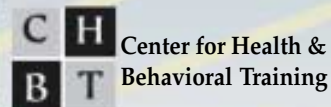


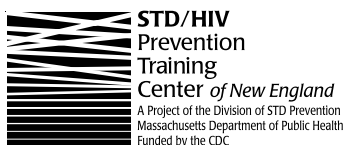
PREVENTION AND MANAGEMENT OF SEXUALLY TRANSMITTED DISEASES IN PERSONS LIVING WITH HIV/AIDS

A Production of
The Eastern Quadrant
STD/HIV Prevention Training Centers
October, 2002



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Center for Health & Behavioral Training



AUTHORS

Part I Centers: Clinical Management

Region I: Sylvie Ratelle, MD, MPH (Boston)
Gaby Brzankalski, MD (Boston)

Region II: Thomas Cherneskie, MD, MPH (New York City)

Region III: Anne Rompalo, MD, MSc (Baltimore)
Terry Hogan, MPH (Baltimore)


Part II Center: Social & Behavioral Intervention

Region II: Pat Coury-Doniger, NP (New York State)
Peter McGrath (New York State)

Part III Center: Partner Management

Region II: Sue Anne Payette (New York State)
Rosalind Thomas (New York State)

FUNDING

 The development of this module was made possible through funding by the Centers for Disease Control and Prevention (CDC).

PRODUCTION

Educational Media Center,
Boston University School of Medicine, Boston, Massachusetts.
Domenic Screnci, Ed.D, Director
Lucy Milne, Ed.M, Assistant Director

ACKNOWLEDGEMENTS

We wish to thank the following individuals for their review and comments on the document:

Jean R. Anderson, MD
John Douglas, MD
Bradley Stoner, MD, PhD
Jack Sobel, MD
Anna Wald, MD, MPH
Karen Wendel, MD

INTRODUCTION

PREVENTION AND MANAGEMENT OF SEXUALLY TRANSMITTED DISEASES (STDs) IN PERSONS LIVING WITH HIV/AIDS

This training module is the result of a collaborative effort by the STD/HIV Prevention Training Centers (PTCs) in the Eastern Geographic Quadrant (Federal regions I, II, and III) of the National Network of STD/HIV Prevention Training Centers. The National Network is comprised of ten training centers offering Part I (Clinical Management), Part II (Behavioral and Social Intervention), and Part III (Partner Services) training to health and human services providers in the United States. For information about the National Network, look at our web site at www.stdhivpreventiontraining.org. The content of the module is consistent with the recommendations from the Centers for Disease Control and Prevention. Sexually Transmitted Diseases Treatment Guidelines 2002. MMWR 2002;51(No. RR-6):1-80. The screening recommendations were adapted from the ones developed by the California STD Controllers Association and Conference of Local AIDS Directors, which were published in Sexually Transmitted Diseases 2001;28:460-3.

OBJECTIVES

Section 1:

- Describe the recommendations for behavioral risk assessment and STD screening in persons living with HIV/AIDS.

Section 2:

- Summarize the epidemiologic evidence of inter-relationships between STDs and HIV.
- Appraise how clinical manifestations of STDs may differ in HIV infected persons.
- Describe the treatment and management of STDs in HIV infected persons.

Section 3:

- Define the target behaviors for HIV infected persons that reduce the risk of STD/HIV transmission.
- Assess the person's readiness to adopt or adhere to the identified target behavior.
- Use a counseling strategy that matches the person's stage of readiness.

Section 4:

- Describe the rationale for partner management.
- Describe the clinician's role in the management of partners (including evaluation, diagnosis, treatment, and timely reporting) as part of standard STD/HIV-related care.
- Locate trained public health professionals (e.g., disease intervention specialists (DIS) and public health advisors (PHA)) within the state and local health departments.

TARGET AUDIENCE:

This module is designed for clinicians who participate in the care of persons living with HIV/AIDS.

MODULE OUTLINE

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SECTION 1

RECOMMENDATIONS FOR STD CLINICAL PREVENTIVE SERVICES FOR PERSONS LIVING WITH HIV/AIDS

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STD clinical preventive services includes routine STD screening, a behavioral risk assessment, and counseling for risk behavior change. A comprehensive clinical evaluation of persons infected with HIV should include routine periodic STD screening as well as a behavioral risk assessment focused on sexual, substance use, and health care seeking behaviors.

Background: Need for routine STD screening, behavioral risk assessment and behavior change interventions.

Centers for Disease Control and Prevention: HIV prevention through early detection and treatment of other sexually transmitted diseases - United States Recommendations of the Advisory Committee for HIV and STD Prevention - Statement - July 1998:47; rr-12:14.

“Persons already infected with HIV should be screened routinely for STDs. Early STD detection and treatment in this subpopulation could be particularly effective and cost-beneficial in reducing HIV transmission for three reasons: most STDs promote increased shedding of HIV; the number of HIV-infected persons is smaller than the number of persons at risk for becoming infected; and HIV infected persons often are receiving regular medical care.

Specifically, all HIV-infected persons who might be at risk for STD acquisition should be screened regularly for curable STDs, including gonorrhea, chlamydial infection, syphilis, and - among women - trichomoniasis. In addition, person with HIV/AIDS should be assessed for genital herpes, educated about symptoms of herpes, and counseled to particularly avoid sex during periods with symptoms of reactivation of genital herpes, which are associated with higher rates of HIV viral shedding. Screening frequency should depend on the person’s risk behavior, the potential risk behavior of the person’s partner(s), and the incidence of STDs in the local population, but generally should occur at least yearly if any potential risk exists for STD acquisition. It should be performed more frequently if any incident STDs are detected by symptoms or screening. These services should be provided as part of and at the site of routine, quality HIV care.”

Janssen R, Holtgrave D, Valdiserri R, Shepherd M, Gayle H, and DeCock K. The serostatus approach to fighting the HIV epidemic: prevention strategies for infected individuals. American Journal of Public Health 2001;91:1019 - 1024.

More recently, a new approach to prevention for positives was recommended by the CDC. The **Serostatus Approach to Fighting the Epidemic** or **SAFE** program emphasizes five components:

1. Increase the number of HIV-infected persons who know their serostatus;
2. Increase the use of health care and preventive services (including STD screening);
3. Increase high-quality care and treatment;
4. Increase adherence to therapy by individuals with HIV;
5. Increase the number of individuals with HIV who adopt and sustain HIV-STD risk reduction behavior.

1.1 STD HISTORY & BEHAVIORAL RISK ASSESSMENT

THIS ASSESSMENT SHOULD BE DONE AT THE INITIAL MEDICAL EVALUATION OF A PATIENT WITH HIV OR IF NOT PREVIOUSLY DONE AT THAT TIME AND BE REPEATED AT SUBSEQUENT VISITS, AND AT LEAST EVERY THREE MONTHS.

- Obtain a sexual and substance use risk assessment and record in medical chart (see Appendix A and Section 3).
- Obtain a STD history (disease/infection, number of times, approximated dates, treatment) and record in the medical chart.
- Ask about symptoms consistent with the presence of an STD (see Appendices A and B).

<p>NOTES:</p> <hr/> <hr/> <hr/> <hr/> <hr/>
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1.2 STD SCREENING AND VACCINATION

AT THE INITIAL MEDICAL EVALUATION OF A PATIENT WITH HIV OR IF NOT PREVIOUSLY DONE AT THAT TIME

1.2.1 SCREENING

- **Visual Inspection of the skin, mouth, genitals, and anal area** (see Appendix B).
- **Syphilis Serology:** quantitative RPR or VDRL
A positive test should be confirmed with a treponemal test (FTA, TPPA or Syphilis G- EIA)
- **A test for *Neisseria gonorrhoeae*:**
Cervix; urethra for men (and women without a cervix)
Nucleic acid amplification test (NAAT) or culture is preferred. If resistant gonorrhea is suspected, culture and antibiotic susceptibility testing should be performed.
Rectum and pharynx if history of exposure
Only cultures should be used for these sites. Non-culture tests are not currently FDA approved for rectal and pharyngeal sites. Studies are on-going to assess the test performance characteristics of the NAATs at these sites
Urine
Urine-based testing with a NAAT should be used if a urethral or cervical swab is refused.
- **A test for *Chlamydia trachomatis*:**
Cervix; urethra for men (and women without a cervix)
NAATS are preferred because they are highly sensitive and specific.
Rectum and pharynx - consider screening if history of exposure
Only cultures should be used at these sites. Non-culture tests are not currently FDA approved for rectal and pharyngeal sites. Studies are on-going to assess the test performance characteristics of the NAATs at these sites.
Urine
Urine-based testing with a NAAT should be used if a urethral or cervical swab is refused.
- **Hepatitis B serology**
- **Hepatitis C serology**

NOTES:

- **A pelvic examination and wet preparation and pH of vaginal fluid to assess for *Trichomonas vaginalis* and bacterial vaginosis.** A cervical cytology should be performed twice in first year of HIV diagnosis. If normal, the cytology should be repeated annually thereafter. Some experts recommend screening every six months for women with a CD4 cell count of 200 or less.

Clinicians may consider screening for herpes simplex virus (HSV) infection by glycoprotein G-specific serology. This may be useful to identify symptoms of genital herpes that may not have been recognized by the patient, to help in the clinical management of atypical symptoms, and to provide behavioral counseling.

1.2.2 VACCINATION

- **Hepatitis B vaccine:** administer to patients who do not have serologic evidence of immunity to hepatitis B
- **Hepatitis A vaccine:** administer to illegal drug users (both injecting and non-injecting drug users); to men who have sex with men, including those who report having minimal or no current sexual activity; to persons with chronic liver disease, including persons with chronic HBV and HCV infection who have evidence of chronic liver disease; to persons engaging in anal-oral sexual contact or insertive anal intercourse without condoms.

NOTES:

AT SUBSEQUENT VISITS

- As mentioned in Section 1.1, an assessment of risk history/sexual exposures since last visit should be performed to determine the need for re-screening.
 - Visual examination and laboratory screening for STDs (syphilis serology, gonorrhea testing at all sites of exposure, chlamydia testing for urethral/cervical exposure, assessment for the presence of trichomonas) should be performed annually or more frequently based on the patient's or their partner's sexual behavior.¹
 - Patients who are diagnosed with an STD are at higher risk of reinfection. STD screening should be repeated 3 to 4 months after treatment for any patient who is diagnosed with an STD.
 - NAAT urine-based testing should be considered to screen women for chlamydia and gonorrhea when a pelvic examination is not indicated or the patient refuses an STD examination and specimen collection.
- ¹ Persons at higher risk include those with multiple or anonymous sex partners or other behaviors associated with transmission of HIV and other STDs; sex or needle sharing partner(s) of persons with any of the above risks; persons with relationship changes that may lead to increased risky behaviors (e.g. dissolution of a relationship); and those residing in an area or who are members of a population with a high prevalence of STDs.

NOTES:

1.3 BEHAVIORAL COUNSELING

- The behavioral risk assessment should be used by the clinician to identify behaviors which would reduce the risk of HIV transmission to others and acquisition of new STDs for the individual patient.
- The clinician should assess the client's readiness to adopt or adhere to these safer behaviors.
- The clinician should use a client-centered approach to counsel the patient to engage in safer behaviors in a way that addresses their unique circumstances.
- Stress that, if infected with an STD, risk of transmitting HIV to sexual partners is increased.
- Reinforce to immuno-suppressed patients that they are more susceptible to STD infection.
- See Section 3 for Stage-Based Behavioral Counseling for persons living with HIV/AIDS.

NOTES:

1.4 PARTNER MANAGEMENT

- HIV-infected patients should be encouraged to notify their partners and to refer them for counseling and testing. If requested by the patient, health-care providers should assist in this process, either directly or by referral to health department partner-notification programs.
- CDC treatment Guidelines include the recommendation that if patients are unwilling to notify their partners, or if they cannot ensure that their partners will seek counseling, physicians or health department personnel should use confidential procedures to notify partners. Consult your state laws to determine when (and if) confidential notification may be undertaken.
- See Section 2 for more disease-specific information on partner management of patients co-infected with an STD and Section 4 for more information on partner services and program support.

NOTES:

1.5 APPENDIX A

SEXUAL AND SUBSTANCE USE RISK ASSESSMENT

STD risk indicators (risk depends on specific STD)

- a. Adolescents.
- b. A sex partner with a known STD diagnosis.
- c. More than one recent sex partner (past 1-4 months)
- d. Sex partner with other recent sex partners (past 1-4 months).
- e. Inconsistent use of barrier methods with casual or multiple partners.
- f. New partner in the last 2 or 3 months.
- g. Commercial sex or exchange of sex for drugs.
- h. A recent or past history of sexual assault or abuse.
- i. Current use of injection drug use or substance abuse by patient or sex partners.

