Gynecologic Care for Women and Adolescents With Human Immunodeficiency Virus

In the United States in 2013, there were an estimated 226,000 women and adolescents living with human immunodeficiency virus (HIV) infection (1). Women with HIV are living longer, healthier lives, so the need for routine and problem-focused gynecologic care has increased. The purpose of this document is to educate clinicians about basic health screening and care, family planning, prepregnancy care, and managing common gynecologic problems for women and adolescents who are infected with HIV. For information on screening guidelines, refer to the American College of Obstetricians and Gynecologists’ Committee Opinion No. 596, Routine Human Immunodeficiency Virus Screening (2).

Background

Epidemiology

In the United States, women account for 24% of the 934,000 individuals living with HIV (1). Heterosexual contact is responsible for 74% of HIV transmission among women in the United States, with injection drug use accounting for 23%, and perinatal infection for 2%. African American and Hispanic women combined account for 78% of HIV-infected women. In most women with HIV, the infection is diagnosed during the reproductive years (1).

Treatment

Treatment of HIV and acquired immunodeficiency syndrome (AIDS) should be provided by a health care practitioner with expertise in HIV. Such expertise has been shown to be a factor that prolongs the life of HIV-infected individuals (3, 4). A team approach is important to address the medical and social complexities of HIV infection. Women and adolescents with HIV may have life circumstances, such as alcohol or drug addiction, psychiatric illness, and domestic violence, that require special attention (5). Careful history and appropriate sensitivity are needed to address these life circumstances and optimize treatment of HIV.

In general, initiation of antiretroviral therapy is recommended for all adults and adolescents with HIV, regardless of CD4+ lymphocyte counts (6). This is a recent substantial change from previous guidelines, which recommended starting based on CD4+ level. Antiretroviral medications select for resistant mutations when used as monotherapy; therefore, antiretroviral therapy uses combinations of three or more drugs. Strict adherence to the dose regimens is critical to sustain
HIV suppression, to reduce the risk of drug resistance, to improve overall quality of life and survival, and to decrease the risk of HIV transmission (6). Because nonadherence to antiretroviral therapy may lead to the emergence of drug resistance and loss of future treatment options, all health care providers, including gynecologists, should ask about and encourage adherence to treatment medications. Current treatment recommendations for women and adolescents with HIV can be found at AIDSinfo.nih.gov.

Clinical Considerations and Recommendations

**What are the special considerations for antiretroviral drug therapy in nonpregnant women infected with HIV?**

There currently are more than 20 U.S. Food and Drug Administration-approved antiretroviral agents from six medication classes that can be used to formulate combination regimens. Some drugs are combined into single pills for patient convenience. Obstetrician–gynecologists and other gynecologic care providers should be aware of the individual agents in these combined formulations. Certain drugs have special considerations in women.

**Efavirenz**

An animal study and case reports have suggested an increased risk of central nervous system birth defects with efavirenz (7). However, more recent prospective data have not detected an increased risk of defects among infants born to women taking efavirenz in the first trimester (8, 9). Women of childbearing potential should undergo pregnancy testing before initiation of efavirenz and receive counseling about the potential risk to the fetus and desirability of avoiding pregnancy while using efavirenz-based regimens (6). Antiretroviral therapy regimens that do not contain efavirenz should be strongly considered in a woman who is planning to become pregnant or is sexually active and not using effective contraception (6), assuming these alternative regimens are acceptable to the obstetrician–gynecologist or other gynecologic care provider and are not thought to compromise the woman’s health. Efavirenz can be continued in patients who present for care after 6 weeks of gestation, provided the regimen is achieving virologic suppression, because the risk of neural tube defects is restricted to the first 5–6 weeks of pregnancy (6). Women who receive antiretroviral regimens should be counseled that there are limited data on use in pregnancy for many newer drugs.

**Nevirapine**

The nonnucleoside reverse transcriptase inhibitor nevirapine is associated with an increased risk of potentially severe and life-threatening liver toxicity in antiretroviral-naive individuals. Because this risk seems to be greatest in women with CD4+ counts of greater than 250 cells per cubic millimeter or elevated baseline transaminase levels, nevirapine should not be used in antiretroviral-naive women unless there is no other alternative and the benefit from nevirapine outweighs the risk of hepatotoxicity (6).

**Other Considerations**

Obstetrician–gynecologists and other gynecologic care providers also should be aware of the potential interactions of several antiretroviral drugs with other medications, including hormonal contraception, which may reduce contraceptive or antiretroviral efficacy (10) (see “What methods of contraception are the most effective for women with HIV, and what methods are contraindicated?”).

**How are recommendations for managing human papillomavirus-related disease different for women infected with HIV?**

The Panel on Opportunistic Infections in HIV-Infected Adults and Adolescents recommends that women who are HIV-infected should have age-based cervical cancer screening as follows (11):

- In women and adolescents with HIV, initiation of cervical cancer screening with cytology alone should begin within 1 year of onset of sexual activity or, if already sexually active, within the first year after HIV diagnosis but no later than 21 years of age.
- Cervical cancer screening in women who are infected with HIV should continue throughout a woman’s lifetime (ie, not stopping at age 65 years).
- In women infected with HIV who are younger than 30 years, if the initial cytology screening result is normal, the next cytology screening should be in 12 months. If the results of three consecutive annual cervical cytology screenings are normal, follow-up cervical cytology screening should be every 3 years. Co-testing (cervical cytology and human papillomavirus [HPV] screening) is not recommended for HIV-infected women younger than 30 years.
- Women infected with HIV who are 30 years and older can be screened with cytology alone or co-testing. After women screened with cytology alone have had three consecutive annual test results that are normal, follow-up screening can be every 3 years. Women infected with HIV who have one
negative co-test result (normal cytology and HPV negative) can have their next cervical cancer screening in 3 years.

- In women with HIV infection, co-testing results that are cytology negative but HPV positive are managed as in the general population (see “How should cytology-negative, HPV-positive co-test results be managed?” in Practice Bulletin No. 168 (Interim Update), Cervical Screening and Prevention) (12).

- Women with HIV who have cervical cytology results of low-grade squamous intraepithelial lesions or worse should be referred for colposcopy.

- For women with HIV infection who are 21 years or older and have atypical squamous cells of undetermined significance (ASC-US) test results, if reflex HPV testing results are positive, referral to colposcopy is recommended. If HPV testing is not available, repeat cervical cytology in 6–12 months is recommended, and for any result of ASC-US or worse on repeat cytology, referral to colposcopy is recommended. Repeat cytology in 6–12 months, but not HPV testing, is recommended for HIV-infected women younger than 21 years with ASC-US test results. Although not explicitly stated in the Panel guidelines, women with HIV infection who have ASC-US, HPV-negative results (whether from reflex HPV testing or co-testing) can return to regular screening.

