Closing the Gap on HPV-Associated Cancer Disparities

Prevent Cancer Foundation
Viruses and Cancer Educational Briefing
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Objectives

1. Discuss HPV Vaccine Policy Changes
2. Describe HPV Vaccine Disparities
3. Address HPV Vaccine Disparities through Prevention and Community Engagement
Good News: Cancer Death Rates are Dropping

- U.S. death rate from cancer has dropped about 20 percent from 1980 to 2014
- Cancer fatalities now account for about 192 deaths for every 100,000 people in the U.S., down from 240 per 100,000
- However, in some parts of the U.S. where poverty, obesity and smoking are more common, rates of death from cancer are going up
## Estimated New Cancer Cases* in the US in 2017

<table>
<thead>
<tr>
<th>Cancer Site</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prostate</strong></td>
<td>30%</td>
<td>30%</td>
</tr>
<tr>
<td><strong>Lung &amp; bronchus</strong></td>
<td>12%</td>
<td>12%</td>
</tr>
<tr>
<td><strong>Colon &amp; rectum</strong></td>
<td>8%</td>
<td>8%</td>
</tr>
<tr>
<td><strong>Urinary bladder</strong></td>
<td>7%</td>
<td>7%</td>
</tr>
<tr>
<td><strong>Skin melanoma</strong></td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Kidney &amp; renal pelvis</strong></td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td><strong>Non-Hodgkin lymphoma</strong></td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td><strong>Leukemia</strong></td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td><strong>Oral cavity &amp; pharynx</strong></td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td><strong>Liver &amp; intrahepatic</strong></td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td><strong>All other sites</strong></td>
<td>22%</td>
<td>22%</td>
</tr>
</tbody>
</table>

*Breast, Lung & bronchus, Colon & rectum, Uterine corpus, Thyroid, Skin melanoma, Non-Hodgkin lymphoma, Leukemia, Pancreas, Kidney & renal pelvis, All other sites are listed for completeness but not in order of incidence.*
# Social Determinants Of Health Disparities In Cancer

![Venn Diagram](image)

- **Poverty/Low Socioeconomic Status**
- **Culture**
- **Social Injustice**

<table>
<thead>
<tr>
<th>Prevention</th>
<th>Early Detection</th>
<th>Diagnosis Incidence</th>
<th>Treatment</th>
<th>Post Treatment &amp; Quality of Life</th>
<th>Survival &amp; Mortality</th>
</tr>
</thead>
</table>

Freeman & Chu, 2005; Mary A. Gerend, and Manacy Pai Cancer Epidemiol Biomarkers Prev 2008;17:2913-2923
How Do Disparities Arise?

Differences in the quality of care received within the health care system

Differences in access to health care, including preventive and curative services

Differences in life opportunities, exposures, and stresses that result in differences in underlying health status
81.3 Years
30 miles = 9-year life span disparity

75 Years
17 miles = 3-year life span disparity

80.1 Years
10 miles = 8-year life span disparity

80.9 Years
12 miles = 9-year life span disparity

Source: Robert Johnson Wood Foundation, Commission to Build a Healthier America
African American Residents in the District of Columbia are

- **6 times** more likely to die from diabetes related complications
- **2 times** more likely to die from coronary heart disease
- **2 times** more likely to die from a stroke
- **3 times** more likely to be obese
- **3 times** more likely to die from prostate cancer
- **3 times** more likely to smoke
- **1.5 times** more likely to die from breast cancer
- **3.5 times** more likely to live below the poverty level

Comparison Group: Self-reported non-Hispanic White residents
Sources: National Cancer Institute | Centers for Disease Control and Prevention | DC Health Risk Factor Surveillance System | American Community Survey
Disparities In HPV-Associated Cancer Disease

HPV Disparities can be seen by:

- Knowledge
- Race
- Ethnicity
- Geography
- Insurance
- Vaccine uptake and completion

The National Cancer Institute defines “cancer health disparities” as:

“differences in the incidence, prevalence, mortality, and burden of cancer and related adverse health conditions that exist among specific population groups in the United States.”
HPV-Associated Cancers—United States, 2008-2012

