BRITISH COLUMBIA’S CERVICAL CANCER SCREENING PROGRAM

DATE: NOVEMBER 19, 2016
PRESENTER: DR. DIRK VAN NIEKERK
Conflict of Interest Disclosure

• Nothing to disclose
Types of Cervical Cancer

There are two main types of cervical cancer:

• Squamous cell carcinoma (SCC)
• Adenocarcinoma*

Programmatic Screening

Screening for disease is the examination of asymptomatic individuals in order to classify them as likely or unlikely to have the disease that is the object of screening.

People who appear likely to have the disease are investigated further to arrive at a final diagnosis. Those people who are found to have the disease are then treated.

Principles of Programmatic Screening

- Evidence from well-conducted studies that early detection improves health outcomes;
- There is accepted treatment for patients with recognised disease;
- There is an effective test available;
- Facilities exist for diagnosis and treatment;
- The benefits of screening outweigh any potential harms;
- Prevalence of the disease is high enough to justify the effort and costs of screening.

- World Health Organization
# Screening Policy Comparison

**NEW Implemented June 2016**

<table>
<thead>
<tr>
<th></th>
<th>PREVIOUS POLICY</th>
<th>NEW POLICY <em>(EFFECTIVE JUNE 2016)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CERVICAL CANCER SCREENING</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>START AGE</strong></td>
<td>Age 21</td>
<td>Age 25</td>
</tr>
<tr>
<td><strong>CERVICAL CANCER SCREENING INTERVAL</strong></td>
<td>2 years</td>
<td>3 years</td>
</tr>
<tr>
<td><strong>CERVICAL CANCER SCREENING STOP AGE</strong></td>
<td>Age 69</td>
<td>Age 69</td>
</tr>
<tr>
<td><strong>TRIAGE OF POSITIVE RESULTS</strong></td>
<td>Refer to colposcopy if ASC-H, AGC or HSIL+</td>
<td>Refer to colposcopy if ASC-H, AGC or HSIL+</td>
</tr>
<tr>
<td></td>
<td>Repeat every 6 months for 2 years if ASCUS or LSIL</td>
<td>Repeat every 6 months for 1 year if ASCUS or LSIL</td>
</tr>
</tbody>
</table>
# BC’s Cervical Cancer Screening Policy

**NEW Implemented June 2016**

<table>
<thead>
<tr>
<th>AVERAGE RISK</th>
<th>RECOMMENDATION</th>
<th>SCREENING INTERVAL</th>
<th>BALANCE OF HARMS &amp; BENEFITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age 25-69</td>
<td>Screen</td>
<td>3 years</td>
<td>Benefits outweigh harms</td>
</tr>
<tr>
<td>Never had sexual contact*</td>
<td>Do not screen</td>
<td>N/A</td>
<td>Harms outweigh benefits</td>
</tr>
<tr>
<td>Received the HPV Vaccine</td>
<td>Screen</td>
<td>3 years</td>
<td>Benefits outweigh harms</td>
</tr>
<tr>
<td>In same sex relationships</td>
<td>Screen</td>
<td>3 years</td>
<td>Benefits outweigh harms</td>
</tr>
<tr>
<td>Transgender with a cervix</td>
<td>Screen</td>
<td>3 years</td>
<td>Benefits outweigh harms</td>
</tr>
<tr>
<td>After TOTAL hysterectomy</td>
<td>Do not screen</td>
<td>N/A</td>
<td>Harms outweigh benefits</td>
</tr>
<tr>
<td>Age &lt;25</td>
<td>Do not screen</td>
<td>N/A</td>
<td>Harms outweigh benefits</td>
</tr>
<tr>
<td>Age &gt;69</td>
<td>Do not screen</td>
<td>N/A</td>
<td>Harms outweigh benefits</td>
</tr>
<tr>
<td>IMMUNE COMPROMISED WOMEN</td>
<td>Screen</td>
<td>Annual</td>
<td>Benefits outweigh harms</td>
</tr>
<tr>
<td>HIGHER THAN AVERAGE RISK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>History of pre-cancerous lesions or cervical cancer</td>
<td>Screen</td>
<td>Annual Until 25 years after diagnosis with at least 5 negative cytology in last 10 years</td>
<td>Benefits outweigh harms</td>
</tr>
</tbody>
</table>