Screening for HPV-related disease in women infected with HIV differs from the general risk population for several reasons. Screening starts earlier because sexually active adolescents who are HIV infected appear to have a high rate of progression of abnormal cytology (13). Screening is more frequent because women infected with HIV are at an increased risk of high-risk HPV infection and cervical intraepithelial neoplasia (CIN) (14–16). Use of co-testing was introduced in the latest guideline revision based on studies that showed the strong negative predictive value of a negative HPV test result in this population (17, 18). Women infected with HIV who receive regular screening and recommended follow-up treatment have a similar incidence of invasive cervical cancer compared with women who are HIV negative (19, 20).

Abnormal cervical screening test results and squamous intraepithelial lesions in women with HIV should be managed in accordance with the ASCCP guidelines (11, 21). The ASCCP guidelines for “Management of Women Ages 21–24 Years With Either Atypical Squamous Cells of Undetermined Significance (ASC-US) or Low-grade Squamous Intraepithelial Lesion (LSIL)” (21) should be followed for adolescents and women younger than 25 years with low-grade lesions. The guidelines for “Management of Young Women with Biopsy-Confirmed Cervical Intraepithelial Neoplasia—Grade 2,3 (CIN 2,3) in Special Circumstances” (21) should be considered for HIV-infected adolescents and women younger than 25 years, as well as those women who, after counseling by their clinicians, consider risk to future pregnancies from treating cervical abnormalities to outweigh risk of cancer during observation of those abnormalities; although if adherence is questionable, treatment may be preferable.

Human papillomavirus vaccination for primary prevention should be administered to HIV-infected females following the same guidelines as for uninfected females (11, 22). Although the Panel on Opportunistic Infections acknowledged that there are no specific data on efficacy of the vaccine in HIV-infected women, there are studies confirming safety and immunogenicity (23).

Condyloma should be managed according to the current Sexually Transmitted Diseases Treatment Guidelines published by the Centers for Disease Control and Prevention (CDC) (11, 24). Women with immunosuppression may have more and larger warts and higher risk of recurrences after treatment. A biopsy should be taken of warts that fail to respond to standard therapy to ensure vulvar intraepithelial neoplasia or cancer is not present (24).

Women infected with HIV have higher rates of vaginal, vulvar, and perianal neoplasia (25, 26) and high-grade anal intraepithelial neoplasia and anal cancer (11) compared with the general population. Women infected with HIV who undergo assessment for cervical or vaginal cytologic abnormalities should have careful visual inspection of these areas. The Panel on Opportunistic Infections (11) and an expert panel convened by the American Society for Colposcopy and Cervical Pathology and the International Anal Epithelial Society (27) noted that although some specialists recommend anal cytology or high-resolution anoscopy for HIV-infected women, there are no national recommendations for anal cancer screening. Screening should not be performed unless referral for high-resolution anoscopy is available to evaluate and treat abnormal findings. An annual digital rectal examination may be useful to detect masses that could be anal cancer.

How does the diagnosis and treatment of bacterial vaginosis or vulvovaginal candidiasis differ between HIV-infected and non-HIV-infected women?

**Bacterial Vaginosis**

Bacterial vaginosis appears to be more prevalent and persistent among women infected with HIV as compared with uninfected women (24, 28). Diagnostic criteria
for bacterial vaginosis do not change with HIV status. Women with HIV should receive the same treatment for bacterial vaginosis as women without HIV infection (24).

**Vulvovaginal Candidiasis**

Vulvovaginal candidiasis is diagnosed in the same way in women with HIV as in women without HIV infection (11). Uncomplicated vulvovaginal candidiasis in women with HIV should be treated with topical antifungals or oral fluconazole as in women without HIV. Women with HIV who have severe or recurrent vulvovaginal candidal infection should be treated with oral fluconazole or topical antifungals for at least 7 days (11).

Vaginal colonization with *Candida albicans* and vulvovaginal candidiasis are more common among HIV-infected women than non-HIV-infected women (29–31). Rates of yeast colonization and vulvovaginal candidiasis are associated with decreasing CD4+ counts (32, 33). Recurrent vulvovaginal candidiasis is not considered a sentinel symptom for HIV infection, but episodes may be recurrent in women with advanced immunosuppression (11).

Long-term prophylactic therapy with fluconazole has been shown to be effective in reducing colonization and symptomatic vulvovaginal candidiasis in HIV-infected women (34). But this regimen is not recommended for routine primary prophylaxis in HIV-infected women unless the recurrences are frequent or severe (11, 24) because of the effectiveness of acute therapy and concerns about development of resistance (11). Periodic monitoring of liver function studies should be considered if oral azole therapy is anticipated for more than 21 days, especially in patients with other hepatic comorbidities (11).

**How do diagnosis and treatment of sexually transmitted infections differ in HIV-infected women compared with non-HIV-infected women?**

Women with HIV should be screened at entry to care and at least annually thereafter with nucleic acid amplification tests for *Neisseria gonorrhoeae* and *Chlamydia trachomatis*, serologic testing for syphilis, and testing for vaginal trichomoniasis (24). Screening for hepatitis C virus should be performed at entry to care (11). The presence of some sexually transmitted infections (STIs), especially ulcerative disease, increases HIV shedding, which may increase the risk of HIV transmission to partners. Barrier precautions are recommended to decrease transmission risk. The CDC’s 2015 *Sexually Transmitted Diseases Treatment Guidelines* include management of STIs in HIV-infected women (see http://www.cdc.gov/std/) (24). Specific guidance for management of STIs in HIV-infected women is included in a “special considerations” section accompanying recommendations for each pathogen. Supplemental recommendations for a few infections, particularly hepatitis, are available from the Panel on Opportunistic Infections in HIV-Infected Adults and Adolescents (see https://aidsinfo.nih.gov/guidelines/html/4/adult-and-adolescent-oi-prevention-and-treatment-guidelines/0) (11).

**Chancre**

Patients infected with HIV with chancroid should be treated with the same regimens as noninfected women, but they need to be monitored closely because they are more likely to experience treatment failure (which can occur with all regimens) and have lesions that heal slowly. Repeated or longer courses of treatment may be required. The CDC guidelines note that there are limited data for the single-dose regimens but do not include a specific recommendation to use extended-dose regimens instead (24).

**Genital Herpes Simplex Virus**

Specific recommendations for suppression and episodic therapy for genital herpes simplex virus (HSV) in HIV-infected women are included in the CDC’s sexually transmitted disease treatment recommendations, and involve higher doses, more frequent administration, and longer courses than recommended for noninfected women (24). Herpes simplex virus type-specific serologic testing can be offered to HIV-infected women with unknown HSV infection status, and suppressive therapy offered to women with HSV-2. Women with HIV and genital herpes should be counseled that suppression therapy for genital herpes does not reduce the risk of transmission of HSV or HIV to their susceptible partners (24).

