KEY ISSUES IN HPV PREVENTION
AND EARLY DIAGNOSIS

PROCEEDINGS OF THE SYMPOSIUM HELD AT THE ROYAL SOCIETY
FOR PUBLIC HEALTH IN LONDON ON 21 APRIL 2015
IAN BANKS

Reflecting the growing debate over human papillomavirus (HPV) vaccination uptake and target groups, the EMHF brought together the key people and organisations in this field to discuss potential improvements in prevention and early diagnosis. EMHF has also been involved in this issue through its membership of HPV Action, a collaboration of some 40 organisations that are seeking the inclusion of boys in the UK’s national HPV vaccination programme.

EMHF believes that HPV prevention is an important men’s health issue and one that we will be going on to raise throughout Europe. It is an issue that also fits well with our wider work programmes to improve men’s cancer outcomes and their access to primary care services.

This Symposium was definitely not just about men’s health, however. Our overall approach is to put gender on the health agenda and there are important issues for women’s health that must also be addressed. It takes two to tango – there is no such thing as immaculate infection when it comes to HPV and it is important that advocates for both men and women’s health work together to improve the health of both sexes.

Without the support of our generous sponsors, Sanofi Pasteur MSD and the HPV and Anal Cancer Foundation, this event would not have been possible. I am also very grateful to our seven supporting organisations. And I am indebted to the many experts in the field who gave up their time, whether as speakers or participants, to discuss this very important – and very topical – public health issue.

The Symposium has made an important contribution to developing our understanding of some key issues in HPV and our next steps for action to improve the health of both sexes. We have in our sights the eventual elimination of the scourge of HPV-related cancers and the other diseases caused by this pernicious infection.

Professor Ian Banks
EMHF President

1 www.hpvaction.org
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JOHN BARON MP

As Chairman of the All Party Parliamentary Group on Cancer (APPGC), I have a longstanding interest in prevention and early diagnosis. I was therefore delighted to support this Symposium.

Ever since the APPGC’s major report in 2009 into cancer inequalities, we have been campaigning to encourage the NHS to adopt measures to reduce the number of lives lost due to late diagnosis – we could save 5,000 extra lives each year by matching European average survival rates, and an extra 10,000 by matching international averages.

One of our recent successes has been to persuade NHS England to place one-year cancer survival rates, broken down by CCG\(^2\), into the ‘delivery dashboard’ of the 2015/16 CCG Assurance Framework. This will make CCGs far more accountable for the one-year cancer survival rates, and should encourage underperforming CCGs to do more to promote earlier diagnosis in their areas – initiatives could include increased screening programmes, more GP training or better referral rates.

Prevention could be improved by rolling out the national HPV vaccination programme more widely. I believe, as does the APPGC, that boys as well as girls should be part of this programme. Ministers are aware of our views, and we have raised this directly with the JCVI and Public Health England.

Other Parliamentarians share this view: Sir Paul Beresford of the All Party Group on Dentistry, Lord Kamlesh Patel of the All Party Group on Men’s Health, and Baroness Joyce Gould of the All Party Group on Sexual and Reproductive Health are among those who have raised this issue in Parliament. In conjunction with the Chairs of other relevant All Party Parliamentary Groups, I had a letter published in The Times in September 2014 advocating extending the vaccination programme.

I believe the public health arguments have been won, and the JCVI now needs to speed up its decision-making process. We also have to convince the government about the value for money argument. There are about 80,000 cases of genital warts in the UK each year and the cost saving from preventing this problem would alone more than pay for vaccinating boys. We also know that around 5,000 women develop an HPV-related cancer each year as do 2,000 men.

We can be very proud of the UK’s HPV vaccination programme for girls – it is one of the best in the world. But the vaccination of both sexes is vital. And we need to do more to improve public awareness of HPV and look at whether we can introduce anal cancer screening for high-risk groups, such as men who have sex with men.

I congratulate EMHF for organising this very timely event and for bringing together such a distinguished group of people, and for taking this issue to the rest of Europe. HPV is a global problem and we need Governments to work together across national boundaries on this. We must all continue to do what we can to take this important issue forward.

\(^2\) Clinical Commissioning Group
TRISTAN ALMADA

My work on the issue of HPV is a labour of love. When we talk about HPV, we can easily get caught up in a lot of jargon – QALYs3, cost-effectiveness, herd immunity. What I want to do is focus for a moment on the human side of HPV, an infection that affects real people. I hope that by understanding the case of my own mother, Paulette, who passed away from HPV-related anal cancer in April 2010, we can prevent this from happening to anyone ever again.

Paulette was sick for only two years after being diagnosed with Stage 4 HPV-related anal cancer. I remember the words she used when she sat down with me and my sisters, Justine and Camille, who now also work alongside me at the HPV and Anal Cancer Foundation. She said: ‘I have cancer but it’s not a very nice sounding kind.’ Those words are still resonate for me today – why is anal cancer not a ‘nice sounding’ cancer? After all, everyone has an anus and the cancer is caused by a virus that virtually everyone will get.

Having anal cancer can be very isolating. The embarrassment and stigma can mean that the diagnosis is not shared with anyone outside a very close circle of friends and family, increasing the emotional anxiety.

In 2014, the Foundation co-hosted an event for anal cancer patients and, as far as are aware, this was the first such gathering of anal cancer patients anywhere in the world. We asked people to raise their hands if this was the first time they had ever met another anal cancer patient and everyone in the room raised their hand.

Paulette’s cancer should without question have been caught sooner. We know that women with a history of cervical disease have a higher risk of developing anal cancer later in life. When in her 20s, my mother had an atypical smear. It was treated and she never thought about it again until she was diagnosed with anal cancer 20 years later. We have done such a good job in tackling cervical cancer but what about the other HPV-related cancers? How can we stop people like Paulette slipping through the net?

We’re working with one of the Foundation’s scientific advisors, Professor Joel Palefsky4, to disseminate a clinical guideline about who to treat, when to treat and when not to treat for anal pre-cancer.

The treatment options for patients who have advanced HPV-related anal cancer are still very dated; they were first administered to patients in the 1970s. Before she fell ill, Paulette was in very good health, had a great diet, walked to work, did yoga twice a week and spent as much time outdoors as she possibly could. She was given a heavy dose of full body chemo from the 1970s – that was pretty brutal and she had the usual side effects: nausea, loss of hair, fatigue.

Against all the odds, she had no sign of disease after the first 12 months of treatment but, just two months later, the cancer came back in her bones. It was excruciatingly painful and I can still remember the pain on her face even through heavy doses of palliative morphine. I ask myself, how is this possible in this era of innovation when we’re making massive progress in treating other cancers? We need to get all the stakeholders – governments, pharmaceutical companies, funders and others – to pull together to develop a new drug for patients as soon as possible.

But the easiest solution is staring us in the face. HPV-related cancers have some of the fastest growing incidence rates, including for men, but this is not inevitable. We can end the problem today if we make the HPV vaccine available to both sexes. Paulette was too old to get the HPV vaccine – it was not available when she was 12. But we now have an opportunity to stamp out this virus and add HPV to the list of other infectious diseases, like smallpox and polio, that have been effectively tackled by immunisation. This is a cheap, safe and effective way of preventing cancer. I reject the government’s timeline of a decision in 2017 - we must jump now at the opportunity with both hands and show the world that the UK is truly a leader in global preventative health.

1 Quality-adjusted life years
2 The founder and president of the International Anal Neoplasia Society and President of the International Human Papillomavirus Society
HPV is a sexually transmitted virus and is so common that most sexually active adults become infected at some point in their lives. Most infections are asymptomatic and resolve without medical intervention. But HPV is the cause of all cervical cancer cases and also causes cancer of the vagina, vulva, anus, penis and the head and neck. It is estimated to be the causal agent in 5% of all human cancers and is heavily implicated in the recent rapid rise in anal and head and neck cancers. HPV is also the cause of genital warts, the commonest sexually transmitted viral disease.

