GLOBAL ACTION ON MEN'S HEALTH

NOMAN IS AN ISLAND
RACE TO END HPV
AND PREVENT 5% OF CANCERS

BOYS, MEN & HPV

A CALL FOR GLOBAL GENDER-NEUTRAL VACCINATION

Key messages

- We have the means to protect everyone – whatever their sex or gender – from high-risk human papillomavirus (HPV) infections and the cancers they cause. To achieve this, a more ambitious, ethical and equitable approach to HPV vaccination is needed at the global and national levels.
- Global Action on Men's Health, NOMAN is an Island: Race to End HPV and the supporters of this Call are seeking the worldwide adoption of gender-neutral (ie. universal) vaccination (GNV) by 2030 with a 90% uptake goal.
- We urge global public health organisations to prioritise the elimination of all the cancers caused by HPV. Every young person should be considered a primary target for vaccination by the World Health Organisation (WHO) and other key health organisations including Gavi, The Vaccines Alliance.
- From an epidemiological perspective, when both males and females are at risk of HPV, it is illogical to immunise girls alone. Only GNV can achieve the elimination of the vaccine-related high-risk HPV types and prevent the cervical and other cancers they cause.
- About 1 in 5 men has a current high-risk HPV infection. A conservative estimate of the number of new HPV cancer cases in men globally is 180,000 annually, with the actual number quite plausibly much higher.
- Despite the burden of HPV-related cancers in men, there are no established routine screening programmes for these cancers leading to delays in diagnosis and treatment.
- GNV increases the resilience of vaccination programmes, helping to protect against crises in vaccine confidence or disruption caused by pandemics, natural disasters or conflict.
- Vaccinating both boys and girls de-feminises and de-stigmatises immunisation programmes. GNV shares the responsibility for cancer prevention more equitably between the sexes.
- WHO's recent recommendation of the option of single-dose vaccination programmes, combined with increasing vaccine supply, makes GNV feasible on a global basis.

BOYS, MEN & HPV

'I am personally arguing very strongly for the vaccination of boys, not only to prevent cancers linked to HPV occurring in males, but also due to the transmission of the virus by males to females. Only an extensive programme to vaccinate both genders could lead to an eradication of the high-risk HPV types within a foreseeable period of time.'

Professor Harald zur Hausen, winner of the Nobel Prize for Medicine (2008) for the discovery that HPV causes cervical cancer[56]

Protecting men protects women, and more quickly

GNV programmes protect more women from cervical cancer than girls-only programmes, especially when vaccination coverage is low, and they also do so faster.

Most cancer cases caused by HPV affect women, with cervical cancer by far the most common. Virtually all HPV-related cancers in women are the result of sexual contact with a man who is carrying HPV.

The elimination of cervical cancer is, rightly, a global health priority. The World Health Organisation (WHO) has set a target for its virtual global elimination by 2030.[1] An essential element of its strategy is a vaccination rate of at least 90% in girls. Currently, however, in most countries with HPV vaccination programmes, the vaccination rate in girls is well below 90%. In Germany and France, for example, the vaccination rate in girls is under 50%.[2] In the African region, first dose coverage stands at 33%.[3] Globally, it is estimated that only about 20% of girls were vaccinated with at least one vaccine dose in 2019.[4]

With a girls-only approach, it will take about 70 years of 100% vaccination coverage to eliminate cervical cancer.[5] Current girls-only HPV vaccination programmes with low or moderate coverage are not likely to reach even the 90% goal in the foreseeable future and therefore cannot provide sufficient levels of 'herd protection' to prevent the infection of unvaccinated, often marginalised, women and girls. GNV is also required to reduce the number of cervical cancer cases more quickly. Moderate (50-75%) girls-only vaccination coverage will not result in the elimination of vaccine-preventable high-risk HPV types or the elimination of the cancers caused by HPV.[6] However, modelling suggests that the high-risk types could be eliminated in about 30 years with GNV at a feasible 75% coverage rate.

Resilience, equity and ethics

No other vaccine is given to only one gender. GNV programmes have greater resilience and are less stigmatised than girls-only programmes as well as being more ethical and equitable.

Gender-neutral HPV programmes are more resilient against downturns in vaccination uptake. Significant falls in coverage can be caused by unfounded concerns about vaccine safety (as has happened in Japan, Denmark and Ireland), pandemics, natural disasters or conflict.