In the United States and Europe, 40–80% of HIV-infected individuals are co-infected with HSV-2 (35). The disease progression of HIV may be hastened by co-existing HSV-2 infection (36). And, as with other forms of immunocompromise, HSV-2 outbreaks can be longer and more severe and have atypical presentations. Frequent shedding occurs despite antiretroviral therapy (37–39). Although HSV-2 suppression does not decrease transmission of HIV (40) or HSV (41) to susceptible partners, suppressive or episodic therapy with oral antiviral agents is effective in decreasing genital ulcers, genital HSV-2 shedding, HIV genital shedding, and plasma HIV viral load among co-infected women (42–47).

**Granuloma Inguinale**

Patients with HIV and granuloma inguinale should be treated the same as women without HIV. The addition of
parenteral gentamicin can be considered if improvement does not occur during the first few days of treatment (24).

**Gonorrhea and Chlamydial Infection**

Women infected with HIV and with gonorrhea or chlamydial cervicitis should receive the same management as women without HIV infection (24). Women with HIV should have annual gonorrhea and chlamydial infection screening because women with these infections may have increased HIV shedding, which decreases with treatment (52). Retesting 3 months after treatment for gonorrhea or chlamydial infection is recommended because of the high prevalence of reinfection (24).

**Pelvic Inflammatory Disease**

Duration and choice of antimicrobial regimens for pelvic inflammatory disease do not differ in women with HIV infection (24). The presentation and clinical course of pelvic inflammatory disease do not appear to differ based on HIV status, but women with HIV may have more frequent tubo-ovarian abscesses compared with women who are not HIV infected (53). Overall response to standard therapy appears to be the same among HIV-infected and noninfected women (54, 55).

**Trichomoniasis**

Women with HIV should be screened for trichomoniasis at entry to care and at least annually thereafter. Interpretation of treponemal and nontreponemal serologic test results for syphilis does not differ between HIV-infected and noninfected women. Human immunodeficiency virus may be associated with a higher risk of false-positive nontreponemal serologic test results, so all reactive (positive) test results must be confirmed with a treponema-specific test. Because rare unusual serologic responses have been observed, when clinical findings suggest syphilis but serologic test results are negative, alternative tests (eg, lesion biopsy, darkfield microscopy, polymerase chain reaction of lesion material) may be useful. Further evaluation should be performed for women with signs of neurologic involvement, including auditory or ophthalmic abnormalities, cranial nerve dysfunction, cognitive dysfunction, altered mental status, or stroke (24). Compared with non-HIV-infected patients, HIV-infected patients with primary syphilis are more likely to have multiple ulcers, and HIV-infected individuals with secondary syphilis more often have concomitant genital ulcers (48).

Women with HIV and syphilis should receive the same treatment regimen and duration of therapy as women without HIV. Most women with HIV infection respond appropriately to the recommended treatment regimen for primary and secondary syphilis. Although some studies show no influence of HIV serostatus on successful syphilis treatment rates (49), other studies show significantly more serologic treatment failures or longer median time to serologic response in HIV-infected patients (50, 51). Women with HIV and primary or secondary syphilis should be evaluated clinically and serologically for treatment failure at 3, 6, 9, 12, and 24 months after therapy (24). Those who meet the criteria for treatment failure (ie, signs or symptoms that persist or recur or individuals who have a sustained [greater than 2 weeks] fourfold increase or greater in titer) should be managed in the same manner as HIV-negative patients. The CDC guidelines include management recommendations for patients whose titers fail to decrease over more prolonged periods (24).
detailed recommendations about when to start and which agents to choose are included in the guidelines from the Panel on Opportunistic Infections in HIV-Infected Adults and Adolescents (11).

**Hepatitis C**

Patients infected with HIV should be tested for hepatitis C at entry into HIV care. At-risk seronegative individuals should be tested at least annually. Women co-infected with hepatitis C virus should be counseled to prevent liver damage by avoiding alcohol consumption, limiting hepatotoxic medications, and avoiding iron supplementation in the absence of iron deficiency anemia. Patients should be screened for immunity to hepatitis A and vaccinated if not immune. Co-infected patients with cirrhosis are at risk of life-threatening complications and should be managed in consultation with an appropriate specialist (11). Treatment of co-infected patients is similar to that for hepatitis C virus-monoinfected patients (11). However, it is important for obstetrician–gynecologists and other health care providers to be aware of the potential for interactions between the newer hepatitis C treatment drugs and antiretroviral drugs (6).

**Ectoparasites**

Women infected with HIV that have pediculosis pubis or scabies should receive the same treatment as noninfected women. Women infected with HIV are at increased risk of crusted scabies, which should be managed in consultation with a specialist (24).

> **How does treatment of menstrual disorders differ between HIV-infected and non-HIV-infected women?**

Women with HIV should receive the same evaluation and treatment for menstrual disorders as uninfected women.

Menstrual disorders are frequently reported by HIV-infected women, but the role of HIV and HIV-related immunosuppression in menstrual abnormalities is unclear. Some studies have shown that amenorrhea and irregular cycles are more common among HIV-infected women (63–65). After controlling for potential confounders, use of antiretroviral therapy and higher CD4+ counts were associated with lower risk of menstrual abnormalities (63, 66). In the Women’s Interagency HIV Study cohort, prolonged amenorrhea (lasting longer than 12 months) was more common among HIV-infected women than among non-HIV-infected women (67). Women infected with HIV were more than three times more likely than non-HIV-infected women to have prolonged amenorrhea without ovarian failure (67). Among women infected with or at risk of HIV, confounding variables, such as weight loss, chronic disease, substance abuse, or use of psychotherapeutic medications, may be related to menstrual disorders (68).

> **How do the diagnosis and management of menopausal symptoms differ between HIV-infected women and non-HIV-infected women?**

Menopause is diagnosed the same way in women with HIV as in uninfected women. Women with HIV may use topical or systemic hormone therapy (HT) for the management of menopausal symptoms, although there are potential interactions with antiretroviral medications that may require higher systemic HT doses. Systemic HT should be avoided in women taking fosamprenavir. Osteoporosis screening, diagnosis, and management are the same as in non-HIV infected women.

As life expectancies for women living with HIV increase and older women are more frequently being diagnosed with HIV, more HIV-infected women are experiencing menopause. Although some studies suggest that the mean age at menopause for HIV-infected women is younger than that for uninfected women, others show no difference (69). A variety of factors associated with earlier menopause, including current smoking, substance abuse, African American race, lower socioeconomic level, and low relative body weight, are common among women with HIV and may explain the earlier age of menopause in some studies (70). Degree of immunodeficiency and coinfection with hepatitis C and HIV also are associated with earlier menopause (71, 72). Women with HIV have high rates of prolonged amenorrhea. Serum follicle-stimulating hormone measurement can be helpful in clarifying whether amenorrhea is related to anovulation or menopause (73).

