rates among MSM and African Americans), and then fell to a nadir of 2.1 cases in 2000–2001 (with rates falling most rapidly among heterosexual African Americans). Unfortunately, since 1996, with the introduction of highly active antiretroviral therapy, the increased use of "serosorting" (i.e., the avoidance of unprotected sex with HIV-serodiscordant partners but not with HIV-seroconcordant partners, a strategy that provides no protection against STIs other than HIV infection), and an ongoing epidemic of methamphetamine use, gonorrhea, syphilis, and chlamydial infection have had a remarkable resurgence among MSM in North America and Europe, where outbreaks of a rare type of chlamydial infection (lymphogranuloma venereum [LGV]) that had virtually disappeared during the AIDS era have occurred. In 2012, ~75% of primary and secondary syphilis cases reported to the CDC were in MSM. These developments have resulted in a high degree of co-infection with HIV and other sexually transmitted pathogens (particularly syphilis and LGV), primarily among MSM.

MANAGEMENT OF COMMON SEXUALLY TRANSMITTED DISEASE (STD) SYNDROMES

Although other chapters discuss management of specific STIs, delineating treatment based on diagnosis of a specific infection, most patients are actually managed (at least initially) on the basis of presenting symptoms and signs and associated risk factors, even in industrialized countries. Table 163-2 lists some of the most common clinical STD syndromes and their microbial etiologies. Strategies for their management are outlined below. **Chapters 225e and 226 address the management of infections with human retroviruses.**

STD care and management begin with risk assessment and proceed to clinical assessment, diagnostic testing or screening, treatment, and prevention. Indeed, the routine care of any patient begins with risk assessment (e.g., for risk of heart disease, cancer). STD/HIV risk assessment is important in primary care, urgent care, and emergency care settings as well as in specialty clinics providing adolescent, HIV/AIDS, prenatal, and family planning services. STD/HIV risk assessment guides detection and interpretation of symptoms that could reflect an STD; decisions on screening or prophylactic/preventive treatment; risk reduction counseling and intervention (e.g., hepatitis B vaccination); and treatment of partners of patients with known infections. Consideration of routine demographic data (e.g., gender, age, area of residence) is a simple first step in STD/HIV risk assessment. For example, national guidelines strongly recommend routine screening of sexually active females ≤25 years of age for *C. trachomatis* infection. Table 163-3 provides a set of 11 STD/HIV risk-assessment questions that clinicians can pose verbally or that health care systems can adapt (with yes/no responses) into a routine self-administered questionnaire for use in clinics. The initial framing statement gives permission to discuss topics that may be perceived as sensitive or socially unacceptable by providers and patients alike.

Risk assessment is followed by clinical assessment (elicitation of information on specific current symptoms and signs of STDs). Confirmatory diagnostic tests (for persons with symptoms or signs) or screening tests (for those without symptoms or signs) may involve microscopic examination, culture, antigen detection tests, nucleic acid amplification tests (NAATs), or serology. Initial syndrome-based treatment should cover the most likely causes. For certain syndromes, results of rapid tests can narrow the spectrum of this initial therapy (e.g., saline microscopy of vaginal fluid for women with vaginal discharge, Gram's stain of urethral discharge for men with urethral discharge, rapid plasma reagin test for genital ulcer). After the institution of treatment, STD management proceeds to the "4 Cs" of prevention and control: *c*ontact tracing (see "Prevention and Control of STIs," below), ensuring *c*ompliance with therapy, and *c*ounseling on risk reduction, including *c*ondom promotion and provision.

Consistent with current guidelines, all adults should be screened for infection with HIV-1 at least once and more frequently if they are at elevated risk for acquisition of this infection.

URETHRITIS IN MEN

Urethritis in men produces urethral discharge, dysuria, or both, usually without frequency of urination. Causes include *Neisseria gonorrhoeae*, *C. trachomatis*, *Mycoplasma genitalium*, *Ureaplasma urealyticum*, *Trichomonas vaginalis*, HSV, and adenovirus.

Until recently, *C. trachomatis* caused ~30–40% of cases of nongonococcal urethritis (NGU), particularly in heterosexual men; however, the proportion of cases due to this organism has probably declined in some populations served by effective chlamydial-control programs, and older men with urethritis appear less likely to have chlamydial infection. HSV and *T. vaginalis* each cause a small proportion of NGU cases in the United States. Recently, multiple studies have consistently implicated *M. genitalium* as a probable cause of many

TABLE 163-2 MAJOR SEXUALLY TRANSMITTED DISEASE SYNDROMES AND SEXUALLY TRANSMITTED MICROBIAL ETIOLOGIES

Syndrome	Sexually Transmitted Microbial Etiologies
AIDS	HIV types 1 and 2
Urethritis: males	*Neisseria gonorrhoeae, Chlamydia trachomatis, Mycoplasma genitalium, Ureaplasma urealyticum* (subspecies *urealyticum*), *Trichomonas vaginalis,* HSV
Epididymitis	*C. trachomatis, N. gonorrhoeae*
Lower genital tract infections: females	
Cystitis/urethritis	*C. trachomatis, N. gonorrhoeae,* HSV
Mucopurulent cervicitis	*C. trachomatis, N. gonorrhoeae, M. genitalium*
Vulvitis	*Candida albicans,* HSV
Vulvovaginitis	*C. albicans, T. vaginalis*
BV	BV-associated bacteria (see text)
Acute pelvic inflammatory disease	*N. gonorrhoeae, C. trachomatis,* BV-associated bacteria, *M. genitalium,* group B streptococci
Infertility	*N. gonorrhoeae, C. trachomatis,* BV-associated bacteria
Ulcerative lesions of the genitalia	HSV-1, HSV-2, *Treponema pallidum, Haemophilus ducreyi, C. trachomatis* (LGV strains), *Klebsiella (Calymmatobacterium) granulomatis*
Complications of pregnancy/puerperium	Several agents implicated
Intestinal infections	
Proctitis	*C. trachomatis, N. gonorrhoeae,* HSV, *T. pallidum*
Proctocolitis or enterocolitis	*Campylobacter* spp., *Shigella* spp., *Entamoeba histolytica, Helicobacter* spp., other enteric pathogens
Enteritis	*Giardia lamblia*
Acute arthritis with urogenital infection or viremia	*N. gonorrhoeae* (e.g., DGI), *C. trachomatis* (e.g., reactive arthritis), HBV
Genital and anal warts	HPV (30 genital types)
Mononucleosis syndrome	CMV, HIV, EBV
Hepatitis	Hepatitis viruses, *T. pallidum,* CMV, EBV
Neoplasias	
Squamous cell dysplasias and cancers of the cervix, anus, vulva, vagina, or penis	HPV (especially types 16, 18, 31, 45)
Kaposi's sarcoma, body-cavity lymphomas	HHV-8
T cell leukemia	HTLV-1
Hepatocellular carcinoma	HBV
Tropical spastic paraparesis	HTLV-1
Scabies	*Sarcoptes scabiei*
Pubic lice	*Pthirus pubis*

Abbreviations: BV, bacterial vaginosis; CMV, cytomegalovirus; DGI, disseminated gonococcal infection; EBV, Epstein-Barr virus; HBV, hepatitis B virus; HHV-8, human herpesvirus type 8; HPV, human papillomavirus; HSV, herpes simplex virus; HTLV, human T cell lymphotropic virus; LGV, lymphogranuloma venereum.