SEXUAL HISTORY

A sexual history should:

- a. Reinforce confidentiality.
- b. Establish patient-provider rapport.
- c. Ensure accurate definition of the problem.
- d. Elicit accurate clinical and behavioral information.
- e. Identify specific STD risk behaviors.
- f. Lead to successful medical and epidemiological management.
- g. Define sexual activity using in a range of specific anatomic and behavioral terms.

ASKING ABOUT SEX PARTNERS

(“Tell me about your sexual partners”):

- a. Define “sex partners” as anyone the patient has had intimate sexual contact at oropharyngeal, genital and anorectal sites.
- b. Sex with men, women or both.
- c. Number of sex partners in the past 1-4 months (any anonymous?).
- d. Number of new sex partners in the past 1-4 months (any anonymous?).
- e. Total number of sex partners in the past 12 months (any anonymous?).
- f. If partner(s) have other sex partners.
- g. Partner with known diagnosis of STD or current STD symptoms.

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- h. Commercial sex, exchange of money or drug for sex.
- i. Meeting partners over the internet.

Asking about sites of recent sexual exposure (past 1-4 months):

- a. Vaginal intercourse (penis to vagina).
- b. Anal intercourse (penis to anus), receptive and/or insertive.
- c. Oral sex (mouth to penis, vagina, or anus).
- d. Other sexual practices may be important in certain situations: use of sex toys or devices, masturbation, “fisting”, sadomasochism (“S & M”).

Asking about condom use for sexual practices (“What’s your experience been with condom use?”):

- a. Pattern of use (never, sometimes, always).
- b. Use with different sites of exposure (vaginal, rectal, oral).
- c. Condom use with last sexual intercourse.
- d. Use with steady and non-steady partners, if applicable.
- e. Circumstances of non-use (e.g. substance use)
- f. Condom breakage and correct use.

Asking about prior history of STDs and genitourinary infections (note number of episodes, when last treated):

- a. Gonorrhea.
- b. Chlamydia.
- c. Nongonococcal urethritis (NGU), urethritis, epididymitis (males).
- d. Mucopurulent cervicitis (MPC) (females).
- e. Pelvic inflammatory disease (PID) (females).
- f. Syphilis - note stage or symptoms, treatment, year, city or state, last VDRL titer, if known.
- g. Genital herpes - note recurrence rate per year.
- h. Genital warts - genital or anal.
- i. Trichomoniasis.
- j. Bacterial vaginosis (females).
- k. Yeast - note frequency, treatment.
- l. Urinary tract infections.
- m. Hepatitis.

NOTES:

Asking about STD associated symptoms and signs:

- a. Oral/pharyngeal symptoms, including oral lesions, cold sores.
- b. Lymph node swelling or tenderness.
- c. Urethral discharge (male).
- d. Vaginal discharge or odor (female).
- e. Dysuria, frequency, urgency.
- f. Itching or irritation (vulvar, anal, penile, pubic area, perineum).
- g. Abnormal vaginal bleeding (spotting between periods, abnormal menses).
- h. Genital lesions or rashes (painful, recurrent).
- i. Non-genital skin rashes.
- j. Pelvic pain/pain with intercourse (dyspareunia).
- k. Testicular pain, swelling, masses.
- l. Rectal/perianal symptoms (pain, discharge, bleeding, itching, sores).
- m. Abdominal complaints (nausea, vomiting, constipation, diarrhea).
- n. Systemic or constitutional symptoms.
- o. Acute arthritis symptoms.

Defining the history of symptoms and signs:

- a. Anatomically stated, dimensions, distribution, onset, duration, recurrence.
- b. Document metric measurement of all lesions, signs & symptoms.
- c. Symptoms ever occurred in the past.
- d. Have symptoms changed since onset.
- e. Anything made symptoms better or worse.
- f. Relation of symptoms to menses, sexual intercourse.

Substance Use History

- a. Patient history of crack cocaine/speed use.
- b. Patient history of injection drug use.
- c. Use of shared needles (frequency and circumstances).
- d. Rinsing needles/works with bleach.
- e. Use of drugs and/or alcohol around sexual activity.
- f. History of exchanging drugs/money for sex.

For more complete information, please refer to the Core Curriculum Modules of the National Network of STD/HIV Prevention Training Centers at www.stdhivpreventiontraining.org

NOTES:

1.6 APPENDIX B

STD ASSOCIATED SIGNS AND SYMPTOMS

WOMEN

Examination	Important Findings & Specimens
Skin of face, trunk, legs, forearms and palms	Lesions or rashes consistent with secondary syphilis
Oral Exam	
Lips, tongue, tonsils, hard & soft palate, buccal mucosa, gums	Mucous patches, orolabial herpes, primary syphilis lesions, signs of pharyngitis
Specimens	Swab of tonsils and posterior oro-pharynx for GC culture (and chlamydia, if culture is available)
Axillary, cervical, epitrochlear, inguinal/ femoral lymph nodes	Adenopathy
Abdomen	Lower abdominal or pelvic tenderness consistent with PID
External genitals	
Pubic Hair	Crabs or nits
Pubic, genital, and perineal skin	Lesions or eruptions consistent with primary or secondary syphilis, herpes, condyloma lata, molluscum contagiosum, or scabies
Inferio-lateral introitus	Tenderness, erythema or fluctuant mass consistent with bartholinitis
Urethral meatus	Discharge (following milk of urethra)
Specimens	Special testing of lesions (e.g. darkfield, HSV culture) present.

NOTES:

STD ASSOCIATED SIGNS AND SYMPTOMS, *cont.***WOMEN**

Examination	Important Findings & Specimens
Vagina	
Vaginal walls	Edema or lesions
Vaginal vault	Vaginal Secretions consistent with Bacterial Vaginosis, Trichomoniasis or Candida
Specimens	Swab of anterior fornix or lateral vaginal walls for Vaginal pH, KOH “whiff” test, and Saline wet prep (for motile trichomonads or clue cells) and KOH wet prep (for Pseudohyphae or buds). Trichomonads culture (Diamonds media or InPouch TV) if available.
Cervix	
Cervix and os	Ulcerations, nodules, polyps, ectopy, friability, cervical petechia (ie strawberry cervix), or mucopurulent discharge from the cervical os.
Specimens	Endocervical swab for Gonorrhea and Chlamydia testing (and gram stain if available); Pap smear if indicated. In women with hysterectomy, specimens for GC and Chlamydia can be taken from the urethra, or testing can be performed on urine with an appropriate FDA approved test for GC/Chlamydia.
Uterus and Adnexa	On bimanual exam: cervical motion tenderness or tenderness of the uterus or adnexa consistent with PID; adnexal mass consistent with a tubo-ovarian abscess.
Ano-rectal	
Skin of the anus	Ulcerations, condyloma or other lesions
Specimens	Rectal swab for GC culture (and Chlamydia culture if available). Anoscopic exam and specimen collection (including gram stain for GC if available) should be considered in patient with rectal symptoms and recent history of anal receptive sex

NOTES:

STD ASSOCIATED SIGNS AND SYMPTOMS, *cont.*

MEN

Examination	Important Findings & Specimens
Skin	
Oral Lymph nodes	See previous pages
Genitals	
Pubic Hair	Crabs or nits
Skin of the penis, scrotum, and perineum	Lesions or eruptions consistent with primary or secondary syphilis, herpes, condyloma accuminata, molluscum contagiosum, or scabies
Urethral meatus	Papular lesions consistent with intraurethral warts; discharge (following milking/stripping of the penis)
Testes and epididymis	Swelling or tenderness consistent with epididymitis
Specimens	Intra-urethral swab (inserted 2-3 cm) or urine for gonorrhea and chlamydia testing. Gram stain of urethral smear if available. If trichomonas urethritis is suspected, first void urine (concentrated 10x) for trichomonads, or urethral swab\urine for culture. Special testing (e.g. darkfield or HSV culture) of lesions if present.
Ano-rectal	See previous pages

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SECTION 2

CLINICAL MANAGEMENT OF STDs IN HIV-INFECTED PERSONS

Over the past several years, many complex interactions between HIV infection and other sexually transmitted diseases (STDs) have been described in clinical trials and epidemiological studies. HIV has been found to alter the manifestation and natural course of a number of STDs. Conversely, certain STDs have been shown to alter the transmission of HIV infection. In many instances, the presence of HIV influences the choice of drugs, duration of treatment and follow-up in managing STDs. Hence, the general management of STDs in HIV-infected persons may need to be different from that in non-HIV-infected individuals. The following information is a summary from the most recent CDC publications, medical texts and journal articles published in the past few years. It covers unique features of presentation, diagnostics, and treatment strategies for HIV-infected persons with STDs. This section reviews the management of the following STDs in co-infected patients:

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2.3 VAGINAL INFECTIONS	31
2.3.1 Trichomoniasis	32
2.3.2 Bacterial Vaginosis	35
2.3.3 Vulvovaginal Candidiasis (VVC)	38
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2.1 GENITAL ULCER DISEASE

EPIDEMIOLOGIC EVIDENCE OF INTER-RELATIONSHIPS WITH HIV

- All of the major etiologic agents of genital ulcer disease (herpes simplex virus, syphilis and chancroid) have been associated with an increased risk of acquiring and transmitting HIV (Fleming, 1999; Wright, 2001).
- Wasserheit analyzed 15 studies and found that STDs increase other overall risk of acquiring HIV by 3-5 times and that HIV may increase the prevalence of some STDs (Wasserheit, 1992).
- Two studies from Nairobi, Kenya, have demonstrated that HIV is more prevalent in persons with a history or clinical evidence of genital ulcer disease (Greenblatt, 1988; Simonson, 1988).
- Studies have isolated HIV from genital ulcer exudates (Schacker, 1998; Gadkari, 1998).
- A proposed mechanism by which genital ulcer disease may facilitate HIV transmission is that disruption of the genital mucosa, associated with the recruitment of inflammatory cells, provides additional targets (i.e., CD4+ lymphocytes and macrophages) for the HIV to attach to during transmission from infected to uninfected host.
- A study conducted in Tanzania found that improved STD treatment in a rural community decreased HIV incidence by about 40% (Grosskurth, 1995).
- Per CDC recommendation, HIV testing should be offered to patients with ulcers positive for *H. ducreyi* or *T. pallidum* who are not known to be HIV infected and considered for those with HSV ulcers (CDC, 2002).

NOTES:

2.1.1 SYPHILIS

GENERAL OVERVIEW

- Syphilis is a systemic disease caused by *T. pallidum*.
- Cases of rapid progression from early syphilis to neurosyphilis in HIV-infected patients, some having received appropriate therapy for early syphilis have been reported (Gordon, 1994).
- There are some associations between accelerated ulcerating syphilis and advancing HIV disease.
- One study found no association between HIV stage and syphilis progression or treatment failure (Rolfs, 1997).

CLINICAL PRESENTATION

- Stages often present similar to stages in non-HIV-infected individuals (Musher, 1999). Differences are highlighted in the following text.

PRIMARY SYPHILIS

- **Chancere:** begins as a macule/papule which progressively erodes into a clean based, painless, indurated ulcer with smooth firm borders. **Although usually singular, multiple chancres can occur in at least 25% of cases, and are more common in HIV-infected persons (up to 70% of cases in one study) (Rolfs, 1997; Rompalo, 2001).**
- **Lymphadenopathy** is classically painless, rubbery and bilateral. No difference in clinical presentation has been documented between HIV infected and non-infected persons.

SECONDARY SYPHILIS

- Symptoms usually occur 3-6 weeks after primary stage.
- Symptoms may include constitutional symptoms (malaise, fever, headache, etc), a macular-papular rash which often involves palms and soles, generalized lymphadenopathy, mucous patches in the mouth, and condyloma lata.

NOTES:

LATENT SYPHILIS

- Is defined as the presence of a positive serology in the absence of evidence of clinical disease and is divided for contact tracing and treatment purposes into two sub-categories:
 - early latent < 1 year duration
 - late latent > 1 year duration
- The latent stage can last 2 to 50 years

TERTIARY SYPHILIS

Late benign syphilis or gummatous syphilis

- The “gumma” is felt to be a marked inflammatory response to a small number of organisms. Pathologically, it is a granuloma with coagulative necrosis. There can be involvement of any organ system, and lesions may occur in the skeletal, spinal and mucosal areas, as well as in the eye, viscera and the brain.
- Among all individuals with syphilis, the average onset is 4 to 10 years, however, **rapid progression from the primary chancre to gummatous lesions has been observed to occur over a period of months in some HIV-infected patients** (Friedman-Kien, 1996).

Cardiovascular syphilis

- Predilection for the vasa vasorum of the proximal aorta, with development of endarteritis.
- Cases of **rapidly developing aortitis have been reported in HIV-positive persons.**

Neurosyphilis

- Despite appropriate treatment, **patients with HIV have been reported to progress to neurosyphilis in the first two years after the diagnosis of syphilis** (Malone, 1995).
- There are various case reports of HIV-infected patients who experienced rapid progression from early syphilis to neurosyphilis. These patients presented with meningitis or cranial nerve deficits such as optic neuritis and deafness (Johns, 1987; Musher, 1990; Flood, 1998).
- According to a multicenter randomized trial, the detection of *T. pallidum* in the CSF in early syphilis is not more common in HIV infected persons, is not predictive of symptomatic neurosyphilis and is not linked to higher rates of serologically defined treatment failures. These findings suggest that **aggressive evaluation of the CSF in HIV-infected persons presenting with early syphilis may not be useful to guide therapy** (Rolfs, 1997).