Menopausal symptoms may be more frequent in women with HIV (74), which may be partly related to comorbidities, antiretroviral therapy, and HIV itself. Despite the high prevalence of menopausal symptoms, use of HT is low in this population because of the increased pill burden and fear of drug interactions (73). Antiretroviral therapy and HT drug interactions have not been studied, but pharmacokinetic studies show interactions between hormonal contraception and many antiretroviral drugs (see “What methods of contraception are the most effective for women with HIV, and what methods are contraindicated?”). Because similar interactions may occur with HT, higher doses may be necessary to achieve symptomatic relief (73). Concomitant use of contraceptive hormones and fosamprenavir leads to decreased antiretroviral levels, so simultaneous use of HT and fosamprenavir is not recommended (73). Hormone therapy should not be
How should HIV-infected women be counseled about transmission prevention?

Women with HIV can decrease the risk of transmission by making behavioral changes, using condoms, and consistently using antiretroviral therapy. Partners of women with HIV can reduce the risk of transmission by using antiretroviral preexposure prophylaxis (PrEP). The CDC provides detailed guidance for clinicians about how to counsel patients with HIV regarding transmission prevention (83).

Women with HIV should be screened for risk behaviors and offered behavioral interventions annually, and more frequently if necessary, to reduce high-risk sexual and drug behaviors that can transmit HIV (52). The CDC has recommended topics to include during screening (Box 1) and counseling about how to prevent transmission of HIV to others (Box 2) (52). Innovative and successful interventions (emphasizing cognitive theory and the theory of gender and power) to decrease risk taking by HIV-infected patients have been developed for diverse populations (84). The underlying principle of providing effective risk-reducing counseling is to individualize the message provided to the patient. Behavioral interventions that target women and adolescents in high-risk populations are crucial to decrease rates of morbidity and mortality from HIV and AIDS. The CDC provides a compendium of evidence-based interventions and best practices for HIV prevention, which includes individual and group counseling, discussion, role play, written material, and interactive media behavioral interventions, many of which were validated in women living with HIV (85).

Women living with HIV should be counseled about serosorting and seropositioning and their limitations. Serosorting is the practice of limiting unprotected sex to partners believed to have the same HIV status. For example, individuals with HIV have unprotected sex only with individuals believed to be HIV-infected. Serosorting may result in HIV transmission if assumptions about the partner’s HIV status are incorrect or may result in acquiring STIs and, more rarely, can lead to superinfection (the acquisition of new HIV strains from the infected partner) (52). Seropositioning is the practice of modifying sexual activity based on beliefs about the partner’s HIV infection status and using sexual positioning that lowers a partner’s risk of acquiring HIV (order from lowest to highest risk: insertive fellatio, receptive fellatio, insertive penile–vaginal sex, receptive penile–vaginal sex, insertive anal sex, receptive anal sex) (52). Although the risk varies with the type of sexual activity, there is risk of transmission with all types (86).

Women living with HIV should use condoms to prevent transmission of HIV as well as transmission and acquisition of other STIs (24, 52). A meta-analysis showed that consistent use of male condoms resulted in an 80% reduction in the risk of HIV transmission among HIV serodiscordant couples (couples in which one individual is HIV infected) (87). Women with HIV generally should not use vaginal spermicides that contain nonoxynol-9 because they may increase the risk of HIV transmission by disrupting the genital epithelium (88, 52).

Women with HIV should take antiretroviral therapy, with the goal of achieving a fully suppressed HIV viral load, for their own benefit and to decrease transmission to uninfected partners. In a meta-analysis of 11 cohorts of 5,021 heterosexual discordant couples, the rate of transmission per 100 person-years from infected partners treated with antiretroviral therapy was 0.46 (95% confidence interval [CI], 0.19–1.09) compared with 5.64 (95% CI, 3.28–9.70) without antiretroviral therapy (89).
Box 1. Centers for Disease Control and Prevention’s Recommendations for Topics to Cover During Risk Screening of Human Immunodeficiency Virus-Infected Patients

- Sexual behaviors
  - Sexual practices (eg, vaginal, penile, anal, or oral sex; insertive versus receptive sex, including recent condom use)
  - Sex partners (eg, number, age, gender, human immunodeficiency virus (HIV) status, drug-use history, and recent diagnoses of sexually transmitted infections (STIs) in partners; whether a partner is new or committed; where partners met; intimate partner violence)
  - Sexual activity that may expose others to blood (eg, sexual abuse; sex during menses; or use of sexual aids, devices, or toys that cause anal or genital trauma, inflammation, or irritation)
  - Use of serosorting* and seropositioning†
- Alcohol and drug-use behaviors
  - Recent and ever use of substances for health or recreational purposes (eg, alcohol, methamphetamine, ecstasy, ketamine, nitrites, marijuana, cocaine)
  - Use of these substances before, during, or after sexual activity
  - Sharing drug-injection equipment (eg, needles, syringes, cotton, cooker, water)
  - Drug-injection partners (eg, number of partners, partners’ HIV infection status)
  - Use of new, sterile syringes and other drug-injection equipment, including sources of equipment
- Biomedical and biologic factors that may influence infectiousness or the risk of HIV transmission
  - Recent diagnosis of acute HIV infection based on HIV test results or clinical evaluation
  - Recent use of antiretroviral therapy
  - Recent diagnosis of STI and STI treatment
  - Recent condom use
  - Contraceptive use
  - Current or planned pregnancy
  - Use of special methods to achieve pregnancy
- Biomedical and biologic factors that may influence the risk of acquiring HIV by partners or the fetus or infant of a woman with HIV
  - Recent condom use
  - Recent diagnoses of STI
  - Current or planned pregnancy
  - Contraceptive use
  - Inconsistent use of sterile drug-injection equipment
  - Use of preexposure prophylaxis or nonoccupational postexposure prophylaxis with antiretroviral medications

*The practice of limiting unprotected sex to partners believed to have the same HIV infection status (eg, individuals with HIV have unprotected sex only with individuals believed to be HIV infected).
†The practice of modifying sexual activity based on beliefs about the partner’s HIV infection status and using sexual positioning that lowers a partner’s risk of acquiring HIV (order from lowest to highest risk: insertive fellatio, receptive fellatio, insertive penile–vaginal sex, receptive penile–vaginal sex, insertive anal sex, receptive anal sex).

