Increasing the Uptake of Human Papillomavirus (HPV) Vaccine Among Indigenous Youth

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Faculty/Presenter Disclosure

• Amy Groom has no relevant financial relationships with the manufacturer(s) of commercial services discussed in this CME activity

• Gabrielle McCallum has no relevant financial relationships with the manufacturer(s) of commercial services discussed in this CME activity

• The authors do not intend to discuss any unapproved/investigational uses of commercial products in this presentation
Overview

• Review HPV vaccine delivery strategies for indigenous populations in the U.S., Australia, and Canada

• Share HPV vaccine coverage information for indigenous youth in the U.S., Australia and Canada

• Discuss barriers to and best practices for HPV vaccine delivery in indigenous communities
U.S. HPV Vaccine Recommendations

• Routine vaccination for 11-12 year olds
  – Females: 2006
  – Males: 2011

• Catch up vaccination for females and males
  – Females 19-26 years
  – Males 19-21 years

• 3 dose series over 6 months
  • 2 dose series approved Oct. 2016
HPV Vaccine Delivery in the US

• Routine childhood and adolescent vaccines are delivered through the clinical system
  – Limited school-based vaccination
• No cost for vaccines for American Indian/Alaska Native (AI/AN) children
  – Federally-funded Vaccines for Children program
• Indian Health Service
  – Federally-funded system of healthcare for 2.2 million AI/AN people in 35 states
U.S. vs. IHS Vaccination Coverage
2015, Ages 13-17 years

IHS Quarterly Immunization Reports. FY 2016 Quarter 1. Available at: http://www.ihs.gov/epi/index.cfm?module=epi_vaccine_reports
IHS HPV Vaccine Initiative*

• Using IHS vaccine coverage data, identified Best Practice and Intervention Sites
• Conducted provider interviews
  – Identified facilitators and barriers to HPV vaccine initiation and series completion
• Provided support for implementation of best practices over 2 year period (2013-2015)

Best Practices

• Provider reminders

• Simultaneous administration of all adolescent vaccines during the same visit

• Standing orders
  – Nurse-only immunization visits

• Reminder/recall strategies

• Provision of HPV vaccine information/education outside the clinic
Barriers

• Patient Awareness
  – Lack of patient awareness about HPV vaccine benefits
  – Parental misconceptions of vaccine safety and link to sexual activity
  – Lack of awareness among patients and their parents of the need for 3 doses of HPV vaccine

• Access issues

• Missing/incomplete data
Interventions Implemented

• Education
  – Reminder/recall strategies
  – Information at health fairs, schools, newsletters, and other community events
  – Provider education
    • You Are the Key - “HPV is Cancer Prevention” training

• Access to Vaccine Services
  – Established standing orders and/or nurse-only immunization clinics
  – Immunization outside the clinic

• Systems-based interventions
  – Missed opportunities and missing data analysis
  – Access to state Immunization Information Systems (IIS)
Mean Increase in HPV coverage*

Conclusion

• Improving HPV vaccine uptake requires multi-faceted interventions
  – Community
    • Education for parents, reminder/recall
  – Health Care System
    • Increasing vaccine access
    • Provider education
  – Data
    • Missed opportunities
    • Partnerships with state IIS
HPV VACCINE IN AUSTRALIA

Slides courtesy of: Assoc Prof Julia Brotherton
Medical Director, Public Health Physician
National HPV Vaccination Program Register
Epidemiologist
Victorian Cervical Cytology Registry
VCS
HPV vaccination in Australia

• Disease burden
  – For Indigenous Australian women, cervical cancer incidence 2x and mortality 4x other Australian women*
  – Participation in cervical screening lower
  – In baseline pre-vaccination study of clinic attenders, high HPV prevalence in young women=non-Indigenous women**

* Source: Cervical screening in Australia 2012-2013, AIHW 2015
** Garland/Brotherton et al, BMC Medicine 2011
National HPV Vaccination Program

- 4vHPV vaccine 3 dose course prevents infection and disease (CIN, cervical, anogenital cancers and genital warts) due to HPV types 16/18/6/11
- 2007-2009: catch up females aged 12-26
- 2009-present: routine school based vax girls (1st yr high school – usual age 12-13)
- 2013-2014: catch up program males at school age 12-15 (+ some GP delivery)
- 2015: routine school based vax boys and girls (1st yr high school – usual age 12-13)
National notified coverage female catch up

As held at Sept 2011. Excludes consumers who have opted off.

Coverage for Indigenous women - HPV catch up

Northern Territory, HPV coverage for 12-17 year old females, 2007-2009 catch up program

Queensland, HPV coverage for 12-17 year old females, 2007-2009 catch up program

Source: Brotherton et al, Med J Aust 2013
Impact on genital warts – national hospital data*

Impact in females

• 90% reduction 12-17 year olds, from mid 2007
• 73% reduction 18-26 year olds, from mid-2008
• Reductions similar in Indigenous (87%) and non-Indigenous (76%) females aged 15-24 years ($P_{\text{heterogeneity}}=0.08$)

HPV Vaccinations on Reserve in Alberta, Canada

Slides courtesy of: Ruth Richardson, First Nations and Inuit Health Branch, Alberta Region
# Provincial and Territorial HPV Vaccine Programs in Canada

