

Building Infrastructure for Cervical Cancer Treatment and Palliation

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The views expressed are my own and do not necessarily reflect those of NCI/NIH/USA government

Disclosures

- National Institutes of Health (NIH) has patents on papillomavirus L1 virus-like particle (VLP) vaccine technology. I am an inventor.
- NIH has licensed L1 VLP technology to Merck and GlaxoSmithKline, the two companies with commercial versions of the vaccine.
- ***I will discuss a potential off-label use of the FDA/EMA-approved vaccines: a single vaccine dose***
- Licensees of other NIH technologies of which I am an inventor: GlaxoSmithKline, Sanofi, Shanta Biotech, Cytos Biotech, Aura Biosciences, Etna Biotech, Acambis, PanVax

***WHO/PAHO/LAC: Leading efforts to
reduce cervical cancer burden***

Main Components of Cervical Cancer Control

- HPV vaccination
- Cervical cancer screening
- Treatment of screen-detected cervical pre-cancer
- **Treatment of screen-detected invasive cervical cancer**
- **Symptom management and palliation of invasive cervical cancer**

HPV vaccination

- The most straightforward intervention and most effective long-term intervention; But vaccination only ***prevents incident infection***, and ***does not alter natural history of prevalent infection***
- It takes many years for vaccination to have a major impact on reducing the burden of invasive cervical cancer
- **Current problem:** a relatively small minority of eligible adolescents have been vaccinated in most low resource settings
- **Current research:** testing whether a single vaccine dose can confer strong protection against HPV infection and disease; if successful, could reduce costs and simplify logistics; possible relevance to current vaccine shortage

