Cervical Cancer Screening and Sexually Transmitted Infections

Objectives for Part 1: Cervical Cancer Screening and Prevention

- Discuss the epidemiology/etiology of cervical cancer
- Define who, when, and how to screen
- List how results are reported
- Describe what to do with the results
- Review changing guidelines and why they’re changing

Why Screen for Cervical Cancer?

- 11th most common cause of cancer death for US women; 2nd most common cause for women worldwide
- Over 12,000 new cases diagnosed in 2010; 4200 deaths per year
- High mortality if not diagnosed, and better prognosis with less disease extent
- Asymptomatic stage can last 10-20 years
- Test is inexpensive, fairly specific and sensitive, easily performed, has decreased deaths 65% in last 60 years
- 50% of women with invasive cervical carcinoma never had a Pap smear or did not have one in the previous 5 years

Contributors to Annual Cervical Cancer Screening Failures in U.S.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Women n (%)</th>
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</thead>
<tbody>
<tr>
<td>Not screened</td>
<td>6,280 (50)</td>
</tr>
<tr>
<td>Poorly screened (not in ongoing program)</td>
<td>1,260 (10)</td>
</tr>
<tr>
<td>Errors in follow-up</td>
<td>1,260 (10)</td>
</tr>
<tr>
<td>Errors in sampling or interpretation</td>
<td>3,770 (30)</td>
</tr>
</tbody>
</table>

Sawaya & Grimes, 1999.
Human Papillomavirus (HPV)

- 6.2 million new infections per year in US (20.6 cases per 100,000 population)
- Thought to be responsible for 5% of all types of cancers worldwide
  - 100% of cervical cancers
  - 90% of anal cancers
  - 40% of penile, vaginal, and vulvar cancers
  - 25% of oral cavity cancers
  - 35% of oropharyngeal cancers

HPV Subtypes

- High risk to transform the cervical epithelium:
  - Types 16, 18, 31, 33, 45 (16 and 18 are found in 70% of cervical cancers)
  - Low risk subtypes (6, 11) are associated with viral condyloma or mild dysplastic changes that do not generally progress to invasive disease

HPV Epidemiology

- 20 million Americans currently infected
  - 1/3 of US women infected by age 24
  - 75% of sexually active women will be infected at some point
  - 90% of HPV infections will clear in 2 years
- Persistent infection is related to cervical cancer
  - 1-2 year persistence of HPV 16 is associated with 20-30% probability of CIN3 in 5 years
  - Women with HPV types 16 and 18 have about 20% risk of progressing to CIN3 over 10 years despite negative Pap tests
  - Untreated CIN3 has a 30% probability of becoming invasive cancer over 30 years

Incidence of 6/11/16/18 HPV

New infection is less likely with older age

<table>
<thead>
<tr>
<th>Age group</th>
<th>Incidence/100 person years</th>
</tr>
</thead>
<tbody>
<tr>
<td>24-29</td>
<td>7.4 (5.9 – 9.2)</td>
</tr>
<tr>
<td>30-34</td>
<td>3.6 (2.4 – 5.1)</td>
</tr>
<tr>
<td>35-39</td>
<td>2.4 (1.5 – 3.6)</td>
</tr>
<tr>
<td>40-45</td>
<td>1.9 (1.2 – 3)</td>
</tr>
</tbody>
</table>

Older women less likely to clear infection

Risk Factors for Cervical Cancer

- Chronic HPV infection
  - Previous CIN2, CIN3 (OR 5-10)
- Risks for contracting HPV
  - History of multiple sexual partners
  - HIV (OR 4-6)
  - Early age of first intercourse (under 17)
  - Long-term oral contraceptives (OR 2-4)
  - Parity (OR 2.6-3.8)
- Risk Factors for Cervical Cancer, continued
  - Risks for not clearing HPV
    - Mother/sister with cervical cancer (OR 2.6)
    - Smoking (OR 2)
  - Exposure to DES
  - Screening issues
    - Low SES
    - Recent immigration from a country where screening is not the norm
Goals for Cervical Cancer Screening

- Prevent morbidity and mortality
- Improve detection of those at risk for cancer and those not at risk
  - Pap screening has been very successful, but false positives are common and lead to additional testing, stress, biopsies
- Avoid, detect, and treat transient HPV infections and associated benign lesions, and avoid harm when treating these (procedures/stress/biopsies etc.)

