CERVICAL CANCER 
PREVENTION & DETECTION
WHAT IS CERVICAL CANCER?

Cervical cancer originates in the cells lining the cervix, the lower part of the uterus (womb).
Most cervical cancers are squamous cell carcinomas (85-90%) and adenocarcinomas (10-15%).

Begin in the cells of the cervix, when they begin to grow out of control and invade other tissues.
Stages

Stage 0: Abnormal cells are found in the innermost lining of the cervix.

Stage I: The cancer is in the cervix.

Stage II: The cancer has spread to most of the cervix.

Stage III: The cancer has spread to the lower third of the vagina.

Stage IV: The cancer has spread to the bladder.
CERVICAL CANCER

- 500,000+ new cases and 275,000 attributable deaths world-wide in 2008
- 11,000+ new cases and 4,000 attributable deaths in 2011 in the U.S.
- 37% cervical cancers occur in women who are between the ages of 20 and 44
  - 13% (or nearly 1 in 8) between 20 and 34
  - 24% (or nearly 1 in 4) between 35 and 44

HPV-Associated Cervical Cancer Incidence Rates by State, United States, 2006-2010

10,000+ Cases and 4,000+ Deaths Every Year

www.cdc.gov/cancer/npcr
<table>
<thead>
<tr>
<th>Tools</th>
<th>NEW ESTIMATED CASES FOR 2016</th>
<th>ESTIMATED DEATHS 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CERVICAL, SEX</td>
<td>CERVICAL, SEX</td>
</tr>
<tr>
<td>Female</td>
<td><strong>12,990</strong></td>
<td><strong>4,120</strong></td>
</tr>
</tbody>
</table>

American Cancer Society, 2016
Incidence rates, 2008-2012
Cervix, by race and ethnicity

- Hispanic: 10.2
- Non-Hispanic black: 10.0
- American Indian and Alaska Native: 10.0
- Non-Hispanic white: 7.1
- Asian and Pacific Islander: 6.3

Death rates, 2008-2012
Cervix, by race and ethnicity

- Non-Hispanic black: 4.1
- American Indian and Alaska Native: 3.5
- Hispanic: 2.7
- Non-Hispanic white: 2.0
- Asian and Pacific Islander: 1.8

Watson et al. MMWR 2012;61:258-261.
CERVICAL CANCER AND LATINAS IN TEXAS:

- Texas Latinas have a higher incidence rate of cervical cancer compared to national rates
  - (10.4 compared to 9.5)

- The death rate due to cervical cancer for Latinas in Texas is greater than it is for white women in Texas
CERVICAL CANCER AND LATINAS IN THE RIO GRANDE VALLEY (RGV):

From 1997 to 2006, women living in the border counties with Mexico are 31% more likely to die of cervical cancer compared to women living in non-border counties.
HIGH INCIDENCE OF CERVICAL CANCER IN HISPANICS

✓ Lack of education / information
✓ Fear of results
✓ Language
✓ Mexican-American identity associated with a higher prevalence of HPV (Human Papillomavirus)
✓ Decreased access to health care (preventive examinations)
✓ Economic (Medical Insurance)
✓ Culture
✓ Others?
CERVICAL CANCER AND LGBT LATINAS:

- Lesbians, like other marginalized groups of women, often under-utilize health care services and significantly delay health care compared with heterosexual women.
CERVICAL CANCER AND LGBT LATINAS:

Just as with many other Latinas, the \textbf{prevention} of cervical cancer for \textbf{LGBTQ} Latinas becomes a question of access:

- Exams at moderate or low prices,
- Providers that are culturally competent,
- Providers who are trained to deal with \textbf{LGBTQ} patients.
CERVICAL CANCER AND LGBT LATINAS:

One of the most pressing issues for access to care for the LGBTQ community is discrimination and prejudice. Homophobia in the doctor's office is, unfortunately common, and a great detractor of queer women seeking medical attention.
Risk Factors
Risk Factors:

- Human Papilloma Virus
- Smoking
- Immunosuppression
- Chlamydia infection
- Poor Diet
- Being Overweight or Obese
Risk Factors:

- Oral Contraceptives
- Intrauterine Devise (IUD)
- 3+ pregnancies
- First pregnancy before age 17
- Poverty
- Family History
Main Risk Factor: HPV

*> 90% of cervical cancers are caused by HPV infection*
HOW DOES SOMEONE GET HPV?