Vaccines can protect against infection by the most common HPV types and afford protection against cancer and genital warts. The UK now has a comprehensive HPV vaccination programme for 12/13 year old girls. There is also a cervical cancer screening programme that tests for pre-cancerous cells and enables early and effective treatment.

There may now be further steps that can be taken to improve the prevention of HPV infection and the early diagnosis of HPV-related disease. The purpose of the Symposium was to identify, better understand and make recommendations about areas where action could be taken.

The symposium was aimed at clinicians, epidemiologists, scientists, public health specialists, patient organisations and others with a special interest in HPV and who are opinion-leaders in this field. It was originally envisaged that 30-40 people would attend on an invitation-only basis but the level of interest was such that the final number of attendees was closer to 50.

As it was not possible to cover every issue in a single day, the focus was on the following:

- An epidemiological overview
- Tackling gaps and inequalities in girls’ participation in the current UK HPV vaccination programme
- HPV vaccination for men who have sex with men
- The inclusion of all boys in the UK HPV vaccination programme
- Improving public awareness of HPV-related disease to improve vaccination uptake
- Screening for high-grade anal dysplasia, especially in high-risk population groups

The presentations were followed by workshop sessions during which participants met in small groups to identify key challenges and next steps in research, policy and practice.

The Symposium aimed to deliver the following main outcomes:

- Informing and stimulating discussion among a wide range of very relevant and influential people and organisations about key issues in HPV prevention and early diagnosis
- Identifying recommendations for action in research, policy and practice
- Published proceedings in the form of a freestanding report
- A report on the event in a relevant health journal

EMHF is also now planning a similar event which will address the issues on a Europe-wide basis. It is hoped this will take place in 2016.

The Symposium was held at the Royal Society of Public Health in central London on 21 April 2015.
HPV is a sexually transmitted virus that is the causal agent in an estimated 5% of all human cancers. In Europe, HPV each year causes around 1,000 cases of penile cancer, 3,700 cases of vulval and vaginal cancer, 1,600 cases of anal cancer in men and 2,800 cases in women, 11,600 cases of head and neck cancer in men and 2,300 cases in women, and 23,000 cases of cervical cancer. HPV also causes 329,000 cases of genital warts in men and 292,000 cases in women.

The UK now has a comprehensive HPV vaccination programme for 12/13 year old girls and a cervical cancer screening programme. The purpose of the Symposium was to identify, better understand and make recommendations about areas where action could be taken to improve the prevention of HPV infection and the early diagnosis of HPV-related disease. EMHF is now planning a similar event which will address these issues on a Europe-wide basis.

An overview of HPV epidemiology, prevention and policy
- In the UK, the burden of HPV-associated disease is now almost the same in men as in women.
- Unlike cervical cancer, there are no reliable and cost-effective screening methods to prevent cancers caused by HPV among men.
- HPV vaccination for boys and girls would achieve real herd immunity.
- Without vaccination, men remain at risk of HPV infection and the associated diseases.

Tackling gaps and inequalities in girls’ uptake of the current HPV vaccination programme
- The UK vaccination programme has, overall, been very successful but there are significant variations in coverage.
- Despite HPV vaccination being delivered as a national programme, there is widespread – and unsustainable – patchiness and variability in structure, process and outcome.
- While parents in faith schools now generally allow vaccination, parents in some independent, Free and academy schools can still pose problems when obtaining consent.

A significant proportion of the young women not being fully vaccinated are ‘hard to reach’, at risk of making other ‘poor life decisions’ (e.g. higher numbers of sexual partners, more likely to smoke), and at higher risk of sexually transmitted infections.

- There is no herd protection for those functioning outside the vaccinated herd. It is likely to be worthwhile to allow vaccinators the capacity to put extra effort into ‘chasing’ those vulnerable young women who are ‘hard to reach’.

- HPV immunisation should be included in Joint Strategic Needs Assessments (JSNAs) and a Working Framework document (a memorandum of understanding) between public health teams and the Local Area Teams would help to formalise ‘interdependent’ working.

- School-based delivery programmes, rather than delivery through primary care, constitute the most effective approach.

Dilemmas in vaccinating men who have sex with men
- The current HPV vaccination provides no direct or indirect protection against HPV for men who have sex with men (MSM).
- HPV-related anal cancer amongst MSM is now at a level comparable to cervical cancer rates before the screening programme was introduced.
- The JCVI has made a draft recommendation that MSM aged 16-40 should be offered the vaccine in sexual health clinics.
- The HPV vaccine is most effective before sexual activity and offering it to 12/13 year olds provides the best opportunity for maximum efficacy.
- Because there is poor data on the number of MSM across the UK, it will be difficult to measure what proportion of MSM will receive the vaccine and the average age of first attendance at a sexual health clinic is 28.
- Despite its limitations, a programme targeting MSM will be a significant and welcome development.
- But a universal vaccination programme is the most effective way to provide universal protection.
The potential for screening for high grade dysplasia, especially in high risk population groups

- Anal Intraepithelial Neoplasia (AIN) is a precursor for Anal Squamous Cell Carcinoma (ASCC), the most common type of anal cancer.
- Anal cancer incidence has increased over the past 30 years in the UK in both sexes, although by more in women. HIV-positive MSM have an up to 80-fold estimated higher risk than HIV-negative men or women.
- The main risk factors for AIN include previous intraepithelial neoplasia (e.g. previous Cervical Intraepithelial Neoplasia in women), the presence of anal or perianal warts, smoking, anoreceptive sex and being HIV-positive.
- Screening for AIN is practicable but a key issue is the efficacy of treatment for high-grade AIN and anal cancer. The recurrence rate for treated AIN is also high. Both effectiveness and cost-effectiveness are key issues in decisions to establish screening of high risk groups.
- The ANALOGY study, funded by Public Health England, is currently evaluating the feasibility, acceptability and efficacy of offering anal screening in a clinical context.

Challenges in increasing public awareness of HPV-related disease to improve vaccination uptake

- Awareness of HPV is rising but a sizeable proportion of the population is still unaware of HPV and of its link with non-cervical cancers.
- Vaccine acceptance and uptake is not always accompanied by good knowledge; nor is good knowledge always necessary for high acceptability.
- Achieving high uptake among MSM will be a different challenge from achieving a high uptake through a school-based programme.
- Considering the different stages of vaccine decision-making may help the development of better communication strategies and behavioural psychology could be useful here.

Should boys be included in the UK HPV vaccination programme?

- Vaccinating boys would prevent many male cases of genital warts, anal, penile and throat cancers. It would help to protect the 15% of women who are not currently vaccinated, protect MSM and protect all men who have sex with unvaccinated women whether abroad or in the UK.
- MSM have highest rates of anal cancer (95% of men with anal cancer are MSM and MSM are 30 times more at risk than heterosexual men), HIV increases cancer progression, and anal warts increases HIV transmission by 2-3 times.
- Targeted vaccination for MSM is important but vaccinating all boys would prevent MSM having to self-present to a sexual health clinic, identifying themselves and ‘begging’ for the vaccine.
- It is possible to increase the protection of women without vaccinating boys and greater effort should be put into improving uptake in girls.
- It could be argued that the best use of resources would be to target vaccination at those most at risk rather than all adolescents (e.g. MSM, people with weaker immune systems such as smokers, people who are HIV-positive, and diabetics).

After this presentation, a vote was taken and there was overwhelming support from attendees for the immediate vaccination of all boys.

Small group discussion

- Inequalities in female vaccination should be addressed by focusing on the ‘hard to reach’ unvaccinated 15% of girls.
- Public awareness of HPV should be enhanced by a simple message that is consistent for both sexes.
- Policy change on male vaccination should be based on the inequality created by a female-only programme.
HPV causes warts on the skin, genital tract, in the larynx and in the oral cavity. For a long time, that is all we thought it did until Harald zur Hausen showed that the virus also caused cervical cancer. We had always known that this cancer had a sexually transmitted origin but we did not know what the exact cause was until zur Hausen detected HPV 16 and HPV 18 in cervical cancers.

