CLINICAL GUIDELINES PROGRAM
NEW YORK STATE DEPARTMENT OF HEALTH AIDS INSTITUTE | HIV • HCV • STIs • SUBSTANCE USE • LGBTQ+ HEALTH

Screening for Cervical Dysplasia and Cancer in Adults With HIV

Updates, Authorship, and Related Resources

Date of current publication	October 16, 2026
Highlights of changes, additions, and updates in the October 16, 2026 edition	• Global: Comprehensive update; discussion and references updated throughout • Screening for Cervical Abnormalities section: – Updated recommendation (see underlined text): For patients younger than 30 years, primary HPV testing is not recommended (A2†). For these patients, clinicians should perform cervical cytology at age 21 years, regardless of the mode of HIV acquisition (A2). If the cytology result is negative (result of NILM), the clinician should repeat testing at 1 year, and if negative, repeat every 3 years thereafter. (A2) – Updated recommendation (see underlined text): For patients aged 30 years and older, clinicians should perform cytology with HPV cotesting within 3 years of previous negative testing. (A2) ○ If the baseline cytology and HPV test results are negative, the clinician should repeat both tests every 3 years thereafter. (A2) ○ HPV testing with reflex to cytology is acceptable. (A3) ○ Cytologic surveillance alone is acceptable only if HPV cotesting is unavailable. (A1) ○ If initial testing with cytology alone is negative (result of NILM), the clinician should repeat testing at 1 year, and if negative, repeat every 3 years thereafter. (A2) – New recommendation: For patients aged 30 years and older who refuse pelvic exams, clinicians should offer the option of self-collection of HPV testing specimens after a shared decision-making discussion that includes the need for cytologic testing or colposcopy in the event of an HPV pooled positive or HPV type 16/18/45 positive result. (A3) – New recommendation: For patients aged 30 years and older with a negative self- or clinician-collected primary HPV test result, clinicians should repeat testing in 3 years. (A2) – Updated Box 1 to include primary HPV testing results – Added detailed discussion of primary HPV testing and self-collection of HPV testing specimens • Screening for Cervical Dysplasia During Pregnancy section: – Updated recommendation (see underlined text): Clinicians should perform cervical cytology and HPV screening for pregnant patients with HIV as appropriate for each patient's age. (A2†) – New recommendation: When HPV testing is used as the primary screening method and the result is pooled positive, the test will reflex to cytology: If the cytology result is negative, the clinician should repeat testing at 1 year (A2); If the cytology result is ASC-US or greater, the clinician should refer the pregnant patient for colposcopy. (A2) – New recommendation: When a pregnant patient tests positive for HPV type 16, 18, or 45, the clinician should refer them as soon as possible (and within 30 days) for colposcopic evaluation, regardless of the cytology result. (A2) – Updated recommendation (see underlined text): Clinicians should ensure that follow-up appointments are in place for abnormal cytology or colposcopy results, no earlier than 4 weeks and ideally no later than 8 weeks postpartum. (A2) • Follow-Up of Abnormal Cervical Cytology Results section: Added Figure 2: Follow-Up of Primary HPV Testing Results in Patients With HIV

Updates, Authorship, and Related Resources

Intended users	Clinicians who provide care to adults with HIV who are at risk of developing HPV-associated cervical dysplasia or cancer
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Screening for Cervical Dysplasia and Cancer in Adults With HIV

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Committee: Medical Care Criteria Committee

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All Recommendations

☑ ALL RECOMMENDATIONS: Screening for Cervical Dysplasia and Cancer in Adults With HIV

HPV Prevention

- Clinicians should recommend the nonavalent HPV vaccine 3-dose series (0, 1–2, and 6 months) to all individuals with HIV aged 9 to 45 years regardless of CD4 cell count, prior cervical or anal screening results, HPV test results, HPV-related cytologic changes, or other history of HPV-related lesions. (A3)

Cervical Cancer Prevention

- Clinicians should perform age- and risk-appropriate screening in patients with HIV who are at risk of cervical cancer (A3) and promote the following measures that may reduce risk:
  - HPV vaccination (A3)
  - ART to suppress HIV viral load (A2)
  - Tobacco use cessation (A2)

☑ ALL RECOMMENDATIONS: Screening for Cervical Dysplasia and Cancer in Adults With HIV

  - Sexual exposure prevention strategies, including using barrier protection (A3) and reducing the number of sex partners and associated sexual networks when possible (A3)
- Clinicians should establish a schedule for routine cervical screening based on a patient's medical history, anatomical inventory, age, and risk profile. (A2)

Pelvic Health Exam

- Clinicians should perform an anatomical inventory to identify patients eligible for screening. (A*)
- Clinicians should perform screening for cervical and genital tract dysplasia and cancer in patients with HIV who have or have had a cervix and meet the below criteria for age-based screening. (A2)
- Clinicians should perform physical examinations of the vulva, vagina, and anogenital perineum at least annually and at the time of cervical cytology and to assess interval complaints. (A3) Abnormal cytology results may reflect vaginal, vulvar, or anogenital dysplasia in the absence of cervical dysplasia.

Age-Based Screening

- For patients younger than 30 years, primary HPV testing is not recommended. (A2†) For these patients, clinicians should perform cervical cytology at age 21 years, regardless of the mode of HIV acquisition. (A2)
  - If the cytology result is negative (result of NILM), the clinician should repeat testing at 1 year, and if negative, repeat every 3 years thereafter. (A2)
- For patients aged 30 years and older, clinicians should perform cytology with HPV cotesting within 3 years of previous negative testing. (A2)
  - If the baseline cytology and HPV test results are negative, the clinician should repeat both tests every 3 years thereafter. (A2)
  - HPV testing with reflex to cytology is acceptable. (A3)
  - Cytologic surveillance alone is acceptable only if HPV cotesting is unavailable. (A3)
  - If initial testing with cytology alone is negative (result of NILM), the clinician should repeat testing at 1 year, and if negative, repeat every 3 years thereafter. (A2)
- For patients aged 30 years and older who refuse pelvic exams, clinicians should offer the option of self-collection of HPV testing specimens after a shared decision-making discussion that includes the need for cytologic testing or colposcopy in the event of an HPV pooled positive or HPV type 16/18/45 positive result. (A3)
- Clinicians should repeat cervical cytology 2 to 4 months after a result of "insufficient specimen for analysis" has been reported. (A3)
- For patients aged 30 years and older with a negative self- or clinician-collected primary HPV test result, clinicians should repeat testing in 3 years. (A2)
- Clinicians should continue cervical cancer screening for patients aged 65 years and older. (A2)
- For patients aged 65 years and older who wish to stop screening, clinicians should engage them in shared decision-making informed by such factors as life expectancy and risk of developing cervical cancer. (A3)

Concomitant Screening for Anal Cancer and STIs

- Clinicians should perform concomitant anal screening starting at age 45 years as outlined in the NYSDOH AI guideline Screening for Anal Dysplasia and Cancer in Adults With HIV.
- Regardless of a patient's cervical cytology results, clinicians should perform routine STI screening according to Centers for Disease Control and Prevention 2021 Sexually Transmitted Infections Treatment Guidelines.

Post-Hysterectomy Cancer Screening

- In patients with an intact cervix, clinicians should perform cervical cytology as noted above [a]. (A*)
- In patients with HIV who have undergone total hysterectomy (uterus and cervix removed), clinicians should screen for vaginal intraepithelial neoplasia by performing *vaginal* cytology with HPV cotesting and manage as noted above. (A2†)
- If a patient's hysterectomy was performed to treat HSILs, CIN 2 or CIN 3, or AIS [a], clinicians should perform 3 consecutive annual HPV tests, after which long-term surveillance should be initiated, with HPV testing every 3 years for 25 years. (A3)

☑ ALL RECOMMENDATIONS: Screening for Cervical Dysplasia and Cancer in Adults With HIV

Post-Cervical Excision HPV Testing

- After a patient has undergone cervical excision, clinicians should perform cervical cytology with HPV testing as follows: 6 months after excision, annually until 3 sequential negative test results have been obtained, and every 3 years thereafter for at least 25 years. (A3)

Screening for Cervical Dysplasia During Pregnancy

- Clinicians should perform cervical cytology and HPV screening for pregnant patients with HIV as appropriate for each patient's age. (A2†)
- Clinicians should refer pregnant patients for follow-up with experienced colposcopy providers when the following cervical cytology results are obtained: repeated ASC-US, ASC-US with HPV, negative cytology with persistently positive HPV, ASC-H, or LSIL or greater. (A3)
- When HPV testing is used as the primary screening method and the result is pooled positive, the test will reflex to cytology:
  - If the cytology result is negative, the clinician should repeat testing at 1 year. (A2)
  - If the cytology result is ASC-US or greater, the clinician should refer the pregnant patient for colposcopy. (A2)
- When a pregnant patient tests positive for HPV type 16, 18, or 45, the clinician should refer them as soon as possible (and within 30 days) for colposcopic evaluation, regardless of the cytology result. (A2)
- When cervical dysplasia is diagnosed, clinicians should ensure that pregnant patients understand the potential risks and benefits and engage them in shared decision-making regarding treatment. (A3)
- Clinicians should ensure that follow-up appointments are in place for abnormal cytology or colposcopy results, no earlier than 4 weeks and ideally no later than 8 weeks postpartum. (A2)

Follow-Up of Abnormal Cervical Screening Results

- Clinicians should follow up on abnormal primary HPV testing and cervical cytology results as indicated in the following (A3):
  - Figure 1: Follow-Up of Abnormal Cervical Cytology Results in Patients With HIV
  - Figure 2: Follow-Up of Primary HPV Testing Results in Patients With HIV
  - Figure 3: Follow-Up of Cervical Cytology Result of Atypical Glandular Cells in Patients With HIV

Management of Cervical Cancer

- Clinicians should *immediately* refer patients with HIV and a diagnosis of cervical cancer to a gynecologic oncologist or surgeon trained in the management of cervical cancer. (A*)
- Clinicians should closely monitor patients with a history of cervical cancer with possible consultation with a gynecologic oncologist after definitive cervical cancer treatment, which may include surgery, radiation, and chemotherapy. (A3)

Abbreviations: AIS, adenocarcinoma in situ; ART, antiretroviral therapy; ASC-H, atypical squamous cells, high-grade squamous intraepithelial lesions cannot be excluded; ASC-US, atypical squamous cells of undetermined significance; CIN, cervical intraepithelial neoplasia; HPV, human papillomavirus; HSIL, high-grade squamous intraepithelial lesion; LSIL, low-grade squamous intraepithelial lesion; NILM, negative for intraepithelial lesion or malignancy; STI, sexually transmitted infection.