- Any type of sexual contact
- Easily transmitted
HIGH-RISK HPV:

- High-risk HPV infections can sometimes develop into cancer of the cervix:
- The types of HPV that can cause cancer are not the same as the types that can cause genital warts.
HPV TYPES DIFFER IN THEIR DISEASE ASSOCIATIONS

~40 Types

Mucosal sites of infection

High risk (oncogenic)
HPV 16, 18 most common

Low risk (non-oncogenic)
HPV 6, 11 most common

Cervical Cancer
Anogenital Cancers
Oropharyngeal Cancer
Cancer Precursors
Low Grade Cervical Disease

~ 80 Types

Cutaneous sites of infection

“Common”
Hand and Foot Warts

Genital Warts
Laryngeal Papillomas
Low Grade Cervical Disease

~80 Types

"Common" 
Hand and Foot Warts

Genital Warts 
Laryngeal Papillomas 
Low Grade Cervical Disease
HEALTH EFFECTS OF HPV

Genital HPV does not cause health problems for most people.

Low-risk HPV infections can cause genital warts. The warts are usually painless and not a serious problem.
Most females and males will be infected with at least one type of mucosal HPV at some point in their lives

- Estimated 79 million Americans currently infected
- 14 million new infections/year in the US
- HPV infection is most common in people in their teens and early 20s

Most people will never know that they have been infected

HPV INFECTION

EVERY YEAR IN THE UNITED STATES 27,000 PEOPLE ARE DIAGNOSED WITH A CANCER CAUSED BY HPV

That’s 1 case every 20 minutes
## Cancers Caused by HPV, U.S.

<table>
<thead>
<tr>
<th>Cancer site</th>
<th>Average number of cancers per year probably caused by HPV†</th>
<th>Percentage per year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Anus</td>
<td>1,400</td>
<td>2,600</td>
</tr>
<tr>
<td>Cervix</td>
<td>0</td>
<td>10,400</td>
</tr>
<tr>
<td>Oropharynx</td>
<td>7,200</td>
<td>1,800</td>
</tr>
<tr>
<td>Penis</td>
<td>700</td>
<td>0</td>
</tr>
<tr>
<td>Vagina</td>
<td>0</td>
<td>600</td>
</tr>
<tr>
<td>Vulva</td>
<td>0</td>
<td>2,200</td>
</tr>
<tr>
<td>TOTAL</td>
<td>9,300</td>
<td>17,600</td>
</tr>
</tbody>
</table>

CDC, United States Cancer Statistics (USCS), 2006-2010
NEW CANCERS CAUSED BY HPV PER YEAR
UNITED STATES 2006-2010

Women (n = 17,600)

- Cervix: n=10,400 (59%)
- Vulva: n=2,200 (13%)
- Anus: n=2,600 (15%)
- Vagina: n=600 (3%)
- Oropharynx: n=1,800 (10%)

- anus: n=1,400 (15%)
- Oropharynx: n=7,200 (77%)
- Penis: n=700 (8%)

CDC, United States Cancer Statistics (USCS), 2006-2010
From 2000 to 2009, oral cancer rates increased
- 4.9% for Native American men
- 3.9% for white men
- 1.7% for white women
- 1% for Asian men

Anal cancer rates doubled from 1975 to 2009

Vulvar cancer rates rose for white and African-American women

Penile cancer rates increased among Asian men
HPV & MALES:

Should men be concerned about HPV?
HOW COMMON ARE HPV-RELATED HEALTH PROBLEMS IN MEN?

About 1% of sexually active men in the U.S. have genital warts.
• 400 men get HPV-related cancer of the penis.