HPVs are very common viruses that infect the skin and the lining of the vulva, cervix, mouth, throat and anus. The viruses are very tissue-specific and they are also very host-specific – they affect only humans. There are low-risk types that cause warts (types 6 and 11) and there are 13 high-risk types that cause cancer (of these, type 16 is by far the most important, followed by type 18).

Globally, 5% of all cancers are estimated to be caused by HPV, although that is probably an under-estimate. HPV is the cause of 100% of cervical cancers but it also causes 90% of anal cancers, at least 70% of oropharyngeal cancers, 40-50% of vulval and penile cancers and 60% of vaginal cancers. In men, worldwide, it causes around 10,500 cases of penile cancer a year, 13,000 anal cancers, and 42,000 head and neck cancers. In women, HPV causes 19,960 vulval and vaginal cancers, 14,300 anal cancers, 18,000 head and neck cancers, and 529,800 cervical cancers.

In men, globally, about 17.6 million cases of genital warts are caused by HPV each year and there are 14.4 million cases in women. Genital warts are the commonest viral sexually transmitted disease with a lifetime risk of acquisition of 10%. Warts will not kill you but they are expensive to treat and a particular problem in those parts of the world where HIV is most prevalent.

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Professor Harald zur Hausen was awarded the Nobel Prize for medicine in 2008 for his work on how cervical cancer is triggered by HPV infection.
HPV-related diseases are 90% preventable with the vaccines currently available and coming on stream.

In Europe and other industrialised countries, cervical cancer is mostly very well controlled through screening programmes. But there are currently no screening programmes for the other HPV-related cancers and, for these cancers, which are now rising in incidence, men are starting to assume a burden almost equivalent to women’s.

The data for penile cancer in Denmark, for example, shows that the incidence trajectory increased over the period 1978-2008 but, even more significantly, because the incidence of high-grade penile pre-cancer increased very sharply between 1998 and 2008, in the next 10-20 years there will be a very much greater incidence of penile cancer. We are looking at a time bomb here.

Since the 1970s, the incidence of anal cancer doubled in both sexes in Scotland. Data from England for the period 1990-2010 shows that incidence rates doubled in men and tripled in women. For men who have sex with men (MSM) specifically, anal cancer now has an incidence rate (about 40 per 100,000) comparable to that of cervical cancer in the absence of a screening programme.

HPV-related cancer of the tonsil has also increased dramatically in incidence since the 1970s. But HPV-negative tonsil cancer – caused by smoking, alcohol and bad teeth – has started to decline. This shift is primarily due to the increased transmission of HPV through oral sex.

In USA, in the period 1984-89, 16.3% of oropharyngeal cancers were HPV associated; by 2000-4, the proportion was 71.7%. The incidence rate of HPV-positive cancers has tripled, rising from 0.8/100,000 in 1988 to 2.6/100,000 in 2004. On the other hand, the incidence of HPV-negative cancers has halved, falling from 2.0/100,000 in 1988 to 1.0/100,000 in 2004. If these incidence trends continue, the annual number of HPV-positive oropharyngeal cancers is expected to surpass the annual number of cervical cancers by the year 2020. This is a rising epidemic.

There is a similar picture in England. Data on oropharyngeal cancer specifically shows that the incidence rate increased in both sexes in the period 1995-2011, but especially for men. Projections for 2025 show significant further increases, again especially for men. This increase is HPV-associated and of great concern.

This rise in HPV-related diseases is an economic and social burden and a personal tragedy.

How can we intervene? Vaccination is the most effective intervention – and we currently have two vaccines in general use, Gardasil and Cervarix. There is now also a new kid on the block, Gardasil 9, which is marketed as preventing more than 90% of cervical cancers. The vaccines contain no HPV DNA but they induce very strong immune responses, especially in 9-13 year olds.

Genital HPV infection is usually but not always sexually transmitted and infection occurs soon after the onset of sexual activity. About 25% of women in the 15-19 age group have, at any one point, HPV in their cervix. About 20% have a high-risk HPV infection and 10% have HPV 16 specifically. Prevalence then declines with age which means that, as they get older, women are developing immunity.

With men, it is a different story, however: Fewer men (20-30%) than women (70-90%) make a natural immune response to HPV infection; they are less likely to clear infections and are repeatedly re-infected. Men are therefore more likely to be HPV-positive in their 20s, 30s and beyond. But men do respond well to the vaccine: if they are vaccinated before the age of 14, there is an excellent immune response and one that is much better than for girls of the same age.
Vaccination is leading to the prevention of Cervical Intraepithelial Neoplasia (CIN) and data from Australia shows that the most dramatic reductions in CIN have occurred in women who were vaccinated at the age of 14 or younger. Genital warts has been virtually eliminated in young Australian women since the start of the vaccination programme and there has been a similar decline in men under 21 who have sex with women. But there has been no impact on the number of genital warts in cases in MSM.

Other data shows that vaccination has produced a significant fall in the genoprevalence of HPV types 6, 11, 16 and 18 in Australia and 16 and 18 in England (Gardasil was not used in England until 2012).

The UK’s HPV vaccination programme for girls started in 2008 and has been brilliantly successful. The number of doses was changed from three to two in 2014 and the JCVI has recently recommended that a vaccination programme for MSM aged 16-40 should be introduced in GUM (genito-urinary medicine) and HIV clinics. Vaccination for boys is currently being considered by JCVI.

The main arguments against vaccinating boys are that men who have sex with women obtain herd protection from a female-only vaccination programme and that it is therefore not cost-effective to vaccinate boys as well. MSM, as a high-risk group, can receive targeted vaccinations.

But it is important to distinguish between ‘herd protection’ and ‘herd immunity’. Herd immunity means that everyone, or almost everyone, has immunity; protection depends on one’s sexual partners not being infected. This means that herd protection for men only works if there is high vaccination uptake in females and that this is sustained (if there is a vaccine scare, coverage could drop dramatically). Vaccination for females only means that MSM will remain a reservoir for infection because it is doubtful that enough MSM will be reached through a programme delivered in GUM and HIV clinics. It is also much more expensive, per dose, to vaccinate adult MSM in clinics compared to adolescents in the school-based programme.

If HPV infection is to be tackled effectively, both boys and girls must be immunised at the age of 12/13 through the school-based programme.

Key messages

- In the UK, the burden of HPV-associated disease is now almost the same in men as in women
- Unlike cervical cancer, there are no reliable and cost-effective screening methods to prevent cancers caused by HPV among men
- HPV vaccination for boys and girls would achieve real herd immunity
- Without vaccination, men remain at risk of HPV infection and the associated diseases

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CIN is a pre-cancerous condition that occurs when there are changes in the surface (squamous) cells of the cervix. CIN can increase the risk of cervical cancer developing later
CHRIS BENTLEY

I have been supported by Sanofi Pasteur MSD to produce a workbook7 for local commissioners and service delivery professionals to use to tackle inequalities in the uptake of HPV vaccination by girls. This is based on the idea of the ‘Christmas Tree’ diagnostic that I developed while working on inequalities at the Department of Health. Essentially, it is about identifying all the factors that influence the impact of interventions to help make sure you get the best population outcomes from them.

The workbook has been used at nine regional events across England and Wales. Each event provided the opportunity for a wide range of stakeholders, from relevant organisations, sectors and disciplines, to take part. Attendees have reported that the events have been very useful in providing a framework for constructive local discussion and that the workbook is a helpful diagnostic tool.

It is clear that the UK vaccination programme for girls has, overall, been very successful but that there are significant variations in coverage. The uptake of the third and final dose of the vaccine has varied between 46% and 96% across populations in England.

There are four main reasons for this inequality:

1. **Variable organisational effectiveness**

   Despite HPV vaccination being delivered as a national programme, there is widespread – and unsustainable – patchiness and variability in structure, process and outcomes. This is in part due to the fact that the service has not completely settled down following the NHS re-organisation and significant variations in cultures, systems and resources have been inherited from different primary care trusts. It seems that some systems are held together by goodwill, historical relationships and staff in new roles who are still able to provide ‘corporate memory’ and advice.