HPV Background

- HPV is the most common sexually transmitted infection in the United States
- Types of HPV:
  - 40 types favor infection of anogenital epithelium
  - 12 types are considered oncogenic (HPV infection is the causative agent in nearly all cervical cancers)
  - Types 16 & 18 are responsible for most cancers
- Typical infection clears in 6-24 months
- Persistent infection is associated with malignancy
- These HPV types can also infect the mouth and throat
Numbers of U.S. Cancers and Genital Warts Attributed to HPV Infections

Objective #1

HPV Vaccination Is Worth Your Passionate Advocacy
Numbers of HPV-associated Cancers in Less Developed and More Developed Regions

Less Developed Regions: Total = 490,000

- Cervix, 93%
- Anus, 2%
- Vulva, 1%
- Vagina, 1%
- Penis, 2%

More Developed Regions: Total = 120,000

- Cervix, 65%
- Oropharynx, 13%
- Vagina, 3%
- Vulva, 6%
- Anus, 10%
- Penis, 3%

Cervical cancer is the fourth most common cancer among women worldwide.

Prevention of HPV Infection

- Abstinence
- Condoms:
  - Incomplete protection
- HPV vaccines:
  - Three FDA-approved HPV vaccines
# HPV Vaccine Policy Recommendations

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Who Is It For?</th>
<th>How Many Doses?</th>
<th>What Infections Does It Prevent?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cervarix</strong></td>
<td>Girls 9 to 26 years of age</td>
<td>3</td>
<td>HPV types 16 and 18 (which cause cancer)</td>
</tr>
<tr>
<td><strong>Gardasil</strong></td>
<td>Girls and Boys 9 to 26 years of age</td>
<td>3</td>
<td>HPV types 6, 11 (which cause genital warts), and HPV types 16 and 18 (which cause cancer)</td>
</tr>
<tr>
<td><strong>Gardasil 9</strong></td>
<td>Girls ages 9 to 26; Boys ages 9 to 15</td>
<td>3</td>
<td>HPV types 16, 18, 31, 33, 45, 52 and 58 (which cause cancer), and HPV types 6 or 11 (which cause warts)</td>
</tr>
</tbody>
</table>
**HPV Vaccine Policy Amendment**

- **October 12, 2016**
  - The Food and Drug Administration (FDA) approved a 2-doses schedule Merck’s Gardasil -9 HPV vaccine for males and females ages 9-14

- **October 19, 2016**
  - Centers for Disease and Control (CDC) recommended that 11- to 12- year-olds received two doses of the HPV vaccine at least six months a part rather than the previously recommended three doses

- Teens and young adults who start the series later, at ages 15 through 26 years, will continue to need three doses of HPV vaccine
Rationale for HPV Vaccination at 11-12 Years of Age

- Optimal vaccine efficacy if the vaccine series is completed before onset of sexual activity
- 47% of high school students have already engaged in sexual intercourse
  - 1/3 of 9th graders
  - 2/3 of 12th graders
- Vaccine is inactive against previously acquired HPV types
- Antibody responses are highest at ages 9 through 15 years
- Protection appears to be long-lasting
Oropharyngeal Cancer

If recent incidence trends continue, the annual number of HPV-positive oropharyngeal cancers is expected to surpass the annual number of cervical cancers by the year 2020.
There is an increasing trend of national vaccination coverage with ≥1 dose, ≥2 doses, and ≥3 doses of HPV vaccine.

Regardless of doses of HPV vaccines and gender, White seems to have lower national HPV vaccination coverage than Black and Hispanic across time.

**Figure 1:** Estimated national vaccination coverage with ≥1 dose of HPV vaccine among females and males aged 13–17 years, by race (White, Black, and Hispanic), 2011-2014
Estimated vaccination coverage with ≥1 dose of HPV vaccine among females and males aged 13-17 years during 2014.

- **Among females:**
  - ≤ 49%: Kansas, Missouri, Tennessee, Alabama, Alaska
  - ≥ 70%: Washington DC, North Carolina, New Hampshire, Rhode Island

- **Among males:**
  - ≤ 29%: Wyoming, Utah, Missouri, Indiana, Kentucky, Mississippi, Alabama, South Carolina

Sisters' HPV vaccine injury claim heads to federal court

Madelyne Meylor, 20, and her sister, Olivia Meylor, 19, say their premature ovarian failure was caused by Gardasil, a vaccine against the human papillomavirus, or HPV, which can cause cervical cancer.
Michael Douglas: HPV caused my throat cancer

"Without wanting to get too specific, this particular cancer is caused by HPV," Douglas said in a recent interview.

