HPV vaccination and Adolescent Sexual & Reproductive Health

Paul Bloem

Expanded Programme of Immunization/IVB

World Health Organization, Geneva
(1) Why is the HPV vaccine needed and what impact evidence exists

(ii) What is the current WHO policy and state of the roll out

(iii) How could HPV link to other interventions.

(iv) What is WHO doing with partners to extend the roll out the vaccine
Global Cervical Cancer Incidence and Mortality 2018

Globally (2018):
- 569,847 cases
- 311,365 deaths

Source: http://globocan.iarc.fr
**Estimated number of cases of cancer associated to HPV infection globally, 2012**

- Cervix uteri: 530,000 (100% new cases attributable to HPV)
- 71% of cases attributable to HPV types 16 and 18
WHO comprehensive approach: programmatic intervention over the life course

**PRIMARY PREVENTION**
- Girls 9-14 years
  - HPV vaccination
- Girls and boys, as appropriate
  - Health information and warnings about tobacco use*
  - Sexuality education tailored to age & culture
  - Condom promotion/provision for those engaged in sexual activity
  - Male circumcision

**SECONDARY PREVENTION**
- Women >30 years of age
  - Screening and treatment as needed
    - “Screen and treat” with low cost technology VIA followed by cryotherapy
    - HPV testing for high risk HPV types (e.g. types 16, 18 and others)

**TERTIARY PREVENTION**
- All women as needed
  - Treatment of invasive cancer at any age
    - Ablative surgery
    - Radiotherapy
    - Chemotherapy
  - Palliative care

* Tobacco use is an additional risk factor for cervical cancer.
Early impact

Pre- and post-vaccine HPV prevalence in 20 yo females

HPV 16/18 prevalence reduced from 30.0% (26.9, 33.1%) in 1988 cohort to 4.5% (3.5, 5.7%) in the 1995 cohort

HPV 31/33/45 prevalence reduced from 14.2% (12-16.7%) in the 1988 cohort to 2.6% (95% CI: 1.9-3.6%) in the 1995 cohort

Other HR-HPV - no significant changes

Kavanagh et al submitted
The vaccines are very effective: in the real world

**Herd immunity**

Proportion of Australian born heterosexual men diagnosed as having genital warts at first visit

See also

- Sando et al, *Acta Derm Venereol* 2014
- Tabrizi and Brotherton et al, *Lancet Infect Dis* 2014

Males <21 years: 81.8% decline post vaccine introduction
Males 21-30 yrs: 51.1% decline post vaccine introduction

Ali et al., BMJ 2013
Statement on the continued safety of HPV vaccination (2017)

"Since licensure of HPV vaccines, GACVS has found no new adverse events of concern based on many very large, high quality studies. The new data presented at this meeting have strengthened this position."
Outline

1. Why is the HPV vaccine needed and what impact evidence exists
2. What is the current WHO policy and state of the roll out
3. How could HPV link to other interventions.
4. What is WHO doing with partners to extend the roll out the vaccine
WHO recommendations (May, 2017):

**Primary Target:** Girls, between 9 and 14 yr old

**Doses:** 2 doses

**Interval:** 6 months minimum

No maximum interval - suggested until 12-15 months after first dose.

To maximize impact, vaccinate multiple age cohorts at introduction:

- All 9-14 yr old girls
- 15-18 yr old girls (if feasible/affordable)

Source: WER May, 2017
(www.who.int/immunization/documents/positionpapers/en/)
Countries with HPV vaccine in the National Immunization Programme

~30% of girls 9-14yr Globally
WHO ESTIMATES: HPV PROGRAM COVERAGE, FEMALES 2018

Source: IVB Database, 15 July 2019
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1. Comprehensive Cervical Cancer Prevention & Control

INTEGRATION

Population prevalence (not to scale)

HPV infection

Precancer

Cancer

9 years 15 years 30 years 45 years 60 years

2. Adolescent Health

PRIMARY PREVENTION
Girls 9-13 years
- HPV vaccination

Girls and boys, as appropriate
- Health information and warnings about tobacco use*
- Sexuality education tailored to age & culture
- Condom promotion/provision for those engaged in sexual activity
- Male circumcision

SECONDARY PREVENTION
Women >30 years of age
Screening and treatment as needed
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TERTIARY PREVENTION
All women as needed
Treatment of invasive cancer at any age
- Ablative surgery
- Radiotherapy
- Chemotherapy

* Tobacco use is an additional risk factor for cervical cancer.
Global Strategy towards the Elimination of Cervical Cancer

**VISION:** A world without cervical cancer

**THRESHOLD:** All countries to reach < 4 cases 100,000 women years

### 2030 CONTROL TARGETS

- **90%** of girls fully vaccinated with HPV vaccine by 15 years of age
- **70%** of women screened with a high precision test at 35 and 45 years of age
- **90%** of women identified with cervical disease receive treatment and care

**SDG 2030:** Target 3.4 – 30% reduction in mortality from cervical cancer

Timeline
Submitted to EB 2020 (Oct 2019) for discussion at WHA May 2020
Integrating HPV vaccination with adolescent health interventions and programs

An opportunity for reaching girls and boys with additional health interventions.

Broutet et al. JAH, 2013; Hindin et al. JAH, 2015
Malaysia:
HPV vaccine delivery
in school health package

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HPV @ 13 years
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(iv) What is WHO doing with partners to extend the roll out the vaccine
WHO roles

1. Update Policies on HPV vaccine
2. Developed technical guidance materials
3. Assist National Immunization Authorities to decide on HV introduction
4. Assist EPI programmes with introduction planning
5. Track introduction and coverage as well as HPV vaccine prices and supply to ensure health markets

WHO HPV Vaccine introduction Clearing house

Visit each area for related resources:

- **POLICY & DECISION-MAKING**
  - Informing national decision-making for HPV vaccine introduction

- **PLANNING**
  - Planning for HPV vaccine introduction

- **FINANCING**
  - Budgeting and financing for HPV vaccine introduction

- **VACCINES & SAFETY**
  - Characteristics, presentations and safety profiles of HPV vaccines

- **COMMUNICATION**
  - Communicating effectively using research-based approaches

- **IMPLEMENTATION**
  - Delivering HPV vaccination programmes

- **MONITORING & SURVEILLANCE**
  - Monitoring the coverage and impact of HPV vaccine programmes

- **HPV PARTNERS**
  - Links to HPV partners and resources

Visit: http://www.who.int/immunization/hpv/en/
Alliance functions:
1. GAVI price of 4.5$ dose for eligible countries. UNICEF handles purchases.
2. Finance eligible countries (GNI<1500) to introduce HPV vaccine.
3. Technical Partners jointly provide technical support at planning, introduction and evaluation stages.