

# Elimination of HPV Cancers as a Public Health Problem, Starting with Cervical Cancers in the US

## What's Known

- Vaccination, screening and follow-up care can prevent almost all cervical cancer, making it the first cancer that could be eliminated in the US.<sup>2</sup>
- In many geographic areas vaccines have eliminated diseases, including polio, as a public health problem.
- Several organizations in the US and around the world have issued statements calling for cervical cancer elimination as a public health problem.<sup>3</sup>
- The World Health Organization has set a draft cervical cancer elimination goal at 4 cases per 100,000 women per year.<sup>4</sup> Some have proposed an elimination goal of 1 case per 100,000 for the US overall and for individual states.

***Elimination is defined as zero, or near zero, cases in a defined geographical area.***

## What's Possible

- Vaccination could largely eliminate HPV infections that cause 90% of HPV cancers.<sup>2</sup>
- Australia could reach the cervical cancer elimination target of 4 cases per 100,000 by 2028 and the target of 1 case per 100,000 by 2066, according to mathematical modelling.<sup>5</sup>
- “Micro-elimination” may be possible for smaller units including states, health systems, and specific age cohorts.
- Several states have cervical cancer rates close to 4 per 100,000 as well as high cervical screening rates and high vaccination rates, e.g. Massachusetts, New Hampshire, North Dakota, and Vermont.

## What Are the Challenges

- The public health definition of elimination differs from the lay definition. The public may think that elimination equals zero cases. A single message is needed that motivates everyone without getting too complicated.
- Messaging needs to respect survivors. It may be hurtful to say that cervical cancer has been eliminated even as new cases happen.
- Some rare types of cervical cancer are not caused by HPV, and screening is not 100% effective.
- Elimination efforts may divert resources to “prevent the last case” (e.g., divert resources away from preventing more common or deadly cancers).
- Once HPV vaccination rates get high enough, routine cervical cancer screening may no longer be recommended. Yet vaccination alone will only prevent 90% of cervical cancers, leaving the incidence of the remaining 10% unchanged.
- Cervical cancer elimination is not foreseeable for low- and middle-income countries where most cervical cancers occur, due to difficulties with broad implementation of effective screening and vaccination programs<sup>6</sup> and temporary vaccine shortages.
- It will be much easier to largely eliminate cervical cancer than the other HPV cancers, for which no effective screening tests exist, and for which a larger proportion of cases are not caused by HPV.

<sup>1</sup> Walter R. Dowdle, The Principles of Disease Elimination and Eradication, MMWR 48 (SU01);23-27, 1999.

<sup>2</sup> Kane, M. and Giuliano, A.R.. Eliminating HPV-related diseases as a public health problem: Let's start with cervical cancer. HPV World 2018;35:42-49.

<sup>3</sup> <http://hpvroundtable.org/get-involved/eliminate/>

<sup>4</sup> [https://www.who.int/docs/default-source/documents/cervical-cancer-elimination-draft-strategy.pdf?sfvrsn=380979d6\\_4](https://www.who.int/docs/default-source/documents/cervical-cancer-elimination-draft-strategy.pdf?sfvrsn=380979d6_4)

<sup>5</sup> Hall, M.T. et al. The projected timeframe until cervical cancer elimination in Australia: a modeling study. Lancet Public Health 4:e19-e27, 2019.

<sup>6</sup> Simms, K.T. et al. Impact of scaled up human papillomavirus vaccination and cervical screening and the potential for global elimination of cervical cancer in 181 countries, 2020-99: a modelling study. Lancet Oncol 20: 394-407, 2019.



**The HPV Vaccination Roundtable convenes, communicates with, and catalyzes member organizations to increase HPV vaccination rates and prevent HPV cancers.**

Learn more at [hpvroundtable.org](http://hpvroundtable.org).