It is also both ethical and equitable to vaccinate on a gender-neutral basis. Ethical because it cannot be right to deny boys and men access to a potentially life-saving vaccine. GNV is consistent with the WHO Constitution which describes 'the enjoyment of the highest attainable standard of health [as] one of the fundamental rights of every human being.'[7] It is also congruent with WHO's global strategy on immunisation which envisages, by 2030, 'a world where everyone, everywhere, at every age, fully benefits from vaccines for good health and well-being.'[8]

GNV is equitable not only because it protects males from the cancers caused by HPV but also because girls-only HPV prevention programmes have entrenched the perception that HPV infection, including its prevention, is first and foremost 'a female issue'. GNV can further help to increase vaccination uptake by helping to overcome the stigma that has become attached to the vaccine by normalising

vaccination and challenging false assumptions that women are to blame for HPV acquisition, transmission and the resulting diseases.[9]

Girls-only vaccination programmes reinforce the message to boys and men that sexual health and cancer prevention, or health in general, are not issues they need be concerned about.[10] Males should protect their partners from infections and HPV vaccination viewed as a shared responsibility between males and females. GNV simplifies the rationale for protection against HPV: everyone is at risk from HPV and therefore everyone should be protected.

GNV is also equitable because males in countries without such programmes will be left at risk compared to males in other countries with GNV. As a steadily increasing number of high- and middle-income countries introduce universal vaccination programmes, males in countries without such programmes, mainly low-income countries, will fall further behind. In this context, it should be noted that the WHO Constitution regards 'unequal development in different countries of health and control of disease, especially communicable disease, as a common danger.'

HPV infection in men

Men are the main vectors (carriers and transmitters) of high-risk HPV infections – over 20% of men currently have a high-risk infection. GNV would prevent HPV-caused cancers in men and simultaneously lead to a significant reduction in cancer rates in women.

GNV is essential because men are at significant risk of HPV infection. Globally, about 1 man in 5 (21%) has a current high-risk HPV infection.[11] Young men aged 25-29, with 24% prevalence, are most likely to be affected. But prevalence is still high, at 20%, in the 15-19 year age-group and remains at about the 20% level across the adult lifespan.

The burden of high-risk HPV infection is particularly high among men in sub-Saharan Africa – with a prevalence of 25% – and most pronounced among those living with HIV.[12] People living with HIV are at the greatest risk from high-risk HPV types. Incidence rates of oropharyngeal cancer are at least two times higher, compared to HIV uninfected populations.[13] Anal cancer incidence is 30 times higher in HIV-positive individuals compared to the general population.[14] In areas of high HIV prevalence, such as sub-Saharan Africa, this increases the value of GNV as an intervention.

Men are more likely to have an infection than women and to be infectious for longer. Men make a poor antibody response to 'natural' HPV infection but a very good response to HPV vaccines. Vaccinating males is the only certain way of providing immunity to men and boys.[15]

HPV infection also causes genital warts and, more rarely, recurrent respiratory papillomatosis (RRP) in all genders. Genital warts is very common – with an estimated annual population-wide incidence rate approaching 200 per 100,000[16] – and can cause anxiety, guilt, anger and loss of self-esteem.[17] The treatments are generally painful, prolonged, difficult for patients to apply, often need to be repeated and are expensive. Both warts and RRP can be prevented by GNV.

HPV and cancer in men

The number of new HPV-caused cancer cases in men is conservatively estimated to be about 180,000 a year and is quite likely to be higher. GNV would not only reduce the incidence of HPV-caused cancers in men it would also help to ease the excess overall burden of cancer on men.

Globally, men suffer an excess overall burden of cancer with significantly higher incidence and mortality rates than women. The incidence rate for all cancers combined is 213 per 100,000 for men,

15% higher than for women. The mortality rate for men is 110, 43% higher than for women.[18] Reducing the number of cancers in men caused by HPV would help to improve their cancer outcomes.

Among males, HPV mainly causes cancers of the anus, penis and oropharynx. Almost all anal cancers, over 50% of cancers of the penis and up to 60% of oropharyngeal cancers (rising to 70-85% in some countries) are caused by HPV infection.[19,20]

There is no accurate global figure for HPV-caused cancer cases in males because of under-recording in many countries.[21] In countries where data around these cancers is accurately measured, the proportion of HPV-related cancer cases which are in males ranges from 20-42%, significantly higher than previous estimates. In India an estimated 20% of cases are in males,[22] in France 28%,[23] in Spain 30%,[24] in Denmark and Ireland 35%[25,26] and in the USA 42%.[27]