Box 2. Centers for Disease Control and Prevention Recommendations for Important Topics for Informing Women With Human Immunodeficiency Virus About How to Prevent Transmission of Human Immunodeficiency Virus to Others ¶

• General topics
  — How human immunodeficiency virus (HIV) is spread (eg, exchange of body fluid) and not spread (eg, handshake)
  — How sustained high adherence to antiretroviral treatment suppresses viral load and reduces the risk of transmitting HIV
  — How preventing or treating symptomatic and asymptomatic sexually transmitted infections (STIs) can improve health and decrease the risk of transmitting HIV
  — How avoiding drugs and alcohol can improve health and may promote safer drug-use or sexual behaviors
  — Benefits of support from family, friends, or partners to encourage safer behaviors
  — Benefits and risks of selectively disclosing HIV infection to others (eg, those at a heightened risk of HIV exposure, health care providers) and methods that minimize the risk of negative consequences of disclosure
  — Benefits of knowing the HIV-infection status of sex and drug-injection partners
  — How serosorting may result in HIV transmission if assumptions about partners' HIV status are incorrect or may result in acquiring STIs and, more rarely, new HIV strains from infected partners
  — Characteristics of HIV-uninfected sex and drug-injection partners that increase their risk of HIV acquisition (eg, sharing nonsterile drug-injection equipment, STIs)
  — Availability of preexposure prophylaxis and nonoccupational postexposure prophylaxis for HIV-uninfected partners when clinically indicated to prevent HIV acquisition
  — Availability of voluntary, confidential, and usually free health department services to notify sex or drug-injection partners of possible HIV exposure

• Topics related to sexual transmission (or perinatal transmission if pregnant woman becomes HIV infected through sexual contact)
  — Communicating with partners to foster healthy sexuality (eg, noncoercive sexual contact, negotiating safer behaviors)
  — Methods that HIV-discordant couples can use to reduce the risk of sexual HIV transmission, including the following:
    ▪ Using latex and polyurethane male and female condoms: negotiating with partner to use; reminders to use; correct and consistent use
    ▪ Using dental dams or other physical barriers while having oral–vaginal or oral–rectal sex
    ▪ Using sexual positioning that lowers a partner’s risk of acquiring HIV (order from lowest to highest risk: insertive fellatio, receptive fellatio, insertive penile–vaginal sex, receptive penile–vaginal sex, insertive anal sex, receptive anal sex)*
    ▪ Practicing mutual masturbation and digital penetration and using clean sex toys that do not cause anal or genital bleeding or trauma†
    ▪ Avoiding exposing partner to blood, semen, vaginal secretions, and other body fluids that are visibly contaminated with blood
    ▪ Avoiding sexual intercourse with HIV-infected individuals after invasive anal or genital procedures until healing is complete† or when anal or genital bleeding, inflammation, or trauma may be present (eg, if infected with STI or when using irritating sexual aids)†
    ▪ Using only water-based spermicides and lubricants that do not contain nonoxynol-9
    ▪ Avoiding contact with body fluids of HIV-infected individuals after invasive oral or dental procedures
    ▪ Reducing the number of sex partners
  — Risk of acquiring STIs in genital and nongenital sites if having genital, anal, or oral sexual contact
  — Presence of symptomatic or asymptomatic STI in individuals with HIV
  — Presence of symptomatic or asymptomatic STI in HIV-uninfected partners, which may increase their risk of acquiring HIV and may indicate a substantial risk of HIV that is a clinical indication for preexposure prophylaxis
  — Methods to prevent unintended pregnancy

(continued)
be counseled that they still can transmit HIV (52). Human immunodeficiency virus can at times be detected in the semen, rectal secretions, female genital secretions, and pharynx of HIV-infected patients with undetectable plasma viral loads, and consistent reduction of viral load depends on close adherence to antiretroviral regimens.

**What is the role of preexposure prophylaxis and postexposure prophylaxis in preventing HIV transmission?**

A seronegative male partner of an HIV-infected woman should consider use of antiretroviral preexposure prophylaxis with a daily fixed dose of oral tenofovir disoproxil fumarate and emtricitabine to reduce the risk of HIV acquisition (83, 91, 92). This combination was approved by the U.S. Food and Drug Administration for HIV prevention in 2013, and the CDC has issued guidance for its use (83). Efficacy of preexposure prophylaxis for decreasing transmission is supported by six randomized trials in a number of populations (92). In a randomized trial of discordant heterosexual couples in Kenya and Uganda without universal access to antiretroviral treatment for the infected person, the use of preexposure prophylaxis was associated with a 75% overall reduction in HIV transmission, and for women living with HIV there was an 84% reduction in HIV transmission to their uninfected male partners (93). Given its safety and effectiveness, women living with HIV should be counseled that their uninfected partners should be informed about the availability of preexposure prophylaxis (83). If preexposure prophylaxis is used, the importance of adherence and periodic HIV testing should be emphasized.

Women infected with HIV should be counseled on the availability of nonoccupational postexposure prophylaxis for uninfected partners when clinically indicated on a one-time or infrequent basis to reduce the risk of HIV acquisition in the event of inadvertent sexual or

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Box 2. Centers for Disease Control and Prevention Recommendations for Important Topics for Informing Women With Human Immunodeficiency Virus About How to Prevent Transmission of Human Immunodeficiency Virus to Others (continued)

<table>
<thead>
<tr>
<th>Topics related to sexual transmission (or perinatal transmission if pregnant woman becomes HIV infected through sexual contact) (continued)</th>
</tr>
</thead>
<tbody>
<tr>
<td>– Options to become pregnant that reduce the risk of HIV transmission</td>
</tr>
<tr>
<td>– Interventions to reduce the risk of perinatal transmission</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Topics related to transmission resulting from substance use and sharing drug-injection equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>– Health benefits of abstaining from or reducing substance use</td>
</tr>
<tr>
<td>– The relation between use of some recreational drugs and higher risk sexual practices (eg, methamphetamines)</td>
</tr>
<tr>
<td>– Risk of transmitting HIV when sharing drug-injection equipment</td>
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<td>– Benefits of completing substance use treatment (that may include relapse prevention and opioid substitution programs)</td>
</tr>
<tr>
<td>– Methods to reduce the risk of transmitting HIV if drug injection continues, including the following:</td>
</tr>
<tr>
<td>■ Reduce the number of drug-injection partners</td>
</tr>
<tr>
<td>■ Use new, sterile equipment from reliable sources (pharmacies, syringe services programs)</td>
</tr>
<tr>
<td>■ Use sterile needles, syringes, fluids, cookers, and cotton each time to prepare and inject drugs</td>
</tr>
<tr>
<td>■ Use sterile water (preferable) or fresh tap water when preparing drugs</td>
</tr>
<tr>
<td>■ Never share or reuse drug-injection or preparation equipment</td>
</tr>
<tr>
<td>■ Clean injection sites with alcohol swabs before injection</td>
</tr>
<tr>
<td>■ Dispose of needles and syringes in safe places after each use</td>
</tr>
</tbody>
</table>

*Estimated risk of acquiring HIV from an HIV-infected partner (in order of lowest to highest risk): insertive fellatio, receptive fellatio, insertive vaginal sex, receptive vaginal sex, insertive anal sex, receptive anal sex.

†Including penile piercing devices, constrictive penile rings, or other sex aids, devices, or toys that have touched the blood or genital secretions of HIV-infected individuals.

‡Examples include tubal ligation; vasectomy; dilation and curettage; and removal of vaginal, cervical, and penile warts, polyps, and precancerous lesions.

parenteral HIV exposure within the past 72 hours (eg, unprotected intercourse, condom breakage, shared drug-injection equipment) (52). The CDC provides guidance for administration of nonoccupational postexposure prophylaxis, which should include two or three antiretroviral medications, and be continued for 28 days (94). Individuals taking nonoccupational postexposure prophylaxis require follow-up HIV testing (92, 94). Partners taking nonoccupational postexposure prophylaxis two or more times in the past year should be offered preexposure prophylaxis (92).