   Immunisation Programme Boards are perceived as best practice but are not a requirement of the national specification; this is reflected in a wide range of local arrangements. In a significant number of areas, there are no structural coordinating arrangements while, in some others, structures combine commissioner and provider representatives.

   However, in some places, such as York, there is a two tier structure which provides an example of good practice. In York, there is a commissioning-level Strategic Immunisation Group on which sit the local NHS England convener, local authorities and CCGs; and, at the provider level, there are four District Immunisation Groups, each convened by a programme co-ordinator/clinical lead.

   There are examples of very inclusive representation in structures, including: school nurses/immunisation team representatives; nurse managers; school representatives; and vulnerable Children/Young People workers (looked after children’s nurse; health visitor for travellers; youth offender team representatives). This provides a focal point for all relevant stakeholders to meet to discuss problems, interpret new guidance, share good practice and make decisions.

   According to Department of Health guidance, Public Health England is responsible for the operationalization of programmes, taking forward the national schedule, setting standards, communication strategy, the collection and analysis of data for surveillance and coverage, and vaccine supply. NHS England has responsibility for implementation by commissioning of local programmes and is answerable to Secretary of State for delivery. Directors of Public Health (DsPH) should provide independent scrutiny and challenge, are responsible to the local population and work with NHS England on equity issues. Most of the workshop groups agreed that a Working Framework document (a memorandum of

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7 C. Bentley, Systematically addressing Inequalities in Human Papillomavirus (HPV) Vaccination Coverage: Identifying strengths and effective practice and making tailored recommendations on how to address gaps in service and programmes (Sanofi Pasteur MSD, 2014)
understanding) between public health teams and the Local Area Teams would help to formalise ‘interdependent’ working.

But, in practice, there is still considerable confusion about roles and responsibilities, including who is responsible for commissioning given that NHS England commissions vaccination and local authorities commission school nursing. DsPH do not have the power to make change happen in vaccination programmes. Also, the role of Health and Wellbeing Boards (HWBs) is variable and unsystematic, often depending on the interest of individual chairs.

Various vaccination delivery systems are currently being used across the country: the most effective approach is based on school nurses, with or without school nurse teams; least effective are primary care based programmes. Primary care programmes are not well co-ordinated and vary practice-by-practice and are far less good at ‘chasing’ non-responders and ‘hard-to-reach’ groups.

Training is critical to maintaining standards and keeping the system safe, and establishing new staff into their roles. However, training arrangements are very variable, and can lack capacity, funding and assurance processes.

2. Systematic equity issues

The reduced role of local education authorities has increased the importance of, and the need for time spent on, vaccination delivery staff developing direct relationships with schools. Although it has taken some hard work and persuasion, most schools now allow access, leaving it up to parents as to whether they consent, or not.

In the early days of the programme, some Jewish, Muslim and Roman Catholic schools would not allow access but this is now not largely a problem. Some imams, while not necessarily backing vaccination, have clarified that there is no religious constraint on being vaccinated. However, parents in some independent, Free and academy schools can still pose substantial problems when obtaining consent. One part solution might be for HPV vaccination rates to be covered by OFSTED inspections (in relation to ‘Healthy Schools’) and/or included in school league tables, which might encourage schools to take ‘ownership’ of levels of protection for their pupils.

Obtaining consent can be very resource-intensive. Roughly 60% of parents return signed consent forms and then, if followed up by telephone, half of the remainder will also say yes. The two main reasons why parents withhold consent are that the child is not yet sexually active and that vaccines are ‘risky’. Some areas have local protocols based on national guidance to allow ‘competent consent’ by girls themselves.

3. Inclusion agenda

Most young women with learning or moderate/severe physical disability are now covered by the vaccination programme because they attend mainstream schools and school nurse teams are generally connected to special schools.

A significant proportion of the young women not being fully vaccinated are ‘hard to reach’, at risk of making other ‘poor life decisions’ (e.g. higher numbers of sexual partners, more likely to smoke), and at higher risk of sexually transmitted infections. Many local authorities cite resources as a challenge, particularly for reaching looked-after children, ‘troubled families’, homeless families, Gypsy/Traveller children, asylum seekers, and young offenders.
This means that, even where average population coverage levels are high, some girls are sexually active in micro-environments where HPV vaccine coverage levels may be particularly low and their attributable risk of infection, and therefore of pre-cancer and cancer, can remain high. There is no herd protection for those functioning outside the vaccinated herd.

There is no real pressure on providers to promote coverage to the unvaccinated 15% - 20% of girls. However, it is likely to be worthwhile to allow vaccinators the capacity to put extra effort into ‘chasing’ those vulnerable young women who are ‘hard to reach’.

4. Capacity and flexibility of the workforce

In most areas, frontline staff believe that high levels of uptake depend on dedicated school nurses or immunisation teams being given the capacity and flexibility to follow-up young women multiple times to complete the vaccination course. Out-of-school-hours clinics and holiday clinics are widely used for ‘mop up’ but are often ineffective due to poor uptake.

There are impressive examples of both tenacity and intelligence-based initiatives, in some cases beyond the call of duty, by frontline staff and co-ordinators. School nurses, in particular, are very aware of young women who are prone to making ‘poor life decisions’ and putting themselves at risk.

There have been concerns that changes to national immunisation schedules, particularly for ‘flu vaccine to children, could swamp delivery systems and remove the capacity for flexibility in following up HPV vaccine uptake in vulnerable young women.

Key messages

• The UK vaccination programme has, overall, been very successful but there are significant variations in coverage

• Despite HPV vaccination being delivered as a national programme, there is widespread – and unsustainable – patchiness and variability in structure, process and outcome

• While parents in faith schools now generally allow vaccination, parents in some independent, Free and academy schools can still pose problems when obtaining consent

• A significant proportion of the young women not being fully vaccinated are ‘hard to reach’, at risk of making other ‘poor life decisions’ (e.g. higher numbers of sexual partners, more likely to smoke), and at higher risk of sexually transmitted infections

• There is no herd protection for those functioning outside the vaccinated herd. It is likely to be worthwhile to allow vaccinators the capacity to put extra effort into ‘chasing’ those vulnerable young women who are ‘hard to reach’

• HPV immunisation should be included in Joint Strategic Needs Assessments (JSNAs) and a Working Framework document (a memorandum of understanding) between public health teams and the Local Area Teams would help to formalise ‘interdependent’ ‘working

• School-based delivery programmes, rather than delivery through primary care, constitute the most effective approach
SHAUN GRIFFIN

The current HPV vaccination programme targets teenage girls between 12-13 years old. Indirectly, this provides some protection to heterosexual men but it provides no direct or indirect protection against HPV for men who have sex with men (MSM).

HPV-related cancers are a key issue for MSM – there are now 35 cases of anal cancer per 100,000 MSM per year (with 70-100 per 100,000 cases of anal cancer amongst HIV-positive MSM) and HPV-related anal cancer amongst MSM is at a level comparable to cervical cancer rates before the screening programme was introduced. MSM are at 15 times greater risk of developing HPV-related anal cancer than heterosexual men. Moreover, genital warts increase the risk of HIV transmission.

In 2014, the JCVI acknowledged that MSM are a group at high risk for HPV infection and associated diseases who receive very little benefit from the girls-only HPV vaccination programme. The JCVI has made a draft recommendation that MSM aged 16-40 should be offered the vaccine in sexual health clinics and has been consulting on this with a view to making a final recommendation, once further modelling work has been completed, in October 2015.

There are several concerns about the JCVI draft recommendation. The HPV vaccine is most effective before sexual activity and offering it to 12/13 year olds provides the best opportunity for maximum efficacy. Waiting until MSM are 16 means that sexual activity may have begun before they are eligible for vaccination. Sexual health clinics are there to provide support after sex, inevitably limiting the impact of a vaccine that is most efficacious if given before sex and at a younger age.