When to Start Screening?

- Age 21 (ACOG, USPSTF, ACS, ASCCP)
- Age is increased because for women <21...
  - high clearance rate of HPV and high incidence of dysplasia, but also highly likely to resolve
  - low cancer rate at this age
  - high incidence of preterm labor with excisional cervical procedures

How Frequently Should We Screen? Women Ages 21-29

- Screen at 3-year intervals with Pap alone (USPSTF, ACS, ASCCP)
  - Women at high risk (e.g., high grade cervical lesion, DES exposure in utero, immunocompromised, transplant) should be screened more frequently
  - No HPV co-testing due to high prevalence in this age population
  - Compared to annual screening...
    - No significant differences found in lifetime risk of cancer
    - Increased harm from twice the colposcopy rate with annual screening

How Frequently Should We Screen? Women Ages 30-65

- Co-testing with HPV at 5 year intervals is the preferred method for ACS and ASCCP
  - HPV testing is sensitive
  - Improves adenocarcinoma detection over Pap alone
  - Increases CIN3 detection by 17%-31%
  - Decreases lifetime cancer deaths (0.2/1000)
  - Decreases lifetime cancer incidence (1/1000)
  - Decreases lifetime colposcopies (100-200/1000)
  - Reduces negative testing associated with very low risk for CIN3
  - Reduces colposcopies and detection of CIN2 that would regress
- Pap alone at 3 year intervals is an alternative

When to Stop Screening with Pap?

- Discontinue at age 65 with adequate recent screenings and no history of CIN2+
  - Adequate recent screenings: 3 consecutive negative cytologies or 2 consecutive negative HPV results in the 10 years prior to screening cessation, with the most recent test in last 5 years
  - Do not resume screening once stopped
  - Women with a diagnosis of CIN2+ should be routinely screened for 20 years after, regardless of age

Paps After Hysterectomy?

No screening if the cervix was removed and if there were no previous high grade lesions or cancers.

Check for a cervix.
If you see one, screen.
If your exam of the cervix was abnormal, do not be reassured by a normal Pap report...

REFER!

ThinPrep Slide vs. Conventional Pap Smear Slide

1. ThinPrep may detect glandular abnormalities better.
2. Cost effective with use of ancillary testing (liquid buffer) as ThinPrep allows reflex testing for HPV.
3. Pap smears can be performed during menstruation.
4. No differences in detection of CIN2+

HPV Testing Alone

• HPV has increased sensitivity to detect CIN2/3
• Increased negative predictive value
• Concerns about inadequate sampling, lack of a standard, and providing false assurance due to false negative results
• Problem with the positive predictive value -- no defined management strategies
• Potential harms from increased colposcopies
• More data is needed and not recommended

Lab Results Reporting: The Bethesda System

1. Specimen Adequacy
   a. Satisfactory for evaluation
   b. Processed and examined, but unsatisfactory for evaluation because of....
2. Descriptive diagnosis
3. General Categories
   a. Negative for intraepithelial lesion or malignancy
   b. Epithelial cell abnormality-glandular or squamous
   c. Other

Inadequate Specimen Result

• Unsatisfactory for interpretation (obscuring cells/blood) – repeat Pap in 2-4 months.
• Satisfactory for interpretation, but endocervical cells or transformation zone elements are absent
  • HPV (-) routine screening
  • HPV (+) do 1 year FU with Pap and HPV or genotype HPV
  • HPV unknown - add HPV or repeat cytology in 3 years

Studies show these women are not at any higher risk for CIN3. Most are older and at lower risk.

Incidental Descriptions Mentioned

• Organisms
  – Trichomonas (treat)
  – Candida
  – Actinomycyes
  – Changes seen with HSV
• Reactive changes
  – Inflammation related to infection or irritation
  – IUD-related
  – Atrophy
  – Endometrial cells in women >40 (investigate for endometrial cancer)
Epithelial Cell Abnormalities (7% of women receiving Paps each year)

- Squamous Cell Abnormalities
  - ASCUS, including ASC-H (2-3 million, 3% of smears)
  - LGSIL (1.25 million)
  - HGSIL (300,000)
  - Squamous cell carcinoma (12,800, 90% of cervical cancers)

- Glandular Cell Abnormalities
  - Atypical glandular cells (AGC)
  - Endocervical adenocarcinoma in situ
  - Adenocarcinoma (10% of cervical cancers)