**What methods of contraception are the most effective for women with HIV, and what methods are contraindicated?**

The U.S. Department of Health and Human Services and the CDC recommend that all women with HIV who do not desire pregnancy be offered effective and appropriate contraceptive methods to reduce the likelihood of unintended pregnancy. No contraceptive methods are contraindicated, but there are special considerations about drug interactions with antiretroviral therapy regimens, risk of acquiring STIs, and risk of transmission of HIV to their partners. The CDC provides specific guidance on contraceptive use for women infected with HIV (see http://www.cdc.gov/reproductivehealth/contraception/USMEC.htm) (95).

Patients should be counseled that dual contraception (the concomitant use of condoms and an additional contraceptive method) is the optimal contraceptive strategy to reduce heterosexual transmission of HIV and other STIs and to minimize the risk of unintended pregnancy. Condoms are an effective, proven method of reducing transmission of infection with sexual intercourse but are not a particularly effective method of contraception, with a typical failure rate of 18% over 1 year (96). Condoms also are recommended to increase contraceptive efficacy when certain antiretroviral therapy regimens are used with certain types of hormonal contraception (95). Despite the recommendation for highly effective contraception among HIV-infected women not desiring pregnancy or on certain antiretroviral therapy regimens, condoms are the most commonly relied upon method among women with HIV, who are less likely than their seronegative counterparts to use highly effective contraception, including intrauterine devices (IUDs) (97). Spermicides and diaphragms (if used with spermicides) generally are not recommended because of an increased risk of HIV transmission to uninfected partners with use of nonoxynol-9 containing spermicides (95).

Hormonal contraception—including combined hormonal methods (pill, patch, and ring), the progestin-only pill, injection, implant, and levonorgestrel-releasing IUDs—generally is considered safe for use by HIV-infected women, including those who use antiretroviral therapy. A systematic review of 11 studies by the World Health Organization (98), which was updated with three additional studies in 2016 (99), showed no evidence of HIV disease progression or increased risk of death associated with the use of hormonal contraception methods, including combined hormonal methods, progestin-only pill, injections, implants, and levonorgestrel-releasing IUDs. The updated meta-analysis showed an adjusted hazard ratio for a composite measure of HIV disease progression of 0.83 (95% CI, 0.48–1.44) for oral contraceptive use and 0.72 (0.53–0.98) for injectables. Analysis of transmission risk is difficult because of potential confounding by differential condom use between hormonal contraceptive users and nonusers. Current studies of HIV transmission risk with hormonal contraceptive use are inconclusive, but the studies included in the World Health Organization systematic review did not find a significantly increased risk of female-to-male HIV transmission (98, 99).

Gynecologic care providers should consider drug-specific interactions between antiretroviral therapy and certain hormonal contraceptives when counseling patients about which method of hormonal contraception might be best for them. There are a number of known drug interactions between antiretroviral therapy and hormonal contraception. Hormonal contraceptives primarily are metabolized through sulphate and glucuronide conjugation in the liver and also are metabolized through cytochrome P450 enzymes. Human immunodeficiency virus antiretroviral agents have varying effects on these metabolic pathways. The data on the interactions between specific hormonal contraceptives and HIV antiretroviral agents are limited, particularly studies that report clinical outcomes such as pregnancy and are drug specific. The CDC’s U.S. Medical Eligibility Criteria for Contraceptive Use, 2016 (95), Guidelines for the Use of Antiretroviral Agents in HIV-1-Infected Adults and Adolescents (section on Drug Interactions) (6), and the Recommendations for Use of Antiretroviral Drugs in Pregnant HIV-1-Infected Women for Maternal Health and Interventions to Reduce Perinatal HIV Transmission in the United States provide frequently updated information by specific drug (62).

**Combined Hormonal Contraception and Progestin-Only Pills**

The co-administration of the nonnucleoside reverse transcriptase inhibitor efavirenz with combined hormonal contraceptives may lead to decreases in contraceptive
Contraceptive Implants

Efavirenz may decrease the efficacy of contraceptive implants (100–103). Despite a potential small decrease in contraceptive effectiveness, implants remain highly effective, and the advantages of use by women concurrently using efavirenz generally outweigh the theoretical or proven risks (MEC 2) (95). There are theoretical concerns that interactions between ritonavir-boosted protease inhibitors, fosamprenavir, or nelfinavir and implants may reduce effectiveness of the implant; however, the advantages of implant use generally outweigh the theoretical or proven risks (MEC category 2) (95). Evidence does not demonstrate significant interactions between nevirapine and implants (101–104).

Injectable Contraception (Depot Medroxyprogesterone Acetate)

Depot medroxyprogesterone acetate (DMPA) can be prescribed to women with HIV because it is considered safe (MEC category 1) and effective for use by HIV-infected women and does not appear to have drug interactions with antiretroviral medications (95). There is theoretical concern that interactions between fosamprenavir and hormonal contraceptives may decrease the effectiveness of fosamprenavir; however, the advantages of use of DMPA generally outweigh the theoretical or proven risks (MEC category 2) (95). No drug interactions have been demonstrated with concurrent use of DMPA and several other antiretroviral medications (95, 101, 104).

Long-Acting Reversible Contraception

The copper IUD and levonorgestrel-releasing IUDs can be used by HIV-infected women. The CDC currently recommends that use of the copper IUD and levonorgestrel-releasing IUDs is safe (MEC category 1) for HIV-infected women. In women who are not clinically well or not using antiretroviral drugs, the advantages of IUD initiation generally outweigh the theoretical or proven risks (MEC category 2), and IUD continuation is considered safe (MEC category 1). There are no known drug interactions between copper or levonorgestrel-releasing IUDs (95). These recommendations were made on the basis of review of data from eight studies of the copper and levonorgestrel-releasing IUDs in HIV-infected women (105). A randomized trial showed the copper IUD is safe and effective for use in HIV-infected women, with a higher rate of efficacy compared with combined oral contraceptives and with a low rate of pelvic inflammatory disease (0.16 cases per 100 woman-years) (106). A prospective cohort study showed no association between HIV infection and complications in the first 2 years of using a copper IUD (107).

Emergency Contraception

Emergency contraception, including emergency contraceptive pills (progestin-only, ulipristal acetate, and combined oral contraceptives) and the copper IUD, should be offered to HIV-infected women in appropriate cases, just as it would be offered to women without HIV. For most medical conditions, the benefits of emergency contraception are considered to outweigh the risks (95, 113). Concerns about drug interactions between some antiretroviral therapy regimens and emergency contraceptive pills exist that are similar to the concerns for combined hormonal contraception (62). The only known study of the use of emergency contraceptive pills in women who received antiretroviral therapy showed a decrease in levonorgestrel levels when given with efavirenz (114). There are no studies of interactions of antiretroviral therapy regimens with ulipristal acetate, but interactions could be present because of similar metabolic pathways (62).
Sterilization

In general, no medical conditions restrict a person’s eligibility for sterilization, and it is an appropriate method for many HIV-infected women (95). As with other medical conditions, consideration should be given to optimizing the patient’s health status before elective surgery. As with other patients, the decision to have sterilization in the setting of HIV should be voluntary and noncoerced.