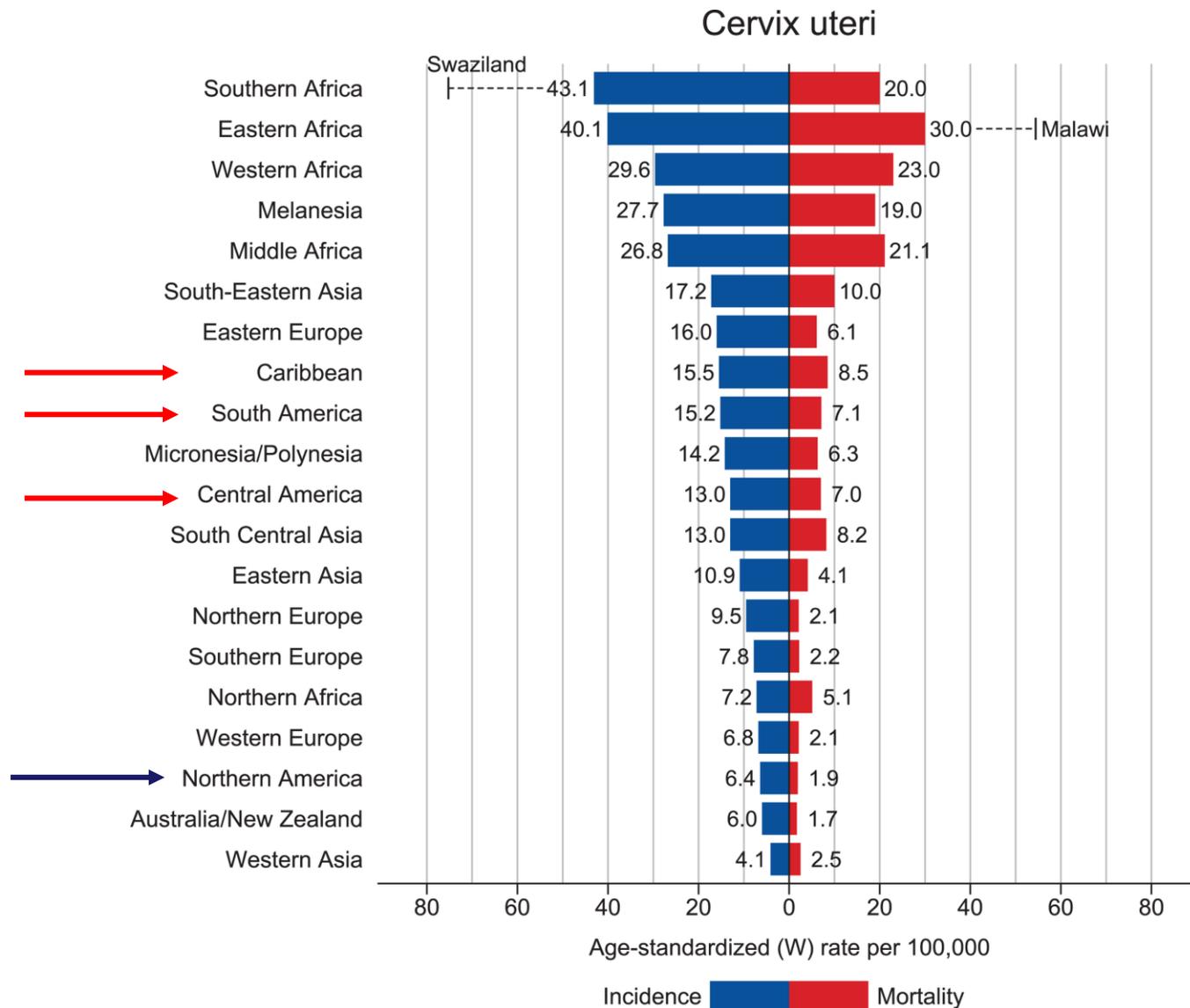
Cervical cancer screening: rationale

- More complicated to implement than vaccination
- Current technology makes it difficult to have high quality screening in most low resource settings; Research advances in next few years have potential to greatly improve this situation
- These anticipated advances should make it feasible to achieve the goal of widely disseminated cervical cancer screening that is high quality, cost-effective, and feasible even for low resource settings
- My personal opinion: *the principal rationale for screening should be to reduce the burden of cervical cancer and save the lives of many women* for whom vaccination would have little or no benefit, **this is a tangible benefit**; *shortening the time needed to reach the elimination threshold is a secondary benefit of screening*; **this is an arbitrary numerical benefit**

Screen-detected invasive cancers: The need and the ethical imperative for intervention

- Screening will identify some women with invasive cancer, in addition to women with pre-cancer. In principle, many screen-detected cancers will be in an early stage and potentially curable in many instances.
- The older the age of the screened women, the higher their incidence of screen-detected cancer
- *There is an ethical imperative to treat and palliate these screen-detected cervical cancers; these interventions can save lives, prolong lives, and improve quality of life*

Cervical cancer: A largely preventable cancer with wide global disparities, including the proportion of women who develop it and then die from it



Screen-detected invasive cancers: An opportunity

- Increased infrastructure is urgently needed in most low resource settings for treatment of invasive cervical cancer and its palliation
 - Palliation is available in 15/48 countries in the Americas
- ***Just as the cervical cancer initiative is an opportunity to greatly expand HPV vaccination and screening, the initiative should also be viewed as an opportunity for a comparable expansion of infrastructure for treatment and palliation***
- Such infrastructure expansion would have positive implications for diseases beyond cervical cancer
 - It would increase the ability to treat and palliate other cancers
 - It would increase the ability to palliate diseases beyond cancer
- In contrast to cervical cancer elimination, this expansion could happen in the near future, if it is viewed as a critical goal of the initiative

Screen-detected invasive cancers: A challenge and a possible solution

- **A paradox:** treatment and palliation of invasive cancer cannot and will not make a contribution to the “elimination” goal (which is based on cervical cancer incidence)
- **My opinion:** Given that treatment and palliation do not contribute to elimination, there is a serious risk that resources for expanding treatment and palliation infrastructure may not be sufficiently prioritized by the initiative. To overcome this risk, the “Global strategy towards elimination” should give greater emphasis to the importance of treatment and palliation and place it in a more relevant conceptual context than cervical cancer elimination

For discussion: Some principles to consider

- The main goal of the cervical cancer initiative should be ***to save women's lives and improve their quality of life by reducing the burden of cervical cancer***
- If this were explicitly the main goal of the initiative, it would be logical to emphasize the importance of expanding all intervention components (vaccination, screening, cancer treatment, and palliation)
 - This framework would make it easier to celebrate interim advances that can happen in the near future, rather than lamenting that what is currently the main goal – elimination – will not happen for many decades
- Elimination should be viewed as a key element, but it should be seen as the means to an end, rather than as the main goal