<table>
<thead>
<tr>
<th>Province</th>
<th># of doses</th>
<th>School Grade</th>
<th>Population</th>
<th>Vaccine used</th>
</tr>
</thead>
<tbody>
<tr>
<td>British Columbia</td>
<td>2</td>
<td>6</td>
<td>Girls</td>
<td>HPV-9</td>
</tr>
<tr>
<td>Alberta</td>
<td>3</td>
<td>5</td>
<td>Girls, boys</td>
<td>HPV-9</td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>2</td>
<td>6</td>
<td>Girls</td>
<td>HPV-4</td>
</tr>
<tr>
<td>Manitoba</td>
<td>2</td>
<td>6</td>
<td>Girls, boys</td>
<td>HPV-4</td>
</tr>
<tr>
<td>Ontario</td>
<td>2</td>
<td>7</td>
<td>Girls, boys</td>
<td>HPV-4</td>
</tr>
<tr>
<td>Quebec</td>
<td>2</td>
<td>4</td>
<td>Girls, boys</td>
<td>HPV-9</td>
</tr>
<tr>
<td>New Brunswick</td>
<td>2</td>
<td>7</td>
<td>Girls</td>
<td>HPV-4</td>
</tr>
<tr>
<td>Nova Scotia</td>
<td>2</td>
<td>7</td>
<td>Girls, boys</td>
<td>HPV-4</td>
</tr>
<tr>
<td>Prince Edward Island</td>
<td>3</td>
<td>6</td>
<td>Girls, boys</td>
<td>HPV-4</td>
</tr>
<tr>
<td>Newfoundland</td>
<td>2</td>
<td>6</td>
<td>Girls</td>
<td>HPV-4</td>
</tr>
<tr>
<td>Yukon</td>
<td>2</td>
<td>6</td>
<td>Girls</td>
<td>HPV-4</td>
</tr>
<tr>
<td>Northwest Territories</td>
<td>3</td>
<td>2</td>
<td>4 – 6, 9 to 14 years old</td>
<td>HPV-4</td>
</tr>
<tr>
<td>Nunavut</td>
<td>3</td>
<td>6</td>
<td>Girls</td>
<td>HPV-4</td>
</tr>
</tbody>
</table>

Table does not include “catch-up” programs, nor targeted programs that may be in place temporarily.

Adapted from Gina Ogilvie’s “HPV Vaccines and Their Impact” presentation at Canadian Immunization Conference, Dec 6, 2016.
Alberta First Nations:
• 3 Treaty Areas
• 7 Cultural Groups
• 46 First Nations
• ~125,000 First Nations people in Alberta; ~65,000 of which live on reserve

Immunization on Reserve in Alberta:
• Schedule established at provincial level, administered by Community Health Nurses
  • Vaccines outside the provincial schedule may be available for sale through pharmacies, physicians, or public health
• First Nations people can access immunization on or off reserve.
• No national immunization registry; provincial database is not currently linked with the on-reserve system.
A Timeline of HPV Vaccine in Canada

Source: Gilla Shapiro’s “Obstacles and opportunities for including males in Canadian human papillomavirus vaccination programs” presentation at Canadian Immunization Conference, December 6, 2016.
Introducing HPV Vaccine

• Key activities within First Nations and Inuit Health Branch (FNIHB) Alberta:
  – Training for Community Health Nurses (CHN)
  – Education resources for CHNs to use
    • PowerPoint for use in presentations
    • Information handout
• Anecdotes from community staff:
  – Evening gatherings inviting mom’s and daughters – part of coming of age discussion, healthy bodies
  – Education sessions in classrooms and with teachers
  – One on one discussions with families and/or students
• Vaccine available at school, or at the Health Centre
Factors impacting Immunization Uptake

• Staffing: reduced or no nursing staff in some communities, especially in northern Alberta Communities.

• Schools: 35/46 communities have schools on-reserve.
  – Students can attend school either on or off reserve
  • Immunization systems are not linked.

• Coverage rates for vaccines with multiple doses are always lower than for vaccines with fewer doses.

• Community characteristics: multiple factors can impact completion of preventive actions like immunization, many of them socio-economic in nature.
  – Uptake for HPV vaccine is comparable to uptake for other vaccines in the same community
How are we doing?


Coverage: 3 doses completed; Uptake: 1 dose or 2 doses only

*2014-15 data for HPV includes data for both males and females therefore the denominator for 2014-15 will be larger than previous years. HPV data for school years between 2010-11 and 2013-14 only included data for females. Vaccine abbreviations: HBV=hepatitis B virus; HPV= human papillomavirus.

Source: Regional Communicable Disease Control Report, 2016; FNIHB, Alberta Region
How are we doing?

HPV Coverage rates: Grade 5 students on reserve / 12-year-olds in Alberta

<table>
<thead>
<tr>
<th>POPULATION AND YEAR</th>
<th>PROPORTION IMMUNIZED (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AB</td>
</tr>
<tr>
<td>2011</td>
<td>55.7</td>
</tr>
<tr>
<td>2012</td>
<td>62.6</td>
</tr>
<tr>
<td>2013</td>
<td>59</td>
</tr>
<tr>
<td>2014</td>
<td>58.3</td>
</tr>
<tr>
<td>2015</td>
<td>60.1</td>
</tr>
</tbody>
</table>

AB Rates calculated on calendar year: denominator is AB 12 year old population calculated annually.
FN Rates calculated on school year: denominator is those in grade 5 on reserve as of June for the school year.

Source: Alberta Health interactive Health Data interaction, accessed 2016-12-23
http://www.ahw.gov.ab.ca/IHDA_Retrieval/selectSubCategoryParameters.do#
First Nations and Inuit Health Branch – Alberta Region

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Overall Conclusions
US, Australia, Canada

• Good uptake of HPV vaccine in indigenous communities
  – Coverage for indigenous populations is similar to or higher than coverage for the general population in some countries
• Provision of vaccine in non-clinical settings (e.g. communities, schools) can facilitate access
• Data quality/Completeness issues may impact vaccine uptake and coverage estimates
• Identifying culturally-appropriate community education opportunities is important