**How should patients who are planning to become pregnant be counseled in order to achieve optimal maternal and fetal health?**

All reproductive-aged women living with HIV should receive prepregnancy counseling if considering pregnancy. Prepregnancy counseling should include a detailed discussion of interventions to reduce the risk of perinatal transmission, ways to optimize women’s long-term health, and the possible effects of antiretroviral medications on the fetus. Women should be counseled that they should be receiving treatment with antiretroviral therapy and have a viral load below the limit of detection before becoming pregnant. Artificial insemination is the safest way for an HIV-infected woman to become pregnant while minimizing the risk of HIV transmission to an HIV-negative partner (62).

The advent of antiretroviral therapy and the reduction of perinatal transmission of HIV over the past decade to achievable rates of less than 1% have allowed HIV-infected women to live longer and healthier lives and to have more fertility options. A cohort study reported that HIV-infected women have similar reproductive patterns to non-HIV-infected women, with most already having children and many wanting children in the future (115).

Similar to prepregnancy counseling for non-HIV-infected women, the goals for HIV-infected women are to improve the health of the women before pregnancy and to identify risk factors for adverse maternal and fetal outcomes. Safe sex practices and avoidance of STIs should be discussed, and both partners should be screened for STIs, which should be treated if present. Risky behaviors, such as smoking and substance abuse, should be reduced and the use of folic acid before pregnancy should be recommended. Overall health should be optimized and health care should be coordinated with other health care providers to ensure vaccinations are up to date (62).

Any HIV-infected woman contemplating pregnancy should be counseled that she should be receiving treatment with antiretroviral therapy, with the goal of a plasma viral load suppressed to an undetectable level before achieving pregnancy (62). The choice of antiretroviral therapy in women of childbearing capacity should take into consideration the regimen’s effectiveness, a woman’s hepatitis B status, the teratogenic potential of the medications, potential drug interactions, and the possible maternal and fetal adverse outcomes (62). Regimens without efavirenz should be considered if an HIV-infected woman is considering pregnancy. Therapy-associated adverse effects (eg, hyperglycemia, anemia, and hepatic toxicity) that can affect maternal-fetal health should be evaluated and managed. All women with HIV who are considering pregnancy should be encouraged to start prenatal care early and should be counseled about the availability of measures to decrease the risk of vertical transmission of HIV, including treating all HIV-infected pregnant women with antiretroviral therapy with the goal of reaching undetectable plasma HIV RNA levels before pregnancy, the need for cesarean delivery for HIV-infected women who fail to achieve plasma HIV RNA level of less than 1,000 copies per millimeter by 36 weeks of gestation, avoidance of breastfeeding, and providing newborns with prophylactic antiretroviral medications for several weeks (116).

Serodiscordant couples should receive information about the risks of sexual and perinatal transmission and about safer methods to become pregnant. Human immunodeficiency virus-negative partners of HIV-infected women should be counseled that the lowest risk of infection is achieved through homologous artificial insemination (117), including the option of self-insemination in the periovulatory period (62). Couples who wish to become pregnant naturally should be educated about timed, periovulatory unprotected intercourse after the partner with HIV has achieved maximal viral suppression with antiretroviral therapy (62). The partner without HIV should consider preexposure prophylaxis to further reduce the risk of HIV acquisition (83). The American Society for Reproductive Medicine’s Ethics Committee recommends that fertility services be offered to HIV-infected individuals and couples willing to use risk-reducing therapies to the extent that it is economically and technically feasible. These recommendations also contain guidance for serodiscordant couples in which the male is HIV infected (117). Costs associated with advanced reproductive techniques, such as in vitro fertilization and intracytoplasmic sperm injection, may limit access for many couples.

In the event of an unintended pregnancy, patients should be counseled about pregnancy options, including parenting, adoption, and abortion, and should be referred for such counseling. For patients who wish to continue their pregnancy, appropriate care to optimize maternal and pregnancy outcomes should be initiated immediately (62).
Are there special considerations when caring for adolescents with HIV?

Obstetrician–gynecologists and other gynecologic care providers who treat adolescents with HIV need to use interviewing and counseling techniques that are appropriate to the cognitive level of adolescents and that take into consideration the social context of adolescents living with HIV.

With advancements in antiretroviral therapy, the number of adolescent survivors of perinatal HIV infection continues to grow. In 2010, an estimated 26% of individuals aged 13–24 years who have HIV infections were infected perinatally (118). Adolescents and young adults who have HIV, who were either behaviorally or perinatally infected, have higher rates of cognitive impairment and mental health problems such as anxiety, depression, attention-deficit/hyperactivity disorder, and posttraumatic stress disorder when compared with their HIV-negative counterparts (119).

Ideally, care for an HIV-infected adolescent should use a holistic, interdisciplinary approach that addresses the young person’s emotional and social needs in addition to providing comprehensive medical treatment. Holistic care seeks to understand the larger context of an adolescent’s life that may affect her medical care, including a need to “fit in,” a desire to “be normal,” and individual experiences with the stigma of having HIV or being bullied. Holistic care is interdisciplinary and often includes social workers, psychologists, and peer support groups along with medical services to encourage retention of patients in care and adherence to treatment, which is particularly challenging among adolescents. Health care providers need to be aware of the social context of adolescents with HIV. A study of HIV-infected adolescents and young adults aged 13–21 years who lived in urban environments showed that 79% had witnessed violence, 53% had experienced violence, and 18% were victims of sexual violence before age 13 years (120). Poor adherence to antiretroviral drug regimens is a common issue in the care of HIV-infected adolescents and young adults (121–123). Adolescents with HIV in whom substance abuse and mental health problems are concomitantly diagnosed may need to be treated for these conditions before their HIV infection can be managed (124). When available, adolescent-friendly, multidisciplinary specialty clinics that provide a “one-stop-shop” approach to health care are associated with higher retention in the care of HIV-infected adolescents (119, 125). A practitioner who provides obstetric and gynecologic services may need to provide care to HIV-infected adolescents and, thus, should be knowledgeable about the treatment options available in their communities, be able to educate individuals with HIV about the illness, and know where to refer their patients for support services typically provided by specialists who care for HIV-infected patients.

