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The New 2012 Cervical Cancer
Prevention & Early Detection Guidelines

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What will be covered

• Background and history on cervical cancer;

• Cervical Cancer – a sexually transmitted disease;

• Risk factors of HPV/cervical cancer;

• The new screening guidelines.
Background

• Cervical cancer is one of the few preventable cancers thanks to the cervical / endocervical cytology test discovered by Dr. George Papanicolau in the 1950’s.

• Since the Pap test was first introduced the cervical cancer rate has dropped by roughly 70%.
Background

• In the 1940’s and earlier, cervical cancer was a very common cancer and a major cause of death among women of childbearing age in the United States.

• Cervical cancer now ranks 14th in frequency in the United States and death rates are low.

• The rate is still high among minority and low-income women who are not screened regularly.
How are we doing in Indian Country?

• 1978-1981: AI/AN women had the highest incidence of cervical cancer among all U.S. ethnic/racial groups – 22.6 cancers / 100,000 women. (NCI SEER Data)

• 2000-2004: AI/AN women have the lowest incidence of cervical cancer among all U.S. ethnic/racial groups – 6.6 cancers/100,00 women. (NCI SEER Data)

• But the incidence of cervical cancer among AI/AN women living in or near federally recognized tribal lands isn’t as good: 9.4 cancers / 100,000 women Based on data from IHS Contract Health Service delivery areas: Counties with or adjacent to tribal lands.
Background

• Most cervical cancers in the U.S. occur among women:
  • who have NEVER had a Pap (50%).
  • who haven’t had a Pap in the past 5 years.
Cervical Cancer - A Sexually Transmitted Disease

- Infection with HPV is necessary for the development of squamous cervical neoplasia.

- HPV is the most common sexually transmitted infection; nearly 80% of sexually active adults are exposed to HPV at some time during their life.

- HPV is most common among teenagers and women in their early 20’s.

- HPV prevalence decreases as women age.
There are over 100 types of HPV, and more than 40 can be sexually transmitted.

15 types are known to cause cancer.

Types 16 and 18 cause about 70% of cervical cancers worldwide.

Type 16 alone causes almost 50% of invasive cancers;
Risk Factors for Cervical Cancer

• Risk factors for cervical cancer are the same as risk factors for acquiring a sexually transmitted disease:
  • Multiple sexual partners and / or a male sex partner with a history of multiple partners
  • Not using condoms
  • Initiation of sexual intercourse in adolescence
  • Smoker
  • Immunosuppressed
  • Exposure to diethylstilbestrol in utero
Risk Factors for Cervical Cancer

- Lack of HPV vaccination; specifically not completing all three HPV vaccinations prior to sexual debut (although 55% of Al/AN girls have been vaccinated, only 18% have received all three HPV vaccinations);

- Not engaging in recommended cervical cancer screening / not going in for follow-up care;

- Exposure to HPV viral types that cause cervical cancer.
Natural History of Cervical Neoplasia

• Most HPV-infected women don’t develop significant cervical abnormalities;

• Most women, especially younger women, have an effective immune response that clears the infection or reduces viral load to undetectable levels in 8-24 months;

• HPV infections in older women are more likely to reflect persistent infections acquired in the past and not cleared by their immune system.
Persistent HPV Infections and Cervical Neoplasia

• We don’t know why some women have persistent infections and most do not – this is an area of current research.

• HPV type and persistent infection are the most important determinants of progression.

• Low-grade lesions (CIN 1) are not necessarily precursors to high-grade lesions (CIN 2,3) or to subsequent invasive cancer.
A New Model for Cervical Carcinogenesis

- Acquisition of a high risk HPV genotype;

- HPV persistence (versus clearance);

- Progression to precancer cervical intraepithelial neoplasia or CIN grade 3 and invasion.
Primary Prevention

• HPV vaccination, ideally prior to sexual debut.

• The vaccine does not protect women against about 30% of cervical cancer caused by HPV types other than HPV-16 and HPV-18.

• Women already exposed to HPV-16 and 18 can expect lower level of protection from the vaccine than the nearly 100% protection of girls who haven’t been exposed.
FDA Approved HPV Vaccines

- **Gardasil®,** a quadrivalent vaccine, protects against HPV types 16, 18, 6 and 11 (types 6 and 11 cause about 90% of genital warts).

- **Cervarix®,** a bivalent vaccine, protects against HPV types 16 and 18, the two high-risk HPV types that cause the majority of cervical cancers.

- These vaccines are effective only if given before infection, i.e., preferably prior to sexual debut.
So What’s New with Screening for Cervical Cancer?
Three New 2012 Cervical Cancer Screening Guidelines

• U.S. Preventive Services Task Force (USPSTF)
  *released March 2012

• American Cancer Society (ACS)
  *released March 2012

• American College of Obstetricians and Gynecologists (ACOG)
  *released October 2012
Summary of Recommendations

• The recommendations apply to women who have a cervix, regardless of sexual history.

• The recommendations do not apply to women who:
  - have a diagnosis of a high-grade precancerous cervical lesion (CIN 2 or 3) or cervical cancer;
  - were exposed to diethylstilbestrol in utero;
  - are immunocompromised (HIV/AIDS or are on long term corticosteroids).
Screening Teenagers

• Neither ACS or USPSTF recommend screening teenagers.

• Invasive cervical cancer is exceedingly rare in adolescents (<1/1,000,000 adolescents).

• The rate of progression of CIN 3 to cancer increases with age.

• There are adverse effects (harms) of over diagnosis and unnecessary treatment of dysplasia.
Potential Harms from Screening & Treatment of Teens

• Results from two meta-analyses:
  * Significant increase in
    - Late Preterm births
    - pPROM (leading to preterm birth)
    - LBW births (resulting from preterm birth)

M Arbyn et al. BMJ 2008; 337:a1284
HPV DNA Testing

• The U.S. Food and Drug Administration (FDA) has approved HPV DNA testing in conjunction with cervical cytology (Pap tests) for routine screening of women aged 30 and older.

• If the results on both the HPV DNA test and the Pap are negative, screening interval may be extended to every five years.
Summary of ACS Recommendations

• Women 21-29 yrs: Cytology alone q 3 yrs. HPV testing should be used for screening or mgt of ASC-US in this group.

• Women 30-65 yrs: Cytology + HPV testing q 5 yrs.

• Women older than 65 don’t need a Pap if they have had adequate prior screening and aren’t at high risk for cervical cancer.
Summary of USPSTF Guidelines

• Women 21-65 yrs: Cervical cytology alone q 3 years. HPV testing should be used for mgt of CIN1/ASC-US.

• Women 30-65 yrs: May lengthen the screening interval to 5 years by adding HPV testing to the cervical cytology screening regimen.

• Women older than 65 yrs: No Pap required if they have had adequate prior screening and are not at high risk for cervical cancer.
Takeaway Message

• Ideal primary prevention: Completing the HPV immunization series prior to sexual debut;

• Secondary prevention: screening regimen of cervical cytology with or without concomitant HPV DNA testing.

• Both immunized and unimmunized women should be screened by the same regimen;
Questions

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Thank You