Note:

a. Every possible effort should be made to determine the reason for a patient's hysterectomy and to obtain the pathology report.

Purpose of This Guideline

This guideline was developed by the New York State Department of Health AIDS Institute (NYSDOH AI) to inform clinicians about cervical, vaginal, and genital screening for adults with HIV, to help them identify and treat precancerous lesions and prevent cervical cancer. Prevention and diagnosis of and screening methods for genital dysplasia in individuals with HIV are discussed, with the following goals:

- Increasing clinicians' knowledge of screening methods and effective medical management of cervical, vaginal, or vulvar dysplasia.
- Emphasizing the role of antiretroviral therapy–associated viral suppression in improving clearance or suppression of human papillomavirus (HPV), preventing cervical dysplasia, and reducing cervical cancer in individuals with HIV.
- Promoting HPV vaccination and identification and treatment of precancerous and cancerous lesions to reduce the incident morbidity and mortality associated with genital HPV disease in individuals with HIV.
- Supporting the NYSDOH Prevention Agenda 2025-2030 and the New York State Ending the Epidemic initiative.

HPV-Associated Cervical Disease

The American Cancer Society estimates that in the United States in 2026, approximately 13,360 new cases of invasive cervical cancer will be diagnosed, and approximately 4,320 individuals will die from cervical cancer [Siegel, et al. 2025]. In New York State in 2022, there were 760 new cases of cervical cancer and, in 2023, 219 deaths from the disease in New York State [CDC 2026c]. Nearly all cases of cervical cancer are associated with human papillomavirus (HPV) infection [CDC 2026b; CDC 2024; Chaturvedi, et al. 2011; Winer, et al. 2006]. Individuals with HIV are at increased risk of HPV infection and related disease and are 5 times more likely to be diagnosed with cervical cancer than individuals without HIV [Liu, et al. 2018; Grulich, et al. 2007]. Persistence of HPV infection is associated with higher risk of disease progression and is more likely among people with HIV, especially with low CD4 counts (<200 cells/mL) [Ahdieh, et al. 2001]. Cervical cancer is an AIDS-defining illness.

In the general population, the HPV subtypes most commonly associated with cervical cancer are 16, 18, and 45 [CDC 2024], and infection with multiple HPV subtypes has been associated with benign condylomata acuminata (genital warts), squamous intraepithelial lesions (SILs), vulvar and anal dysplasia, and anogenital carcinoma [National Cancer Institute 2021]. In individuals with HIV, a broader range of HPV oncogenic subtypes are associated with cervical dysplasia [Orlando, et al. 2017].

HPV-related cervical cell abnormalities: Persistent HPV infection is necessary for the development of cervical SILs, which arise at the junction of the cervical squamous and columnar epithelium around the cervical os, the transformation zone. SILs are the most common type of precancerous cervical lesions, preceding nearly 80% of cervical cancers [ICESCC 2007]. Glandular carcinomas are the second most common type of cervical cancer [ICESCC 2007]. SILs occur more frequently in individuals with HIV than in those without HIV [Liu, et al. 2018; Maiman, et al. 1993].

Cervical cell abnormalities can be categorized as high risk (cancer causing) or low risk (benign warts) based on oncogenic potential. High-risk HPV types related to anogenital cancers include 16, 18, 26, 31, 33, 35, 39, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 70, 73, and 82 [Guan, et al. 2012; Hariri, et al. 2012]. Although high-risk HPV types are detected in 99% of cervical cancers, types 16, 18, and 45 are the most oncogenic [Clifford, et al. 2017; Keller, et al. 2015] and account for nearly 70% of all cervical cancers in the general population [CDC 2024].

Adenocarcinoma of the cervix (AC) is more difficult to diagnose than squamous cell carcinoma and has a worse prognosis [Suh, et al. 2023; Castanon, et al. 2016]. AC typically develops within the single celled layer of glandular epithelium of the endocervical canal. Because this tissue is less likely to be effectively sampled, precursor changes may not be identified. The cytologic result likely to identify risk is atypical glandular cells (AGC). The histological precursor to AC is adenocarcinoma in situ (AIS), which is uncommon and likely underdiagnosed. Although squamous cell carcinoma and its precursor cervical intraepithelial neoplasia (CIN) 3 are highly associated with HPV types 16 and 18, adenocarcinoma and AIS are caused almost exclusively by HPV types 16, 18, and 45. A cytologic result of AGC in combination with HPV types 16, 18, or 45 is highly predictive of AIS and AC [Schiffman, et al. 2023].

Among individuals with HIV, cervical cancers (both adenocarcinoma or squamous cell) are associated with high-risk HPV types 16, 18, 45, 51, 52, 53, 56, 58, and 59; low-risk types 6 and 11 are most commonly associated with benign disease (genital warts) [McKenzie, et al. 2010]. Identifying the presence of high-risk HPV types is central to managing abnormal cytology results in individuals with and without HIV [Perkins, et al. 2020; Hariri, et al. 2012].

Higher risk of cervical disease associated with HIV: The risk of HPV-related cervical disease is increased in individuals with HIV [McClymont, et al. 2020; Grabar, et al. 2019; Liu, et al. 2018; Konopnicki, et al. 2013]. Cervical cancer has historically been a leading cause of cancer death among individuals with HIV [Dryden-Peterson, et al. 2016], which may be related to the increased prevalence and persistence of HPV in this population [Kojic, et al. 2014; Moscicki, et al. 2004].

HPV Prevention

☑ RECOMMENDATION

HPV Prevention

- Clinicians should recommend the nonavalent HPV vaccine 3-dose series (0, 1–2, and 6 months) to all individuals with HIV aged 9 to 45 years regardless of CD4 cell count, prior cervical or anal screening results, HPV test results, HPV-related cytologic changes, or other history of HPV-related lesions. (A3)

Abbreviation: HPV, human papillomavirus.

HPV Vaccine

In 2006, the U.S. Food and Drug Administration (FDA) approved a nonavalent vaccine that protects against nononcogenic HPV types 6 and 11 and oncogenic HPV types 16, 18, 31, 33, 45, 52, and 58 (Gardasil 9). Because it offers broader coverage of HPV types than other approved bivalent or quadrivalent vaccines, the nonavalent vaccine is the only HPV vaccine available in the United States (see Centers for Disease Control and Prevention [CDC] HPV Vaccination: Information for Health Care Providers for more). The HPV vaccine is approved by the FDA for preventive but not therapeutic use.

Extrapolating data from the demonstrated effectiveness of the quadrivalent HPV vaccine in older individuals [Wilkin, et al. 2018], the FDA expanded the age range for approved use of the HPV vaccine in the United States from ages 9 to 26 years to ages 9 to 45 years [FDA 2025]. There is no specific mention of HIV infection in the updated FDA approval. Individuals with HIV have a robust and safe immune response to HPV vaccination. As in individuals without HIV, antibody titers and seropositivity rates in individuals with HIV decline over time but remain high [Staadegaard, et al. 2022]. The lack of formal protection and efficacy results preclude definitive conclusions on the clinical benefits of the HPV vaccine in individuals with HIV; however, given the increased lifetime burden of persistent HPV infection, disease, and morbidity, proactive vaccination is a strategic means of primary prevention and potential disease mitigation that should be strongly considered and encouraged [Di Donato, et al. 2021; Karimi-Zarchi, et al. 2020; Lichter, et al. 2020].

When to Vaccinate

HPV vaccination for all individuals may be scheduled at the same time as standard adolescent vaccines offered at ages 9 to 12 years. If possible, the HPV vaccine series should begin at age 9 years [Glidden, et al. 2016]. The 3-dose vaccine is recommended for all patients with HIV aged 9 to 45 years. The nonavalent HPV vaccine should be recommended regardless of CD4 cell count and administered according to the CDC standard schedule for immunocompromised adults, children, and adolescents (a 3-dose series given at 0, 1–2, and 6 months).

HPV vaccination provides high levels of neutralizing antibodies for at least 5 years and is protective in individuals aged 26 years or younger who do not have HIV, regardless of history of sexual activity; however, the full length of its protection has not been established. In an observational study conducted in England that examined the effectiveness of a national HPV immunization program, the reduction in cervical cancer was greatest in individuals who received the vaccine at ages 12 to 13 years [Falcaro, et al. 2021]. Although data are limited, the immunogenicity of the HPV vaccine has been demonstrated in individuals with HIV [Staadegaard, et al. 2022; Wilkin, et al. 2018; Kojic, et al. 2014].