NOTES:

SUMMARY OF UNIQUE FEATURES ASSOCIATED WITH HIV INFECTION:

1. Primary stage of syphilis consisting of **multiple or very extensive chancres**.
2. Neurosyphilis - Reports suggest that HIV-positive patients **have early neurological involvement and a higher risk of developing neurosyphilis than HIV negative patients**, despite previous therapy for syphilis. Case reports also suggest a more rapid progression of disease, with symptomatic neurosyphilis likely to occur sooner after infection in the HIV- positive patient compared with the HIV-negative patient. **Syphilitic meningitis** occurs more commonly in HIV-positive patients. However, **HIV-positive patients with or without neurosyphilis, are more likely to be younger, have higher CSF WBC count and higher CSF protein levels.**
3. **Case reports are published describing gummatous lesions** with possible involvement of skin, groin, penis, calf, thigh, oral cavity, and cerebrum.
4. Rapidly developing cases of **syphilitic aortitis**.
5. Presentation of syphilis as **encephalitis and arteritis**.
6. **Condyloma latum**, seen in patients with secondary syphilis, have been reported as more common in HIV-infected patients. Conflicting data exist.
7. Other unusual cutaneous manifestations including **lues maligna (syphilis with vasculitis), sclerodermiform lesions, keratodermas, extensive oral ulcers, deep cutaneous nodules, and rubeoliform eruptions, and hepatitis**.

DIAGNOSIS

Serologic tests for syphilis and HIV infection

- **The vast majority of HIV-positive patients will have nontreponemal and treponemal tests results that are consistent with their HIV-negative counterparts, and so appear to be accurate and reliable for diagnosis and following response to treatment.** However, HIV-infected patients may present with atypical serologic results (higher than expected, false negatives, delayed appearance of sero-reactivity or fluctuating titers).
- Recent data suggests that **HIV-positive patients respond less well serologically and titers decline more slowly than the patients without HIV infection when treated for early syphilis**, but clinically defined failure is uncommon in both groups. Rates of serologically defined treatment failures appear unrelated to CD4 cell counts in HIV-infected persons.
- **Negative syphilis serologies have been reported in HIV-positive patients with clinical evidence of syphilis.** This infrequent finding is limited to patients with CD4 < 200.

NOTES:

Darkfield of ulcerative lesions, as well as biopsy of skin rashes and lesions with subsequent direct fluorescent antibody (DFA) staining, should be considered in these cases.

- Treponemal tests may return to negative in HIV-positive patients over time. A study by Haas et al. suggests that the reactivity to treponemal tests may decrease when the CD4 count <200 (Haas, 1990).
- **HIV can cause a false-positive syphilis non-treponemal test.**

Indications for CSF Evaluation

- Any time clinical signs and symptoms of CNS and/or ophthalmic involvement are present (these can occur in early syphilis).
- Treatment failure.
- **In syphilis of > 1 year duration or unknown duration if HIV infection.**
- Evidence of active tertiary syphilis (gummas, aortitis, iritis).
- **CSF abnormalities such as mononuclear pleocytosis and elevated protein are common in early syphilis and in HIV infection. As a result, the clinical prognostic significance of CSF abnormalities in HIV-infected persons with primary or secondary infection is uncertain.** Most HIV-infected persons respond appropriately to standard penicillin therapy. However, some experts recommend CSF examination before treatment of early syphilis and intensified therapy if CSF abnormalities are present.
- **Neurosyphilis should be considered in the differential diagnosis of neurological disease in HIV infected persons.**

TREATMENT



RECOMMENDED TREATMENT REGIMEN FOR EACH STAGE OF SYPHILIS REMAINS THE SAME FOR HIV INFECTED AND NON-INFECTED PERSONS.

- **Penicillin is the drug of choice in HIV-infected patients.** If the patient is allergic, he/she should be managed according to the recommendations for penicillin-allergic HIV-negative patients.
- **Treatment failures with currently recommended regimens for syphilis have been reported in HIV-infected patients.** In addition, other reports suggest that HIV-infected patients with early syphilis are at increased risk of neurologic complications. However, a recent randomized clinical trial suggests that the magnitude of these risks is probably small, and **no treatment regimen other than the ones recommended have been proven**

NOTES:

to be more effective in preventing neurosyphilis, Therefore, close follow-up is warranted for all HIV-infected persons treated for syphilis, regardless of therapy.

- **The Jarisch-Herxheimer reaction** is a febrile reaction with chills, fever, arthralgias, headache, and a transiently increased prominence of lesions. It is due to the release of treponemal constituents, probably in an endotoxin-like reaction (Musher, 1999). This reaction is **reported more frequently in HIV-infected persons following treatment for early syphilis (26% vs. 12%)**.

CDC RECOMMENDED TREATMENT FOR PRIMARY, SECONDARY AND EARLY LATENT SYPHILIS (< 1 YEAR'S DURATION)

Benzathine penicillin G 2.4 million units IM once.

- Some experts recommend **additional treatment, such as three weekly doses of benzathine penicillin or additional antibiotics**.
- Penicillin allergy: Data are limited, however doxycycline 100 mg orally twice daily for 14 days and tetracycline 500 mg four times daily for 14 days are regimens that have been used. Some specialists recommend ceftriaxone 1 gram IM or IV daily for 8-10 days. Preliminary data suggests that azithromycin may be effective as a single oral dose of 2 gm. **The use of any of these therapies in HIV infected persons has not been studied, and must be undertaken with caution.**
- **Pregnant HIV-infected patients who are penicillin allergic must be desensitized and treated with penicillin.**

CDC RECOMMENDED TREATMENT FOR LATE LATENT SYPHILIS (> 1 YEAR'S DURATION) OR OF UNKNOWN DURATION

Benzathine penicillin G 2.4 million units IM weekly x 3 consecutive weeks

- Rule out tertiary disease in all patients with latent syphilis (neurosyphilis, aortitis, gummas, iritis) by clinical examination.
- **Perform lumbar puncture before treatment if patient has HIV infection** (in both late latent syphilis or latent syphilis of unknown duration).

NOTES:

- **Penicillin-allergy: Doxycycline 100 mg orally twice daily for 28 days or tetracycline 500 mg four times daily for 28 days. If follow-up cannot be ensured or if the HIV-infected woman is pregnant, desensitize and treat with penicillin.**



RECOMMENDED TREATMENT FOR NEUROSYPHILIS & OCULAR INFECTION

Aqueous Crystalline Penicillin G 18-24 million units IV daily, administered as
3-4 million units every 4 hours, for 10-14 days

or

Aqueous Procaine Penicillin 2.4 million units IM daily,

PLUS

Probenecid 500mg PO qid, both x 10-14 days

- The durations of the recommended regimens for neurosyphilis are shorter than that of the regimen used for late syphilis in the absence of neurosyphilis. Therefore, some experts administer benzathine penicillin, 2.4 million units IM after completion of these neurosyphilis treatment regimens to provide a comparable total duration of therapy. Some experts administer three doses one week apart.
- Despite the use of this treatment regimen, patients with ocular infection should have a lumbar puncture performed to rule out neurosyphilis, as those patients with positive LP results would require follow-up LPs to assess adequacy of treatment.

SYPHILIS FOLLOW-UP AFTER TREATMENT

Primary, Secondary and Early Latent Syphilis

- Reexamine serologically and clinically at **3, 6, 9, 12, and 24 months** after treatment.
- Some experts recommend CSF exam 6 months after therapy (unproven benefit).
- CSF exam if treatment failure suspected (persistent signs and symptoms, fourfold increase in titers) or failure of titers to decrease fourfold after 6 to 12 months ⇒ retreat with 2.4 million units IM of benzathine penicillin if no neurosyphilis per CSF exam.

Late Latent Syphilis

- Reexamine serologically and clinically at **6, 12, 18 and 24 months** after therapy.
- If titers fail to decrease fourfold between 12 and 24 months, clinical symptoms develop, or titers rise fourfold ⇒ repeat LP ⇒ treat according to CSF results.

NOTES:

Neurosyphilis

- If initial pleocytosis was present, CSF examination **every 6 months** until cell count is normal.
- If CSF cell count has not decreased after 6 months or if CSF is not entirely normal after 2 years (negative VDRL and normal protein level), consider retreatment.

MANAGEMENT OF SEX PARTNERS

Sexual transmission of *T. pallidum* occurs only when mucocutaneous syphilitic lesions are present; such manifestations are uncommon after the first year of infection. However, persons exposed sexually to a patient who has syphilis in any stage should be evaluated clinically and serologically according to the following recommendations.

- Persons who were exposed within the 90 days preceding the diagnosis of primary, secondary, or early latent syphilis in a sex partner might be infected even if seronegative; therefore such persons should be treated presumptively.
- Persons who were exposed >90 days before the diagnosis of primary, secondary, or early latent syphilis in a sex partner should be treated presumptively if serologic test results are not available immediately and the opportunity for follow-up is uncertain.
- For purposes of partner notification and presumptive treatment of exposed sex partners, patients with syphilis of unknown duration who have high nontreponemal serologic test titers (i.e., >1:32) can be assumed to have early syphilis. However, serologic titers should not be used to differentiate early from late latent syphilis for the purpose of determining treatment (see Latent Syphilis Treatment).
- Long-term sex partners of patients who have latent syphilis should be evaluated clinically and serologically for syphilis and treated on the basis of the evaluation findings.

For identification of at-risk partners, the time periods before treatment are

- a. 3 months plus duration of symptoms for primary syphilis,
- b. 6 months plus duration of symptoms for secondary syphilis, and
- c. 1 year for early latent syphilis.

NOTES:

2.1.2 CHANCROID

GENERAL OVERVIEW

- Caused by *Haemophilus ducreyi*, a gram-negative facultative anaerobic bacillus (Ronald, 1999).
- Most common cause of genital ulceration in Africa; men mostly affected (Bogaerts, 1998).
- Outbreaks have occurred in the United States, Canada, and Europe (Czelusta, 2000; Mertz, 1998)
- Chancroid is a cofactor for HIV transmission and high rates of HIV infection among patients who have chancroid occur in the United States and other countries (CDC, 2002; Gray, 1997; Mertz, 1998).
- About 10% of cases of chancroid acquired in the United States are coinfecting with *T. pallidum* or HSV. (CDC, 2002).

CLINICAL PRESENTATION

- In limited studies, a few small differences in clinical presentation have been shown in HIV-positive patients compared to HIV-negative patients.
- There are reports of longer ulcer duration and a greater number of ulcers at initial presentation in HIV-infected patients. (Czelusta, 2000; King, 1998.) Ulcer size has not shown to be affected by HIV infection. (Czelusta, 2000; Bogaerts, 1998).
- Typical clinical presentation is painful, single or multiple ulcers with ragged edges and a base covered by a necrotic, yellowish exudate.
- Painful inguinal adenitis is present on average in 40% of patients with chancroid, but can occur in up to 87% of cases. (Ortiz, 1994; Mertz, 1998).
- An atypical presentation occurred in an HIV-infected person from New York, whose chancroid manifested as a chronic penile ulcer accompanied by the development of ulcers on his legs and digits (Friedman-Kien, 1996).

DIAGNOSIS

- As in the HIV-negative person, a definite diagnosis of chancroid in HIV-positive persons requires identification of *H. ducreyi* on special culture media. However, diagnosis remains problematic because these media are not widely available, and their sensitivity is <80%. There is no FDA-approved PCR test for *H. ducreyi* available in the USA.

NOTES:

- A probable diagnosis may be made in non HIV-infected and HIV-infected persons if the following criteria are met (CDC, 2002):
 1. Patient has one or more painful genital ulcers;
 2. By darkfield exam, the patient has no evidence of *T. pallidum* infection in ulcer exudates or by a serology test for syphilis performed at least 7 days after the onset of ulcer;
 3. The clinical presentation, appearance of genital ulcers, and regional adenopathy, if present, are typical for chancroid; and
 4. A test for HSV performed on the ulcer exudate is negative.
- The combination of a painful ulcer and tender inguinal adenopathy, which occur among one third of patients, suggest a diagnosis of chancroid. If accompanied by suppurative inguinal adenopathy, signs are practically pathognomonic.

TREATMENT

- All of the following four regimens are effective for treatment of chancroid in HIV-infected patients. The recommended regimens for HIV infected persons are the same as for HIV-negative persons (CDC, 2002).



RECOMMENDED TREATMENT FOR CHANCROID

Azithromycin 1g orally in a single dose,
or
Ceftriaxone 250 mg intra-muscularly (IM) in a single dose,
or
Ciprofloxacin 500 mg orally twice a day for 3 days,
or
Erythromycin base 500 mg orally three times a day for 7 days.

