and policymakers to access resources on HPV vaccination, it includes the project's outputs, best



practices, training modules and public awareness tools. The Hub has been developed jointly by ECO and the **International Papillomavirus Society (IPVS)** and all materials undergo a review by IPVS for preliminary feedback and approval before being uploaded and made accessible to users. The Hub is available on an open-access basis at: <https://hpvhub.ipvsoc.org/protect-europe>.

The Hub has four main sections:

1. **Resources.** These include practical guidelines and support for EU member states and their health workforces. Users can download communication material policy resources and articles as well as scientific publications and other resources based on the insights gained by the different WPs of the project. The Hub also includes newsletters from HPV World, a PROTECT-EUROPE collaborator.
2. **Members.** This section contains information on the PROTECT-EUROPE consortium partners as well as the project Advisory Board.
3. **News and Updates.** This section has links to project press releases, HPV-related events and awareness days/weeks, bi-annual newsletters and other relevant articles either highlighting the milestones of the project or bringing to the reader's attention the latest news on HPV awareness and prevention.
4. **Events.** All the events organised throughout the project, such as the PROTECT-EUROPE Masterclasses and other HPV and cancer-related events (e.g. International HPV Awareness Day, European Immunisation Week, ECO events, etc.) can be accessed through this section.

The Hub has been designed with a focus on sustainability beyond the two years of the project. ECO and IPVS will continue to maintain and update the site while consortium partners will use it as a platform for the dissemination of the project's



outputs. The Hub has been visited more than 2000 times between its launch and November 2024, totalling 400+ users with an average view time of 1 minute and 15 seconds.

PROJECT EVALUATION

The project contained a Work Package (WP5) dedicated to monitoring and evaluation.

The evaluation had four objectives:

1. To undertake an objective, independent monitoring and evaluation of the design and delivery of the project against agreed milestones.
2. To perform on a continuous basis a comprehensive and systematic monitoring, evaluation and analysis of the goals, objectives, and activities in each of the Work Packages.
3. To determine whether the project has produced planned deliverables, expected benefits, and made the desired changes.
4. To provide recommendations for future action, practice, and policy development on HPV vaccination delivery to benefit the health of EU citizens.

The evaluation framework was guided by the **PRISM (Practical, Robust Implementation and Sustainability Model) framework**, employing a mixed-methods approach, combining both qualitative data collection and thematic analysis, with network mapping and metrics analysis. PRISM is an expansion of the **RE-AIM (Reach, Effectiveness, Adoption, Implementation, Maintenance)** framework and is designed to guide the planning, implementation, and evaluation of health interventions. PRISM adds to RE-AIM by incorporating considerations regarding the intervention's design, recipient characteristics, external environment, and sustainability factors. This relationship makes PRISM particularly useful for comprehensive evaluations as it ensures a broad and contextually rich understanding of an intervention's impact, operational challenges, and sustainability.

The final evaluation was not available by the time this version of the report was published. An interim evaluation report, which looked at the first year of the project, found that almost all deliverables had either been delivered as agreed or were on track. There were some delays with some planned activities, but it was not anticipated that these would impact the project negatively. Overall, the project was found to be 'progressing well.'

Sustainability and next steps

PROTECT-EUROPE will leave a significant legacy. EU member states and others will have access to a suite of permanently available resources, including guidance on effective communications and access to newly designed training materials. The training-the-trainers model will ensure that a cadre of trainers will be able to continue to deliver the training programme once the project ends. All the project consortium members, as well as ECO's 50-strong HPV and Hep B Action Network members, will incorporate the learning from the project into their own work programmes and continue to disseminate it. The peer-reviewed publications that were produced during as well as after the project will also help significantly. Dissemination events will also spread the word about the project's findings and raise awareness of initiatives that EU member states should act on.

ECO and consortium members will also be seeking further funding, from the EU and others, to continue to develop the learning and interventions developed by PROTECT-EUROPE. In June 2024, the Council of the EU [published a series of recommendations](#) to member states to improve cancer prevention by boosting the uptake of HPV and HBV vaccination. There is a key opportunity to extend the project's approach to impact **other vaccine-preventable cancers, including Hepatitis B (HBV)**.

