Cervical Cancer: Evidence Based Approaches
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Geographic distribution of the world ASIR of cervical cancer, by country, estimated for 2008 (per 100 000 women-years).
Geographic distribution of the world ASMR of cervical cancer, by country, estimated for 2008 (per 100 000 women-years).
Regional Cervical Cancer Screening Practices

- North America and Europe
  - Centralized national cytology-based screening programs → decreased cervical cancer incidence and mortality

- Eastern and Central Europe
  - Highly variable; some national cytology-based programs, not uniformly implemented

- Sub-Saharan Africa
  - Lack of centralized care; alternative strategies (VIA, VILI) utilized, although not uniformly implemented

- Asia/Western Pacific Region
  - Cytology and/or VIA implemented in most countries

- Latin America and the Caribbean
  - Efforts to implement cytology-based programs have been less successful; alternative approaches are being explored
Burden of Cervical Cancer in the Caribbean and Latin America

Adjusted Rates of Cervical Cancer Incidence and Mortality
Incidence of Cervical Cancer in the Caribbean

<table>
<thead>
<tr>
<th>POPULATION</th>
<th>Incidence</th>
<th>Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Numbers</td>
<td>Crude Rate</td>
</tr>
<tr>
<td>World</td>
<td>527624</td>
<td>15.1</td>
</tr>
<tr>
<td>More developed regions</td>
<td>83078</td>
<td>13.0</td>
</tr>
<tr>
<td>Less developed regions</td>
<td>444546</td>
<td>15.6</td>
</tr>
<tr>
<td>Latin America and Caribbean</td>
<td>68818</td>
<td>22.5</td>
</tr>
<tr>
<td>Caribbean</td>
<td>5018</td>
<td>23.6</td>
</tr>
<tr>
<td>Bahamas</td>
<td>44</td>
<td>24.5</td>
</tr>
<tr>
<td>Barbados</td>
<td>44</td>
<td>31.8</td>
</tr>
<tr>
<td>Cuba</td>
<td>1287</td>
<td>23</td>
</tr>
<tr>
<td>Dominican Republic</td>
<td>1507</td>
<td>29.7</td>
</tr>
<tr>
<td>Haiti</td>
<td>1048</td>
<td>20.3</td>
</tr>
<tr>
<td>Jamaica</td>
<td>392</td>
<td>28</td>
</tr>
<tr>
<td>Puerto Rico</td>
<td>259</td>
<td>13.3</td>
</tr>
<tr>
<td>Trinidad and Tobago</td>
<td>209</td>
<td>30</td>
</tr>
<tr>
<td>Belize</td>
<td>43</td>
<td>26.2</td>
</tr>
</tbody>
</table>

Barriers to Cancer Screening and Treatment in Latin America and the Caribbean

- Effective cytology-based screening requires multiple visits to healthcare providers (initial screening, results, colposcopy/biopsy, treatments, etc).
- Need infrastructure for transport of samples to laboratories.
- Diagnostic and treatment centers may require extended travel for patients (especially those living in rural areas).
- Low literacy.
- Cultural factors.
- Competing health needs.
- Limited resources; lack of public awareness.
- Lack of centralized national programs for cervical cancer control.

Mostly cytology-based screening programs in Latin America and Caribbean—only effective in Puerto Rico, Cuba, and Chile

Pan-American Health Organization (PAHO) ProVac Initiative:
- Conduct situation analysis in each country
- Intensify information, education, and counseling
- Fortify existing screening programs; implement innovative technologies (e.g. rapid HPV testing) in resource-limited settings
- Establish/strengthen information systems and cancer registries
- Generate evidence to inform HPV vaccine policy
- Advocate for equitable access and affordable vaccines
- Universal HPV vaccination
  - Currently, price of HPV vaccine is prohibitive for most Caribbean countries
  - Strategies previously used to disseminate rubella and tetanus vaccines may be helpful in developing plans for HPV vaccine dissemination
  - If implemented, universal HPV vaccination will reduce cervical dysplasia and thus the efficacy of Pap smear as a primary screening test
- HPV testing as a primary screening, with Pap smear for triage
- VIA or VILI, self-sampling, and Rapid HPV testing may improve screening in rural areas
- Establishment of HPV vaccination and screening registries
- Method for evaluating efficacy of these strategies
Cancer Control Strategies

- HPV Self-sampling
  - Can be done in privacy of home and delivered by a paraprofessional
  - Circumvents both access and cultural barriers
  - Potentially could be paired with

- Community health workers
  - Individuals of target populations who are trained in intervention delivery and have extensive knowledge of cultural norms and values
  - May deliver screening interventions such as self-sampling
  - Promote health literacy
  - Connect women with formal healthcare system and ensure timely follow-up for abnormal tests
SUCCESS Project: Community health worker-delivered HPV self-sampling found to be highly efficacious cervical cancer screening among Haitian and Hispanic women living in Miami, as well as women living in Haiti.

- CHWs provided education, intervention, and follow-up successfully.
- May represent a strategy to augment screening programs throughout the Caribbean, especially those targeting individuals living in rural and resource-limited areas.

Cancer Control Strategies

Cervical Cancer Screening Completion among SUCCESS Participants
Given the results of the SUCCESS study, we are now conducting a trial comparing in-person self-sampler delivery vs. mailed self-sampler delivery.

Mailed self-sampling kit includes detailed pictorial instructions and pre-paid envelope for sample return.

Preliminary results suggest that mailing the self-sampler may be efficacious for improving screening among Caribbean immigrants.

This type of intervention may be explored within Caribbean countries as well.
## Overall Numbers 5/10/16

<table>
<thead>
<tr>
<th>Site</th>
<th>Total Eligible</th>
<th>Total Eligible</th>
<th>%</th>
<th>Kits Returned Arm 1</th>
<th>%</th>
<th>Total Kits Returned Arm 2</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Little Haiti</td>
<td>178</td>
<td>153</td>
<td>86%</td>
<td>69/123</td>
<td>56%</td>
<td>54/123</td>
<td>44%</td>
</tr>
<tr>
<td>South Dade</td>
<td>200</td>
<td>158</td>
<td>79%</td>
<td>69/118</td>
<td>58%</td>
<td>49/118</td>
<td>42%</td>
</tr>
<tr>
<td>Hialeah</td>
<td>253</td>
<td>198</td>
<td>78%</td>
<td>72/150</td>
<td>48%</td>
<td>78/150</td>
<td>52%</td>
</tr>
<tr>
<td>Total</td>
<td>689</td>
<td>509</td>
<td>74%</td>
<td>210/391</td>
<td>54%</td>
<td>181/391</td>
<td>46%</td>
</tr>
</tbody>
</table>

*Total number of kits returned N= 391  
Arm 1 = kit delivery via CHW  
Arm 2 = kit delivery via mail
Cancer Control Strategies

- HPV Rapid Assay
  - We are in the process of developing a paper-based assay to detect high risk HPV
  - Does not require laboratory infrastructure
  - Can be delivered by a paraprofessional
  - When paired with a screening modality such as self-sampling, this point-of-care test could revolutionize cervical cancer screening within rural and resource-limited settings in the Caribbean