EACH YEAR

• Get HPV-related cancer of the anus.

1500 MEN

Oropharynx Cancer

5600 MEN

Get cancers of the oropharynx but several of these cancers are related to tobacco and alcohol use, not HPV.
HPV IN MEN:

- Some men are more likely to develop HPV-related diseases than others:
- Gay and bisexual men are 17 times more likely to develop anal cancer than men who only have sex with women.
HPV & MEN:

- Men with weakened immune systems, including those who have HIV, are more likely than other men to develop anal cancer.

- Men with HIV are also more likely to get severe cases of genital warts that are harder to treat.
Currently, there is no HPV test that is recommended for men.

The only approved HPV test on the market are for research of women from cervical cancer. These are not useful for research of cancers related to HPV or genital warts in men.
SIGNS & SYMPTOMS
OF CERVICAL CANCER
SIGNS & SYMPTOMS

• In early stages, there are usually no symptoms

• Symptoms begin when the cancer becomes invasive and grows
SIGNS & SYMPTOMS

• Abnormal vaginal bleeding
• Abnormal vaginal discharge
• Pain during sex
• Pelvic pain
• Pain with urination
• Low back pain
• Urinary infection
THE BEST WAY TO FIND CERVICAL CANCER EARLY IS REGULAR PAP TESTS (WHICH CAN BE COMBINED WITH A HPV TEST)
AN ABNORMAL PAP TEST IS OFTEN THE FIRST STEP IN FINDING CERVICAL CANCER. ADDITIONAL TESTS CAN THEN DIAGNOSE CERVICAL CANCER.
HOW IS CERVICAL CANCER DIAGNOSED?

- Medical history and physical exam
- Pap smear test
- Colposcopy
- Cervical biospsy
Pelvic Exam:

Examination of the vagina, cervix, uterus, fallopian tubes, ovaries, and rectum.
HPV Testing:

Laboratory test used to check the DNA (genetic material) for certain types of HPV.
Pap test:

Procedure to collect cells from the surface of the cervix and vagina.
Colposcopy

Procedure wherein a colposcopy is used to examine the vagina and cervix for abnormalities
A tissue sample is cut from the cervix and looked at under a microscope by a pathologist to check for signs of cancer.
PREVENTION
CERVICAL CANCER SCREENING

- Begin testing at 21 years old
- Under 21 years if sexually active.
- 21 to 29 years, every 3 years.
- Over 30 years, every 5 years

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PREVENTIVE MEASURES

- Vaccination against HPV
- No smoking
- Healthy Diet
- Increased physical activity
- Monogamous relationship
- (mutual)
- Condom Use
- Abstinence
- Do not wait for symptoms, get an HPV test
- OTHERS???
HPV vaccine is cancer prevention.

Talk to the doctor about vaccinating your 11–12 year old sons and daughters against HPV.

Evidence-Based HPV Disease Prevention

#UCanStopHPV
WITHOUT VACCINATION, ANNUAL BURDEN OF GENITAL HPV-RELATED DISEASE IN U.S. FEMALES:

- 4,000 cervical cancer deaths
- 10,846 new cases of cervical cancer
- 330,000 new cases of HSIL: CIN2/3 (high grade cervical dysplasia)
- 1 million new cases of genital warts
- 1.4 million new cases of LSIL: CIN1 (low grade cervical dysplasia)
- 3 million cases and $7 billion

American Cancer Society. 2008; Schiffman Arch Pathol Lab Med. 2003; Koshiol Sex Transm Dis. 2004; Insinga, Pharmacoeconomics, 2005
# Available Vaccines

