



HPV vaccine: the key to eliminating cervical cancer inequities

Programmes must ensure equitable access for all eligible groups

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The human papillomavirus (HPV) vaccine protects individuals from HPV strains that cause cancer. Evidence of its effectiveness in eliminating invasive cervical cancers is growing.¹⁻⁴ In a linked paper, Falcaro and colleagues (doi:10.1136/bmj-2023-077341) provide further evidence for the impact of HPV vaccination in eliminating invasive cancers.⁵ They also answered the vexed question of whether national HPV vaccination programmes magnify or narrow cervical cancer inequities.

Women from lower socioeconomic backgrounds share a disproportionately greater burden of cervical cancer incidence and mortality.⁶ Notably, socioeconomic inequities in cervical cancer are reported across high, middle, and low income countries.⁷⁻⁹ Falcaro and colleagues' findings underscore the importance of the HPV vaccine as an effective tool for reducing inequalities in cervical cancer, making a clear case for equitable access to the vaccine.

In their nationwide study, Falcaro and colleagues found that HPV vaccination reduced cervical cancer risk and grade 3 cervical intraepithelial neoplasia by 83.9% (95% confidence interval 63.8% to 92.8%) and 94.3% (92.6% to 95.7%), respectively, in the contemporary birth cohort of women offered vaccination routinely at age 12-13 years in England. Invasive cervical cancers decreased by more than 80% in all socioeconomic groups among vaccinated girls and women, preventing an estimated 687 cervical cancers by mid-2020. Interestingly, vaccine effectiveness (the proportion of cervical cancers averted) was consistent regardless of socioeconomic status. This finding suggests that marginalized groups may benefit from the HPV vaccine despite poor social determinants of health or higher prevalence of risk factors such as smoking, alcohol consumption, and reduced uptake of cancer screening.¹⁰⁻¹⁴

Vaccine equity

Foundational to the success of England's universal HPV immunization programme was the consideration of equitable access. More than 100 countries have introduced HPV vaccination programmes, and inequities in vaccine access and availability are documented.¹⁵ To successfully eliminate cervical cancers, policy makers must develop, implement, or redesign programmes to ensure equal access to the HPV vaccine for all individuals, regardless of their income. For example, the Vaccines for Children programme in the US provides free HPV vaccination to children from a low income household, as a result of which vaccine coverage in teenagers from such households is comparable to (and exceeds) coverage among teenagers from high income households.¹⁶ Similarly, the national immunization programme in Australia, introduced in 2007 and providing free HPV

vaccination to schoolchildren aged 12-13 years, led to rapid uptake and attainment of 80% vaccine coverage.¹⁷ The human and monetary consequences of cervical cancer and treatment averted through HPV vaccination outweigh the costs of making it accessible to all age eligible individuals.¹⁸

Another notable finding from Falcaro and colleagues' study is the incremental effect of building up HPV vaccine coverage in successive birth cohorts. Typically, the effect of a public health programme is often not fully evident during the early phases due to lag time in population uptake. In England, for instance, HPV vaccine coverage (a proxy for herd protection from HPV) increased from 38.9% to 48.1% in individuals born between September 1990 and August 1993 to 70.8-75.7% in those born between September 1993 and August 1995 and to 80.9-88.0% in those born between September 1995 and August 2000. The reduction in cervical cancer risk in these three cohorts was incremental—35.5%, 71.3%, and 86.0%, respectively.

Inherently, these data also emphasize the importance of attaining the 90% coverage target recommended by the World Health Organization.¹⁹ Currently, HPV vaccine coverage is below target in many countries despite being offered for several years.²⁰ Inequities in vaccine access, hesitancy, and variation in the extent to which healthcare providers recommend vaccination create a major challenge to target attainment in countries with existing HPV vaccine programmes.²¹⁻²⁴ Additionally, upstream factors (finances, health system capacity, supply, and vaccine prioritization) can deter introduction and scale-up in countries with no programmes.²⁵ To overcome the challenges of reaching target coverage and to maximize population herd immunity, collective efforts of government, community stakeholders, and healthcare professionals in these countries will be necessary.

In conclusion, the HPV vaccine is the key to eliminating cervical cancer inequalities. An equity driven approach is critical for the success of HPV vaccination programmes.

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