In 2022, the World Health Organization endorsed an off-label single-dose schedule of the HPV vaccine for individuals aged 9 to 20 years, based on data from randomized controlled trials and systematic reviews that demonstrated similar protection against initial or persistent HPV infection [Barnabas, et al. 2022; Whitworth, et al. 2020]. However, individuals with HIV (regardless of age or antiretroviral therapy [ART] status) should continue to receive 3 HPV vaccine doses because of the increased lifetime HPV cancer risk, decreased geometric mean titers, and increased HPV seroconversion (measured by antibody levels) in this population [WHO 2022].

HPV testing and vaccination: HPV testing is not recommended before vaccine administration. It is unlikely that an individual will have been infected with all the HPV types covered by the nonavalent vaccine; therefore, it is expected that the nonavalent HPV vaccine will be effective against any of the 9 HPV types or any HPV types to which the individual has not yet been exposed. There also may be beneficial prevention due to cross-reactivity with other HPV types not included in the nonavalent vaccine [Wheeler, et al. 2012]. Therefore, the nonavalent HPV vaccine should be offered to eligible individuals with HIV even if they have prior documented HPV infection.

Revaccination: Revaccination with the nonavalent HPV vaccine is not currently recommended for individuals previously immunized with the bivalent or quadrivalent HPV vaccine [ACOG 2020; Petrosky, et al. 2015]. Vaccination with the quadrivalent HPV vaccine has demonstrated cross-protection against other oncogenic HPV types [Kemp, et al. 2011]. There is no maximum interval between vaccine doses; as long as all 3 doses are given, there is no need to repeat doses if a vaccination is not given on schedule [CDC 2025].

→ KEY POINTS

- Individuals aged 9 to 45 years with HIV should receive 3 HPV vaccine doses regardless of ART status.
- Individuals older than 45 years with HIV may be offered 3 HPV vaccine doses regardless of ART status.
- HPV vaccination status does not change the schedule of cervical cancer screening.
- HPV testing should not be used to assess the need for HPV vaccination.

Other Forms of HPV Prevention

HPV infection is the most common sexually transmitted infection (STI) in the United States, and many individuals become infected with multiple types of HPV during their lives [CDC 2026a]. Most HPV infections resolve, become latent, or are not detectable on clinical assays within a few years of exposure and infection [Ho, et al. 1998; Moscicki, et al. 1998; Evander, et al. 1995]. HPV is transmitted via skin-to-skin contact, so barrier protection, such as male/insertive and female/receptive condoms, offers some but not full protection. Because prior identification of HPV infection in a sexual partner is unlikely, limiting the number of sexual partners may reduce but not eliminate an individual's exposure to HPV [Workowski, et al. 2021].

→ KEY POINTS

- Inform patients with HIV about the risk of acquiring HPV and other STIs from close physical contact with the external genitalia, anus, cervix, vagina, urethra, mouth and oral cavity, or any other location where HPV lesions are present.
- Consistent and correct condom use remains an effective way to reduce the risk of transmission of most STIs, including HPV. However, inform patients that barrier protection such as condoms and dental dams may not fully protect against HPV.

Cervical Cancer Prevention

☑ RECOMMENDATIONS

Cervical Cancer Prevention

- Clinicians should perform age- and risk-appropriate screening in patients with HIV who are at risk of cervical cancer (A3) and promote the following measures that may reduce risk:
  - HPV vaccination (A3)
  - ART to suppress HIV viral load (A2)
  - Tobacco use cessation (A2)
  - Sexual exposure prevention strategies, including using barrier protection (A3) and reducing the number of sex partners and associated sexual networks when possible (A3)
- Clinicians should establish a schedule for routine cervical screening based on a patient's medical history, anatomical inventory, age, and risk profile. (A2)

Abbreviations: ART, antiretroviral therapy; HPV, human papillomavirus.

HPV vaccination, sustained access and adherence to effective ART and recommended screening and treatment, and overall sexual and preventive healthcare are essential to preventing cervical cancer in people with HIV. Minimizing gaps in care or refusal of care, with the goal of identifying treatable precancerous lesions (cervical intraepithelial neoplasia [CIN] 3 or greater), coupled with treatment and follow-up is a powerful strategy to decrease the incidence of HPV-related cancers in individuals with HIV [U.S. Preventive Services Task Force, et al. 2018; Massad, et al. 2017; Thorsteinsson, et al. 2016].

Risk calculation: Factors that increase the risk of cervical cancer include older age, HPV type 16 infection, persistent HPV infection, a cytology result of high-grade squamous intraepithelial lesions, a history of CIN 3, or previous cervical cancer. See the following resources for extensive discussion of risk and risk calculation:

- 2019 American Society for Colposcopy and Cervical Pathology (ASCCP) Risk-Based Management Consensus Guidelines for Abnormal Cervical Cancer Screening Tests and Cancer Precursors (see also letter summarizing updates through 2023)
- ASCCP Management Guidelines App Quick Start Guide

ART as prevention: Early in the epidemic, women with HIV presented with cervical cancer at later stages, when treatment was less successful [Maiman, et al. 1993]. Risk of incident cervical cancer for individuals with HIV has declined significantly over the last 20 years [Hernandez-Ramirez, et al. 2017; Robbins, et al. 2017]. ART has been found to reduce HPV acquisition, improve regression, and decrease rates of cervical disease progression [Carlander, et al. 2018; Kelly, et al. 2018; Liu, et al. 2018; Ghebre, et al. 2017; Adler, et al. 2012]. Rates of cervical dysplasia in women with HIV who are virally suppressed on ART and have a CD4 count ≥500 cells/mm^3 are comparable to rates in women without HIV [Silverberg, et al. 2018; Aho, et al. 2017; Massad, et al. 2017]. Cervical disease pathogenesis is the same in women with HIV who are virally suppressed and have a CD4 count ≥500 cells/mm^3 as for women who do not have HIV [Davies, et al. 2015; Kim, et al. 2013; Konopnicki, et al. 2013; Harris, et al. 2005].

Screening: Countries with a national screening program have lower rates of cervical cancer among women with HIV, and some U.S. cohorts have demonstrated comparable rates of invasive cervical cancer in people with or without HIV [Massad, et al. 2009]. Cervical cancer screening and prompt referral for treatment of precancerous lesions and invasive cervical cancer are most effective when integrated into routine HIV services, ideally within HIV clinics [McCormick Viens, et al. 2023]. Universal access to comprehensive HIV treatment, health care maintenance, and HPV prevention and cancer screening are critical for reducing the burden of HPV-related cancers in people with HIV [Ghebre, et al. 2017].

Tobacco use cessation: Tobacco use is associated with development of genital HPV lesions and disease [Gallaway, et al. 2018], and cigarette smoking potentiates the risk for acquisition of high-grade CIN in individuals with HIV [Massad, et al. 2012a]. Clinicians should inform patients of the risks of tobacco use and encourage reduction or cessation of use of all tobacco products as a component of prevention of genital HPV disease.

◊ RESOURCES: Tobacco Use Cessation

- For more information on addressing tobacco use with your patients, see:
  - NYSDOH AI guideline Substance Use Screening, Risk Assessment, and Use Disorder Diagnosis in Adults > Patient Engagement and Interventions
  - NYSDOH resources TalkToYourPatients.ny.gov and Cigarette Smoking and Secondhand Smoke
  - American Academy of Family Physicians FDA-Approved Medications for Smoking Cessation

Screening for Cervical Abnormalities

☑ RECOMMENDATIONS

Pelvic Health Exam

- Clinicians should perform an anatomical inventory to identify patients eligible for screening. (A*)
- Clinicians should perform screening for cervical and genital tract dysplasia and cancer in patients with HIV who have or have had a cervix and meet the below criteria for age-based screening. (A2)
- Clinicians should perform physical examinations of the vulva, vagina, and anogenital perineum at least annually and at the time of cervical cytology and to assess interval complaints. (A3) Abnormal cytology results may reflect vaginal, vulvar, or anogenital dysplasia in the absence of cervical dysplasia.

☑ RECOMMENDATIONS

Age-Based Screening

- For patients younger than 30 years, primary HPV testing is not recommended. (A2†) For these patients, clinicians should perform cervical cytology at age 21 years, regardless of the mode of HIV acquisition. (A2)
  - If the cytology result is negative (result of NILM), the clinician should repeat testing at 1 year, and if negative, repeat every 3 years thereafter. (A2)
- For patients aged 30 years and older, clinicians should perform cytology with HPV cotesting within 3 years of previous negative testing. (A2)
  - If the baseline cytology and HPV test results are negative, the clinician should repeat both tests every 3 years thereafter. (A2)
  - HPV testing with reflex to cytology is acceptable. (A3)
  - Cytologic surveillance alone is acceptable only if HPV cotesting is unavailable. (A3)
  - If initial testing with cytology alone is negative (result of NILM), the clinician should repeat testing at 1 year, and if negative, repeat every 3 years thereafter. (A2)
- For patients aged 30 years and older who refuse pelvic exams, clinicians should offer the option of self-collection of HPV testing specimens after a shared decision-making discussion that includes the need for cytologic testing or colposcopy in the event of an HPV pooled positive or HPV type 16/18/45 positive result. (A3)
- Clinicians should repeat cervical cytology 2 to 4 months after a result of "insufficient specimen for analysis" has been reported. (A3)
- For patients aged 30 years and older with a negative self- or clinician-collected primary HPV test result, clinicians should repeat testing in 3 years. (A2)
- Clinicians should continue cervical cancer screening for patients aged 65 years and older. (A2)
- For patients aged 65 years and older who wish to stop screening, clinicians should engage them in shared decision-making informed by such factors as life expectancy and risk of developing cervical cancer. (A3)

Concomitant Screening for Anal Cancer and STIs

- Clinicians should perform concomitant anal screening starting at age 45 years as outlined in the NYSDOH AI guideline Screening for Anal Dysplasia and Cancer in Adults With HIV.
- Regardless of a patient's cervical cytology results, clinicians should perform routine STI screening according to Centers for Disease Control and Prevention 2021 Sexually Transmitted Infections Treatment Guidelines.