<table>
<thead>
<tr>
<th></th>
<th>Bivalent 2vHPV (Cervarix)</th>
<th>Quadrivalent 4vHPV (Gardasil)</th>
<th>9-valent 9vHPV (Gardasil 9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1 VLP types</td>
<td>16, 18</td>
<td>6, 11, 16, 18</td>
<td>6, 11, 16, 18, 31, 33, 45, 52, 58</td>
</tr>
<tr>
<td>Manufacturer</td>
<td>GlaxoSmithKline</td>
<td>Merck</td>
<td>Merck</td>
</tr>
<tr>
<td>Adjuvant</td>
<td>AS04: 500 μg aluminum hydroxide 50 μg 3-O-desacyl-4′-monophosphoryl lipid A</td>
<td>AAHS: 225 μg amorphous aluminum hydroxyphosphate sulfate</td>
<td>AAHS: 500 μg amorphous aluminum hydroxyphosphate sulfate</td>
</tr>
</tbody>
</table>
Percentage of Cervical Cancer attributed to high-risk HPV

- HPV 16: 60.6%
- HPV 18: 10.2%
- HPV 45: 5.9%
- HPV 33: 3.8%
- HPV 31: 3.7%
- HPV 52: 2.8%
- HPV 58: 2.3%
- HPV 35: 1.9%
- HPV 39: 1.6%
- HPV 51: 1.3%
- HPV 59: 1.1%
- HPV 56: 0.8%
BARRIERS TO VACCINES

- The social stigma about sex and sexually transmitted infections
- Busy immunization schedule
- HPV vaccine is a recommendation but not a school requirement
- 16.7% of Texas children (0-18) are uninsured
BARRIERS TO VACCINES

Missed opportunities:

- Lack of provider recommendation
- Delays in scheduling appointments
- The inability to pay the fee for the office visit for preventive checkup
- Lack of transportation and waiting periods in the office very long (miss work)
- Lack of culturally appropriate educational materials for different ages

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Parents without the intention to vaccinate in the next 12 months

- Not sexually active
- Not recommended (13%)
- Safety concern/Side effects
- Not needed or necessary
- Lack of knowledge

Percent
HPV vaccine is very important because it prevents cancer.

I know we’d like to protect Maureen from cancer and I’d feel better if she got her first dose of the HPV vaccine series today.
IF MAIN CONCERN IS “MY DAUGHTER WILL WAIT FOR MARRIAGE/WON’T BE EXPOSED”, TRY SAYING:

HPV is so common that almost everyone will be infected at some time. When your daughter marries, she could catch HPV from her husband. He might have been infected before he ever met her.
IF MAIN CONCERN IS “WHY NOW, LET’S WAIT UNTIL CHILD IS OLDER,” TRY SAYING:

HPV vaccine produces a more robust immune response in preteens than in older teens which is why I recommend starting the HPV vaccine series today.
Studies have shown that getting the HPV vaccine doesn’t make kids more likely have sex, or to have sex at a younger age.
IF MAIN CONCERN IS "WOULD YOU GIVE IT TO YOUR CHILD,"

TRY SAYING:

Yes, I gave it to my child (or grandchild, etc.) because I think preventing cancer is very important.
Vaccines, like any medication, can cause side effects. With HPV vaccine most are mild, primarily pain or redness in the arm. This should go away quickly.

HPV vaccine has not been linked with any serious or long-term side effects.
BRAINSTORMING SESSION:

Local Resources for Cervical Cancer Prevention & Detection
CERVICAL CANCER PREVENTION & DETECTION RESOURCES

- Texas AHEC East – Piney Woods Region: Healthcare Professional Education (online CEUs!)
- County Health Districts: HPV Vaccines ($15); no charge for HPV vaccine if uninsured (in Tyler)
- Longview Wellness Point (FQHC): exams, HPV tests
- St. Paul Pediatric Clinic in Tyler: must be 18 or younger (903)-531-9455
- Jasper Newton Health District
- Planned Parenthood: low-cost pap smears
- Texas Breast & Cervical Cancer Control: 512-458-7796
- UT Health: Primary Health Care Grant – free mammograms & pap smears (if qualified)
- Angelina County: HPV vaccine funding available
- Bethesda Clinic in Tyler, Lindale
- Tyler Family Circle of Care (FQHC)
- Tyler Care Clinic: HIV treatment, HPV vaccination & testing