Cervical Dysplasia Terminology

<table>
<thead>
<tr>
<th>Cytology (PAP) Terms</th>
<th>Histology (BIOPSY) Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASC-US</td>
<td>Atypical squamous cells of uncertain significance</td>
</tr>
<tr>
<td>ASC–H</td>
<td>Atypical squamous cells, cannot rule out high grade</td>
</tr>
<tr>
<td>LSI or LGSIL</td>
<td>Low grade squamous intraepithelial lesion</td>
</tr>
<tr>
<td>HSIL or HGSIL</td>
<td>High grade squamous intraepithelial lesion</td>
</tr>
<tr>
<td>AGC</td>
<td>Atypical glandular cells</td>
</tr>
</tbody>
</table>

Biopsy Findings by Pap/HPV Result

<table>
<thead>
<tr>
<th>Pap result</th>
<th>CIN1</th>
<th>CIN2/3</th>
<th>Cancer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal Pap</td>
<td>up to 10%</td>
<td>&lt;1%</td>
<td>0.25%</td>
</tr>
<tr>
<td>ASC-US, HPV neg</td>
<td>&lt;10%</td>
<td>&lt;1.5%</td>
<td>&lt;0.01%</td>
</tr>
<tr>
<td>Normal Pap, HPV+</td>
<td>&lt;1.1%</td>
<td>&lt;0.08%</td>
<td></td>
</tr>
<tr>
<td>ASC-US, HPV+</td>
<td>50-60%</td>
<td>7-18%</td>
<td>0.1%</td>
</tr>
<tr>
<td>LGSIL</td>
<td>50-60%</td>
<td>2-19%</td>
<td>0.16%</td>
</tr>
<tr>
<td>HGSIL</td>
<td>20%</td>
<td>up to 70%</td>
<td>7%</td>
</tr>
</tbody>
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How to Manage Normal Results

Age 21-30
- Repeat Pap q 3 years (ages 21, 24, 27)
- HPV test ONLY for triage of ASC-US

Ages 30-65
- Co test q 5 yrs
  - or
  - Pap q 3 years

How to Manage Abnormal Results

- Co-testing with HPV (women ages 30-65)
- Pap alone (women ages 21-65)
Risk of CIN3 for Women with (+) HPV and (-) Cytology
Ages 30-65

At one year, risk is high enough to warrant repeat in one year but not high enough for immediate colposcopy

<table>
<thead>
<tr>
<th>CIN3 risk</th>
<th>Cancer risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 year</td>
<td>&lt;1% - 4.1%</td>
</tr>
<tr>
<td>3 years</td>
<td>2.2% - 7.0%</td>
</tr>
<tr>
<td>&gt;10 years</td>
<td>16% - 21.2%</td>
</tr>
</tbody>
</table>

Management of Women >30 with (+) HPV, (-) Cytology

• Repeat co-testing in 1 year
  - If HPV+, refer for colposcopy (persistent infection)
  - If HPV- with cytology LSIL or more, refer to colposcopy (high risk of CIN2+)
  - If HPV- and cytology is ASCUS or less, screen with co-testing in 3 years (not 5 years)

  or

• Testing for HPV 16/18 with genotype testing
  - If HPV 16/18 positive, refer to colposcopy (most cancers with type 16 or 18)
  - If HPV 16/18 negative, repeat co-testing in 1 year

Management of Women >30 with (-) HPV, (+) Cytology

• ASCUS – repeat in 3 years, not 5 years
  - Risk of precancerous lesions low (<2%) as HPV (-)
  - LSIL or higher with HPV (-)
  - Higher risks of CIN2 and cancer warrant colposcopy

How to Manage Abnormal Pap Results

• Co-testing with HPV (women ages 30-65)
• Pap alone (women ages 21-65)

Managing an ASC-US Result
Three ways to evaluate...