- **HIV-infected persons who have chancroid should be monitored closely**
- **HIV-infected persons do not respond as well to treatment** compared to HIV negative persons. As a group, HIV-infected patients are more likely to fail therapy and ulcers heal more slowly.
- Treatment failures may occur with any of the regimens listed above and patients may require longer therapy.

NOTES:

- There are limited data concerning the therapeutic efficacy of the recommended ceftriaxone and azithromycin regimens in HIV-infected persons. Hence, these treatments should be used only if close follow-up can be ensured.
- Some experts recommend the seven-day erythromycin regimen over others for HIV-infected patients.
- Adjunctive therapy may include incision and drainage of suppurative lymphadenopathy. Buboec may appear to worsen in the 1-2 days following therapy.

FOLLOW-UP

- Patients should be reexamined 3 and 7 days after initiation of therapy.
- Ulcers should improve symptomatically within 3 days, and objectively within 7 days after initiation of therapy.
- Large ulcers may require >2 weeks for healing.

OTHER MANAGEMENT CONSIDERATIONS

- Patients should be retested for syphilis three months after the diagnosis of chancroid if the initial test results were negative.

PARTNER MANAGEMENT

- Sex partners of patients who have chancroid should be examined and treated, regardless of whether symptoms of the disease are present, if they had sexual contact with the patient during the 10 days preceding onset of symptoms in the patient.

NOTES:

2.1.3 HERPES SIMPLEX VIRUS

GENERAL OVERVIEW

- At least 50 million persons in the United States have genital HSV infection (CDC, 2002).
- Case control and cohort studies show an association between HSV-2 infection and acquisition of HIV infection (Corey, 1999; Wald, 2002).
- About 95% of men who practice anal receptive intercourse are seropositive for HSV-2 (El-Attar, 1999).
- Nearly 80% of the general population infected with HSV-2 experience recurrence, compared to almost 100% recurrence in HIV-infected patients infected with HSV-2 (El-Attar, 1999). Subclinical HSV shedding is more common in HIV infected persons compared to HIV negative individuals (Schacker, 1998; Schacker, 2001).
- 80 to 90% of all MSM with HIV infection have antibodies to HSV-1 and 80 to 95% to HSV-2 (Corey, 1999).
- Higher HIV viral load has been detected in herpetic ulcers (Schacker, 1998).
- The major morbidity from herpetic lesions in HIV infected persons is their failure to resolve, even with antiviral therapy using acyclovir.

CLINICAL PRESENTATION

- Lesions caused by HSV are common among HIV infected persons, and may be severe, painful, prolonged and atypical (CDC, 2002).
- HIV-infected patients may present with a larger number and size of ulcers, frequently in the perianal region. These lesions may become superinfected with pathogens such as cytomegalovirus, *Pneumocystis carinii*, and *Candida albicans*. (Siegal, 1981).
- In one study, there was a significant increase in the detection of HSV in genital ulcers of HIV-infected patients with CD4+ cell counts below 50. Close to 60% of all ulcers in patients with this level of CD4+ count were HSV positive (Bagdades, 1992).
- Chronic HSV-2 ulcers of greater than 1 month duration are considered an AIDS-defining illness in individuals with HIV infection (CDC, 1993).
- Erosive disease in the genital region has not been reported (Friedman-Kien, 1996).
- In severely immunocompromised patients, HSV-2 may present as hyperkeratotic verrucous lesions which mimic condyloma.

NOTES:

- HSV may also manifest as esophagitis, hepatitis, pneumonitis, or disseminated infections in AIDS patients (Corey, 1999).
- As in HIV-negative individuals, HSV outbreaks may be accompanied by tender lymphadenopathy.

DIAGNOSIS

- Same as in HIV-negative individuals.
- The clinical diagnosis should be confirmed by laboratory testing.
- Isolation of HSV in cell culture is the preferred virologic test in patients who present with genital ulcers or other muco-cutaneous lesions.
- PCR is available in some laboratories and is the test of choice for detecting HSV in spinal fluid for diagnosis of HSV-infection of the central nervous system.
- Because false-negative HSV cultures are common, especially in patients with recurrent infection or with healing lesions, type-specific serologic tests are useful in confirming a clinical diagnosis of genital herpes. Additionally, such tests can be used to diagnose persons with unrecognized infection (see Section 1: Clinical Preventive Services) and to manage sex partners of persons with genital herpes (see below).

TREATMENT



RECOMMENDED REGIMEN FOR THE FIRST CLINICAL EPISODE OF GENITAL HERPES (SAME AS IN HIV NEGATIVE PERSONS)

Primary infection

Acyclovir	400 mg orally three times a day for 7 to 10 days
or	
Acyclovir	200 mg orally five times a day for 7 to 10 days
or	
Famciclovir	250 mg orally three times a days for 7 to 10 days
or	
Valacyclovir	1g orally twice a day for 7 to 10 days

Treatment may be extended if healing is incomplete after 10 days of therapy

NOTES:

CDC **RECOMMENDED REGIMENS FOR EPISODIC INFECTION IN PERSONS
INFECTED WITH HIV**

Acyclovir	400 mg orally three times a day for 5 to 10 days
or	
Acyclovir	200 mg orally five times a day for 5 to 10 days
or	
Famciclovir	500 mg orally twice a day for 5 to 10 days
or	
Valacyclovir	1.0 g orally twice a day for 5 to 10 days

- **Episodic or suppressive therapy with oral antiviral agents is often beneficial**

CDC **RECOMMENDED REGIMENS FOR DAILY SUPPRESSIVE THERAPY IN
PERSONS INFECTED WITH HIV**

Acyclovir	400-800 mg orally twice or three times a day
or	
Famciclovir	500 mg orally twice a day
or	
Valacyclovir	500 mg orally twice a day

CDC **RECOMMENDED REGIMENS FOR SEVERE DISEASE OR COMPLICATIONS
(SUCH AS DISSEMINATED INFECTION, PNEUMONITIS, HEPATITIS, MENINGITIS, OR
ENCEPHALITIS), INITIATE THERAPY WITH**

Acyclovir	5-10mg/kg body weight IV q8 hrs
------------------	---------------------------------

- In the recommended doses, acyclovir, famciclovir and valacyclovir are safe to use in immunocompromised persons.
- Safety and efficacy have been documented among patients receiving daily therapy with acyclovir for as long as six years, and with valacyclovir or famciclovir for 1 year.
- **If lesions persist or recur in a patient receiving antiviral therapy, HSV resistance should be suspected** and a viral isolate should be obtained for sensitivity testing. **Such**

NOTES:

patients should be managed in consultation with a specialist, and alternative therapy should be administered. All acyclovir resistant strains are also resistant to valacyclovir, and most are resistant to famciclovir. In HIV-infected patients, acyclovir resistance may be encountered in 11% to 17% (Korn, 1997).



SUGGESTED REGIMENS FOR ACYCLOVIR-RESISTANT GENITAL HERPES

Foscarnet	40mg/kg body weight IV q8 hrs until clinical resolution,
or	
Topical cidofovir gel	1% applied to the lesions once daily for 5 consecutive days

PARTNER MANAGEMENT

- The sex partners of patients who have genital herpes likely benefit from evaluation and counseling. Symptomatic sex partners should be evaluated and treated in the same manner as patients who have genital lesions. Asymptomatic sex partners of patients who have genital herpes should be questioned concerning histories of herpes, counseled to recognize symptoms of herpes, and offered type-specific serologic testing for HSV infection.
- Sex partners of infected persons should be advised that they might be infected even if they have no symptoms. Type-specific serologic testing of asymptomatic partners of persons with genital herpes can determine whether risk of HSV acquisition exists.

NOTES:

2.2 CERVICITIS/URETHRITIS/ PELVIC INFLAMMATORY DISEASE

EPIDEMIOLOGIC EVIDENCE OF INTER-RELATIONSHIPS WITH HIV

- Non-ulcerative STDs, including gonorrhea and chlamydia, are risk factors for sexual transmission of HIV in women (Laga, 1993).
- Disruption of columnar epithelium and lymphocytic infiltration in women with cervicitis, as well as genital tract inflammation in men with urethritis, may contribute to the increased rate of HIV transmission (Ormond, 1998).
- Urethritis can increase the infectiousness of men with HIV-1 infection (Cohen, 1997).

2.2.1 GONORRHEA

GENERAL OVERVIEW

- Infection is attributed to *Neisseria gonorrhoeae* which most often affects the urogenital tract, and secondarily, the rectum, oropharynx, and conjunctivae.
- Coinfection with *Chlamydia trachomatis* varies by setting and geographic location, but can be as high as 30% to 50%.
- There are **limited studies** regarding the differences in presentation, diagnosis, and treatment of gonorrhea in HIV-infected individuals.

CLINICAL PRESENTATION

- Manifestations of uncomplicated gonococcal infections in HIV-positive and negative persons include:
 - a. Urethral infection in men
 - b. Urethral and cervical infection in women
 - c. Rectal infection
 - d. Pharyngeal infection
 - e. Conjunctivitis

COMPLICATIONS

- Complications may include acute salpingitis, disseminated gonococcal infection, and gonococcal endocarditis and meningitis.

NOTES:

- Although rare, when disseminated disease occurs, it most commonly present as a monoarticular, migratory, purulent arthritis of the large joints plus/minus a dermatitis (Hook III, 1999).
- Strongin reported a case of **gonococemia with oligoarticular arthritis in the hips and sternoclavicular joints in an HIV-infected patient** (Strongin, 1991).
- Gonococcal infection in a severely immunocompromised AIDS patient, might progress to rectal abscess, sepsis, and death (El-Attar, 2000).

DIAGNOSIS

- Same as in HIV-negative persons.
- Identification of *N. gonorrhoeae* at infected sites is made by microscopic examination of stained smears (male symptomatic urethritis), culture, immunochemical or nucleic acid detection of the organism.
- Culture of *N. gonorrhoeae* on selective and non-selective medium is the gold standard.
- Chlamydia should be tested for concurrently.

TREATMENT

- Treatment of uncomplicated gonococcal infection is the same for HIV-infected individuals as in non-HIV infected persons.

NOTES:


RECOMMENDED TREATMENT
Uncomplicated Gonococcal Infections of the Cervix, Urethra, and Rectum

Cefixime	400 mg orally in a single dose
or	
Ceftriaxone	125 mg IM in a single single dose
or	
Ciprofloxacin*	500 mg orally in a single dose
or	
Ofloxacin*	400 mg orally in a single dose
or	
Levofloxacin*	250 mg orally in a single dose
	<i>Plus if chlamydial infection is not ruled out:</i>
Azithromycin	1g orally single dose
or	
Doxycycline	100 mg orally twice a day for 7 days

* quinolones should not be used for treatment if infection acquired in Asia and the Pacific, including Hawaii. In addition, use of quinolones is probably inadvisable for treating infections acquired in California and in other areas with increased prevalence of quinolone resistance

- Cephalosporins are contraindicated in persons allergic to penicillin.
- Quinolones are contraindicated in pregnancy and are ineffective for incubating syphilis.
- Doxycycline is contraindicated in pregnant women.
- Routine dual therapy without testing for chlamydia can be cost-effective for populations in which chlamydial infection accompanies 10% to 30% of gonococcal infections, because the cost of therapy for chlamydia is less than the cost of testing. In geographic areas in which the rates of coinfection are low, some clinicians might prefer a highly sensitive test for chlamydia rather than treating presumptively.

NOTES:

CDC RECOMMENDED TREATMENT**Gonococcal Infections of the Pharynx**

Ceftriaxone 125 mg IM in a single dose
or
Ciprofloxacin 500 mg orally in a single dose
or
Plus if chlamydial infection is not ruled out:
Azithromycin 1g orally single dose
or
Doxycycline 100 mg orally twice a day for 7 days

CDC RECOMMENDED TREATMENT**Gonococcal Conjunctivitis**

Ceftriaxone 1g IM single dose.
Infected eye should be lavaged with saline solution once.

PARTNER MANAGEMENT

- All sex partners of persons who have *N. gonorrhoeae* infection should be evaluated and treated for *N. gonorrhoeae* and *C. trachomatis* if their last sexual contact was within 60 days before the onset of symptoms or diagnosis.
- If a patient's last sexual contact was before 60 days, then the most recent sex partner should be treated.
- Patients should be instructed to avoid sexual intercourse until therapy is completed and until they and their sex partners no longer have symptoms

NOTES:

2.2.2 CHLAMYDIA

GENERAL OVERVIEW

- The most frequently reported bacterial STD in the United States.
- Infection caused by *C. trachomatis*, an obligate intracellular bacterial parasite of columnar and transitional epithelial cells.
- Gonococcus can be found concurrently in up to 10-50% of women with diagnosed chlamydial infections.