Post-Hysterectomy Cancer Screening

- In patients with an intact cervix, clinicians should perform cervical cytology as noted above [a]. (A*)
- In patients with HIV who have undergone total hysterectomy (uterus and cervix removed), clinicians should screen for vaginal intraepithelial neoplasia by performing *vaginal* cytology with HPV cotesting and manage as noted above. (A2†)
- If a patient's hysterectomy was performed to treat HSILs, CIN 2 or CIN 3, or AIS [a], clinicians should perform 3 consecutive annual HPV tests, after which long-term surveillance should be initiated, with HPV testing every 3 years for 25 years. (A3)

Post-Cervical Excision HPV Testing

- After a patient has undergone cervical excision, clinicians should perform cervical cytology with HPV testing as follows: 6 months after excision, annually until 3 sequential negative test results have been obtained, and every 3 years thereafter for at least 25 years. (A3)

Abbreviations: AIS, adenocarcinoma in situ; CIN, cervical intraepithelial neoplasia; HPV, human papillomavirus; HSIL, high-grade squamous intraepithelial lesion; NILM, negative for intraepithelial lesion or malignancy; STI, sexually transmitted infection.

Note:

a. Every possible effort should be made to determine the reason for a patient's hysterectomy and to obtain the pathology report.

Purpose of Screening

The primary goal of cervical cytology is to identify and treat precancerous lesions—defined as CIN 3, AIS, and in rare cases, invasive cervical cancer [Perkins, et al. 2020]. Cervical cancer is a relatively rare finding in the United States; nevertheless, identification and treatment are essential and may include more frequent testing, referral for colposcopy and directed biopsy, and subsequent treatment of biopsy-proven histologic abnormalities. CIN 2 has appreciable regression rates [Perkins, et al. 2020].

A histology result of CIN 3 or higher is the established surrogate for cancer risk. CIN 3 is a finding of severely atypical cellular changes that encompass greater than two-thirds of the epithelial thickness and include full-thickness lesions. Previous terms for CIN 3 were "severe dysplasia" and "carcinoma in situ." CIN 3 was chosen instead of CIN 2 because it is a more pathologically reproducible diagnosis [Perkins, et al. 2020]. The HPV type distribution in CIN 3 lesions more closely approximates that of invasive cervical cancer.

How cervical cytology results are reported: Cervical cytology currently uses the Bethesda Classification System as standard nomenclature to describe abnormal results that may require further follow-up [CPBG 2016; Massad, et al. 2013]. The Bethesda Classification System (see Box 1, below) also describes the degree of neoplastic change found on biopsy. These naming conventions are not interchangeable (see guideline section Follow-Up of Abnormal Cervical Screening Results).

Box 1: Molecular, Cytologic, and Histologic Classifications of Cervical Dysplasia [a]

Bethesda Classification System (describes cervical cytology results):

- Negative for intraepithelial lesion or malignancy (NILM)
- Atypical squamous cells of undetermined significance (ASC-US)
- Atypical squamous cells, high-grade squamous intraepithelial lesion cannot be excluded (ASC-H)
- Atypical glandular cells (AGC): endocervical cells, endometrial cells, or glandular cells
- Atypical glandular cells not otherwise specified (AGC-NOS)
- Atypical glandular cells favoring neoplasia (AGC-FN)
- Low-grade squamous intraepithelial lesions (LSIL)
- High-grade squamous intraepithelial lesions (HSIL)
- Squamous cell carcinoma
- Cancer

Primary HPV testing:

- Negative
- Positive (pooled)
- HPV 16/18 negative (and potentially 45 negative, depending on the test used)
- HPV 16/18 positive (and potentially 45 positive, depending on the test used)

Cervical intraepithelial lesion or neoplasia (describes histology obtained at biopsy):

- Atypia
- Low-grade cervical intraepithelial neoplasia (CIN 1)
- Moderate-grade cervical intraepithelial neoplasia; may be a low-grade or high-grade lesion (CIN 2)
- High-grade cervical intraepithelial neoplasia (CIN 3)
- Carcinoma in situ (CIS)
- Endocervical carcinoma in situ
- Cancer

Note:

a. Adapted from [Nayar and Wilbur 2015].

Who to Screen

Age-based screening: Cervical dysplasia is caused by genital HPV, an STI. Consistent with American Society for Colposcopy and Cervical Pathology (ASCCP) guidelines [Perkins, et al. 2020], cervical cancer screening in individuals younger than 30 years with HIV who have a cervix should begin within at least 2 years of first receptive sexual activity or by age 21 years [Keller, et al. 2012]. HPV cotesting is not recommended in this age group. For individuals aged 30 years and older, cervical cytology and HPV cotesting should be performed within 3 years of previous negative testing.

HIV has been associated with an increased lifetime risk of cervical cancer; therefore, the ASCCP guidelines recommend continued screening in this population beyond age 65 years [Perkins, et al. 2020]. However, patients and their clinicians may decide together to discontinue screening after assessment of the risks and benefits, possible mitigating factors to ongoing risk for HPV infection, and the purpose of screening. Factors to consider include HPV status and risk of acquisition, history of screening results and risk of cervical cancer, the burden of screening and associated follow-up, viral suppression status, comorbidities, and life expectancy [DHHS 2024; Massad, et al. 2021; Aserlind, et al. 2017].

HIV viral suppression and lifetime prognosis: Patients with HIV who are virally suppressed and have demonstrated adherence to HIV care and primary care, who have negative cytology and negative HPV test results, no genital or pelvic complaints, do not use tobacco products, and do not have any other cervical cancer risk factors may benefit from cervical screening every 5 years [Robbins, et al. 2017]. When navigating extended screening intervals or discontinuation of screening based on lifetime prognosis, individualized patient-centered shared decision-making that addresses lifetime risk of HPV-related disease, goals for screening, cultural and personal values, and benefits of a personalized screening interval is crucial.

→ KEY POINTS

- Compassionate engagement in shared decision-making is crucial when navigating extended screening intervals or discontinuation of screening based on a patient's lifetime prognosis. When engaging patients in shared decision-making regarding screening intervals, consider duration of HIV infection, viral load and CD4 cell count over time, and history of abnormal Pap test results and anogenital HPV lesions.
- Cervical screening every 5 years may benefit individuals with HIV who are virally suppressed and adherent to HIV and primary care and have negative cytology and HPV test results, no genital or pelvic complaints, no tobacco use, and no other cervical cancer risk factors.

Transgender and gender-diverse individuals: Although the recommendations in this guideline are based on data from studies in cisgender women, this committee supports extrapolation of that data to support recommendations for all adults with HIV who are eligible for cervical screening.

Inclusive and culturally sensitive healthcare that acknowledges the needs of transgender, transmasculine, transfeminine, and nonbinary patients should include an anatomical inventory that identifies which organs are present and absent to determine and meet the screening and healthcare needs of each patient regardless of their gender expression. It is important that care providers and facilities establish a safe and welcoming environment for transgender patients [UCSF 2016a]. In the United States, 2.8 million people identify as transgender, including 2.1 million adults, 33% of whom are transgender women, 34% transgender men, and 33% nonbinary [Herman and Flores 2025]. Asking patients to provide details about all gender-affirming and gynecologic surgical procedures will help establish the need for screening for HPV-related cancers (for terminology and definitions related to transgender care, see the University of California San Francisco Transgender Care and Treatment Guidelines > Terminology).

Evidence, although limited, shows that transgender and gender-diverse individuals are less likely to have undergone recommended cancer screenings than their cisgender counterparts, particularly transgender men and cervical cancer screening [Chan, et al. 2024; Oladeru, et al. 2022]. Transgender men who have a uterine cervix are at risk for cervical cancer, yet screening rates are lower in this population than in cisgender women, largely because of barriers to inclusive, informed medical care for transgender people. Testosterone use in transgender men causes vaginal atrophy, which is associated with high rates of cytology results that are classified as "insufficient." Notation of testosterone use and amenorrhea, when indicated, will facilitate accurate interpretation of cell morphology in transgender men [Tabaac, et al. 2018; UCSF 2016b; Peitzmeier, et al. 2014].

Transgender women may undergo genital reconstruction, or vaginoplasty, to create a neovagina. There are no studies to support cervical or vaginal screening of a neovagina; however, visual examination to assess symptoms or as part of routine screening is appropriate [Fierz, et al. 2019; UCSF 2016b; van der Sluis, et al. 2016; Heller 2015].

→ KEY POINTS

- Inclusive and culturally sensitive healthcare includes a safe and welcoming environment that acknowledges the needs of transgender, transmasculine, transfeminine, and nonbinary patients.
- Ask patients to provide details about all gender-affirming and gynecologic surgical procedures they have undergone to help inform screening for HPV-related cancers.
- To facilitate accurate interpretation of cell morphology, note testosterone use and the presence of amenorrhea in the requisition for cervical cytology in transgender men.

HPV Testing

Primary HPV testing: HPV testing is used as a primary screening tool to assist risk stratification. The U.S. Food and Drug Administration (FDA) has approved multiple assays for primary HPV testing to be used for screening individuals aged 25 years and older in the general population. Although data are limited on the use of this screening strategy for people with HIV in the United States, research from a retrospective cohort suggests that primary HPV screening with reflex to 16/18 genotyping in cervical cancer screening for people with HIV may result in fewer colposcopies over the subsequent 1 to 2 years than cytology with HPV testing [Strickler, et al. 2020].