*Sexual contact includes intercourse as well as digital or oral sexual contact involving the genital area of a partner of either gender.*

[www.screeningbc.ca](http://www.screeningbc.ca)
Evidence suggests four well founded reasons for initiating screening at age 25:

• Invasive cervical cancers in women younger than age 25 are rare;
• Screening is relatively ineffective in younger women;
• Women under 25 have a higher prevalence of lesions that often clear without treatment;
• There are risks associated with unnecessary follow-up and treatments, many of which may have long-term consequences for pregnancy or cause undue anxiety and distress.
Age to Start Screening

Women younger than age 25 are rare

Cervical Cancer In Young British Columbia Women
Incidence Rate per 100,000 Population
by Age (20-29), 1986-2009

7.24/100,000 women aged 25-29
1.35/100,000 women aged 20-24
Age to Start Screening

Invasive cervical cancers in women younger than age 25 are rare

Cases of and deaths from cervical cancer, with associated incidence and mortality (rates per 100,000 women), among Canadian women (2002–2006) by age group
Age to Start Screening
Screening is relatively ineffective in younger women

BMJ. 2009 Jul 28;339:b2968

www.screeningbc.ca
### Age to Start Screening

Screening is relatively ineffective in younger women.

#### Protective Effect of Past Screening for Cervical Cancers

Sasieni et al., 2009

<table>
<thead>
<tr>
<th>Age (yrs) at cancer diagnosis</th>
<th>Cases</th>
<th>Controls</th>
<th>Odds Ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>25-29</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screened 22-24</td>
<td>202</td>
<td>58%</td>
<td>399</td>
<td>57%</td>
</tr>
<tr>
<td>Screened 20-21 but not 22-24</td>
<td>46</td>
<td>13%</td>
<td>70</td>
<td>10%</td>
</tr>
<tr>
<td>Not screened 20-24</td>
<td>103</td>
<td>29%</td>
<td>226</td>
<td>33%</td>
</tr>
<tr>
<td>Total</td>
<td>351</td>
<td>100%</td>
<td>695</td>
<td>100%</td>
</tr>
<tr>
<td>35-39</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screened 32-34</td>
<td>346</td>
<td>53%</td>
<td>842</td>
<td>66%</td>
</tr>
<tr>
<td>Screened 30-31, but not 32-34</td>
<td>88</td>
<td>14%</td>
<td>144</td>
<td>11%</td>
</tr>
<tr>
<td>Not screened 30-34</td>
<td>214</td>
<td>33%</td>
<td>288</td>
<td>23%</td>
</tr>
<tr>
<td>Total</td>
<td>648</td>
<td>100%</td>
<td>1,274</td>
<td>100%</td>
</tr>
<tr>
<td>45-49</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screened 42-44</td>
<td>214</td>
<td>45%</td>
<td>583</td>
<td>63%</td>
</tr>
<tr>
<td>Screened 40-41, but not 42-44</td>
<td>55</td>
<td>12%</td>
<td>133</td>
<td>14%</td>
</tr>
<tr>
<td>Not screened 40-44</td>
<td>203</td>
<td>43%</td>
<td>207</td>
<td>22%</td>
</tr>
<tr>
<td>Total</td>
<td>472</td>
<td>100%</td>
<td>923</td>
<td>100%</td>
</tr>
<tr>
<td>55-59</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screened aged 52-54</td>
<td>111</td>
<td>33%</td>
<td>389</td>
<td>58%</td>
</tr>
<tr>
<td>Screened 50-51, but not 52-54</td>
<td>32</td>
<td>9%</td>
<td>103</td>
<td>15%</td>
</tr>
<tr>
<td>Not screened 50-54</td>
<td>198</td>
<td>58%</td>
<td>183</td>
<td>27%</td>
</tr>
<tr>
<td>Total</td>
<td>341</td>
<td>100%</td>
<td>675</td>
<td>100%</td>
</tr>
</tbody>
</table>
Age to Start Screening