CLINICAL PRESENTATION

- Manifestations of chlamydial infections in HIV-positive and negative persons include:
 - Urethral infection in men
 - Urethral and cervical infection in women
 - Rectal infection
 - Conjunctivitis
- Most infections are asymptomatic

DIAGNOSIS

- Same as in HIV-negative persons
- While *C. trachomatis* culture is the most specific test, its rigorous handling and transport requirements make it impractical in many instances.
- The majority of infections can be uncovered using antigen detection methods such as the DFA and EIA. Nucleic acid amplification tests (NAATs) are the most sensitive and specific non-culture detection methods.
- Gonorrhea should be tested for concurrently.
- **Screening sexually active women aged 15-24 for chlamydia is recommended at least yearly, regardless of HIV infection status** (see Section I: Clinical Preventive Services).

NOTES:

TREATMENT

- Same in HIV-infected individuals as in non-HIV infected individuals.

CDC RECOMMENDED TREATMENT FOR UNCOMPLICATED CHLAMYDIAL INFECTIONS IN NON-PREGNANT ADULTS

Azithromycin 1g orally in a single dose
 or
Doxycycline 100 mg orally twice a day for 7 days

Alternate Regimens

Erythromycin 500 mg orally four times a day for 7 days
 or
EES 800mg orally four times a day for 7 days
 or
Ofloxacin 300 mg orally three times a day for 7 days
 or
Levofloxacin 500 mg orally daily for 7 days

Ofloxacin is contraindicated in pregnant women

CDC RECOMMENDED REGIMENS FOR UNCOMPLICATED CHLAMYDIAL INFECTIONS IN PREGNANT WOMEN

Erythromycin base 500 mg orally four times a day for 7 days
 or
Amoxicillin 500 mg orally three times a day for 7 days

NOTES:

Alternate Regimens

Erythromycin	base 250 mg orally four times a day for 14 days
or	
Erythromycin ethylsuccinate	800 mg orally four times a day for 7 days
or	
Erythromycin ethylsuccinate	400 mg orally four times a day for 14 days
or	
Azithromycin	1 g orally single dose

PARTNER MANAGEMENT

- All sex partners of persons who have *C. trachomatis* infection should be evaluated, tested and treated if they had sexual contact with the patient during the 60 days preceding the onset of symptoms or diagnosis.
- The most recent sex partner should be evaluated and treated even if the time of the last sexual contact was more than 60 days before the onset of symptoms or diagnosis.
- Patients should be instructed to avoid sexual intercourse until they and their contact have completed treatment. Abstinence should be continued until seven days after a single dose regimen or after completion of a seven day regimen.

NOTES:

2.2.3 PELVIC INFLAMMATORY DISEASE (PID)

GENERAL OVERVIEW

- Occurs in approximately 1 million U.S. women annually.
- HIV seropositivity is not infrequent in hospitalized women with acute PID, ranging from 8% in Brooklyn to 15-29% in sub-Saharan Africa.
- Because HIV is concentrated in populations with a high incidence of traditional STDs and PID has been reported as more common among HIV-infected women, some experts recommend HIV testing among women with PID if HIV serostatus is unknown.
- Risk factors/risk markers for PID:
 - a. Young age, adolescence: increased age-related chlamydia (CT) / gonorrhea (GC) rates.
 - b. History of prior PID: damaged fallopian tube mucosa may be more susceptible to recurrent infection.
 - c. History of prior GC or CT: increased likelihood of recurrent GC or CT.
 - d. Male partners with GC, CT, or multiple partners.
 - e. Current douching: probable contributions of vaginal flora changes, epithelial damage, and disruption of cervical mucous barrier.
 - f. Presence of IUD within the first 21 days of placement; after 21 days, risk returns to baseline. Recent data suggest that IUDs may be safe for selected HIV-infected women with ongoing access to medical services.
 - g. Bacterial vaginosis: role in the development of PID is controversial.
 - h. Demographics (socioeconomic status).
 - i. Oral contraceptive use: may increase the risk of cervical chlamydial infection, but decrease the risk of clinically apparent symptomatic PID (mechanisms unclear).
- Etiologic agents for PID are similar between HIV-positive and HIV-negative women, except for:
 - Higher rates of concomitant *Mycobacterium hominis*, candida, streptococcal and HPV infections.

CLINICAL PRESENTATION

- When present, symptoms often include lower abdominal pain, cramping, dysuria, intermittent or post-coital bleeding, vaginal discharge, fever.

NOTES:

- “Silent” PID-diagnosis is difficult. Often asymptomatic or with atypical presentation in the setting of upper tract inflammation +/- infection, such as dyspareunia, irregular bleeding, urinary or gastrointestinal symptoms. Mild abdominal or uterine tenderness on exam has been associated with asymptomatic endometritis.
- Studies of the influence of HIV on presentation and clinical course of PID have reported varied findings:
 - HIV positive women may present with high febrile temperatures and low leukocyte counts

COMPLICATIONS

In general:

- Approximately 25% of women with a single episode of symptomatic PID will experience sequelae, including ectopic pregnancy, infertility, or chronic pelvic pain.
- The risk of ectopic pregnancy is increased 6-10 fold.
- Tubal infertility occurs in 8% of women after one episode of PID, in 20% after two episodes, and in 40% after 3 episodes.

Among HIV infected women:

- Some investigators found a higher frequency of complicating tubo-ovarian abscess formation (related to the severity of immunodeficiency) and a greater need for change in therapy or surgical intervention.
- Others found no differences in complication rate.
- Most studies showed no difference in therapeutic response comparing HIV-infected to HIV-uninfected women.

DIAGNOSIS

- CDC recommends empiric treatment of PID if these minimum criteria are met in the absence of any other explanation.
 1. Uterine/adnexal tenderness;
or
 2. cervical motion tenderness.
- Under some circumstances, a clinician may choose to treat with even less specific findings. In patients with both pelvic tenderness and signs of lower genital tract inflammation, the diagnosis of PID should be considered.

NOTES:

- Acute adnexal tenderness may be the most sensitive sign of upper genital tract infection. The general recommendation is to err on the side of over treatment given the high incidence of adverse outcomes with untreated PID.
- Additional criteria to increase specificity of diagnosis (but will decrease sensitivity).
 - a. Temp >38.3C.
 - b. Abnormal cervical or vaginal discharge.
 - c. Elevated erythrocyte sedimentation rate (ESR).
 - d. Elevated C-reactive protein (CRP).
 - e. Gonorrhea or chlamydia test positive.
 - f. WBCs on microscopic evaluation of saline preparation of vaginal secretions, but utility is controversial.
- Specific diagnostic measures include.
 - a. Endometrial biopsy.
 - b. Transvaginal sonography (may demonstrate TOA or thickened tubes with or without free pelvic fluid).
- Laparoscopy is indicated for:
 - a. Severe peritonitis to exclude ruptured tubal abscess or ruptured appendix.
 - b. Patients with mild signs in whom the diagnosis is unclear.
 - c. Patients who fail to respond to antibiotic therapy.
 - d. Percutaneous drainage of an abscess.

TREATMENT

The microbiology of organisms identified in HIV-infected women with PID is similar to those found in HIV-uninfected women. In developed countries, the incidence of *N. gonorrhoeae* and *C. trachomatis* appears low.

Regimens must provide coverage of *N. gonorrhoeae*, *C. trachomatis*, anaerobes, Gram-negative facultative organisms, and streptococci

Treatment should be instituted as early as possible to prevent long term sequelae.

If IUD is present, removal depends on the initial severity and response to therapy.

If BV is present, choose an antibiotic with good anaerobic coverage.

NOTES:

Indications for hospitalization and parenteral treatment include:

- a. Inability to exclude surgical emergencies (i.e., appendicitis, ectopic pregnancy).
- b. Tubo-ovarian abscess.
- c. Pregnancy.
- d. Inability to follow or tolerate an outpatient regimen.
- e. Failure to respond clinically to outpatient antimicrobial therapy within 48-72 hours.
- f. Severe illness, nausea and vomiting, or high fever.

No data currently exist to support more aggressive management (such as hospitalization or parenteral antimicrobial regimens) of immunodeficient HIV-infected women with PID. Some experts, however, recommend initial hospitalization and parenteral antimicrobial regimens in HIV-infected women, particularly those with low CD4 lymphocyte counts.

RECOMMENDED PARENTERAL TREATMENT

Parenteral Regimen A

Cefoxitin	2 g IV q 6 hours
or	
Cefotetan	2 g IV q 12 hours
PLUS	
Doxycycline	100 mg PO or IV q 12 hours

Parenteral therapy can be discontinued 24 hours after a patient improves clinically, and oral therapy with doxycycline (100mg twice a day) should continue to complete 14 days of therapy. When tubo-ovarian abscess is present, many health-care providers use clindamycin or metronidazole with doxycycline for continued therapy rather than doxycycline alone, because it provides more effective anaerobic coverage.

Parenteral Regimen B

Clindamycin	900 mg IV q 8 hours
PLUS	
Gentamycin	loading dose IV or IM (2 mg/kg), followed by maintenance dose (1.5 mg/kg q 8 hours). Once daily gentamicin dosing may be used.

NOTES:

Parenteral therapy can be discontinued 24 hours after a patient improves clinically; continuing oral therapy should consist of doxycycline 100mg orally twice a day or clindamycin 450 mg orally 4 times a day to complete a total of 14 days of therapy.

When tubo-ovarian abscess is present, many health-care providers use clindamycin for continued therapy rather than doxycycline, because clindamycin provides more effective anaerobic coverage.

Alternative Parenteral Regimens

Limited data exist on other parenteral regimens, including combinations of:

Ofloxacin 400 mg IV every 12 hours

or

Levofloxacin 500 mg IV once daily

WITH OR WITHOUT

Metronidazole 500 mg IV every 8 hours

or

Ampicillin/Sulbactam 3 g IV every 6 hours

PLUS

Doxycycline 100 mg orally or IV every 12 hours.



RECOMMENDED ORAL TREATMENT

Each of these regimens should be continued for a total of 14 days therapy. Patients on oral therapy ideally should be followed up within 72 hours, at which time they should show substantial clinical improvement. The role of anaerobes in mild/moderate PID as an outpatient is unclear; the routine use of metronidazole is controversial. If bacterial vaginosis is present, addition of metronidazole in the treatment regimen may be particularly compelling.

Regimen A

Ofloxacin 400 mg orally 2 times a day

or

Levofloxacin 500 mg orally once a day

WITH OR WITHOUT

Metronidazole 500 mg orally 2 times a day for 14 days.

NOTES:

Routine administration of metronidazole is controversial.

Regimen B:

Ceftriaxone 250 mg IM once

OR

Cefoxitin 2 g IM with **Probenecid** 1 g orally in a single dose

OR

other parenteral **third generation cephalosporin** (e.g., Ceftizoxime, Cefotaxime),

PLUS

Doxycycline 100 mg orally 2 times a day for 14 days.

- At present, an appropriate oral azithromycin regimen for the treatment of PID has not been established and is not recommended. Azithromycin lacks anaerobic activity and lacks optimal coverage of some Gram-negative organisms.

FOLLOW-UP:

- Patient should be re-examined within 72 hours after initiation of therapy, and should demonstrate substantial clinical improvement. If no improvement is shown, consider other work-up/etiology or change to parenteral therapy.
- Some experts recommend rescreening for *C. trachomatis* and *N.gonorrhoeae* after completion of therapy, if initially positive. The optimal time period for rescreening is controversial and ranges from 4-6 weeks to 3-6 months.
- Patient counseling about risk of re-infection and sequelae.
- Avoid douching.

SCREENING RECOMMENDATIONS

(See Section I: Clinical Preventive Services)

- Prevention of gonorrhea and chlamydia infection by screening and treating high-risk women reduces the incidence of PID.
- Although BV is associated with PID, it is not clear whether identifying and treating women with BV will reduce the incidence of PID.

NOTES:

PARTNER MANAGEMENT

- Male sex partners of women with PID should be examined and treated if they had sexual contact with the patient during the 60 days preceding onset of symptoms in the patient. The evaluation and treatment are imperative because of the risk for reinfection and the strong likelihood of urethral gonococcal or chlamydial infection in the sex partner.
- Male partners of women who have PID caused by *C. trachomatis* and/or *N. gonorrhoeae* are often asymptomatic. Sex partners should be treated empirically with regimens effective against both of these infections, regardless of the apparent etiology of PID or pathogens isolated from the infected woman.
- Treatment of BV prior to upper tract invasive or surgical procedures. Although BV is associated with PID, it is not clear whether identifying and treating women with BV will reduce the incidence of PID. The efficacy of treating asymptomatic pregnant women with BV and pregnancy outcomes is unclear.