Primary HPV testing plays an important role in settings where access to cytology is limited, as in many low- and middle-income countries. In 2020, the World Health Organization (WHO) launched an initiative to eliminate cervical cancer with the benchmark goal that by 2030, 90% of female children under the age of 15 be vaccinated against HPV, 70% of individuals with a cervix undergo screening, and 90% of those who are found to have precancerous lesions or invasive cervical cancer receive treatment. The WHO guidelines issued in 2021 explicitly endorse the use of primary HPV screening for people living with HIV, with cytology as a tool to triage the need for treatment when HPV test results are positive [WHO 2021]. Modeling was used to evaluate a range of screening strategies for women living with HIV in Tanzania where HIV is endemic, and it was concluded that screening with primary HPV testing every 3 years most effectively reduced cervical cancer incidence [Hall, et al. 2023].

HPV cotesting: Cervical cytology with HPV cotesting has been used to extend cervical screening intervals to every 5 years in women without HIV [U.S. Preventive Services Task Force, et al. 2018; ACOG 2016; CPBG 2016]. However, cervical cytology with HPV cotesting is not indicated for individuals younger than 30 years because resolution of HPV infection and cervical dysplasia is likely regardless of HIV status [U.S. Preventive Services Task Force, et al. 2018; Plummer, et al. 2007; Woodman, et al. 2001]. Aggressive treatment of dysplasia from transient HPV infection may damage the cervix, contribute to preterm delivery, and be more harmful than beneficial in this age group [Conner, et al. 2014; Bruinsma and Quinn 2011]. HPV cotesting is a valuable adjunct to cervical cytology in individuals with HIV aged 30 years and older [Alade, et al. 2017; Castle, et al. 2012; Keller, et al. 2012].

Self-collected specimens for HPV testing: HPV testing specimens can be self- or clinician collected. FDA approval for self-collection specifies that screening take place in a clinical setting. In 2021, the WHO endorsed self-collection as a way of expanding cervical cancer screening beyond traditional clinician-performed exams [WHO 2021]. In December 2024, the U.S. Preventive Services Task Force (USPSTF) issued a draft recommendation statement that included self-collection with clinician-collected cytology and HPV testing [U.S. Preventive Services Task Force 2024]. Self-collection was also included in the 2025 recommendations from the Enduring Consensus Cervical Cancer Screening and Management Guidelines Committee [Wentzensen, et al. 2025].

Self-collected HPV screening has been shown to have broad acceptability, and its benefits include self-efficacy, privacy, convenience, and practicality. Self-collection avoids the physical discomfort of the traditional pelvic exam, is less invasive, and is self-paced [Camara, et al. 2021; Wang, et al. 2020]. Patient concerns regarding self-collection center on accuracy, safety, and sterility of the swab, with lack of accuracy of the sample the most prevalent concern, and some patients have expressed concern that self-collected samples may not be as reliable as clinician-collected samples [Wang, et al. 2020]. However, data from more than 50 paired clinical accuracy studies showed that, for precancer detection, polymerase chain reaction (PCR)-based assays were equally sensitive on self-collected specimens and relative specificity was high compared with clinician-collected specimens [Wentzensen, et al. 2025]. Multiple FDA-approved self-collection assays for HPV testing are PCR-based. Further research is being conducted to determine the optimal interval for repeating a negative test, but the current 3-year interval is recognized as safe.

◊ RESOURCES

- For detailed information about the process of self-collection, see:
  - American Cancer Society In-Clinic and At-Home HPV Self-Collection Test
  - National Cervical Cancer Coalition HPV Screen With Self-Collection: How it Works

Although there is no evidence on self-collected HPV testing specifically in people with HIV, self-collection is widely recognized as a powerful tool for evaluating under screened populations, including transgender and nonbinary individuals who may be uncomfortable accessing traditional gynecologic care. Self-collection may also increase screening among individuals who seldom access healthcare, especially those with physical, social, psychological, or other barriers to care, such as a history of physical assault, trauma, coercion, or post-traumatic stress disorder.

Self-collection is endorsed by the USPSTF, the ASCCP, and the American Cancer Society for individuals aged 30 years and older [Perkins, et al. 2026; U.S. Preventive Services Task Force 2024; Perkins, et al. 2020]. Individuals younger than 30 years should continue to be screened by cytology with reflex HPV testing only for samples that yield atypical squamous cells of undetermined significance (ASC-US) or greater, to avoid overtreatment of lesions or abnormalities that might resolve on their own in this age group.

For individuals living with HIV, optimal screening for anogenital cancers includes a yearly visual exam to identify vulvar, vaginal, and perianal changes. However, if an individual has persistently declined pelvic exams, the clinician and patient may share the decision to begin screening with a self-collected swab. It is essential that individuals who are being offered self-collection have been educated regarding the risks of HPV, the benefit of a more complete exam, and the need for follow-up care, including colposcopy in the event of a positive result.

→ KEY POINTS

- In individuals aged 30 years and older, cytologic surveillance alone is acceptable only if HPV cotesting is unavailable. Cytology is less sensitive than HPV testing for detection of precancer and, therefore, requires testing at shorter, more frequent intervals [Perkins, et al. 2020].
- It is recommended that clinicians without access to HPV cotesting offer cytology at a minimum of 3-year intervals. Initial negative testing with cytology alone (result of NILM) in an individual older than 30 years should be repeated at 1 year and, if the result is negative, repeated every 3 years thereafter.
- Screening with primary HPV testing with reflex to cytology is acceptable for individuals aged 30 years and older.
- Self-collection of HPV testing specimens is acceptable after shared decision-making for individuals aged 30 years and older who refuse pelvic exams.

Concomitant Screening for Anal Cancer and STIs

Anal SILs have been associated with concurrent cervical SILs; however, they can also occur independently. Anal cancer screening should be performed according to the NYSDOH AI guideline Screening for Anal Dysplasia and Cancer in Adults With HIV. Regardless of cytology results, it is important that screening for STIs is performed routinely in patients who engage in risk behaviors (for more information, see CDC 2021 Sexually Transmitted Infections Treatment Guidelines).

Post-Hysterectomy Cancer Screening

After a patient who does not have HIV has had a hysterectomy for benign disease, routine screening for vaginal cancer is not generally recommended. However, because HIV and HPV infection increase the risk of vaginal SILs [Bradbury, et al. 2019; Massad, et al. 2012b], vaginal cytologic testing after hysterectomy is recommended for patients with HIV [Smeltzer, et al. 2016]. SILs on the vaginal cuff can recur from a latent anogenital HPV infection or as primary disease after hysterectomy, not related to previous cervical infection [Smeltzer, et al. 2016; Saslow, et al. 2012].

If the indication for hysterectomy in a patient with HIV is unknown, screening should be performed as it would be in a patient with an intact cervix. Individuals with HIV who have undergone hysterectomy and have any history of high-grade CIN, AIS, or invasive cervical cancer, regardless of whether the hysterectomy was performed for that disease or subsequently for benign disease, should receive a minimum of 3 consecutive negative annual HPV tests before long-term surveillance with cervical cytology and HPV testing every 3 years is initiated [Perkins, et al. 2020; Khan, et al. 2016].

The FDA has not approved HPV testing for vaginal samples; however, the sensitivity of HPV-based testing seems superior to cytology alone when screening for high-grade SIL after hysterectomy [Perkins, et al. 2020; Khan, et al. 2016]. Abnormal vaginal screening results should be managed according to colposcopy guidelines for vaginal cytology [Perkins, et al. 2020].

Screening for Cervical Dysplasia During Pregnancy

☑ RECOMMENDATIONS

Screening for Cervical Dysplasia During Pregnancy

- Clinicians should perform cervical cytology and HPV screening for pregnant patients with HIV as appropriate for each patient's age. (A2†)
- Clinicians should refer pregnant patients for follow-up with experienced colposcopy providers when the following cervical cytology results are obtained: repeated ASC-US, ASC-US with HPV, negative cytology with persistently positive HPV, ASC-H, or LSIL or greater. (A3)
- When HPV testing is used as the primary screening method and the result is pooled positive, the test will reflex to cytology:
  - If the cytology result is negative, the clinician should repeat testing at 1 year. (A2)
  - If the cytology result is ASC-US or greater, the clinician should refer the pregnant patient for colposcopy. (A2)
- When a pregnant patient tests positive for HPV type 16, 18, or 45, the clinician should refer them as soon as possible (and within 30 days) for colposcopic evaluation, regardless of the cytology result. (A2)
- When cervical dysplasia is diagnosed, clinicians should ensure that pregnant patients understand the potential risks and benefits and engage them in shared decision-making regarding treatment. (A3)
- Clinicians should ensure that follow-up appointments are in place for abnormal cytology or colposcopy results, no earlier than 4 weeks and ideally no later than 8 weeks postpartum. (A2)

Abbreviations: ASC-H, atypical squamous cells, high-grade squamous intraepithelial lesions cannot be excluded; ASC-US, atypical squamous cells of undetermined significance; HPV, human papillomavirus; LSIL, low-grade squamous intraepithelial lesion.

Pregnant individuals with HIV should undergo cervical cytology and HPV cotesting as appropriate for their age group. Referral to a practitioner skilled and experienced in colposcopy is recommended for all pregnant patients with cervical screening results of persistent ASC-US, ASC-US with HPV, negative cytology with persistently positive HPV, ASC-H, or LSIL or greater.

The natural history, pathogenesis, rate of progression, and prognosis of cervical cancer are not affected by pregnancy. Colposcopy-directed biopsies are generally safe during pregnancy but should be performed only if a lesion appears to be carcinoma in situ or cancer [UpToDate 2025]. Endocervical curettage, endometrial biopsy, and treatment without biopsy are unacceptable practices during pregnancy. Diagnostic excisional procedure or repeat biopsy is recommended only if cancer is suspected based on cytology, colposcopy, or histology results [Perkins, et al. 2020]. Shared decision-making that accounts for a patient's risk of cancer, ongoing monitoring and treatment plan, pregnancy options, and reported values and goals should be applied when managing cervical dysplasia in pregnancy.