The CDC estimates that, in the USA, HPV causes 15,500 cancer cases in men a year.[28] Data for India suggests there will be 24,855 HPV-caused cancers in men in 2025.[29] There are also 2,209 cases a year in France, Ireland and Denmark combined. Between them, these five countries contain 23% of the total male population worldwide and have about 42,500 HPV-caused cancer cases in men each year. It is therefore plausible to assume that the number of cases in men globally should be measured in the hundreds of thousands with the number potentially exceeding 180,000, at a conservative estimate.[30]

In many countries, including low-income countries, rates of HPV-caused cancers in men have been rising in recent years.[31] Rates of penile cancer and anal cancer are increasing significantly among males – high penile cancer rates in Brazil have received particular attention recently[32,33] – and the incidence of oropharyngeal cancer in men has now overtaken that of cervical cancer in women in both the UK and the USA with HPV being the main driver.[34]

There are currently no routine screening programmes for HPV-caused cancers in men and, because HPV is a sexually transmitted infection, vaccination in adolescence before young people become sexually active is the best means of prevention. This means that vaccination should be provided for boys before the age of 15 and, ideally, by the age of 13.

There is now good evidence showing the impact of HPV vaccination on cancer rates. A study of women in Scotland born 1988-1996 and immunised aged 12 or 13 shows that none developed invasive cervical cancer.[35] Similar data is now emerging for men. Vaccinated males aged up to 39 in the USA, for example, have less than half the risk of developing an HPV-caused cancer than unvaccinated males.[36]

Marginalised men

The only effective way to protect men who have sex with men from HPV-caused cancers is through GNV.

Men are to some extent protected against HPV infection by girls-only vaccination programmes but only if they have female sexual partners who have been vaccinated. Even if 90% of girls have been vaccinated, that still leaves a significant number of women who may carry an infection.

Vaccination programmes usually have uneven impacts with some groups, such as people living in rural or remote areas, migrants, racially or ethnically marginalised populations or some religious communities, much less likely to be vaccinated. Men who have sex with women in these groups will be at greater risk.

Men who have sex with men (MSM) are completely unprotected by girls-only vaccination programmes. MSM are much more likely than men who have sex only with women to have a high-risk HPV infection

– about three-quarters of MSM may be affected[37] – and to develop an HPV-caused cancer. MSM who are also HIV positive are at even greater risk of anal, penile and oropharyngeal cancers.[38] Many MSM also have sex with women who, if they are unvaccinated, are consequently at a higher risk of infection. The number of MSM who have sex with women may be surprisingly high: in one study, over a quarter (28%) of men who had sex with men defined themselves as heterosexual/straight.[39]

A new global policy approach

GNV is not a novel concept. Over 70 countries protect both their sons and daughters against HPV infection.

More countries are now introducing GNV. It was first adopted by the USA in 2011 and then by Australia in 2013. GNV programme adoption was slow over the next five years – with only 25 countries implementing GNV – but since 2018 the pace of introduction has accelerated. By mid-2024, more than 70 countries had either introduced GNV or announced that they would do so.[40] These are mostly high-income countries although some middle-income and lower-middle-income countries, such as Bhutan, Cape Verde and Cameroon, are now providing GNV. Eswatini has announced that it will be introducing GNV in 2025, which will make it the fourth country in the African region to have done so.

At the international level, the European Commission (EC) was the first governmental body to recommend GNV. In Europe's Beating Cancer Plan, published in 2021, the EC designated GNV as a 'flagship' policy to achieve the elimination of not just cervical cancer but all the cancers caused by HPV.[41] This has already had an impact with GNV programmes introduced in two member states, Bulgaria and Romania, in 2024 alone. In 2023, the Pan American Health Organization's Technical Advisory Group on Vaccine-Preventable Diseases recommended that boys should be offered HPV vaccination throughout the Americas region.[42]

WHO and HPV cancers

Boys should now be considered a primary target population for HPV vaccination by WHO and other health organisations.

Historically, WHO's approach to the prevention of HPV cancers has focused on cervical cancer. The other cancers, and the impact of HPV-caused cancers on men, have not been reflected in its policy or plans. Boys are defined as a 'secondary target population' who should be vaccinated only if this is 'feasible' and 'affordable' and does not divert resources from vaccination of the primary target population (girls) or cervical cancer screening programmes.[43] GAVI, The Vaccines Alliance, a public-private global health partnership, aligns its HPV programme eligibility with the WHO's primary target population of girls aged 9 to 14 years. This means that an opportunity to eliminate all the cancers caused by HPV, including cervical cancer, is being missed.

The narrative that vaccinations are for the elimination of cervical cancer alone may have been appropriate two decades ago when the vaccine was being developed and first introduced but it no longer consistent with the evidence. It is now clear that HPV prevention policy should therefore consider the whole, not just 50%, of the population if the cancers caused by this pernicious virus are to be eliminated and equity achieved between males and females and between countries.