NOTES:

2.3 VAGINAL INFECTIONS

EPIDEMIOLOGIC EVIDENCE OF INTER-RELATIONSHIPS WITH HIV

- In vaginal infections, microabrasions of the vaginal mucosa set up an inflammatory response causing increased lymphocyte activation and cytokine production, which may assist the HIV virus in infecting an HIV-negative woman.
- In a woman already infected with HIV, this same inflammatory process is postulated to increase the risk of HIV transmission to uninfected sexual partners.
- Additionally, evidence suggests that in a vaginal infection, the inflammatory response causes an up-regulation of HIV, with an increase in the size and virulence of the inoculum. This further increases the risk of HIV transmission.
- The association between HIV and vaginal infections (as well as the issues related to clinical complications associated with these infections) further supports the recommendation that providers actively screen HIV-infected women for evidence of *Trichomonas vaginalis* and bacterial vaginosis (see Section I - STD Clinical Preventive Services) and treat these infections aggressively when present.

NOTES:

2.3.1 TRICHOMONIASIS

GENERAL OVERVIEW

- Infection caused by a protozoan, *Trichomonas vaginalis*.
- Almost always sexually transmitted; fomite transmission is rare. Because *T. vaginalis* may persist for months to years in epithelial crypts and periglandular areas, distinguishing between persistent, subclinical infection and remote sexual acquisition is not always possible (NNPTC, 2002).
- Typically causes vaginitis in women and non-gonococcal urethritis in men. Up to 50% of infected women are asymptomatic, although 30% of those who are asymptomatic will become symptomatic within 6 months. May cause up to ~ 11-13% of nongonococcal urethritis in males, but urethral infection is frequently asymptomatic (NNPTC, 2002;Krieger, 1995).
- Vaginal trichomoniasis has been associated with adverse pregnancy outcomes, particularly premature rupture of membranes, preterm delivery, and low birth weight.
- Trichomoniasis has been shown to increase the risk of acquiring HIV (Laga, 1993).
- The prevalence and incidence of trichomoniasis in women appears unrelated to HIV status or CD4 cell count. Furthermore, HIV infected women are not at higher risk of recurrence or persistence compared to HIV negative women (Cu-Uvin, 2002; Minkoff, 1999).
- *T. vaginalis* inactivates leukocyte protease inhibitors. These appear to be protective against HIV infection (Anderson, 2001;Draper, 1998).
- Wang et al found that treatment of trichomoniasis in HIV infected women reduced the vaginal shedding of HIV RNA but not HIV DNA (Wang, 2001).

CLINICAL PRESENTATION

- As in non-HIV-infected persons, HIV-positive women may present with a diffuse, mal-odorous, yellow-green discharge with vulvar irritation and males may experience discharge and dysuria.
- Although not consistently present, petechiae on the cervix and/or vagina or “strawberry cervix /vagina” is usually pathognomonic.

DIAGNOSIS

- Same as in HIV-negative persons.

NOTES:

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- Women likely to have an elevated vaginal pH, amine odor, and/or a frothy yellow/green discharge.
- In clinical practice, diagnosis of trichomoniasis is usually made on microscopic examination of male urine or on a wet-mount preparation of vaginal discharge (sensitivity 60%-70%).
- The gold standard of diagnosis remains culturing of *T. vaginalis* in a Diamond's medium or other commercially available system (such as InPouchTV®)
- Pap smears have limited sensitivity and low specificity; therefore, cannot be used to reliably diagnose trichomonal vaginitis.
- DNA probes are significantly more sensitive than wet prep, but are also more expensive and not widely available

TREATMENT

- HIV-infected women (and men) should receive the same treatment as HIV-negative persons.

RECOMMENDED TREATMENT

Metronidazole 2g orally in a single dose

Pregnant women can be treated with this regimen. Multiple studies and meta-analyses have not demonstrated a consistent association between metronidazole use during pregnancy and teratogenic or mutagenic effects in infants.

Alternative regimen

Metronidazole 500 mg orally twice a day for 7 days.

Treatment Failure

Retreat with

Metronidazole 500 mg orally twice a day for 7 days

If treatment failure occurs again, treat with

Metronidazole 2g orally once daily for 3 to 5 days

NOTES:

- Patients with culture-documented infection who continue to be unresponsive to treatment should be managed in consultation with a specialist; evaluation of such cases should ideally include determination of the susceptibility of *T. vaginalis* to metronidazole
- Patients allergic to metronidazole should be desensitized. Topical therapy with drugs other than nitroimidazoles can be attempted, but cure rates are low (< 50%).

PARTNER MANAGEMENT

- Sex partners of patients with *T. vaginalis* should be treated.

NOTES:

2.3.2 BACTERIAL VAGINOSIS

GENERAL OVERVIEW

- A clinical syndrome of altered vaginal ecology wherein high concentrations of mixed bacterial species replace the normal peroxide-producing *Lactobacillus* of the vagina.
- Culture of vaginal fluid shows mixed flora typically including *Gardnerella vaginalis*, genital mycoplasmas, and anaerobic bacteria such as peptostreptococci, *Prevotella* spp., and *Mobiluncus* spp (Hillier, 1999).
- Most prevalent cause of vaginal discharge or malodor (Hillier, 1999).
- Associated with having multiple sex partners, but not considered sexually transmitted.
- Sewankambo found that 26.7% of women with severe BV were HIV infected, compared to 14.2% of women with normal vaginal flora (Sewankambo, 1997).
- Cohen also found an association between abnormal vaginal flora and HIV. According to this study, BV is independently associated with HIV-positivity (Cohen, 1995).
- Taha et al. used a longitudinal study, analyzing >1000 women, to show that increased risk for HIV seroconversion was related to severity of vaginal microbial disturbance among antenatal and postnatal women (Taha, 1998).

CLINICAL PRESENTATION

- As in non-HIV-infected persons, women may present with a homogeneous, white, noninflammatory discharge that smoothly coats the vaginal walls.
- Discharge often malodorous or “fishy”.
- A recent longitudinal analysis demonstrated that HIV infected women, particularly those who are immunocompromised, are more likely to have persistent BV. Furthermore, immunocompromised women were more likely to have severe disturbances of the vaginal flora (Jamieson, 2001).
- BV has been associated with endometritis, PID and vaginal cuff cellulitis following invasive procedures including endometrial biopsy, hysterectomy, hysterosalpingography, placement of an IUD, cesarean section, uterine curettage and abortion (CDC, 2002). BV has also been associated with adverse pregnancy outcomes-preterm labor, premature rupture of membranes, preterm birth, chorioamnionitis, postpartum infection.
- More studies must be done to determine if immunosuppression increases the risk of progression of BV to PID.

NOTES:

- Due to possibility of increased risk for PID, some authors suggest treatment of asymptomatic BV in HIV-infected women.

DIAGNOSIS

- As in HIV-negative persons, clinical diagnosis of BV is based on Amsel Criteria and at least three of the following findings must be present:
 1. Vaginal pH >4.5 (most sensitive but least specific)
 2. Presence of “clue cells” on wet mount examination (bacterial clumping upon the borders of epithelial cells). Clue cells should constitute at least 20% of all epithelial cells (an occasional clue cell does not fulfill this criteria).
 3. Positive amine or “whiff” test (liberation of amines with or without the addition of 10% KOH, with resultant “fishy” odor).
 4. Homogeneous, non-viscous, milky-white discharge adherent to the vaginal walls.
- Some experts use the Gram stain to diagnose BV by comparing the relative concentration of bacterial morphotypes characteristic of BV to that of lactobacilli (Nugent criteria).
- Culture of *G. vaginalis* is not specific and is not recommended.
- Other tests that may be useful to diagnose BV include a DNA-probe, and card tests to detect an elevated pH and amines (e.g. FemExam).

TREATMENT

- Same treatment regimen recommended for HIV-positive women as for HIV-negative women.

RECOMMENDED TREATMENT

Non-pregnant Women

Metronidazole	500 mg orally twice a day for 7 days
or	
Clindamycin cream	2%, one full applicator (5g) intravaginally at bedtime for 7 days
or	
Metronidazole gel	0.75%, one full applicator (5g) intravaginally once a day for 5 days.

NOTES:

Alternative Regimens for Recurrent Disease

Metronidazole	2g orally in a single dose
or	
Clindamycin	300 mg orally twice a day for 7 days
or	
Clindamycin ovules	100 g intravaginally once at bedtime for 3 days

Pregnant Women

- An association between BV and premature delivery has been demonstrated in a number of studies. Recent treatment trials have demonstrated a significant reduction in pre-term delivery in women at high risk (i.e., those who have previously delivered a premature infant).



RECOMMENDED REGIMENS DURING PREGNANCY

Metronidazole	250 mg orally three times a day for 7 days
or	
Clindamycin	300 mg orally twice a day for 7 days

- Existing evidence do not support the use of topical agents during pregnancy

FOLLOW-UP

- Follow-ups are not required if symptoms resolve.
- Recurrence of BV is 25 to 30% in three months.
- No long-term maintenance regimen with any therapeutic agent is recommended.

MANAGEMENT OF SEXUAL PARTNERS

- Results of clinical trials indicate that response to therapy and risk for recurrence are not affected by treating the sexual partner(s). Therefore, routine treatment of sex partners is not recommended.

NOTES:

2.3.3 VULVOVAGINAL CANDIDIASIS (VVC)

GENERAL OVERVIEW

- Vulvovaginal candidiasis (VVC) is caused by *Candida albicans* or occasionally by other yeast species such as *Candida glabrata*.
- HIV infected women are more likely to have non-albicans isolates with reduced susceptibility to fluconazole (Sobel, 2001).
- Vaginal candida colonization rates in HIV-infected women are higher than among seronegative women with similar demographic and high-risk behaviors (CDC, 2002).

CLINICAL PRESENTATION

- As in non-HIV-infected women, patients with HIV infection typically present with symptoms of pruritis and vaginal discharge.
- According to a study done by Iman, there is a systematic progression of candidiasis related to the level of CD4 cells present. With normal CD4 counts, patients were seen most often with symptoms of vaginitis. For CD4<200, thrush became more prominent. Systemic infection with candidiasis was most frequent with severely low CD4 counts (Iman, 1990).

DIAGNOSIS

- Same as in HIV-negative persons.
- Diagnosis suggested by pruritus and erythema in the vulvovaginal area. May see a white clumpy discharge in vaginal vault, but both are highly non-specific.
- Confirm diagnosis with a 10% KOH wet preparation or Gram stain of vaginal discharge to demonstrate yeasts or pseudohyphae.
- If diagnosis unclear, a culture or other test can be performed to detect yeast species.
- *Candida vaginitis* is associated with a vaginal pH of 4.5 or less.

TREATMENT

- CDC recommends same treatment for HIV-positive and HIV-negative persons.
- Topical formulations including various over-the-counter preparations are generally effective. Oral regimens are also available.
- Short-course formulations (single dose to 3 days regimens) effectively treat uncomplicated infections (sporadic or infrequent VVC, mild-to-moderate VVC, likely to be *C. albicans*,

NOTES:

non-immunocompromised women). Some experts prefer to treat all HIV infected women with longer courses of regimens.

- Complicated infections are defined as recurrent VVC, severe VVC, non-albicans candidiasis or women with uncontrolled diabetes, debilitation, or immunosuppression or those who are pregnant. See next pages for treatment recommendations under these circumstances.

NOTES:


RECOMMENDED REGIMENS FOR UNCOMPLICATED VVC

Butoconazole	2% cream 5 g intravaginally for 3 days
or	
Butoconazole	2% cream 5 g (Butaconazole-sustained release), single intravaginal application
or	
Clotrimazole	1% cream 5 g intravaginally for 7 to 14 days,
or	
Clotrimazole	100 mg vaginal tablet for 7 days,
or	
Clotrimazole	100 mg vaginal tablet, two tablets for 3 days
or	
Clotrimazole	500 mg vaginal tablet, a single application
or	
Miconazole	2% cream 5 g intravaginally for 7 days
or	
Miconazole	200 mg vaginal suppository once daily for 3 days
or	
Miconazole	100 mg vaginal suppository once daily for 7 days
or	
Nystatin	100,000-unit vaginal tablet once daily for 14 days
or	
Tioconazole	6.5% ointment 5g intravaginally a single application,
or	
Terconazole	0.4% cream 5g intravaginally for 7 days
or	
Terconazole	0.8% cream 5g intravaginally for 3 days
or	
Terconazole	80 mg vaginal suppository one suppository for 3 days
or	
Fluconazole	150 mg tablet orally once

NOTES:

SEVERE VVC

- should be treated with 7 to 14 days of topical therapy or 150 mg of fluconazole on day 1 and day 4.

NON-ALBICANS SPECIES

- 7 to 14 days of therapy with a non-fluconazole drug is recommended as first line therapy. If recurrence occurs, than a regimen of boric acid suppositories 600 mg intravaginally once a day for 14 days is recommended. Additional options include topical 4% (or higher %) flucytosine. Referral to a specialist is advised.
- Some expert consider using topical antifungal prophylaxis when systemic antibiotics are given, especially with women who have frequent bouts of VVC or who are immunosuppressed.
- Routine primary prophylaxis with fluconazole is not recommended in HIV infected women. Secondary prophylaxis with weekly fluconazole 150 mg is reserved only for women with severe recurrences of VVC (> 4 episodes).