Close follow-up of abnormal cytology or colposcopy results is critical in the postpartum period. The colposcopic exam should be performed no earlier than 4 weeks after delivery and ideally no later than 8 weeks. Biopsy during pregnancy should be conducted for any lesions suspicious for cancer to avoid delays in treatment. To prevent loss to follow-up, the clinician should refer for postpartum colposcopy in the antepartum period, making sure to include the provision of ongoing health insurance.

→ KEY POINT

- Although cervical biopsies are not routinely recommended in pregnancy, any lesion suspicious for carcinoma in situ or cancer merits immediate evaluation with biopsy.

Follow-Up of Abnormal Cervical Screening Results

☑ RECOMMENDATIONS

Follow-Up of Abnormal Cervical Screening Results

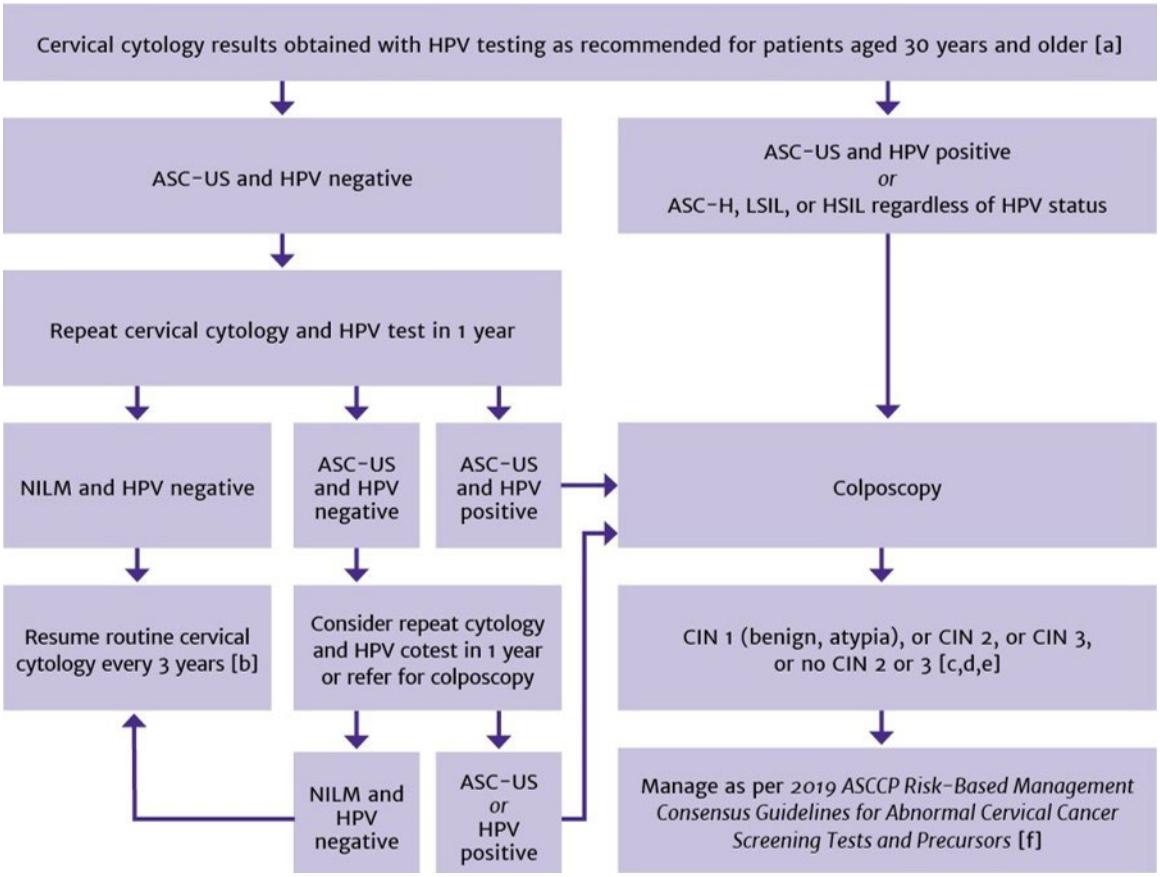
- Clinicians should follow up on abnormal primary HPV testing and cervical cytology results as indicated in the following (A3):
  - Figure 1: Follow-Up of Abnormal Cervical Cytology Results in Patients With HIV
  - Figure 2: Follow-Up of Primary HPV Testing Results in Patients With HIV
  - Figure 3: Follow-Up of Cervical Cytology Result of Atypical Glandular Cells in Patients With HIV

Abbreviation: HPV, human papillomavirus.

Colposcopy with biopsy is the recommended diagnostic test for cervical dysplasia identified through cervical cytology and HPV testing. Colposcopy is not used for primary screening. Colposcopy visually locates specific lesions for directed biopsy and histologic diagnosis and has better sensitivity and specificity for SILs than cytology alone. Abnormal cytology results that require colposcopy include atypical squamous cells of undetermined significance (ASC-US) with high-risk HPV; atypical squamous cells, high-grade squamous intraepithelial lesion cannot be excluded (ASC-H); atypical glandular cells (AGC), low-grade squamous intraepithelial lesion (LSIL); high-grade squamous intraepithelial lesion (HSIL), repeated positive high-risk HPV results with negative cervical cytology results; and repeated ASC-US cytology results regardless of HPV result. See further discussion of these results below.

Figure 1, below, shows appropriate follow-up of abnormal cervical cytology results in patients with HIV.

Figure 1: Follow-Up of Abnormal Cervical Cytology Results in Patients With HIV



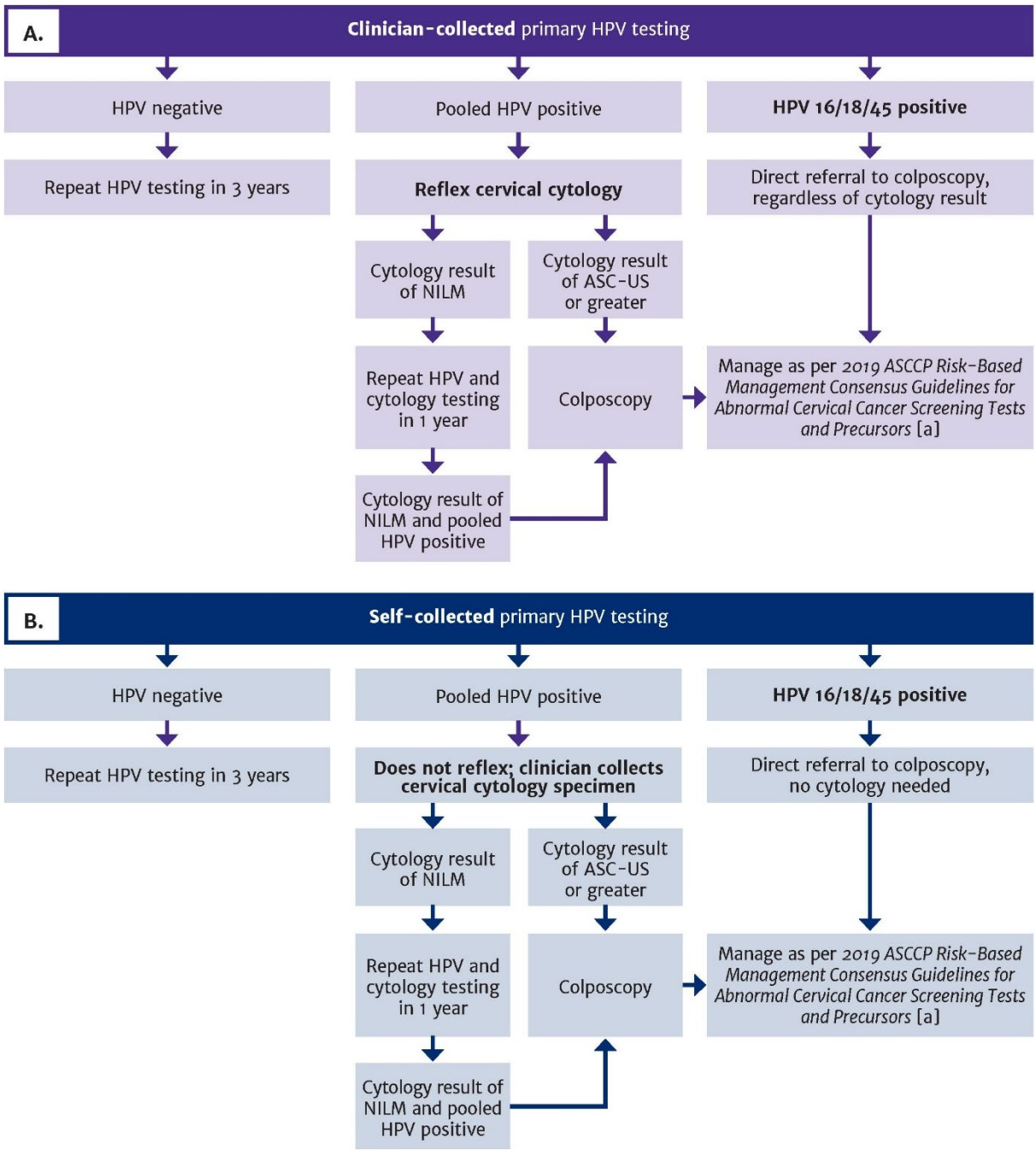
Abbreviations: ASC-H, atypical squamous cells, high-grade squamous intraepithelial lesion cannot be excluded; ASC-US, atypical squamous cells of undetermined significance; ASCCP, American Society for Colposcopy and Cervical Pathology; CIN, cervical intraepithelial neoplasia; HPV, human papillomavirus; HSIL, high-grade squamous intraepithelial lesion; LSIL, low-grade squamous intraepithelial lesion; NILM, negative for intraepithelial lesion or malignancy.