Updating WHO policy to recognise the importance of protecting both boys and girls would act as a catalyst to strengthen and accelerate progress towards the elimination of all HPV cancers.

Boosting vaccination uptake

Vaccines don't save lives. Vaccination does.

The first step is the introduction of GNV. The second is to ensure that vaccination uptake is high enough to make a significant impact and to ensure 'herd protection' (when enough people are immune to ensure the protection of the whole population). While modelling studies suggest that the HPV vaccination rate must reach at least 75% in both boys and girls to achieve elimination of the main high-risk HPV types,[44] 90% is now a more commonly accepted public health target. However, very few countries have reached this level and, in most countries with GNV, the rate in boys is significantly lower than that for girls. Worldwide, about four girls are vaccinated for every boy.[5] The best way to ensure a high uptake for all is through school-based vaccination programmes[45] and a greater focus on communicating the benefits of vaccination to young people and their parents and carers which includes tailored messaging about the need to protect boys.[46]

There is evidence that introducing GNV boosts uptake in girls. In Cameroon, when the programme was for girls alone, uptake was constrained by fears that the vaccine was being used to sterilise girls. When the programme was extended to boys, the coverage rate in girls increased three-fold.[47]

It's time for a new approach to HPV prevention policy

The authors and supporters of this Call to Action recommend a 6-point plan for GNV.

GAMH, NOMAN is an Island: Race to End HPV and the supporters of this Call believe it is now time for WHO, GAVI and individual governments not currently providing GNV to reconsider their position. They should do so because:

- The evidence for the public health benefits of GNV is now robust and overwhelming.
- WHO's recent recommendation of single-dose (rather than double- or triple-dose) HPV vaccination programmes changes the economics of vaccination. In short, it is now feasible to vaccinate boys as well as girls.
- There is no longer a significant problem with vaccine supply. Total supplies are expected to have tripled between 2022 and 2025 and global demand will be met by 2025.[48] The vaccine is now manufactured by five companies and, with sufficient notice, supply can be increased to meet growing demand. Supply is expected to meet demand by 2025.
- There are now calls from researchers and advocates in lower-income countries for the introduction of global GNV[49,50,51] as well as from a range of international organisations including the World Federation of Public Health Associations[52] and the International Papillomavirus Society.[53] The Director-General of the Africa Centres for Disease Control and Prevention is reported to have emphasised the importance of including boys in HPV vaccination programmes as part of a comprehensive strategy to combat HPV and cervical cancer in Africa.[54] The Immunisation Technical Advisory Group for the WHO African Region has recommended that countries consider the benefits of vaccinating boys.[55]

It is therefore recommended that:

1. HPV must be understood, and responded to, as a threat to the health of all sexes and genders.
2. GNV should be viewed from the perspective of its potential to eliminate high-risk, oncogenic HPV types, thereby accelerating the elimination of not only cervical cancer but also *all* the cancers caused by HPV.

3. By 2028, global policymakers should have reviewed the issue of GNV with a view to recommending its implementation. WHO should include boys in the primary target population for HPV vaccination.
4. By 2030, all countries currently without an HPV vaccination programme should have introduced HPV vaccination on a gender-neutral basis while countries currently with a girls-only programme should have transitioned to GNV.
5. Health partnerships between countries with established GNV programmes and lower-income countries should be established along with capacity-building initiatives to support the wider implementation of GNV.
6. A greater focus is needed on increasing vaccine uptake to at least 90% for all, a target most likely to be achieved through school-based vaccination programmes.

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About Global Action on Men's Health and NOMAN is an Island: Race to End HPV

GAMH was launched during International Men's Health Week in June 2014 and registered as a UK-based charity in May 2019. It brings together organisations and others with an interest in men's health in a global advocacy network. Its mission is to create a world where all men and boys have the opportunity to achieve the best possible health and wellbeing wherever they live and whatever their backgrounds. *gamh.org*

NOMAN is an Island: Race to End HPV is an organisation started by three siblings after losing their mother to cancer caused by HPV. Inspired by their mother's courage, they resolved to eradicate HPV and prevent HPV cancers from ending other lives prematurely. NOMAN's global work encompasses advocacy and education, coalition building, and generating evidence-based calls to action to educate and ultimately convince policymakers that HPV elimination is possible, but only via gender-neutral HPV immunisation. NOMAN is an Island: Race to End HPV is a programme of the HPV and Anal Cancer Foundation, a registered charity in England and Wales and the USA. *nomancampaign.org*

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