1. Triage by HPV testing (helps determine risk of CIN2+)
   - Standard in >95% of labs if liquid-based cytology is used to collect Pap smear
   - When Pap is read as ASC-US, a test for high-risk HPV is done on the leftover liquid
   - If high-risk HPV+, refer for colposcopy as CIN2+ risk is >15%

2. Repeat Pap
   - Repeat Pap in 6 and 12 months
   - If either Pap is ASC-US or worse, refer for colposcopy

3. Colposcopy (in selected circumstances)

Managing ASC-H

• Risk of CIN 2 or worse is 50%
• HPV triage is not indicated
• Refer for colposcopy
Managing LGSIL and HGSIL

- Risk of CIN2+ is high
  - In those <25, the risk of CIN3+ with LSIL is less than for older women. Can do HPV testing to stratify or repeat cytology in a year which is the preferred FU for this age group.
- No role for HPV testing
  - Exception: postmenopausal women with LSIL can be triaged with HPV and managed in the same manner as ASC-US
- LSIL and HSIL (except LSIL in <25): refer for colposcopy

Glandular Cell Abnormalities

Atypical Glandular Cells (AGC)
- More likely to be associated with both squamous and glandular abnormalities
- High rates of CIN2+ with this abnormality
- Pap smears are less sensitive for detecting glandular dysplasia and malignancy
- Refer for colposcopy and do endometrial biopsy

<table>
<thead>
<tr>
<th>CIN2/3</th>
<th>Cancer</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGC-NOS</td>
<td>9-41%</td>
</tr>
<tr>
<td>AGC</td>
<td>27.96%</td>
</tr>
</tbody>
</table>

When is HPV Screening Useful?

HPV testing has higher sensitivity/lower specificity than Pap with less variability
1. Can stratify women with ASC-US
   - Easily done via reflex testing. Sample taken at same time as Pap smear (using liquid-based media) and analyzed if necessary
2. After colposcopy, if no CIN2,3 is found—will show if persistent HPV is present
3. Can stratify postmenopausal women or women age <25 with LSIL
4. Co-testing for women ages 30-65

When HPV Screening is Not Useful

- Screening women < 30
  - Still used to triage ASC-US
- Prescreening for HPV vaccination
- ASC-H, LSIL, HSIL (refer to colposcopy regardless of HPV status)
- STI screening
HPV Vaccines

*Gardasil®
- Quadrivalent vaccine for 6/11/16/18
- FDA approved in 2006 for men and women ages 9–26
- Given at times 0, 2 mo, and 6 mo
- Indicated to prevent CIN2 and 3 cancer, warts, anal and vulvar cancers and precursors)

Cervarix®
- Bivalent vaccine for 16/18 (less protection for warts)
- FDA approved for women ages 9–26
- Given at times 0, 1 mo, and 6 mo
- Indicated to prevent CIN 2 and 3 cancer

Efficacy of HPV Vaccines

<table>
<thead>
<tr>
<th>% Decrease in CIN 2 or worse in vaccine group (vs. placebo)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women negative for all vaccine HPV types and per protocol</td>
</tr>
<tr>
<td>&gt;99%</td>
</tr>
<tr>
<td>Women positive for at least 1 viral type OR off protocol (missed or late doses)</td>
</tr>
<tr>
<td>40 – 60%</td>
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</tbody>
</table>

Nearly identical for bivalent and quadrivalent vaccines. Efficacy thus far indicates a duration of 7-10 years; studies are ongoing.

HPV Vaccine

- More effective for those with no prior exposure to HPV (doesn’t clear infection)
- Duration of protection unknown; doesn’t replace regular screening. ?? effects on natural immunity.
- Age recommendations based on epidemiologic data and models
- Well tolerated
- Do not test for HPV infection prior to vaccination
- Continue to screen as indicated

HPV Vaccine

- Not recommended for women with
  - Pregnancy
  - Moderate to severe acute illness
  - Yeast allergy
- Adverse events
  - Syncope in adolescents
  - Serious reported events not thought to be causally linked (voluntary reporting data)
- May be efficacious in >26, but unclear and not FDA approved
- Don’t need to restart series if dose is missed

Objectives for Part 2: Sexually Transmitted Infections

- Describe how to counsel and evaluate risk for STIs
- Discuss STIs and how they present differently in women
- Provide a vaginitis update
Estimated number of new and existing (total) sexually transmitted infections
United States, 2008


VETERANS HEALTH ADMINISTRATION

STI Risk Factors

- Unprotected sex
- Young age
- Unmarried
- Multiple sexual partners
- History of a prior STI
- Illicit drug use
- Contact with sex workers
- New sex partner in past 60 days
- Think about vaccination (HPV, hepatitis)

The Sexual History

Partners

- Men, women, both?
- How many partners in past 2 months?
- How many partners in past 12 months?