Because there is poor data on the number of MSM across the UK, it will be difficult to measure what proportion of MSM will receive the vaccine. Not all MSM self-identify at sexual health clinics and many MSM do not attend sexual health clinics at all (16% of HIV-positive MSM remain undiagnosed) and the average age of first attendance at a sexual health clinic is 28. Black and minority ethnic communities also have a lower attendance rate at clinics. The experience of the Hepatitis B vaccination programme suggests that not all clinics may offer the vaccine and that there will be a drop-off rate through the course of three doses. The lack of official data on the Hepatitis B programme also increases concerns about the effectiveness of this model.

The JCVI draft recommendation did not take into account the costs of administering the vaccine and sexual health clinics have expressed concerns about the viability of administering the vaccine without a specific additional budget. Concerns about cost might lead to patchiness in provision. There will also be a potentially significant cost for targeted advertising of a service for MSM.
If the JCVI does recommend an extension of the vaccination programme to MSM aged 16-40, this would create new inequality issues. If MSM aged 16-40 can receive the vaccine, then why not women or heterosexual men? It also means that MSM will receive a less effective programme than women who received it at 12/13 years before sexual activity begins and in a setting (schools) that encourages uptake and where the risk of drop-out before receiving all the vaccine doses is lower.

An equality impact assessment was completed in 2008 for the introduction of the HPV vaccination programme for girls. The Department of Health, which has responsibility for considering the equality issues, will conduct a new equality analysis once JCVI has made its recommendation.

However, despite its many limitations, a programme targeting MSM will be a significant and welcome development. It is an important step towards a universal vaccine programme for boys and girls at school. It could also have the wider benefits of increasing attendance at sexual health clinics and testing for sexually transmitted infections generally.

But because MSM must be protected before they are exposed to HPV, and because it is impractical to identify future MSM at 12/13 years, a universal vaccination programme is the most effective way to provide universal protection.

**Key messages**
- The current HPV vaccination provides no direct or indirect protection against HPV for men who have sex with men (MSM)
- HPV-related anal cancer amongst MSM is now at a level comparable to cervical cancer rates before the screening programme was introduced
- The JCVI has made a draft recommendation that MSM aged 16-40 should be offered the vaccine in sexual health clinics
- The HPV vaccine is most effective before sexual activity and offering it to 12/13 year olds provides the best opportunity for maximum efficacy
- Because there is poor data on the number of MSM across the UK, it will be difficult to measure what proportion of MSM will receive the vaccine and the average age of first attendance at a sexual health clinic is 28
- Despite its limitations, a programme targeting MSM will be a significant and welcome development
- But a universal vaccination programme is the most effective way to provide universal protection
ALICE MARTHA SCHOFIELD

Anal Intraepithelial Neoplasia (AIN) is a precursor for Anal Squamous Cell Carcinoma (ASCC), the most common type of anal cancer. The ANALOGY study at the University of Manchester is investigating whether it is feasible and acceptable to screen for anal cancer and precancer in high risk groups.

Both anal and cervical neoplasia are driven by HPV. The affected zones are similar physiologically and both diseases are visible on examination using a microscope. But the natural history of AIN is not well established and is not identical to that of Cervical Intraepithelial Neoplasia (CIN). Also, high-grade AIN is not as amenable to effective and straightforward treatment as high-grade CIN. The ease with which screen detected lesions can be treated is an important consideration.

Anal cancer incidence has increased rapidly over the past 30 years in the UK in both sexes, although by more in women. In 2010 in the UK, there were 437 new cases in males and 673 in females. HIV-positive MSM have an up to 80-fold estimated higher risk than HIV-negative men or women of developing anal cancer. Even in the era of HAART* for HIV, when HIV-positive people are supposed to be immuno-competent, they are still more likely to develop anal cancer: one meta-analysis found that the annual progression of high-grade AIN to ASCC is 1:600 for HIV-positive men and 1:4200 for HIV-negative men.

The main risk factors for AIN include previous intraepithelial neoplasia (e.g. previous CIN in women), the presence of anal or perianal warts, smoking, anoreceptive sex and being HIV-positive.

Screening for AIN is practicable. As with cervical cancer there is a lengthy pre-invasive phase which creates an opportunity for secondary prevention. High-risk groups can be identified and the anus is relatively easy to access for inspection, biopsy, and sampling for cytology. Pre-invasive lesions can then be treated surgically. Experience also suggests that patients find screening acceptable.

It is crucial when considering screening that any harm is outweighed by benefit. The potential to save some lives from anal cancer should not be outweighed by treatment failure, the need for follow up, and anxiety engendered by the diagnosis of AIN.

The UK National Screening Committee has suggested that screening for AIN in populations at higher risk of anal cancer may be of benefit but that further information is needed. The ANALOGY study, funded by Public Health England, is currently evaluating the feasibility, acceptability and efficacy of offering anal screening in a clinical context. It involves high resolution anoscopy, HPV testing and liquid based anal cytology.

The study targeted men and women over age 25 who belong to groups at higher risk of AIN. These groups are:

- HIV-positive men who have sex with men
- HIV-positive women with a history of genital warts/abnormal cytology
- HIV-negative men and women who have a history of anal sex
- Transplant recipients (men and women) attending transplant follow-up clinics

The ANALOGY study is now closed to recruitment and the findings are expected to be published in late 2015/early 2016.

Key messages

- Anal Intraepithelial Neoplasia (AIN) is a precursor for Anal Squamous Cell Carcinoma (ASCC), the most common type of anal cancer
- Anal cancer incidence has increased over the past 30 years in the UK in both sexes, although by more in women. HIV-positive MSM have an up to 80-fold estimated higher risk than HIV-negative men or women
- The main risk factors for AIN include previous intraepithelial neoplasia (e.g. previous CIN in women), the presence of anal or perianal warts, smoking, anoreceptive sex and being HIV-positive
- Screening for AIN is practicable but a key issue is the treatment for high-grade AIN and anal cancer. The recurrence rate for treated AIN is also high. Both effectiveness and cost effectiveness are key issues in decisions to establish screening of high-risk groups
- The ANALOGY study, funded by Public Health England, is currently evaluating the feasibility, acceptability and efficacy of offering anal screening in a clinical context

* Highly active antiretroviral therapy
Survey data suggests that women’s awareness of HPV has roughly doubled over the past 10 years. A 2002 study found that 30% of female university staff were aware of HPV and 11% knew of the link with cancer. In 2007, 25% of women in a population-based survey had heard of HPV and 2.5% could spontaneously name it as a risk factor for HPV. By 2013, 62% of women and 39% of men in a web-based survey had heard of HPV and, in a separate study, 46% women recognised HPV as a risk factor for cervical cancer. The trend is similar in the UK and the USA.

This change is partly due to the introduction of the HPV vaccination programme and also because HPV testing is now being used in triaging of abnormal cytology screening tests in the cervical screening programme. But levels of awareness are far higher in women than men, and generally lower in older people.

A review of 16 studies (mostly US) of MSM’s awareness of HPV found that 63% had heard of HPV and 39% were aware of the vaccine. There was moderately low awareness of link with anal (32-53%), oral (25-47%) and penile (28-31%) cancers. Among MSM, higher awareness of HPV was generally linked with increased acceptability of the vaccine.

But, generally, it is not clear that higher awareness of HPV actually leads to higher vaccine uptake or that higher uptake is the result of higher awareness. A survey of about 2,000 15/16 year old girls in England found that 77% had received at least one dose of the vaccine and 20% had never heard of HPV. Of those who had heard of HPV, 53% knew it can cause cervical cancer, 18% knew most people will get HPV at some point and 31% knew the vaccine should be offered before sexual debut. The girls had a mean knowledge score of 8.3 out of 21 and there was no association between their knowledge and vaccine status.

A systematic review covering 28 qualitative studies and 44 survey studies found that even though vaccine uptake among girls and parents was generally high, knowledge was often poor, people struggled to make sense of information (in particular, there was confusion about the role of a virus in causing cancer and the fact that the virus is sexually transmitted), poor knowledge could be a barrier to acceptance and there was confusion about the need for future cervical screening after vaccination.