Conclusion

PROTECT-EUROPE has made a significant contribution to the development and implementation of high-uptake gender-neutral HPV vaccination programmes across the EU's 27 member states. It has analysed and identified the key factors underpinning effective communications between HCPs and public health services with young people and their parents/carers. This learning has been converted into accessible training, education and easily accessible tools that will improve knowledge and skills and help to undermine the pernicious impact of misinformation and fake news on HPV vaccine confidence.

Ultimately, this project **will help reducing suffering, saving lives and accelerate the elimination of HPV and all associated cancers across all sexes and genders.**

RECOMMENDATIONS



It is vital that all EU countries' vaccination programmes are delivered on a gender-neutral basis with a target uptake of 90% to ensure effective 'herd protection', programme resilience, stigma reduction and greater gender equality.



Because of the critically-important role of HCPs in promoting vaccination uptake, it is essential that they receive appropriate advice, guidance and training on effective communication with young people and their parents/carers. This support for HCPs should be available both pre- and post-qualification.



Post-qualification education for HCPs should be provided on a continuous and ongoing basis and training and guidance programmes widely disseminated to targeted audiences. Programmes should also be available in as many languages as possible.



HCPs must be fully aware of, and reflect in their practice, the need to communicate appropriately with different demographic groups.



HPV vaccination programmes are best delivered through schools and should be supported by targeted, interactive educational interventions that boost young people's understanding of HPV and increase their willingness to receive the vaccine.



Social media and e-health platforms can play a useful role and can be adapted for specific communities by tailoring messages that resonate with socio-cultural practices and beliefs. Platforms should interactively share health information, testimonials and positive stories about vaccination.



Public health messaging promoting vaccination should be evaluated both in terms of process and outcomes in order to improve understanding of the specific determinants driving HPV vaccination awareness and acceptance.



Resources supporting the work of professionals involved in promoting uptake, such as the Hub developed for the PROTECT-EUROPE project, must be maintained on a long-term basis. They must also be freely and widely accessible to all.



Regular environmental scanning is required to ensure that local, national and global factors that could influence the uptake of HPV vaccination are reflected in the support provided to HCPs.



All countries should appoint a national HPV elimination Board or committee comprising a range of specialists, such as gynaecologists, gynae-oncologists, school nurses, sexologists, andrologists, epidemiologists, pathologists, public health professionals, general practitioners, patient experts, young generation representatives, the government, and other organisations. Each Board would be tasked with creating a national HPV elimination strategy which would include communications.

APPENDIX 1

Consortium members

1. Association of Slovenian Cancer Societies (ASCS)
2. Catalan Institute of Oncology (ICO) / Fundacio Institut d'Investigacio biomedica de Bellvitge (IDIBELL)
3. Champalimaud Foundation
4. Childhood Cancer International (CCI)
5. Cyprus Association of Cancer Patients and Friends (PASYKAF)
6. East Galway and Midlands Cancer Support (EGM)
7. European Cancer Organisation (ECO)
8. European Head and Neck Society (EHNS)
9. European Society of Pharmacy Oncology (ESOP)
10. European Society of Sexual Medicine (ESSM)
11. Fondazione Umberto Veronesi (FUB)
12. Foundation for the Promotion of Health and Biomedical Research of the Valencian Community (FISABIO)
13. Hellenic Society of Head and Neck Cancer (HeSHNCA)
14. Hospital Clinic de Barcelona
15. HPV Prevention and Control Board – University of Antwerp (HPVPCB)
16. Irish Cancer Society (ICS)
17. Karkinaki
18. Karolinska Institutet (KI)
19. Loono
20. Mallow Flower Foundation (MFF)
21. National Network for Children (NCC)
22. PRAKSIS
23. Romanian Football Federation (RFF)
24. Split Cancer Institute
25. The Romanian Association for Health Promotion (ARPS)
26. ThinkYoung (TY)
27. University College York (UCC)
28. WONCA Europe
29. Youth Cancers Europe (YCE)
30. Youth Health Organisation (YHO)
31. Y-Peer



APPENDIX 2

Work Package members

WP1: European Cancer Organisation (leader). Other partners include:

- Association of Slovenian Cancer Societies
- Catalan Institute of Oncology / IDIBELL
- Champalimaud Foundation
- Institute Childhood Cancer International
- European Head and Neck Society
- European Society of Oncology Pharmacy
- FISABIO
- Fondazione Veronesi
- Hellenic Head and Neck Society
- Hospital Clinic de Barcelona
- Irish Cancer Society
- Karkinaki
- Karolinska Institutet
- National Network for Children
- PASYKAF
- Romanian Health Promotion Association
- Split Cancer Institute
- University of Antwerp
- Y-Peer

WP2: FISABIO (leader), University of Antwerp (co-leader), WONCA Europe (co-leader). Other partners include:

- East Galway and Midlands Cancer Support
- European Society of Oncology Pharmacy
- Hellenic Head and Neck Society
- Hospital Clinic de Barcelona
- Catalan Institute of Oncology / IDIBELL
- Karolinska Institutet
- Mallow Flower Foundation
- PRAKSIS

WP3: European Society for Sexual Medicine (leader). Other partners include:

- Association of Slovenian Cancer Societies
- Childhood Cancer International
- East Galway and Midlands Cancer Support
- European Head and Neck Society
- European Society of Oncology Pharmacy
- Karkinaki
- Karolinska Institutet
- Loono
- Mallow Flower Foundation
- National Network for Children
- PASYKAF
- PRAKSIS
- Romanian Football Federation
- Split Cancer Institute
- Youth Cancer Europe
- Y-Peer

WP4: Catalan Institute of Oncology / IDIBELL (leader). Other partners include:

- ESSM
- European Cancer Organisation
- European Society of Oncology Pharmacy
- FISABIO
- Hospital Clinic de Barcelona
- International Papillomavirus Society
- Karolinska Institute
- University of Antwerp
- WONCA Europe

WP5: University College of Cork (leader)

WP6: European Cancer Organisation (leader), ThinkYoung (co-leader), Youth Health Organisation (co-leader). Other partners include:

- FISABIO
- Fondazione Veronesi
- Hellenic Head and Neck Society
- Catalan Institute of Oncology / IDIBELL
- Romanian Health Promotion Association
- Youth Health Organisation

APPENDIX 3

Advisory Group members

- Professor **Margaret Stanley** (University of Cambridge and Past-President, IPVS), Chair
- Professor **Paolo Bonanni** (University of Florence)
- **Bernie Brennan** (HPV Vaccination Campaigner)
- **Nicolás González Casares** (Member of the European Parliament Subcommittee on Public Health)
- **Daphné Holt** (Chair, Coalition for Life-Course Immunisation and Member of Editorial Board, Vaccine Today)
- **Jennie Jackson** (Regional Cancer Centre, Stockholm Gotland)
- Professor **Heidi Larson** (London School of Hygiene and Tropical Medicine)
- **Alin Mituța** (Former Member of the European Parliament and Member of National and European Parliamentarians for Cancer Action)
- Professor **Walter Ricciardi** (Università Cattolica del Sacro Cuore, Chair of the Mission Board for Cancer, the Scientific Committee of Human Technopole Foundation, and the European Mission Board for Vaccination)
- Professor **Rob Ruiter** (Maastricht University)

APPENDIX 4

List of academic papers published to date (November 2024)

- Çevik, Hüsna Sarıca, A. Gülsen Ceyhun Peker, Süleyman Görpelioğlu, Shlomo Vinker, and Mehmet Urgan. 2024. "How to Overcome Information and Communication Barriers in Human Papillomavirus Vaccination? A SWOT Analysis Based on the Opinions of European Family Doctors in Contact with Young People and Their Parents." *European Journal of General Practice* 30 (1). <https://doi.org/10.1080/13814788.2024.2393858>
- Murciano-Gamborino, Carlos, Javier Diez-Domingo, and Jaime Fons-Martinez on behalf of the PROTECT-EUROPE Consortium. 2024. "Healthcare Professionals' Perspectives on HPV Recommendations: Themes of Interest to Different Population Groups and Strategies for Approaching Them" *Vaccines* 12, no. 7: 748. <https://doi.org/10.3390/vaccines12070748>



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**Co-funded by
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Co-funded by the European Union - EU4Health - Grant Agreement n. 101080046

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