Practices

Vaginal sex?
- Condom use?
  1. When and with whom?
  2. If not used all the time, in what situations?
Anal sex?
- Condom use?
  1. When and with whom?
  2. If not used all the time, in what situations?
Oral sex?

Protection from STIs

- What is she doing?
- What is her understanding of what she should be doing?
Past history
- Previous STIs in her or her partner(s)?
Pregnancy prevention
- Need for birth control?
- What is she using?

Assess HIV risk

- Injected drug use by her or her partner(s)?
- Money or drugs exchanged for sex by her or her partner(s)?
- “Is there anything else that I need to know about?”

Cervicitis

- Not always related to infection
- Mucopurulent discharge, edema, friability
- Etiology
  - Chlamydia and gonorrhea are most common
  - Foreign objects, radiation, malignancy
  - HSV and ?mycoplasma are rare
- Common to have gonorrhea and chlamydia infections at same time. Always treat for both.

All patients with one STI should be screened for others!

- HIV and STI prevention counseling - condoms, reduction in number of partners
- Pregnancy testing
- Partners need treatment and they need to be abstinent 7 days until both are fully treated
- Consider rescreening those with new infections, if appropriate, in several months
- 66% of patients with new infections are asymptomatic - screen those at risk
- Patient delivered partner therapy-decreases chlamydia reinfecction by 20% and gonorrhea reinfecction by 50%.
Gonorrhea in Women

- Half are asymptomatic
- Cervix, urethra, anorectal, pharynx, PID (leads to scarring and high infertility/tubal pregnancy risk)
- Penetration to women in 50% of sexual encounters
- Diagnosis
  - Nucleic Amplification
  - DNA probe
  - Culture
- Treat chlamydia as well

Chlamydia in Women

Most women have normal exams and are asymptomatic, but cervicitis and acute urethral symptoms are the most common symptoms

Diagnosis
- NAAT: can be used with female urine
- Direct fluorescent antibody: not as sensitive
- EIA: less sensitive

Chlamydia Screening

- USPSTF recommends screening of asymptomatic women...
  - Yearly for all sexually active women ≤24 years
  - Sexually active women >25 years with risk factors (African American, new male sex partner, two or more partners in preceding year, inconsistent barrier contraceptive use, history of prior STI)
  - All pregnant women at the first prenatal visit

HIV and Women

- Growing problem
  - In 1985, 7% of U.S. AIDS cases were women
  - Rate is now 25%
  - HIV disproportionately affects African American and Hispanic women. Together, they represent <29% of all U.S. women, yet account for 79% of female AIDS cases.
- Gender-specific complications
  - Recurrent vaginal yeast infections
  - Pelvic inflammatory disease (PID)
  - Increased risk of precancerous cervical changes

HIV and Women: Transmission

- Of new HIV infections in 2004...
  - 70% due to heterosexual contact
  - 28% due to IV drug use
- Uninfected women have higher risk of contracting HIV from infected men than uninfected men have of contracting HIV from infected women
- Condoms decrease transmission
- Nonoxynol-9 spermicide may increase risk as it causes irritation and abrasions

HIV Screening

CDC Recommendations

Screen all patients in all settings unless patient opts out when informed that testing will be performed
- Annual screening for persons at high risk for HIV
- Separate written consent should not be required as general consent for medical care should be considered sufficient to encompass HIV testing. VA requires verbal informed consent.
- Prevention counseling should not be required with HIV diagnostic testing or as a part of HIV screening programs in healthcare settings.
- Pregnant women: Include HIV in the routine panel of prenatal screening tests for all women
Summary of STI Screening for Women

- HIV: screen all women ≤ 65 regardless of risk at least once; annual screen for those at increased risk
- GC: women at high risk; consider those < 25
- Chlamydia: all women ≤ 24; all others at high risk
- Trichomonas: women at high risk
- Syphilis: women at risk
- Hepatitis B and A: consider vaccinating women at risk
- HPV: encourage consideration of vaccination for women ≤ 26

Causes of Vaginitis

- STIs (e.g., Trichomonas)
- Overgrowth of normal flora (e.g., bacterial vaginosis, yeast)
- Non-infectious
  - Physiologic leukorrhea
  - Atrophic vaginitis
    - Menopause, lactation, progestin-only contraception
  - Chemical vaginitis