RECURRENT VULVOVAGINAL CANDIDIASIS

- Recurrent vulvovaginal candidiasis (RVVC) is defined as four or more episodes of symptomatic VVC annually.
- Vaginal cultures should be obtained to confirm the clinical diagnosis and to identify unusual species
- **Fluconazole 150 mg weekly is effective in reducing *Candida albicans* colonization and symptomatic VVC, after starting with an initial intensive topical regimen for 10 -14 days.**
- In HIV positive women, RVVC is more often caused by non-candida species, particularly *C. glabrata* if the patient has been on azole therapy previously.
- If *C. glabrata* is isolated, a maintenance regimen of 100,000 units of nystatin delivered daily via vaginal suppositories has been successful, after initial treatment with boric acid or flucytosine).

NOTES:

2.4 HUMAN PAPILLOMAVIRUS INFECTIONS

EPIDEMIOLOGY OF HPV & CONDYLOMA ACUMINATA

- A higher incidence of HPV has been demonstrated among HIV-seropositive individuals as compared with HIV uninfected persons (Koutsky, 1999).
- About 60% of HIV-infected men who have sex with men (MSMs) test positive for HPV by Southern blot, while only 20-30% of HIV-negative MSMs test positive for HPV (El-Attar 1999).
- In one study, using very sensitive tests, HPV infection was found in 48% of HIV-negative MSMs and in 54% of MSMs with AIDS (Koutsky, 1999).
- Anal HPV infection was detected by PCR (amplified DNA testing) in 76% of HIV-positive women as compared with 42% of HIV-negative women; among HIV infected women CD4 cell count (200 was associated with anal HPV detection. (Palefsky, 2001)
- HIV-infected persons tend to be infected with more types of HPV than control populations, more often including HPV types with high oncogenic potential (Volkow, 2001).
- In a cohort followed every 6 months for 2-3 years, HIV-positive women were 1.8, 2.1 and 2.7 times more likely to have a high-, intermediate-, and low-risk HPV infection, respectively, compared with HIV-negative women. (Ahdieh, 2001)
- The only existing data on the prevalence of oral warts come from a nested case control study of a cohort of HIV-infected individuals which documented HPV-associated oral warts in 2.6% of HIV-infected persons (King, 2002) (in contrast to a prevalence of <0.5% among immunocompetent persons (Bouquot, 1986)).
- One study has demonstrated an increase (3-6 fold) in the incidence of oral warts associated with antiretroviral therapy and HAART in particular. (Greenspan, 2001)
- In another study, an increase in HPV-related oral lesions was noted in the HAART era, though this increase was associated with a decrease in HIV RNA. The authors posit that a decrease in HIV RNA could explain an increase in clinically detectable warts as a result of reconstitution of the immune system and associated inflammatory response to subclinical HPV infection. (King, 2002)

EPIDEMIOLOGY OF HPV-ASSOCIATED DYSPLASIA

- Women who are HIV-positive have a 5-6 times greater risk of having cervical intraepithelial neoplasia (CIN) than HIV-negative women (Korne, 1997).

NOTES:

- HIV status, detection of HPV, CD4 lymphocyte count, and HIV RNA level appears to predict the incidence of abnormal cervical cytology (Massad, 2001).
- Because immune status of HIV-infected women has been shown to influence the progression of CIN significantly, the CDC includes invasive cervical carcinoma as a classification for AIDS (CDC, 1993).
- There is also an association between HPV and anal carcinoma in both men and women (El-Attar, 1999).
- Melbye et. al. found that the incidence of anal squamous cell carcinoma is significantly increased in AIDS patients compared to the general population (Melbye, 1994).
- In a study of men presenting with penile lesions, a higher prevalence of potentially oncogenic HPV genotypes (16, 18, 31, 33, 35), as detected by in situ hybridization, was found among HIV-infected men (67%) in contrast to HIV-negative men (10%) (Gomousa-Michael, 2000).

NATURAL HISTORY OF HPV INFECTION

- One hypothesis for increased rates of HPV in HIV-infected persons is that HIV-induced immunosuppression leads to reactivation of viruses which were previously not detectable (Korn, 1997).
- As CD4 cell counts decrease, HPV viral shedding increases and the disease becomes more extensive (Heard 2000).
- Among HIV-infected women, persistence of HPV infection was nearly 2 times greater if the women had a CD4 cell count < 200 cells/uL, compared to a woman with CD4 cell count >500 cells/uL. (Ahdieh, 2001)
- Condyloma in HIV-infected patients have been associated with a significant risk for transformation into squamous cell carcinoma.
- HPV detection (ie presistance) and HIV RNA levels have been associated with dysplastic progression. (Massad, 2001).
- The effectiveness of highly active antiretroviral therapy (HAART) in preventing the persistence of HPV infection or the progression of squamous intraepithelial lesions has yet to be proven, and the studies to date are contradictory. (Lillo, 2001; Palefsky, 2001; Heard, 1998; Luque, 2001, Minkoff, 2001).

NOTES:

CLINICAL PRESENTATION

- The presentation of HPV in HIV-positive patients ranges from genital warts to carcinoma (Ormond, 1998).
- HPV lesions may be diffuse, less clinically apparent and more frequently dysplastic in HIV patients. Alternatively, the lesions in HIV-positive persons may be more extensive and resistant to treatment.
- In HIV-positive persons, subclinical genital HPV can affect the whole lower anogenital tract cervix, vagina, vulva, penis, anus, and any other genital skin (Czelusta, 2000).

DIAGNOSIS

Exam

Visual inspection is sufficient to detect lesions on the external anogenital area. Acetic acid evaluation of external genitalia is of limited value in routine clinical practice. Acetowhitening (whitened area of skin or mucosa after application of 3-5% solution of acetic acid solution) has low specificity, as low as 50-60% (many false positives); often noted at sites of prior trauma/inflammation and not recommended for evaluation of external genitalia.

Cervical Cytology

- Cytology, and colposcopy if the latter is abnormal, are used to detect cervical lesions in HIV-infected individuals.
- Some studies have questioned the sensitivity of the Pap smear in HIV-infected women while other studies have shown similar sensitivity and specificity for both HIV-positive and HIV-negative women (Korn, 1997).
- CDC recommends two pelvic exams with Pap smear screening during the first year after a diagnosis of HIV infection. If results are normal, yearly Paps/pelvic exams are indicated thereafter (CDC, 2002).
- Increased screening is recommended by experts as CD4 cell count drops below 200 (Anderson, 2001).

Colposcopy

- Refer to the 2001 Consensus Guidelines for the Management of Women with Cervical Cytological Abnormalities (Wright TW et al, JAMA 2002;287:2120-2129.) and the Guidelines for Preventing Opportunistic Infections among HIV-Infected Persons - 2002 (MMWR 2002;51(No. RR-8);1-52) for the management of abnormal cytology.

NOTES:

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- Experts recommend colposcopy for cytologic abnormalities of ASC-US or higher (Anderson, 2001).
- Colposcopy is not indicated as a regular screening tool for HIV patients with a documented normal Pap smear.

Anal Cytology

- **The natural history of anal SIL and treatment efficacy have not been well described. Therefore, until further information is available, CDC does not recommend screening for ASIL(CDC, 2002).**
- Because of the increased incidence of anal cancer in HIV infected MSMs, screening for anal SIL by cytology in this population is advocated by some specialists. Palefsky recommends anal squamous intraepithelial lesion (ASIL) testing (ie., anal Pap smears) for those at highest risk and in whom treatment would be most beneficial (Czelusta, 2000). Groups that Palefsky suggests might benefit from anal cytology include HIV-positive men with a history of receptive anal intercourse who might benefit from aggressive treatment, and HIV-negative men who participate in receptive anal intercourse or have a history of perianal or intra-anal condylomas. Excluded from ASIL screening would be HIV-infected patients with a poor prognosis as documented by CD4 levels or HIV plasma RNA levels

Biopsy

- Squamous cell carcinoma arising in or resembling genital warts may occur more frequently among immunosuppressed persons, thus requiring biopsy for confirmation (CDC, 2002).
- Based on the observation of a higher prevalence of high-grade dysplasia and carcinoma in HIV-positive individuals, at least one author recommends that HIV-infected patients with a high serum HIV load and/or a history of anal dysplasia should be examined by anoscopy, and condyloma should be analyzed histologically. (Sobhani, 2001)

TREATMENT

- Factors that may influence the choice of treatment include wart size and number, site of the wart, morphology, cost of treatment, convenience, and adverse effects.
- Treatments available include patient applied podofilox and imiquimod, and provider applied therapies such as cryotherapy, podophyllin resin, trichloroacetic acid, bichloroacetic acid, interferon, and surgery.

NOTES:

- Persons who are immunosuppressed because of HIV infection or other reasons may not respond as well as immunocompetent persons to therapy for genital warts, and they may have more frequent recurrences after treatment. Treat only if symptomatic.
- For anal warts, rates of recurrence after treatment in HIV-infected patients ranges from 10-75%, and appears to be more frequent among HIV-infected persons as compared with those who are HIV-negative (Sobhani, 2001).
- Lesions that fail to resolve following treatment with multiple modalities deserve biopsy for detection of neoplastic features.
- The role of warts (or irritated treatment sites) in HIV transmission unknown.

CDC RECOMMENDED TREATMENT REGIMENS:

External Genital Warts

Patient-applied: (Provider should identify warts for treatment and teach how to apply substance):

Podofilox 0.5% solution or gel (Condylox®). Patients may apply podofilox solution with a cotton swab, or podofilox gel with a finger, to visible genital warts twice daily for 3 days, followed by 4 days of no therapy. This cycle may be repeated as necessary for a total of 4 cycles. Total wart area treated should not exceed 10cm², and a total volume of podofilox should not exceed 0.5mL per day. If possible, the health-care provider should apply the initial treatment to demonstrate the proper application technique and identify which warts should be treated. Local irritation is common. *The safety and efficiency of podofilox has not been evaluated in pregnant women (category C).*

Imiquimod 5% cream (Aldara®). Patients should apply imiquimod cream with a finger, at bed-time, 3 times per week every other day, for up to 16 weeks. It is recommended that 6-10 hours following the application, the treatment area be washed with mild soap and water. Many patients may be clear of warts by 8-10 weeks or sooner. Response rates are lower in men with keratotic warts, and podophyllotoxin may be a more effective patient-applied treatment for these patients. Local skin reactions are common. *The safety and efficiency of imiquimod has not been evaluated in pregnancy (Category B).*

NOTES:

Provider-administered:

Cryotherapy with liquid nitrogen or cryoprobe. Two freeze cycles using spray, cryoprobe, or cotton-tipped applicator, with a 1-minute thaw between freezing, should be used. Repeat applications every 1 to 2 weeks. May be used in pregnancy.

Podophyllin resin 10-25% in compound tincture of benzoin. A small amount should be applied to each external wart and allowed to air dry. To avoid the possibility of problems with systemic absorption and toxicity, some experts recommend that application be limited to $\leq 0.5\text{mL}$ of podophyllin or $\leq 10\text{cm}^2$ of warts per session. Some experts suggest that it should be thoroughly washed off 1 to 4 hours after application to reduce local irritation. Repeat weekly if necessary. Local irritation is common. Potency, components, and contaminants in podophyllin are not standardized, and the shelf life is uncertain. *The safety and efficiency of podofilox has not been evaluated in pregnant women (category C).*

Trichloroacetic acid (TCA) or bichloroacetic acid (BCA) 80-90%. Apply a small amount only to warts and allow to dry, at which time a white “frosting” develops; powder with talc or sodium bicarbonate (baking soda) or liquid soap preparations to remove unreacted acid if an excess amount is applied. Repeat weekly if necessary. Can be painful after application and may be caustic to unprotected skin around the warts (which can be protected by the application of Vaseline®). Can be used in pregnancy.

Surgical removal-tangential scissor excision, tangential shave excision, curettage, or electrosurgery. Can be used in pregnancy.

NOTES:

Alternative treatments regimens:

Laser surgery	Costly but effective for very large and otherwise difficult to treat warts.
Interferon	Systemic interferon is not effective. Intralesional interferon has efficacy because of antiviral and/or immunostimulating effects. However, interferon therapy is not recommended for routine use because of inconvenient routes of administration, frequent visits, and its association with a high-frequency of systemic adverse effects.
5FU	is not currently recommended because of side effects

Cervical Warts

For women with exophytic cervical warts, treatment should be based on histopathologic lesion stage as determined by colposcopy and biopsy.

Vaginal Warts

Treat only if symptomatic, since most treatments also affect normal tissue and could cause scarring and pain.

Cryotherapy with liquid nitrogen. The use of the cryoprobe in the vagina is not recommended because of the risk for vaginal perforation and fistula formation.