When caring for adolescents, disclosure issues need to be considered. Physicians should be familiar with the federal and state laws that affect confidentiality in the provision of health care to HIV-infected adolescents, including the Health Insurance Portability and Accountability Act privacy rule. Clinicians should contact their local health departments for information on reporting infectious diseases and partner notification. During interviews with adolescents, it is important to share the limitations of confidentiality. Adolescence is a natural time for the exploration of sexuality. This process may be particularly complex and confusing for a young person who is infected with HIV. Adolescents who are infected with HIV should receive counseling and care that allows them to realize their sexual and reproductive goals while maximizing their personal health and minimizing the risk of unintended pregnancy, acquisition of new STIs, and transmission of infection to partners or offspring. When counseling adolescents with HIV regarding contraception, recommend the most effective reversible methods based on the patient’s goals, antiretroviral regimen, and clinical status.

Summary of Recommendations

The following recommendations are based on good and consistent scientific evidence (Level A):

- Women living with HIV should use condoms to prevent transmission of HIV as well as transmission and acquisition of other STIs.
- Women with HIV should take antiretroviral therapy, with the goal of achieving a fully suppressed HIV viral load, for their own benefit and to decrease transmission to uninfected partners.
- A seronegative male partner of an HIV-infected woman should consider use of antiretroviral pre-exposure prophylaxis with a daily fixed dose of oral tenofovir disoproxil fumarate and emtricitabine to reduce the risk of HIV acquisition.

The following recommendations are based on limited or inconsistent scientific evidence (Level B):

- The copper IUD and levonorgestrel-releasing IUDs can be used by HIV-infected women.
Women with HIV should be screened for risk behaviors and offered behavioral interventions annually, and more frequently if necessary, to reduce high-risk sexual and drug behaviors that can transmit HIV.

Women with HIV generally should not use vaginal spermicides that contain nonoxynol-9 because they may increase the risk of HIV transmission.

Hormonal contraception—including combined hormonal methods (pill, patch, and ring), the progestin-only pill, injection, implant, and levonorgestrel-releasing IUDs—generally is considered safe for use by HIV-infected women, including those who use antiretroviral therapy. Gynecologic care providers should consider drug-specific interactions between antiretroviral therapy and certain hormonal contraceptives when counseling patients about which method of hormonal contraception might be best for them.

Depot medroxyprogesterone acetate can be prescribed to women with HIV because it is considered safe (MEC category 1) and effective for use by HIV-infected women and does not appear to have drug interactions with antiretroviral medications.

In women infected with HIV who are younger than 30 years, if the initial cytology screening result is normal, the next cytology screening should be in 12 months. If the results of three consecutive annual cervical cytology screenings are normal, follow-up cervical cytology screening should be every 3 years. Co-testing (cervical cytology and HPV screening) is not recommended for HIV-infected women younger than 30 years.

Women infected with HIV who are 30 years and older can be screened with cytology alone or co-testing. After women screened with cytology alone have had three consecutive annual test results that are normal, follow-up screening can be every 3 years. Women infected with HIV who have one negative co-test result (normal cytology and HPV negative) can have their next cervical cancer screening in 3 years.

The following recommendations are based primarily on consensus and expert opinion (Level C):

Patients should be counseled that dual contraception (the concomitant use of condoms and an additional contraception method) is the optimal contraceptive strategy to reduce heterosexual transmission of HIV and other STIs and to minimize the risk of unintended pregnancy.

All reproductive-aged women living with HIV should receive prepregnancy counseling if considering pregnancy.

Human papillomavirus vaccination for primary prevention should be administered to HIV-infected females following the same guidelines as for uninfected females.

Women with HIV should receive the same treatment for bacterial vaginosis as women without HIV infection.

Uncomplicated vulvovaginal candidiasis in women with HIV should be treated with topical antifungals or oral fluconazole as in women without HIV. Women with HIV who have severe or recurrent vulvovaginal candidal infection should be treated with oral fluconazole or topical antifungals for at least 7 days.

Women with HIV should be screened at entry to care and at least annually thereafter with nucleic acid amplification tests for *Neisseria gonorrhoeae* and *Chlamydia trachomatis*, serologic testing for syphilis, and testing for vaginal trichomoniasis. Screening for hepatitis C virus should be performed at entry to care.

Herpes simplex virus type-specific serologic testing can be offered to HIV-infected women with unknown HSV infection status, and suppressive therapy offered to women with HSV-2. Women with HIV and genital herpes should be counseled that suppression therapy for genital herpes does not reduce the risk of transmission of HSV or HIV to their susceptible partners.

Women with HIV should receive the same evaluation and treatment for menstrual disorders as uninfected women.

Menopause is diagnosed the same way in women with HIV as in uninfected women.

Women with HIV may use topical or systemic hormone therapy (HT) for the management of menopausal symptoms, although there are potential interactions with antiretroviral medications that may require higher systemic HT doses. Systemic HT should be avoided in women taking fosamprenavir.

Emergency contraception, including emergency contraceptive pills (progestin-only, ulipristal acetate, and combined oral contraceptives) and the copper IUD, should be offered to HIV-infected women in appropriate cases, just as it would be offered to women without HIV.
Women infected with HIV should be counseled on the availability of nonoccupational postexposure prophylaxis for uninfected partners when clinically indicated on a one-time or infrequent basis to reduce the risk of HIV acquisition in the event of inadvertent sexual or parenteral HIV exposure within the past 72 hours (eg, unprotected intercourse, condom breakage, shared drug-injection equipment).

Artificial insemination is the safest way for an HIV-infected woman to become pregnant while minimizing the risk of HIV transmission to an HIV-negative partner.

Obstetrician–gynecologists and other gynecologic care providers who treat adolescents with HIV need to use interviewing and counseling techniques that are appropriate to the cognitive level of adolescents and that take into consideration the social context of adolescents living with HIV.

References


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virus shedding in HIV coinfected adults: an observational cohort study. BMJ Open 2014;4:e004210. (Level II-3) [PubMed] [Full Text] ↩


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The MEDLINE database, the Cochrane Library, and the American College of Obstetricians and Gynecologists’ own internal resources and documents were used to conduct a literature search to locate relevant articles published between January 2000–June 2016. The search was restricted to articles published in the English language. Priority was given to articles reporting results of original research, although review articles and commentaries also were consulted. Abstracts of research presented at symposia and scientific conferences were not considered adequate for inclusion in this document. Guidelines published by organizations or institutions such as the National Institutes of Health and the American College of Obstetricians and Gynecologists were reviewed, and additional studies were located by reviewing bibliographies of identified articles. When reliable research was not available, expert opinions from obstetrician–gynecologists were used.

Studies were reviewed and evaluated for quality according to the method outlined by the U.S. Preventive Services Task Force:

I  Evidence obtained from at least one properly designed randomized controlled trial.
II-1 Evidence obtained from well-designed controlled trials without randomization.
II-2 Evidence obtained from well-designed cohort or case–control analytic studies, preferably from more than one center or research group.
II-3 Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments also could be regarded as this type of evidence.
III  Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees.

Based on the highest level of evidence found in the data, recommendations are provided and graded according to the following categories:

Level A—Recommendations are based on good and consistent scientific evidence.
Level B—Recommendations are based on limited or inconsistent scientific evidence.
Level C—Recommendations are based primarily on consensus and expert opinion.