Bacterial Vaginosis

- Most prevalent cause of discharge, but >50% of women asymptomatic
- No/few WBC’s on wet mount
- Need 3 of 4 to diagnose:
  - Thin, whitish-grey discharge that smoothly coats vaginal walls
  - Fishy amine odor with 10% KOH (whiff test)
  - pH >4.5
  - Clue cells (>20%) on wet mount
- 30% recurrence in 3 mos, 50% in 12 mos

Candidiasis

- Usually not transmitted sexually, but frequently diagnosed in women being evaluated for STIs
- Yeast are part of normal vaginal flora
- Risk factors
  - DM, antibiotics, contraceptive devices, immunosuppression, exogenous estrogens
- “Cottage cheese” discharge
- Pruritis, erythema, burning
- Pseudohyphae on KOH
- pH ≤4.5
- Culture for >4 episodes/year

Complicated Vulvovaginal Candidiasis (VVC)

Recurrent VVC
- 7-14 days topical therapy
- 100mg, 150mg, 300 mg dose of fluconazole q3day x 3 doses
- Maintenance regimen: fluconazole 150 mg once per week for 6 months (clotrimazole 200 mg vaginal cream twice weekly, or 500 mg vaginal suppository once weekly are alternatives)
Severe VVC
- 7-14 days of topical therapy
- 150 mg dose fluconazole – repeat in 72 hours
Non-albicans VVC
- 600mg boric acid vaginally daily x 14 days
- 7-14 days non-fluconazole therapy (intravaginal nystatin)
Compromised host
- 7-14 days topical

Trichomonas

- Pruritus, dysuria; can be present for many years without symptoms
- Frothy, thin yellow discharge
- Strawberry cervix, erythema of vagina and vulva
- Elevated pH >4.5
- Trichomonads seen on wet mount
- Treat partners
  - Can be transmitted between females
  - Do not treat pregnant women
### Vaginitis Differentiation

<table>
<thead>
<tr>
<th></th>
<th>Normal</th>
<th>BV</th>
<th>Candidiasis</th>
<th>Trich</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Odor, discharge, itch</td>
<td>Itch, discomfort, dysuria, thick discharge</td>
<td>Itch, discharge, 50% asymptomatic</td>
<td></td>
</tr>
<tr>
<td>Vaginal discharge</td>
<td>Clear to white</td>
<td>Homogenous, adherent, thin, malodorous “fishy”, milky white</td>
<td>Thick, clumpy, white “cottage cheese”</td>
<td>Frothy, gray or yellow-green, malodorous</td>
</tr>
<tr>
<td>Clinical findings</td>
<td>pH 3.8 – 4.2</td>
<td>Inflammation, erythema</td>
<td>Cervical petechiae “strawberry cervix”</td>
<td></td>
</tr>
<tr>
<td>KOH wet mount test</td>
<td>Negative</td>
<td>Positive</td>
<td>Negative</td>
<td>Often positive</td>
</tr>
<tr>
<td>NaCl wet mount</td>
<td>Lactobacilli</td>
<td>Clue cells (≥20%), no/few WBCs</td>
<td>Few WBCs</td>
<td>Mixte flagellated protozoa, many WBCs</td>
</tr>
<tr>
<td>KOH wet mount</td>
<td>Pseudohyphae or spores if non-albicans species</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

http://www2a.cdc.gov/stdtraining/self-study/vaginitis/vaginitis2.asp

### VHA Guidance on Clinical Preventive Services

- VHA develops Guidance Statements on Clinical Preventive Services (screenings, immunizations, brief health behavior counseling, preventive medications)
- Statements on Cervical Cancer Screening and HPV Immunization are in development and will be posted in summer of 2012

### Key References


### Resources

- American Cancer Society. Human Papilloma Virus (HPV), Cancer, and HPV Vaccines – Frequently Asked Questions. [http://www.cancer.org/docroot/CRI/content/CRI_2_6x_FAQ_HPV_Vaccines.asp](http://www.cancer.org/docroot/CRI/content/CRI_2_6x_FAQ_HPV_Vaccines.asp)
- CDC page on HPV Immunization: [http://www.cdc.gov/vaccines/vpd-vac/hpv/default.htm#ed](http://www.cdc.gov/vaccines/vpd-vac/hpv/default.htm#ed)