Women under 25 have a higher prevalence of lesions that clear without treatment

Regression of Cervical Intraepithelial Neoplasia 2 in Young Women

Age to Start Screening
There are risks associated with unnecessary follow-up and treatments

<table>
<thead>
<tr>
<th>Outcome (# studies)</th>
<th>Cases</th>
<th>Controls</th>
<th>Pooled relative risk (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd trimester loss (4)</td>
<td>1.6%</td>
<td>0.4%</td>
<td>2.60 (1.45-4.67)</td>
</tr>
<tr>
<td>Preterm birth &lt; 34/40 (5)</td>
<td>2.9%</td>
<td>2.3%</td>
<td>2.21 (1.33-3.67)</td>
</tr>
<tr>
<td>PPROM (6)</td>
<td>5.1%</td>
<td>2.5%</td>
<td>2.37 (1.64-3.44)</td>
</tr>
<tr>
<td>Preterm birth &lt;37/40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vs. no dysplasia (15)</td>
<td>8.6%</td>
<td>4.6%</td>
<td>1.86 (1.58-2.21)</td>
</tr>
<tr>
<td>vs. dysplasia untreated (4)</td>
<td>10.0%</td>
<td>7.2%</td>
<td>1.08 (0.88-1.33)</td>
</tr>
</tbody>
</table>

Kyrgiou et al, Cochrane Database Syst Rev 2015 Sep 29:9
Conner et al, Obstet Gynecol 2014;123(4):752-61
Age to Start Screening
There are risks associated with unnecessary follow-up and treatments

LEEP and preterm births

<table>
<thead>
<tr>
<th>Depth of LEEP</th>
<th>% preterm births</th>
<th>Odds ratio for preterm birth (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;12 mm</td>
<td>5.3%</td>
<td>1.00</td>
</tr>
<tr>
<td>13-15</td>
<td>4.4%</td>
<td>0.82 (0.55-1.23)</td>
</tr>
<tr>
<td>16-19</td>
<td>7.2%</td>
<td>1.44 (0.96-2.16)</td>
</tr>
<tr>
<td>&gt;20</td>
<td>9.0%</td>
<td>1.76 (1.21-2.55)</td>
</tr>
<tr>
<td>&lt;10 vs. &gt;10 mm</td>
<td></td>
<td>2.61 (1.28-5.34)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of LEEPs</th>
<th>% preterm births</th>
<th>Odds ratio for preterm birth (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 vs. none</td>
<td>11.4%</td>
<td>3.78 (2.58-5.53)</td>
</tr>
<tr>
<td>2 vs. 1</td>
<td></td>
<td>1.88 (1.27-2.78)</td>
</tr>
</tbody>
</table>

Noehr et al, Obstet Gynecol 2009;114(6):1232-8
Kyrgiou et al, Lancet 2006;367(9509):489-498
## Cervical Cancer Screening Program

<table>
<thead>
<tr>
<th><strong>PROGRAM OBJECTIVE</strong></th>
<th>To reduce cervical cancer incidence and mortality by finding pre-cancers and cancer at an early stage through routine screening</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TARGET POPULATION</strong></td>
<td>Women age 25-69 years</td>
</tr>
<tr>
<td><strong>SCREENING TEST</strong></td>
<td>Cytology</td>
</tr>
<tr>
<td></td>
<td><em>Pap test is provided by health care providers across BC; specimens sent to central lab in Vancouver for processing and reporting</em></td>
</tr>
<tr>
<td><strong>RESULTS</strong></td>
<td>Results mailed to health care provider</td>
</tr>
<tr>
<td><strong>REMINDER</strong></td>
<td>Mailed to health care provider when time to rescreen</td>
</tr>
<tr>
<td></td>
<td><em>Providers are responsible for reminding patients to return to screening</em></td>
</tr>
</tbody>
</table>
How Can I Fight Cervical Cancer?

