Outline

• Cervical Cancer Background
• Types of Cervical Cancer Prevention
• Cervical Cancer Incidence and Mortality Rate
• European Guidelines for Quality Assurance of Cervical Cancer
• Overview of HPV Vaccinations
• Overview of Screening Practices
• Possible Options for Slovakia
Cervical Cancer

Background

- 2\textsuperscript{nd} most common cancer in women worldwide
- HPV is leading contributor to cervical cancer
- Many sexually active individuals will be infected by HPV at some points in their lives
- Persistent infection with specific types of HPV (Types 16 and 18) may lead to precancerous lesions
  - If untreated, the lesions may become cancerous and lead to cervical cancer

Three types of Prevention

• Primary Prevention
  o HPV Vaccination
  o Targeted at girls ages 9-13 before sexually active

• Secondary Prevention
  o Cervical Cancer Screening
    • Recommended at least for women 30-49 years of age
    • Tests
      o Conventional (Pap) and liquid based cytology (LBV)
      o Visual inspection with Acetic Acid (VIA)
      o HPV testing for high risk HPV types

• Tertiary Prevention
  o Chemotherapy, radiotherapy, and palliative care
  o Treatment of Cancer at any age

World Health Organization 2013
Risk Factors of HPV and Cervical Cancer

- High Number of Partners
- HPV-positive sexual partners
- Polygamy
- Early onset of sexual behavior

Szaboova et al. 2014
## Incidence and Mortality Rate of Cervical Cancer

<table>
<thead>
<tr>
<th></th>
<th>Europe</th>
<th>Slovak Republic</th>
<th>Czech Republic</th>
<th>Slovenia</th>
<th>Finland</th>
<th>Austria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Incidence Rate</strong></td>
<td>13.4</td>
<td>19.4</td>
<td>16.3</td>
<td>11.8</td>
<td>4.9</td>
<td>7.0</td>
</tr>
<tr>
<td><strong>Mortality Rate</strong></td>
<td>3.7</td>
<td>6.9</td>
<td>4.3</td>
<td>4.1</td>
<td>1.4</td>
<td>2.8</td>
</tr>
</tbody>
</table>

Estimated incidence and mortality from cervical cancer, 2012; 
Age Standardized Rate (European) per 100,000

World Health Organization 2012
European Guideline for Quality Assurance of Cervical Cancer

- Organized population-based screening for European Union members
- Defining the screening policy
- Monitoring and Evaluation Required
- Cervical cytology recommended standard
- Opportunistic screening discouraged

Arbyn et al. 2010
# Overview of HPV vaccination for Slovak Republic, Czech Republic, and Slovenia

<table>
<thead>
<tr>
<th>Country</th>
<th>Cervarix date of licensure</th>
<th>Gardasil date of licensure</th>
<th>National Professional Recommendation for female HPV vaccination (age range)</th>
<th>Implementation of immunization program</th>
<th>Primary target population (gender/age group)</th>
<th>Recommendation of vaccination of males</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slovak Republic</td>
<td>2007</td>
<td>2007</td>
<td>12 years</td>
<td>Current organized initiatives for implementation</td>
<td>NA</td>
<td>No</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>2007</td>
<td>2006</td>
<td>9-26 years</td>
<td>Implemented since April 2012</td>
<td>Female/13-14 years</td>
<td>No</td>
</tr>
<tr>
<td>Slovenia</td>
<td>2007</td>
<td>2006</td>
<td>9-26 years</td>
<td>Implemented since September 2009</td>
<td>Female/11-12 Years</td>
<td>No</td>
</tr>
</tbody>
</table>

Not Applicable (NA)

Seme *et al.* 2013, Kesic *et al.* 2012
Overview of HPV vaccination for Slovak Republic, Czech Republic, and Slovenia

<table>
<thead>
<tr>
<th>Country</th>
<th>Reason(s) for lack of implementation of HPV vaccine in national immunization program</th>
<th>Financing</th>
<th>Type of program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slovak Republic</td>
<td>Financial constraints, unsatisfactory evidence of vaccine effectiveness</td>
<td>10% covered by insurance</td>
<td>Available on Demand</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>NA</td>
<td>Private funding</td>
<td>Available on demand</td>
</tr>
<tr>
<td>Slovenia</td>
<td>NA</td>
<td>Free of Charge</td>
<td>School-based</td>
</tr>
</tbody>
</table>

Not Applicable (NA)

Seme et al. 2013, Kesic et al. 2012
Overview of screening practices in Slovak Republic, Czech Republic and Slovenia

<table>
<thead>
<tr>
<th>Type of Screening</th>
<th>Status of Screening</th>
<th>Started (year)</th>
<th>Screening test</th>
<th>Age Range</th>
<th>Screening interval (year)</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slovak Republic</td>
<td>Opportunistic</td>
<td>1980</td>
<td>Conventional Cytology</td>
<td>23-64</td>
<td>3</td>
<td>17%-20%</td>
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<tr>
<td>Czech Republic</td>
<td>Organized</td>
<td>2008</td>
<td>Conventional Cytology</td>
<td>25-60</td>
<td>1</td>
<td>48%</td>
</tr>
<tr>
<td>Slovenia</td>
<td>Organized</td>
<td>2003</td>
<td>Conventional Cytology</td>
<td>20-64</td>
<td>3</td>
<td>70%-74%</td>
</tr>
</tbody>
</table>

Kesic et al. 2012
Finland

- One of the lowest incidence rates for cervical cancer
  - 4.9 incidence rate
  - 1.4 mortality rate
- Integration of the screening into health system
- 5-Year interval
- Organized screening
- Personal invitation through population registries

Possible options for Slovak Republic

- National organized population based screening
- Introduction of wide vaccination programs
  - Integration of HPV vaccine into the National Immunization Program
  - School-based
- Increase public awareness of cervical cancer risk
  - School-level
- Surveillance of screening and vaccination registries
- Increase the availability of tests
- Personal invitations through population registries
- Increase insurance coverage for vaccination and screening

Ondrusova et al. 2012, Tachezy et al. 2008
References