The evidence suggests that it is possible to achieve high levels of vaccination uptake without adolescents or their parents knowing very much about HPV and the diseases it can cause. But it is surely preferable for people to have a good understanding and, currently, a ‘teachable moment’ at the time of vaccination is being overlooked.

Currently in the UK, information leaflets are provided to girls and their parents by the NHS when invitations for vaccination are issued. Leaflets about cervical screening also contain information about HPV. The media plays an important role in disseminating information although this appears in irregular peaks and troughs; an example of a recent peak was when the actor Michael Douglas publicly discussed the cause of his throat cancer in 2013.

So, how can vaccine uptake be increased, bearing in mind that low levels of knowledge and awareness are only a possible barrier? More certain barriers include low perceived risk (of HPV-related disease), concerns about vaccine safety and side-effects, worry about the impact on sexual behaviour (some parents believe it will encourage risk-taking), cost and accessibility (in some countries more than others), and the lack of physician recommendation (especially in the US).

The Precaution Adoption Process Model (PAPM) could be helpful in developing interventions to tackle these barriers and increase vaccine uptake. When applied to HPV vaccination, the PAPM has six relevant stages:
Interventions can then be designed for each stage:

<table>
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<tr>
<th>PAPM stage for HPV vaccine</th>
<th>Characteristics of the stage</th>
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<tbody>
<tr>
<td>1. Never heard of the HPV vaccine</td>
<td>No knowledge/opinions about HPV vaccination</td>
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<tr>
<td>2. Never thought about having the vaccine</td>
<td>Some knowledge, but never considered having the vaccine</td>
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<tr>
<td>3. Undecided about having the vaccine</td>
<td>Thinking about being vaccinated but unsure whether to do it. Weighing up pros and cons</td>
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<tr>
<td>4. Decided not to be vaccinated</td>
<td>Decision is made, so less open to persuasive messages</td>
</tr>
<tr>
<td>5. Decided to be vaccinated</td>
<td>Decision is made – intention formed (motivation established)</td>
</tr>
<tr>
<td>6. Having the vaccine</td>
<td>Volitional stage – planning and carrying out</td>
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Health professionals play a key role in programmes where vaccination is opportunistic, as could happen in the UK if the vaccination is targeted at MSM.

One important issue, regardless of whether the target group is MSM or adolescents, is whether professionals require participatory or presumptive consent for vaccination. If vaccination is presented by health professionals as the default position (‘Well, we have to do some shots’) then uptake is more likely than if a question is posed (‘What do you want to do about shots?’). But presumptive consent may not be informed consent.

Key messages

- Awareness of HPV is rising but a sizeable proportion of the population is still unaware of HPV and of its link with non-cervical cancers
- Vaccine acceptance and uptake is not always accompanied by good knowledge; nor is good knowledge always necessary for high acceptability
- Achieving high uptake among MSM will be a different challenge from achieving a high uptake through a school-based programme
- Considering the different stages of vaccine decision-making may help the development of better communication strategies and behavioural psychology could be useful here
PETER GREENHOUSE

Peter Greenhouse presented the arguments for and against the immediate extension of the national HPV vaccination programme to boys.

There is now an equivalent burden of HPV-related disease in men and women and vaccinating boys would prevent many male cases of genital warts, anal, penile and throat cancers. It would help to protect the 15% of women who are not currently vaccinated, protect MSM and protect all men who have sex with unvaccinated women whether abroad or in the UK.

MSM have highest rates of anal cancer (95% of men with anal cancer are MSM and MSM are 30 times more at risk than heterosexual men), HIV increases cancer progression and anal warts increases HIV transmission by 2-3 times. HIV-positive men on HAART are now surviving long enough to get anal cancer and their immunity is sub-optimal. If they are not vaccinated against HPV they may end up dying from anal cancer rather than AIDS. Moreover, HPV vaccination seems to have a therapeutic effect on men who have had previous high-grade AIN and they have a much lower risk of recurrence.

We must now get on with vaccinating MSM – it is commonsense and BASHH has been making case for MSM vaccination for some time. The vaccine already purchased but not now needed because of the shift from a 3-dose to 2-dose vaccination regime for girls should go to sexual clinics for vaccinating MSM. But vaccinating all boys would prevent MSM having to self-present to a sexual health clinic, identifying themselves and ‘begging’ for the vaccine.

Men have twice the risk of developing oropharyngeal cancer than women and about 70% of these cases are HPV 16-related. Heterosexual men aged 40-50 are most at risk. The incidence of HPV-related oral cancers is rising in men while smoking-related oral cancers are falling.

Vaccinating boys as well as girls is the only way to achieve herd immunity. In Australia, the 81% fall in wart infection in young men as a result of vaccinating just girls shows that it is possible to achieve herd protection through a girls-only programme but men in Australia are less likely to travel and be exposed to infection by unvaccinated women than men in Europe. Data from Denmark, by contrast, shows a 50% fall in the incidence of warts in young Danish men (the fall in women was 67%). In Australia, vaccinating girls had no impact on the number of warts cases in MSM.

In the UK, where about 85% of girls are vaccinated, a young man will, on average, need to have sex with six young women before he has contact with one who is unvaccinated. The girls who are unvaccinated tend to be in the poorest areas, school truants and in care and much more likely to be smokers. Some of these girls are just not reachable and the only way to protect them is to vaccinate as many young men as possible.

The HPV vaccine appears to be safe so, in line with modern medical ethics, no harm will be done by providing it to boys and it will also do good. Social justice will also be served by providing the vaccine equally to all men, regardless of their sexuality.

SHOULD BOYS BE INCLUDED IN THE UK HPV VACCINATION PROGRAMME?
There are several arguments against the immediate vaccination of boys. First, the public health modelling work needs to be completed to ascertain whether vaccination is necessary for all boys, because herd protection via girls plus vaccinating MSM might be sufficient and cost-effective in light of other healthcare priorities. A Canadian study has suggested that vaccinating only 70% of 12 year old girls would reduce the prevalence of HPV types 6/11 in women and men who have sex with women (MSW) to virtually nil within 20 years.

Secondly, it is possible to increase the protection of women (and MSW) without vaccinating boys. For example, with the input of additional resources, Merthyr Tydfil in South Wales achieved a 92% vaccination rate, increasing to 12 the average number of women a man would need to have sex with before contact with an unvaccinated woman. Thus, in the UK, it would be more cost effective to put greater effort into improving uptake in girls. Furthermore, for UK-born MSW, herd protection is less likely to be lost when travelling abroad as their poor linguistic skills mean that they are most likely to mix with UK women – ‘Brits do Brits’.

Thirdly, it could be a better use of resources to target vaccination at those most at risk rather than all adolescents. As well as all girls, this would include MSM and people with weaker immune systems such as smokers, people who are HIV-positive, and diabetics. Because most people exposed ‘naturally’ to HPV do not develop antibodies, post-sexual debut vaccination can still make a significant difference to immunity. Women who have developed CIN would also benefit from vaccination as it would reduce their risk of recurrence.

**Key messages**

- There is now an equivalent burden of HPV-related disease in men and women and vaccinating boys would prevent many male cases of genital warts, anal, penile and throat cancers. It would help to protect the 15% of women who are not currently vaccinated, protect MSM and protect all men who have sex with unvaccinated women whether abroad or in the UK
- MSM have highest rates of anal cancer (95% of men with anal cancer are MSM and MSM are 30 times more at risk than heterosexual men), HIV increases cancer progression and anal warts increases HIV transmission by 2-3 times
- Targeted vaccination for MSM is important but vaccinating all boys would prevent MSM having to self-present to a sexual health clinic, identifying themselves and ‘begging’ for the vaccine
- Vaccinating boys as well as girls is the only way to achieve herd immunity
- It is possible to increase the protection of women without vaccinating boys and greater effort should be put into improving uptake in girls
- It could be argued that the best use of resources would be to target vaccination at those most at risk rather than all adolescents (e.g. MSM, people with weaker immune systems such as smokers, people who are HIV-positive, and diabetics)

*After this presentation, a vote was taken and there was overwhelming support from attendees for the immediate vaccination of all boys.*
Following the presentations, delegates formed groups for discussion and feedback on the key issues of the symposium. The groups were tasked with determining the next steps for research, policy and practice in three areas: inequalities in female vaccination; enhancing public awareness; and male vaccination.