By KATIE MCDONOUGH

By RYAN JASLOW / CBS NEWS/ June 3, 2013, 12:42 PM

Katie Couric Admits disproportionate reporting on HPV Vaccine...

What Farrah Fawcett can teach us about anal cancer

Deborah Kotz, U.S. News & World Report
Top 5 Parent Reasons For Not Vaccinating Boys And Girls,
NIS-Teen 2013

- Lack of knowledge
- Not needed
- Safety concerns
- Not recommended
- Not sexually active

* Not mutually exclusive.
** Did not know much about HPV or HPV vaccine
Clinician Barriers

Cost/reimbursement concerns →
Hesitant to “go to the mat” →
Overestimating parental concerns →
Conducting patient risk assessments →
Competing priorities →
Think their HPV uptake and completion rates are fine →

Removing Barriers

Better vaccine business practices
Understand burden and need
Improve self-efficacy, outcome expectations
Follow the ACIP recommendation
Bundle recommendations
Knowing their actual rates

Physicians play a key role by providing information on benefits of vaccination

“Physician recommendation” is reported by parents as one of the top reasons for receipt of recommended vaccines
By the beginning of the 2009 school year, and of every school year thereafter, the parent or legal guardian of a female child enrolling in grade 6 for the first time at a school in the District of Columbia shall be required to submit certification:
- That the child has received the HPV vaccine; or
- That the child has not received the HPV vaccine because:
  • It violates his or her religious beliefs;
  • The vaccination is medically inadvisable; or
  • The parent or legal guardian has signed an opt-out form

A rule to include males was submitted and approved in 2014
Overarching Research Question: How do we Accelerate HPV Vaccine Update in the US?

- Strong recommendation for HPV vaccination
- Use of electronic office systems to support HPV vaccination
- Communication strategies to increase knowledge regarding cancer prevention benefits, efficacy, and safety of HPV vaccines

Providers

Parents, caregivers & adolescents
Provider HPV Training Tool Kits

TOOL KIT COMPONENTS

- HPV facts
- HPV clinical educational materials
- Barriers to HPV vaccination initiation and completion
- Frequently asked questions about HPV vaccine safety
- DC’s HPV vaccination legislation
- Tips and time-savers for talking with parents about the HPV vaccine
- The art of making an HPV vaccine strong recommendation
- Immunization resources and HPV vaccination reminder/recall notification strategies
Sample DC Media Advertisements

- **Web (Hyperlink)**
- **Emblem**
- **ADS:** Transit, Newspaper, Web (Radio & CBO's)
- **Radio:** Public & Internet, Cable Networks, Cinema Media
- **Flyer**
- **Poster**
- **Brochure**
The process of working collaboratively with and through groups of people affiliated by geographic proximity, special interest, or similar situations to address issues affecting the well-being of those people.

It often involves partnerships and coalitions that help mobilize resources and influence systems, change relationships among partners, and serve as catalysts for changing policies, programs, and practices.

Evaluating the Human Papillomavirus Vaccine Adherence Protocol in a Student-Driven Free Clinic

Amanda Cain, MS2, Sherrie Wallington, PhD, Matthew Levy, MD, Eileen Moore, MD
The HOYA Clinic, Georgetown University School of Medicine, Washington, DC
The Current HPV Program
DC Family Homeless Shelter
What Must Be Done

Legislators Must:
• Advocate for insurance, including Medicaid, to cover HPV vaccinations
• Advocate for health care payers to adequately reimburse health care providers who make the vaccine available
• Fund the development of school curricula on HPV vaccination

Health Care Providers Must:
• Treat HPV vaccination as a routine vaccination
• Use culturally appropriate communication strategies to educate patients and parents about the importance, effectiveness and safety of HPV vaccination
• Strengthen the use of electronic medical records to identify eligible patients

Thank You for Inviting Me!

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