Notes:

a. HPV reflex testing should be performed in patients younger than 30 years with a positive cervical cytology result; in patients aged 30 years and older, HPV cotesting is recommended.
b. Cervical screening every 5 years may benefit individuals with HIV who are virally suppressed and adherent to HIV and primary care and have negative cytology and HPV test results, no genital or pelvic complaints, no tobacco use, and no other cervical cancer risk factors.
c. If cotesting was not performed, then HPV reflex testing is indicated following an abnormal cytology result.
d. For non-high-grade CIN, refer to ASCCP recommendations for management of LSIL (CIN 1) preceded by ASC-H or HSIL cytology.
e. In patients younger than 25 years, immediate excision is not recommended; in nonpregnant patients aged 25 years and older, the decision regarding expedited treatment versus colposcopy with biopsy should be based on shared decision-making between the patient and clinician.
f. Perkins RB, Guido RS, Castle PE, et al. 2019 ASCCP risk-based management consensus guidelines for abnormal cervical cancer screening tests and cancer precursors. *J Low Genit Tract Dis* 2020;24(2):102-31. [PMID: 32243307]

Figure 2, below, shows appropriate follow-up of primary HPV testing results in patients with HIV.

Figure 2: Follow-Up of Primary HPV Testing Results in Patients With HIV



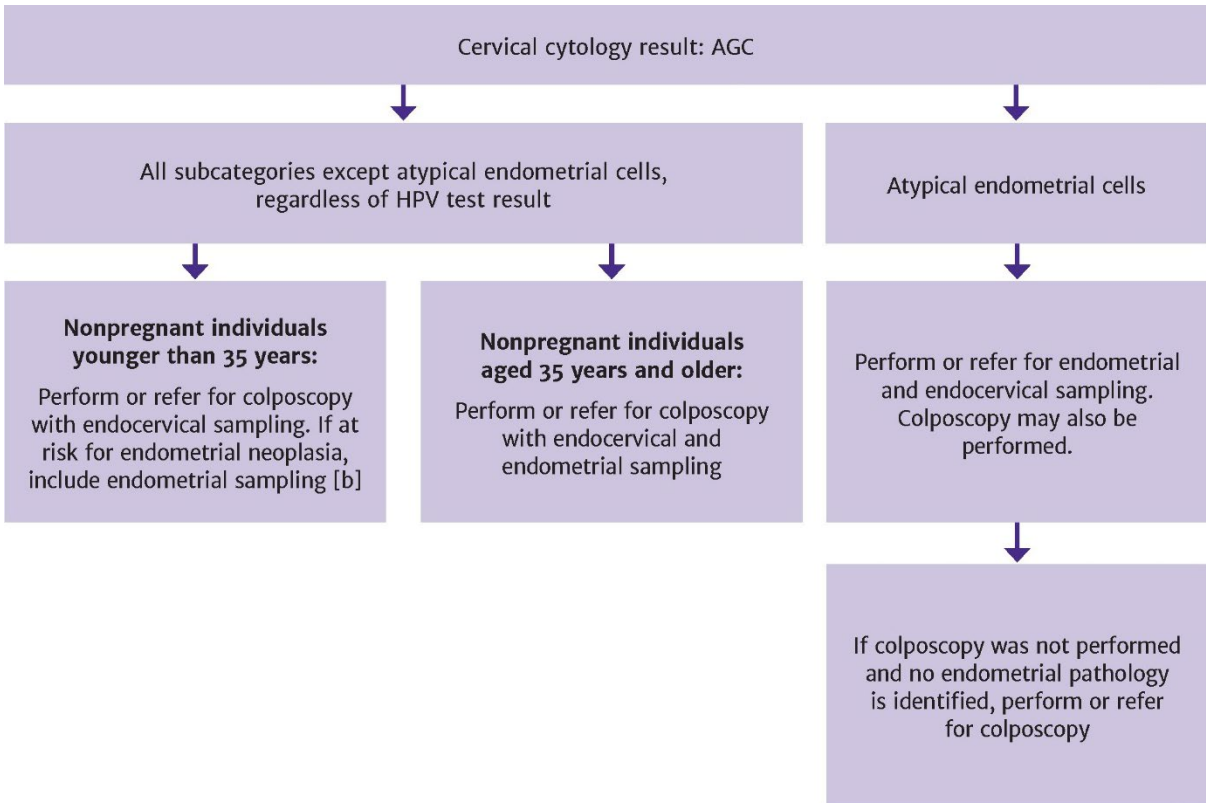
Abbreviations: ASCCP, American Society for Colposcopy and Cervical Pathology; ASC-US, atypical squamous cells of undetermined significance; HPV, human papillomavirus; NILM, negative for intraepithelial lesion or malignancy.

Note:

a. Perkins RB, Guido RS, Castle PE, et al. 2019 ASCCP risk-based management consensus guidelines for abnormal cervical cancer screening tests and cancer precursors. *J Low Genit Tract Dis* 2020;24(2):102-31. [PMID: 32243307]

Figure 3, below, shows appropriate follow-up of a cervical cytology result of AGC in patients with HIV.

Figure 3: Follow-Up of Cervical Cytology Result of Atypical Glandular Cells in Patients With HIV [a]



Abbreviations: AGC, atypical glandular cells; HPV, human papillomavirus.

Notes:

a. Adapted with permission from the American Society for Colposcopy and Cervical Pathology. See Perkins RB, Guido RS, Castle PE, et al. 2019 ASCCP risk-based management consensus guidelines for abnormal cervical cancer screening tests and cancer precursors. *J Low Genit Tract Dis* 2020;24(2):102-31 [PMID: 32243307]
b. Conditions that increase risk for endometrial neoplasia include abnormal uterine bleeding, obesity, or conditions suggesting chronic anovulation.

ASC-US: Because a cervical cytology result of ASC-US indicates the inability to determine whether the cellular abnormality is benign or high risk, an HPV test in response to the cytology result (HPV reflex testing) is recommended regardless of a patient's age. The purpose is to identify possible high-risk HPV infection, which, if present, requires follow-up with colposcopy.

ASC-H: A cervical cytology result of ASC-H suggests that a lesion is precancerous, and colposcopy is indicated regardless of the HPV cotest result.

LSIL: A cervical cytology result of LSIL indicates early cell changes associated with HPV infection. In individuals who do not have HIV, LSILs tend to be associated with transient changes that regress over time [UpToDate 2025; Solomon, et al. 2002]. Data on women with HIV indicate higher rates of recurrence and progression of LSILs than observed among those without HIV [Zeier, et al. 2012; Nappi, et al. 2005; Robinson, et al. 2003]. Individuals with HIV and LSILs on cytology should be referred for colposcopy.

AGC: Any cervical cytology result of AGC requires immediate follow-up with colposcopy and further evaluation (see Figure 3, above). Treatment decisions are based on the resulting tissue diagnosis. Glandular carcinoma of the cervix may be preceded by a negative cytology result or a test result indicating the presence of AGC [Moukarzel, et al. 2017]. A cytology result of AGC may indicate a precursor lesion for adenocarcinoma of the cervix (AC), which is caused almost entirely by a subset including HPV types 16, 18, and 45 [Guan, et al. 2013; de Sanjose, et al. 2010]. Adenocarcinoma in situ (AIS) is also caused primarily by these same 3 HPV types. The combined finding of HPV 16, 18, or 45 and AGC indicates a greatly elevated risk of in situ and invasive cervical adenocarcinoma [Schiffman, et al. 2023].

An AGC result of atypical endometrial cells indicates a risk of endometrial cancer, and all individuals with atypical endometrial cells require endometrial sampling. Although the mean age of presentation for endometrial cancer is 60 years, premenopausal individuals with histories of abnormal uterine bleeding, obesity, or conditions suggesting chronic anovulation are also at greater risk of endometrial cancer. Although the incidence of endocervical adenocarcinoma is lower than that of squamous cell carcinoma of the cervix, endocervical adenocarcinoma is associated with a worse prognosis [Arshi and Farci 2022].

HSIL: A cytology result of HSIL suggests that a lesion is more likely to be precancerous. HSILs are associated with high-risk HPV types and have a high risk of progression to cervical intraepithelial neoplasia (CIN) or cancer [UpToDate 2025]. In individuals with HIV, both LSILs and HSILs require close follow-up and referral for colposcopy.

For nonpregnant individuals aged 25 years and older with HSILs, current American Society for Colposcopy and Cervical Pathology (ASCCP) guidelines for the general population recommend consideration of immediate treatment—destruction or excision of precancerous lesions—in cases in which the risk of CIN 3 or higher is 25% or more [Perkins, et al. 2020]. Treatment without colposcopy removes an intermediate step for those at highest risk for CIN 3 or higher. In cases in which the risk of CIN 3 or higher exceeds 60%, definitive management with direct excision for treatment without colposcopic-guided biopsy is preferred. Reasons for considering expedited treatment vary and may include limited access to healthcare. Immediate treatment without histologic confirmation is not recommended for individuals younger than 25 years because of the very low cervical cancer rates and high rates of HSIL regression in this population [Perkins, et al. 2020]. Because individuals with HIV are known to have an elevated risk of cervical cancer, a thorough discussion of the risks and benefits of cervical dysplasia treatment is crucial during shared decision-making with patients.