**Inequalities in female vaccination**
The group agreed that the main focus should be on the ‘hard to reach’ unvaccinated 15% of girls. What is needed is a better understanding of who is being missed and what the barriers are to vaccination, with an increase in screening in areas of high deprivation. This could be achieved through a better understanding of those areas that are achieving high vaccination rates and applying this to other poor performing areas, the implementation of delivery guidelines and improved surveillance of dose completion (ensuring girls complete the programme). It was suggested that having schools ‘compete’ against each other may incentivise the scheme and improve vaccination rates.

**Enhancing public awareness**
It was acknowledged that changing the widespread public perception that HPV is more than a ‘female issue’ would be a challenge, as historically the vaccination message has been focussed on the prevention of cervical cancer. The public message should be kept simple, with the message for boys consistent and complementary to the female message. For a public awareness campaign to be effective, all public health sectors and all stakeholders need to be involved and providing a consistent message. All health care professionals need to be supported to discuss HPV with their patients. It was suggested that patient and public involvement (PPI) would be invaluable in the development of new awareness messages, e.g. involving people at high risk of HPV and its consequences in developing messages.

**Male vaccination**
It was agreed that there was no need for further research in the area of the efficacy of the HPV vaccine in males as it is now widely accepted that the vaccine is effective in males. But more studies are required to demonstrate the cost-effectiveness of adding males to the vaccination programmes. From a policy perspective, the focus should be on equality and that an inequality exists with a female-only vaccination programme, and crucially that further equality issues will arise for women if the government implements the JCVI’s recommendation to vaccinate MSM up to the age of 40. It was proposed that the value of a gender neutral vaccination programme could be demonstrated through a simple public message, (e.g. ‘prevent the preventable’), case studies of individuals with HPV-related disease that could have been prevented through vaccination, and a sustained media campaign with press, celebrity and political allies.

**Key messages**
- Inequalities in female vaccination should be addressed by focusing on the ‘hard to reach’ unvaccinated 15% of girls
- Public awareness of HPV should be enhanced by a simple message that is consistent for both sexes
- Policy change on male vaccination should be based on the inequality created by a female-only programme
Tristan Almada - Co-founder, HPV and Anal Cancer Foundation

Tristan founded the HPV and Anal Cancer Foundation in 2010 along with his two sisters, Justine and Camille, following the death of their mother, Paulette Isabel Crowther, to stage IV anal cancer at the young age of 53. After seeing first-hand how few resources are available to anal cancer patients, caregivers, and providers, they started a non-profit to provide much needed attention to the disease, to offer services such as support groups, to fund research in an effort to improve the therapeutic standard of care that has remained the same for the last 30 years, and to advocate for universal vaccination against the Human Papillomavirus, the causal agent of 5% of all cancers.

Tristan has lived in London for the past seven years and oversees the UK arm of the Foundation.

Professor Ian Banks - President, European Men’s Health Forum (EMHF)

Ian has been EMHF President since its launch in 2001. He is a retired accident and emergency doctor and general practitioner. He is a former president of the Men’s Health Forum (England and Wales), past vice president of the International Society of Men’s Health (ISMH), past deputy editor of the Men’s Health Journal and for six years the medical editor for Men's Health magazine. He was a trustee of Developing Patient Partnerships for six years. Ian is a founder member of the Self Care Forum (UK) and the official spokesman on men’s health issues for the BMA.

Ian was appointed visiting professor of men’s health in Europe by Leeds Metropolitan University in 2005 and awarded the Royal Society of Public Health (RSPH) Gold Medal for public health in 2007, followed by appointment to the RSPH Academy. In 2012, the RSPH appointed Ian as Professorial Fellow to the Society. The City of Vienna and the ISMH honoured Ian with their award for public health in September 2007. He is now visiting professor in men’s health at the University of Ulster and honorary senior lecturer in men and cancer at Queen’s University Medical School. He currently chairs the European Cancer Organisation (ECCO) patient advisory committee and the European Forum Against Blindness.

In 2013, Ian was appointed to the board of the European Cancer Concord which produced the Cancer Patient’s Bill of Rights. He acts as the Guardian of the Royal College of General Practitioner’s (RCGP) syllabus and statement on men’s health and is a trustee of the European Pharmaceutical Students’ Association. In January 2015, Ian was appointed Visiting Professor in cancer inequalities at Leeds University and to the European Society of Medical Oncologists’ (ESMO) patient advocacy committee.
**John Baron MP - Chair of the All Party Parliamentary Group on Cancer since 2009**

John studied at Cambridge and joined the Royal Regiment of Fusiliers in 1984, serving in Berlin and Northern Ireland as a platoon commander, then as a Captain with the United Nations in Cyprus, before finishing in Germany as the Battalion Operations Officer.

On leaving the Army in 1988, he entered the City, running portfolios for charities and private clients, and was a Director of Hendersons and then Rothschild Asset Management.

Since leaving the City, he has assisted charities and individuals monitor their fund managers. He also writes for the FT’s Investors Chronicle magazine, speaks at investment seminars, and has written the ‘FT Guide to Investment Trusts’.

John was elected as the Conservative MP for Billericay and District in 2001, and served on Parliament’s Education Select Committee becoming a Shadow Health Minister in 2002. However, he resigned from the Front Bench in 2003 in order to vote against the Iraq war. He has since opposed UK military intervention in Afghanistan, Libya and Syria. As Chairman of the All Party Parliamentary Group on Cancer (APPGC), John campaigns to improve cancer services. The APPGC recently successfully campaigned for one-year cancer survival figures to be included at the top of the ‘Accountability Tree’ for the local NHS, which will help to promote earlier diagnosis – cancer’s ‘magic key’. John also supports the extension of the national HPV vaccination programme to include boys as well as girls.

**Professor Chris Bentley - Independent Population Health Consultant**

As a London qualified doctor, Chris migrated into Population Health medicine via practice in East Africa (with Save the Children Fund and UNICEF), London, and both Sussex and Sheffield/South Yorkshire, where he was Director of Public Health. He lead the Health Inequalities National Support Team, which worked with the 70 most deprived areas of England with the poorest health (Spearhead areas) to support systematic action to address national and local inequality targets. Based on this work, Chris provided ongoing policy advice to the Department of Health on population health issues.

He now works as an independent consultant, with contracts at local, regional and national level, and with the World Health Organization in Europe. Recent major projects have included Social Determinants work with MoH in Poland; external review of screening Quality Assurance systems for PHE, and work on inequalities in HPV vaccine uptake supported by Sanofi Pasteur MSD.

Chris has been appointed by the Secretary of State for Health as Chair of the Technical Advisory Group to the Advisory Committee on Resource Allocation. He is a Non-Executive of Derbyshire Community Healthcare NHS Foundation Trust, and a visiting Professor at Sheffield Hallam University.
Mr Peter Greenhouse - Consultant in Sexual Health, Bristol and Weston

Peter has been chair of the media committee of the British Society for Sexual Health and HIV (BASHH) since 2010, and was responsible for running the successful campaign to introduce quadrivalent HPV vaccine into the national schools cervical cancer prevention programme.

He qualified in 1979 from Cambridge, training in Venereology and Gynaecology, with the aim of bringing the two subjects together to improve women's health. He set up the UK's first integrated sexual health centre in Ipswich in 1991, providing holistic care for contraception and sexually transmitted infections under one roof. After moving to Bristol in 1999, he won large Department of Health capital grants to redesign and rebuild sexual health services there and in Weston, which won the Terrence Higgins Trust's 'Sex Factor' Award in 2007.