• Identify eligible women for screening
• Obtain high quality smears
• Make appropriate referrals for abnormal results
• Encourage smoking cessation
• Encourage and provide HPV vaccination
Screening Effectiveness

• Screening effectiveness depends on:
  – Women’s participation**
  – Sample quality **
  – Adequate management and treatment of abnormal results**

• Laboratory performance
Screening Challenges in BC

- 10% of eligible women have NEVER had a Pap smear
- >20% of women have had inadequate screening
- >50% of women with cancer had inadequate screening
Screening Challenges in BC

• Poorly screened women
  – *More advanced disease*
  – *Higher mortality*

• Rate of cervical cancer is up to 4-6 times higher in First Nations women
Cervical Cancer Screening Participation Rates By Age Group: 2012-2014
Program Statistics

Participation Rates by Health Authority: 2012-2014
Program Statistics

36-Month Retention Rates By Age Group Over Time: 2007-2011
Technique

- SINGLE slide
- Cytobrush!
- LABEL the slide in PENCIL
  - NAME and DOB
  - 2,000 smears per day!!!
- Use cytospray IMMEDIATELY
  - 10 seconds makes a difference
  - By 1 minute – largely air dried
Management of Abnormal Results

Age 25-69 Pap test Every 3 Years

- Normal
  - Routine Screening
  - Repeat Pap at 6 Months
    - Normal
      - Routine Screening
    - High/Low-grade
      - Colposcopy
  - Low-grade ASC-US or LSIL
    - Repeat Pap at 6 Months
      - Normal
      - Repeat Pap at 6 Months
      - Normal
      - Routine Screening
      - High/Low-grade
      - Colposcopy
  - High-grade ASC-H, HSIL +
    - Colposcopy

- Low-grade ASC-US or LSIL
  - Repeat Pap at 6 Months
    - Normal
    - Repeat Pap at 6 Months
      - Normal
      - Routine Screening
      - High/Low-grade
      - Colposcopy
    - Low-grade ASC-US or LSIL
    - High/Low-grade
      - Colposcopy
    - High-grade ASC-H, HSIL
      - Colposcopy
Health Professional’s Recommendation

Communication

• Explaining the need for immunization
• Clearly conveying the risks
• Strong physician/provider recommendation

Recommendation is critical

- Reinforce key points about each vaccine
- Discuss vaccine safety
- Address the risks encountered by unvaccinated people

2. PHAC 2006 Canadian Adult Immunization Coverage Survey.

www.screeningbc.ca
STI Screening

- STI screening should not be offered concurrently with cervical cancer screening to young women due to different start ages.

- Primary care providers should offer STI risk assessment and screening to sexually active women under the age of 25 at all clinically appropriate encounters, consistent with:
  - Canadian Guidelines on Sexually Transmitted Infections
  - BC Lifetime Prevention Schedule

- BCCDC provides provincial leadership and guidance around STI clinical service delivery
  - GetCheckedOnline (www.getcheckedonline.com)
Resources

- Patient brochures in multiple languages (English, Punjabi, Chinese)
  - Is Cervical Cancer Screening Right for You?
  - Abnormal Cervical Cancer Screening Result
Resources

• “After Your Cervical Cancer Screening” tear-off pad
Resources

• “What You Should Know” clinic poster

• “Screening for Cervical Cancer: Pap Test” animated video
  – Available in multiple languages (English, Cantonese, Mandarin and Punjabi)
For More Information...

Visit  www.screeningbc.ca
Resources – Provider and Patient

- [www.bccolposcopy.ca](http://www.bccolposcopy.ca)
- **HPV FOCAL FAQ**
- [www.sexualityandu.ca](http://www.sexualityandu.ca)
- [www.hpvinfo.ca](http://www.hpvinfo.ca)
- [http://immunizebc.ca/diseases-vaccinations/hpv](http://immunizebc.ca/diseases-vaccinations/hpv)
- **NACI Guidelines:**
Questions?

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Medical Leader, Cervical Cancer Screening Program  
BC Cancer Agency  
dvanniek@bccancer.bc.ca

For more information on cancer screening...  
Visit the BC Cancer Agency Screening Programs website: www.screeningbc.ca or email screening@bccancer.bc.ca