CIN: As described in the guideline section Screening for Cervical Abnormalities, SILs are cytologic findings and CIN is a histologic finding found on biopsy performed at the time of colposcopy.

CIN 1 describes a low-grade lesion and refers to mildly atypical cellular changes in the lower third of the epithelium; HPV cytopathic effect (koilocytotic atypia) is often present.

CIN 2 (formerly called moderate dysplasia) describes a high-grade lesion and refers to atypical cellular changes confined to the basal two-thirds of the epithelium with preservation of epithelial maturation. However, CIN 2 has poor reproducibility and is likely a heterogeneous mix that includes lesions that could be called CIN 1 or 3. CIN 2 is stratified according to p16 immunostaining to identify precancerous lesions. Specimens that are p16 negative are referred to as LSILs and those that are p16 positive are referred to as HSILs. Because of the poor reproducibility of CIN 2, CIN 2 and 3 are often classified together as "CIN 2/3."

CIN 3 (formerly called severe dysplasia or carcinoma in situ) describes a high-grade lesion and refers to severely atypical cellular changes encompassing greater than two-thirds of the epithelial thickness and includes full-thickness lesions [UpToDate 2025].

Indications for expedited treatment: ASCCP guidelines urge consideration of diagnostic excision and treatment without the intermediary step of colposcopy in cases in which risk of CIN 3 exceeds 25%; expedited treatment is preferred when risk exceeds 60% [Perkins, et al. 2020]. For discussion of risk calculation, see the 2019 ASCCP Risk-Based Management Consensus Guidelines for Abnormal Cervical Cancer Screening Tests and Cancer Precursors. The ASCCP guidelines do not specifically address individuals with HIV.

→ KEY POINTS

- Vaginal or cervical infections (e.g., trichomonas, herpes simplex virus, gonorrhea, chlamydia, or bacterial vaginosis) or age-related atrophic changes may be associated with inflammation and abnormal cytology results. It is important to screen for inflammatory conditions, especially in patients with a cytology result of ASC-US and a negative HPV test result. Cytology and HPV cotesting may be repeated 3 to 6 months after inflammatory condition(s) have been treated, before referring to colposcopy.
- Any cervical cytology result of AGC requires immediate follow-up with colposcopy and further evaluation.
- Any HPV result positive for HPV 16, 18, or 45 requires immediate referral for colposcopy and further evaluation.
- This committee strongly encourages all facilities that provide medical care for patients with HIV to develop a clinical pathway for the screening, diagnosis, and treatment of abnormal anal cytology results. See the NYSDOH AI guideline Screening for Anal Dysplasia and Cancer in Adults With HIV.

Management of Cervical Cancer

☑ RECOMMENDATIONS

Management of Cervical Cancer

- Clinicians should *immediately* refer patients with HIV and a diagnosis of cervical cancer to a gynecologic oncologist or surgeon trained in the management of cervical cancer. (A*)
- Clinicians should closely monitor patients with a history of cervical cancer with possible consultation with a gynecologic oncologist after definitive cervical cancer treatment, which may include surgery, radiation, and chemotherapy. (A3)

Individuals with cervical cancer may have few and nonspecific symptoms; when they present with symptoms, more advanced disease is often found. Vaginal bleeding and postcoital bleeding are the most common symptoms. Malodorous vaginal discharge, pelvic pain, back pain, and lower abdominal pain are also common. Weight loss, leg pain, edema, and obstructive uropathy indicate advanced disease [American Cancer Society 2025]. Patients with a diagnosis of cervical cancer, with or without symptoms, should be referred immediately for assessment and management of their disease. Support services often facilitate patient engagement and maintenance in cancer treatment and care.

The standard therapeutic approach to treating cervical cancer in individuals with HIV is the same for individuals without HIV. Treatment by high-volume surgeons at high-volume hospitals with higher rates of guideline-based care is associated with better cervical cancer survival outcomes [Bonte, et al. 2019; Liu, et al. 2018; Uppal, et al. 2017; ACOG 2016; Showalter, et al. 2016]. Appropriate staging, management, and therapy for cervical cancer should be determined by a gynecologic oncologist or a clinician with similar training and experience. Although the effect of treatment by gynecologic oncology specialists has not been studied among patients with cervical cancer, research suggests that patients with other gynecologic cancers experience better survival outcomes, especially when treated at National Cancer Institute Comprehensive Cancer Centers [Bonte, et al. 2019; Wright, et al. 2017; Bristow, et al. 2015; Minig, et al. 2015; Mercado, et al. 2010].

Management and therapy should be based on the stage of disease. Treatment may include cone biopsy/loop electrosurgical excision, total hysterectomy, radical hysterectomy, radiation therapy, chemotherapy, and combined modality therapy with surgery, radiation, and chemotherapy. The increased risk of treatment failure and high recurrence rate in individuals with HIV demand close follow-up by a multidisciplinary team of clinicians even after definitive cervical cancer treatment.

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Supplement: Guideline Development and Recommendation Ratings

Table S1: Guideline Development: New York State Department of Health AIDS Institute Clinical Guidelines Program	
Developer	New York State Department of Health AIDS Institute (NYSDOH AI) Clinical Guidelines Program
Funding source	NYSDOH AI
Program manager	Clinical Guidelines Program, Johns Hopkins University School of Medicine, Division of Infectious Diseases. See Program Leadership and Staff.
Mission	To produce and disseminate evidence-based, state-of-the-art clinical practice guidelines that establish uniform standards of care for practitioners who provide prevention or treatment of HIV, viral hepatitis, other sexually transmitted infections, and substance use disorders for adults throughout New York State in the wide array of settings in which those services are delivered.
Expert committees	The NYSDOH AI Medical Director invites and appoints committees of clinical and public health experts from throughout New York State to ensure that the guidelines are practical, immediately applicable, and meet the needs of care providers and stakeholders in all major regions of New York State, all relevant clinical practice settings, key New York State agencies, and community service organizations.
Committee structure	• Leadership: AI-appointed chair, vice chair(s), chair emeritus, clinical specialist(s), JHU Guidelines Program Director, AI Medical Director, AI Clinical Consultant, AVAC community advisor • Contributing members • Guideline writing groups: Lead author, coauthors if applicable, and all committee leaders
Disclosure and management of conflicts of interest	• Annual disclosure of financial relationships with commercial entities for the 12 months prior and upcoming is required of all individuals who work with the guidelines program, and includes disclosure for partners or spouses and primary professional affiliation. • The NYSDOH AI assesses all reported financial relationships to determine the potential for undue influence on guideline recommendations and, when indicated, denies participation in the program or formulates a plan to manage potential conflicts. Disclosures are listed for each committee member.
Evidence collection and review	• Literature search and review strategy is defined by the guideline lead author based on the defined scope of a new guideline or update. • A comprehensive literature search and review is conducted for a new guideline or an extensive update using PubMed, other pertinent databases of peer-reviewed literature, and relevant conference abstracts to establish the evidence base for guideline recommendations. • A targeted search and review to identify recently published evidence is conducted for guidelines published within the previous 3 years. • Title, abstract, and article reviews are performed by the lead author. The JHU editorial team collates evidence and creates and maintains an evidence table for each guideline.
Recommendation development	• The lead author drafts recommendations to address the defined scope of the guideline based on available published data. • Writing group members review the draft recommendations and evidence and deliberate to revise, refine, and reach consensus on all recommendations. • When published data are not available, support for a recommendation may be based on the committee's expert opinion. • The writing group assigns a 2-part rating to each recommendation to indicate the strength of the recommendation and quality of the supporting evidence. The group reviews the evidence, deliberates, and may revise recommendations when required to reach consensus.

Table S1: Guideline Development: New York State Department of Health AIDS Institute Clinical Guidelines Program	
Review and approval process	• Following writing group approval, draft guidelines are reviewed by all contributors, program liaisons, and a volunteer reviewer from the AI Community Advisory Committee. • Recommendations must be approved by two-thirds of the full committee. If necessary to achieve consensus, the full committee is invited to deliberate, review the evidence, and revise recommendations. • Final approval by the committee chair and the NYSDOH AI Medical Director is required for publication.
External reviews	• External review of each guideline is invited at the developer's discretion. • External reviewers recognized for their experience and expertise review guidelines for accuracy, balance, clarity, and practicality and provide feedback.
Update process	• JHU editorial staff ensure that each guideline is reviewed and determined to be current upon the 3-year anniversary of publication; guidelines that provide clinical recommendations in rapidly changing areas of practice may be reviewed annually. Published literature is surveilled to identify new evidence that may prompt changes to existing recommendations or development of new recommendations. • If changes in the standard of care, newly published studies, new drug approval, new drug-related warning, or a public health emergency indicate the need for immediate change to published guidelines, committee leadership will make recommendations and immediate updates and will invite full committee review as indicated.

Table S2: Recommendation Ratings and Definitions		
Strength	**Quality of Evidence**	
A: Strong B: Moderate C: Optional	1	Based on published results of at least 1 randomized clinical trial with clinical outcomes or validated laboratory endpoints.
	*	Based on either a self-evident conclusion; conclusive, published, in vitro data; or well-established practice that cannot be tested because ethics would preclude a clinical trial.
	2	Based on published results of at least 1 well-designed, nonrandomized clinical trial or observational cohort study with long-term clinical outcomes.
	2†	Extrapolated from published results of well-designed studies (including nonrandomized clinical trials) conducted in populations other than those specifically addressed by a recommendation. The source(s) of the extrapolated evidence and the rationale for the extrapolation are provided in the guideline text. One example would be results of studies conducted predominantly in a subpopulation (e.g., one gender) that the committee determines to be generalizable to the population under consideration in the guideline.
	3	Based on committee expert opinion, with rationale provided in the guideline text.