He lectures internationally on all aspects of women's sexual health, specialising in chlamydia, HPV, herpes and hormonal interactions with genital infections, and has been the principal postgraduate lecturer on pelvic infection for BASHH since 1994 and the RCOG from 2009-13.

Widely published as a medical photographer, he is a medical advisor to the Ectopic Pregnancy Trust and a member of the Expert Advisory Group on STI of the European Society for Contraception. He is also advisor to an art project - “The Great Wall of Vagina” - which aims to educate women about normal genital anatomy and discourage demand for labiaplasty.

Dr Shaun Griffin - Executive Director of External Affairs, Terrence Higgins Trust

Shaun started at the Terrence Higgins Trust in January 2015. He held his previous role as Director of Communications and Public Affairs at the Human Tissue Authority (HTA) from 2005, from where – in 2011 – he was seconded two days a week to the Health Research Authority (HRA) as its Executive Director of Communications.

Shaun completed a PhD at Cancer Research UK/University College London, followed by a post-doctoral fellowship. For the 20 years since then he has worked in health and science fields, with roles spanning communications, public affairs, policy and journalism.

He wrote and edited books on HIV and hepatitis for a medical publishing company, after which he developed e-learning materials on HIV/AIDS for developing countries at the Wellcome Trust charity, before moving to their press office. He subsequently moved to UK Biobank – the largest population health project in the world – as its first Head of Communications in 2003.

Shaun has sat on a number of Department of Health advisory groups, and is currently a member of an HRA Research Ethics Committee specialising in clinical trials.

Dr Alice Martha Schofield - Clinical Fellow, ANALOGY Study, Institute of Cancer Sciences, University of Manchester

Alice Martha Schofield is an Obstetrics and Gynaecology trainee in the North West Deanery. Alice is currently working as a clinical research fellow at the University of Manchester in the Institute of Cancer Science under the supervision of Professor Henry Kitchener. For just over two years Alice has been the lead clinician on the ANALOGY study.

Alice graduated with MBChB from the University of Manchester in 2006 and completed her Foundation Training at Salford Royal Foundation Trust. Alice postponed her training post in Obstetrics and Gynaecology to spend a year demonstrating anatomy at the University of Manchester. Alice commenced her training in Obstetrics and Gynaecology in 2009.
Professor Margaret Stanley - Emeritus Professor of Epithelial Biology and Fellow of Christ’s College, University of Cambridge

Margaret Stanley attended the Universities of London, Bristol and Adelaide, she is a Fellow of the Academy of Medical Sciences and Honorary Fellow of the UK Royal College of Obstetricians and Gynaecologists. She has a lifetime award for contribution to research on cervical cancer and cervical precancers from the American Society for Colposcopy and Cytopathology (ASCCP) and a lifetime award for achievement from the International Papillomavirus Society.

She has served on several Research Council committees and was a member of the Biology and Biotechnology Science Research Council from 2000-2003. She was a member of the Spongiform Encephalopathies Advisory Committee that advised the UK government on prion diseases (mad cow disease) from 2004-2010. In 2004, she was awarded the OBE for services to Virology.

Margaret was and still is a research scientist and her research has focused on how the body defends itself against infections with HPV and how to develop vaccines that prevent HPV infection as well as those that might treat HPV infection. She is a consultant for the three companies that market HPV vaccines, MSD, SPMSD and GSK, and for small biotech companies developing therapeutic vaccines. She was a member of the WHO Ad hoc Expert Group 2013: Consultation on Human Papilloma Virus (HPV) Vaccines Schedules that prepared the Report on reduced dosage schedules for consideration by SAGE (the WHO Special Advisory Group of Experts). She is a member of the WHO group for Development and Evaluation of Second Generation HPV Vaccines and acts as the invited expert for the HPV subcommittee of the Joint Committee on Vaccines and Immunisation in the UK.

Dr Jo Waller - Cancer Research UK Career Development Fellow, Health Behaviour Research Centre, University College London

Jo Waller is a Cancer Research UK career development fellow, with over 15 years’ research experience in the field of cervical cancer prevention. Jo graduated with a psychology degree from the University of Exeter and went on to complete an MSc and PhD in health psychology at University College London. She has been based at the Health Behaviour Research Centre at UCL since 1998. Her research focuses on public understanding of cancer, predictors of participation in cancer-protective behaviours, screening decision-making, and the psychological impact of cancer screening. She has a particular interest in HPV-related cancers and is currently involved in studies related to cervical, anal and head and neck cancer. Jo sits on the HPV Primary Screening Pilot group, and is a member of the Advisory Committees for the NHS cervical and breast screening programmes.
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<thead>
<tr>
<th>Name</th>
<th>Position/Title</th>
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<tbody>
<tr>
<td>Kieran Aldred</td>
<td>Campaigns and Parliamentary Officer</td>
<td>Terrence Higgins Trust</td>
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<tr>
<td>Tristan Almada</td>
<td>Co-founder</td>
<td>HPV and Anal Cancer Foundation</td>
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<td>Jon Antoniazzi</td>
<td>Policy Officer</td>
<td>Tenovus Cancer Care</td>
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<td>Peter Baker</td>
<td>Consultant</td>
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<td>John Baron MP</td>
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<td>All Party Parliamentary Group on Cancer</td>
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<td>Nik Batley</td>
<td>Sexpression:UK</td>
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<tr>
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<tr>
<td>Gabby Brunton</td>
<td>Street and Co</td>
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<td>Dr Christine Campbell</td>
<td>University of Edinburgh</td>
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<tr>
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<td>London Cancer Alliance</td>
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## SYMPOSIUM ATTENDEES

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
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<tbody>
<tr>
<td><strong>Prof Richard Parish</strong></td>
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<td>Policy Manager, Cancer Research UK</td>
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<td>Head of Health Information &amp; Evaluation, Cancer Research UK</td>
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<td><strong>Prof Clare Wilkinson</strong></td>
<td>Bangor University</td>
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<td><strong>Robert Wilson</strong></td>
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REPORT AUTHOR

Peter Baker is an independent consultant committed to improving the health of men and boys. He supports organisations in the public, third and private sectors that want to begin or develop their work on men’s health. He works as a consultant for the European Men’s Health Forum, is Campaign Director for HPV Action and has the role of Director of Global Action on Men’s Health. In 2015, he completed a review of Ireland’s National Men’s Health Policy for the Health Service Executive.

For 12 years, until August 2012, Peter was Chief Executive of the Men’s Health Forum, England and Wales’ leading men’s health charity, and he continues to support its work as an Associate. Peter was previously a health journalist, author of two self-help books for men, launch editor of malehealth.co.uk, and a social policy researcher in local government.

Peter was deputy editor of the Men’s Health Journal for two years and is currently a Fellow of the Royal Society of Public Health.
The European Men's Health Forum (EMHF) was established in 2001. Originally part of the Men’s Health Forum (England and Wales), it soon became an autonomous, non-profit-making, non-governmental organisation based in Brussels.

EMHF is the only European organisation dedicated to the improvement of men’s health in all its aspects. Its vision is a future in which all men in Europe have an equal opportunity to attain the highest possible level of health and well-being.

EMHF aims to improve the health of men and boys by:

- Raising the profile of men’s health at a Europe-wide level and within individual states.
- Encouraging Europe-wide, national, regional and local organisations (both governmental and non-governmental) to include men’s issues in their health policies and practices.
- Improving the delivery of health services to men, including primary care and health promotion information.
- Increasing the awareness of health professionals of men’s health issues and their ability to work effectively with male patients and men generally.
- Enhancing men’s awareness of their own health and their treatment options.
- Fostering improvements in men’s health-related behaviour, not least in terms of increasing their willingness to access health care and reducing the risks they take with their health.
- Providing opportunities for organisations and individuals across Europe with an interest in men’s health to network and collaborate.
- Accelerating research into the health needs of men across Europe.
- Advocating a ‘gender-sensitive’ approach to health research, policy and practice that takes full account of the needs of both men and women.

EMHF is committed to gender equality, fully supports activities to improve women’s health, and opposes the re-allocation of funding from women’s to men’s health.

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