Trichloroacetic acid (TCA) or bichloroacetic acid (BCA) 80-90%. Apply a small amount only to warts and allow to dry, at which time a white "frosting" develops; powder with talc or sodium bicarbonate (baking soda) or liquid soap preparations to remove unreacted acid if an excess amount is applied. Repeat weekly if necessary.

NOTES:

Urethral Meatus Warts

Cryotherapy with liquid nitrogen.

Podophyllin resin 10-25% in compound tincture of benzoin. The treatment area must be dry before contact with normal mucosa. This treatment can be repeated weekly, if necessary. The safety of podophyllin during pregnancy has not been established.

Although data evaluating the use of **podofilox** and **imiquimod** for the treatment of distal meatal warts are limited, some specialists recommend their use in certain patients.

Anal Warts

Cryotherapy with liquid nitrogen.

Trichloroacetic acid (TCA) or bichloroacetic acid (BCA) 80-90%. Apply a small amount only to warts and allow to dry, at which time a white “frosting” develops; powder with talc or sodium bicarbonate (baking soda) or liquid soap preparations to remove unreacted acid if an excess amount is applied. Repeat weekly if necessary.

Warts on the rectal mucosa should be managed in consultation with a specialist.

Oral Warts

Cryotherapy with liquid nitrogen.

Surgical removal

PARTNER MANAGEMENT

Examination of sex partners is not necessary for the management of genital warts because no data indicate that reinfection plays a role in recurrences. Additionally, providing treatment solely for the purpose of preventing future transmission cannot be recommended because the value of treatment in reducing infectivity is not known. However, because self- or partner-examination has not been evaluated as a diagnostic method for genital warts, sex partners of patients who have genital warts may benefit from examination to assess the presence of genital

NOTES:

warts and other STDs. The counseling of sex partners provides an opportunity for these partners to a) learn about implications of having a partner who has genital warts and about their potential for future disease transmission and b) receive STD and Pap screening. Female sex partners of patients who have genital warts should be reminded that cytologic screening for cervical cancer is recommended for all sexually active women.

<p>NOTES:</p> <hr/> <hr/> <hr/> <hr/> <hr/>
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2.5 ECTOPARASITIC INFECTIONS

2.5.1 SCABIES

GENERAL OVERVIEW

- One of the most common skin conditions and also the most common ectoparasitic infection in HIV-infected individuals.
- Infecting parasite is *Sarcoptes scabiei*.
- According to one text, one study reported scabies in 20% of HIV-positive patients (Friedman-Kien, 1996)
- May present as the classic or crusted “Norwegian” type. HIV/AIDS is one of the most common risk factor for crusted scabies (Orkin, 1993).
- Crusted scabies is associated with greater transmissibility than scabies.
- Published data regarding crusted and atypical presentations of scabies have been increasing since 1986 (Czelusta, 2000).

CLINICAL PRESENTATION

- In HIV patients with normal immune function, scabies may present as in the general population. Patients with scabies usually complain of pruritus that is more severe at night, but occasionally patients are asymptomatic. Skin lesions most commonly involve the interdigital spaces, flexor surfaces of the wrist, axillae, waist, feet and ankles (Burkhart, 2000). The area around the nipples of the breast may be affected in women, and the scrotum and penis may be affected in men.
- As immune system declines, most commonly when CD4 counts drop below 200, more fulminant forms of scabies may be seen. However, severe and atypical forms of scabies may occur early on in HIV disease as well. Patients with CD4 cell counts above 200 have developed crusted scabies (Portu, 1994).
- One author divides the severe and atypical manifestations into papular and crusted scabies and describes them as follows.
 - a. Papular - Characterized by generalized papules on trunk and extremities, each covered by a burrow that may be scaly. Patients may have severe pruritis.

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- b. Crusted (Norwegian) - Often thick, friable, greyish plaques. Can be found on the face, scalp, back, buttocks, nails, and feet. Plaques may have mild to severe fissuring. As lesions crust, they tend to become less pruritic, but cases of pruritic crusted scabies have been reported in HIV infected patients (Schlesinger, 1994). Patients may also present with both types of aforementioned lesions.
- With severe forms of scabies, complications may arise in significantly immunocompromised patients. Complications include secondary infection, bacteremia, and fatal sepsis. There are also case reports of leukocytoclastic vasculitis developing in association with scabies infestations (Valks, 1996).

DIAGNOSIS

- Suspect scabies for any atypical or pruritic rash in HIV-infected persons.
- Often, a skin scraping is enough for diagnosis in crusted or papular scabies. It may be taken from any nonexcoriated area or from beneath the nails.
- If scrapings are negative with a high suspicion for scabies, an empiric course of therapy and/or a skin biopsy is appropriate.

TREATMENT

- For uncomplicated scabies, treatment is the same for HIV infected patients as non-HIV infected persons.



RECOMMENDED TREATMENT FOR UNCOMPLICATED SCABIES

Permethrin cream (5%) applied to all areas of the body from the neck down and washed off after 8-14 hours.

Alternative Regimen

Lindane (1%) 1oz. of lotion or 30g of cream applied thinly to all areas of the body from the neck down and thoroughly washed off after 8 hours.

or

Ivermectin in two doses of 200 mcg/kg separated by two weeks. Not a FDA approved indication

NOTES:

- There are no controlled therapeutic studies for crusted scabies but treatment failure with standard therapy has been reported and some experts recommend combined treatment with oral ivermectin and a topical scabicide or repeat treatment with ivermectin (Taplin 1997; Corbett, 1996). Lindane should be avoided because of the risk of neurotoxicity with heavy applications and denuded skin. These cases might be best managed by consultation with an expert.

OTHER TREATMENT CONSIDERATIONS:

- To prevent reinfection, bedding and clothing should be decontaminated by machine-washing, machine drying using the hot cycle, dry-cleaning, or removing from body contact for at least 72 hours.
- In patients with crusted scabies, topical treatments may have poor penetration into thick scaly skin, and attention should be given to the cleaning and trimming of fingernails to avoid injury from excessive scratching.

MANAGEMENT OF SEX PARTNERS AND HOUSEHOLD CONTACTS

Both sexual and close personal or household contacts within the preceding month should be examined and treated.

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SECTION 3

STAGE-BASED BEHAVIORAL COUNSELING FOR STD/HIV PREVENTION FOR PERSONS LIVING WITH HIV/AIDS

BACKGROUND AND RATIONALE 2

**3.1 ADAPTATION OF SOC/TTM TO DEVELOP
STAGE-BASED BEHAVIORAL COUNSELING 3**

3.1.1 Step 1: Identify a target behavior and assess
a client’s readiness to adopt or adhere to the behavior 4

3.1.2 Step 2: Use a Counseling Strategy that matches
the Client’s Stage of Readiness 8

3.1.3 Step 3: Document the Stage, counseling Strategy used, and Client’s
Plan to provide continuity of care and evaluate effectiveness 11

3.2 APPENDIX 12

3.3 REFERENCES 17

BACKGROUND & RATIONALE:

- As persons with HIV/AIDS are now living longer, healthier lives, there is an increasing need for interventions for primary transmission prevention.
- Primary transmission prevention of HIV, as well as other STDs, depends on changes in sexual, substance use, and health care seeking behaviors.
- Since STDs facilitate both the transmission and acquisition of HIV, STD and HIV clinics are important settings for an integrated approach to HIV/STD primary prevention. Providers in these clinics have a unique opportunity to influence behavior change with their patients/clients.
- Traditionally, clinical providers have used patient education to help their clients/patients with behavior change. It has recently become clear however, that client/patient education alone is not effective for sustained behavior change.
- In recent clinical trials of STD and HIV primary prevention interventions, the efficacy of social and behavioral science (SBS) based behavioral counseling was found superior compared to patient/client education when delivered under a highly controlled research protocol in STD clinic settings (CDC, 2001; CDC, 1999; Kamb, 1998; Kamb, 1996; NIMH, 1998; Shain, 1999).
- As a result, the Centers for Disease Control and Prevention (CDC) now recommends HIV prevention counseling models which are science-based and incorporate essential elements for effectiveness: counseling that is (a) interactive, (b) focused on client's personal risks and circumstances, and (c) directed towards helping clients set and reach specific goals. (CDC, 2001)
- The CDC's Division of HIV/AIDS Prevention is also recommending that HIV clinical providers and case managers provide behavior change interventions for their patients/clients with HIV/AIDS (Janssen, 2001).
- The Stage of Change/ Transtheoretical Model of Behavior Change Theory (SOC/ TTM) has been successfully used by health care providers to delivery brief counseling interventions in clinical settings for cardiovascular risk reduction, smoking cessation, exercise adoption, etc.

3.1 ADAPTATION OF SOC/TTM TO DEVELOP STAGE-BASED BEHAVIORAL COUNSELING:

1. The SOC/TTM theory of behavior change has been adapted to develop a behavioral counseling intervention for STD/HIV prevention. In this adaptation, sexual, substance use, and health care seeking target behaviors are defined which, if adhered to, would result in the primary transmission prevention of HIV and primary acquisition prevention of other STDs. SOC was used to provide a system to assess each client’s readiness for behavior change; TTM was used to develop eleven HIV/STD counseling strategies, which psychologically match the stages (Coury-Doniger, 2001).
2. This method of Stage-based Behavioral Counseling allows a clinician to assess each client’s stage of readiness for change and then use an appropriate behavioral counseling strategy in the same way they currently “diagnose” and “treat” medical problems. The clinician can efficiently determine an accurate starting point for each client, use an appropriate counseling strategy, and set realistic goals for the outcome of the session. There are three basic steps:

Steps in Using Stage-based Behavioral Counseling

Step 1	Identify a target behavior and assess a client’s readiness to adopt or adhere to the behavior.
Step 2	Use a counseling strategy that matches the client’s readiness.
Step 3	Document the stage, counseling strategy, and client plan to provide continuity of care and evaluate effectiveness.

NOTES:

3.1.1 STEP 1: IDENTIFY A TARGET BEHAVIOR AND ASSESS A CLIENT’S READINESS TO ADOPT OR ADHERE TO THE BEHAVIOR

FIRST - Identify a Target Behavior:

There are many behaviors that will reduce the risk of STD/HIV transmission; these are called target behaviors. Target behaviors for persons living with HIV/AIDS can include any sexual, substance use, and health care seeking behavior that will reduce the chances that a client will transmit HIV infection and/or acquire a new STD. Examples of target behaviors for patients living with HIV/AIDS are listed below.

Target Behaviors for HIV/AIDS Clients

<p>Sexual target behaviors: (gold standard)</p>	<ul style="list-style-type: none"> a. Delay or avoid vaginal/rectal intercourse b. Use male or female condoms consistently for vaginal/rectal sex c. Disclose HIV status to sexual partner(s)
<p>Harm reduction target behaviors for clients who are not ready for above:</p>	<ul style="list-style-type: none"> a. Get STD testing/treatment regularly b. Get HIV testing/treatment regularly c. Use condoms consistently with outside partners, not main partner d. Reduce number of sexual partners e. Increase the number of times condoms are used for penetrative sex f. Use non-penetrative sexual practices g. Put the condom on right before ejaculation h. Any “first step” that a client is willing to take
<p>Substance use target behaviors: (gold standard)</p>	<ul style="list-style-type: none"> a. Stop using b. Enter a substance use treatment program c. Avoid sharing needles/works
<p>Harm reduction target behaviors for clients who are not ready for above:</p>	<ul style="list-style-type: none"> a. Reduce number of times you are using b. Rinsing needles/works with bleach c. Don’t have sex when you’re high d. Use in a less harmful way, e.g. snort don’t shoot e. List other options - any “first step” that a client is willing to take
<p>Health care seeking target behaviors:</p>	<ul style="list-style-type: none"> a. Receive HIV care at recommended intervals b. Adhere to treatments as prescribed c. Accept referrals for on-going case management d. Get STD screening regularly

NOTES:

THEN - Assess The Client’s Readiness To Adopt Or Adhere To That Target Behavior:

As target behaviors are identified that would result in STD/HIV prevention for a given client, the clinician uses the stages of change to assess the client’s readiness to adopt or adhere to that behavior. The following chart shows an example of staging in relation to a target behavior: using a female/male condom consistently for vaginal/rectal sex:

EXAMPLE:

STAGE OF CHANGE	DESCRIPTION OF CLIENT’S READINESS
Precontemplative	Client sees no need to use condoms consistently
Contemplative	Client sees the need to use condoms consistently, but has barriers...
Ready for Action	Client is ready to start using condoms consistently or has been using condoms consistently for 0-3 months
Action	Client has been using condoms consistently for 3-6 months
Maintenance	Client has been using condoms consistently for more than 6 months

STAGING QUESTIONS:

For primary transmission HIV prevention, HIV/AIDS clients should be assessed in relation to the sexual, substance use, and health care seeking target behaviors (listed above). To correctly identify the appropriate target behavior and classify the client’s SOC, the clinician interviews the client using a series of open-ended questions. Some of the staging questions are already part of a standard medical history. Assessing a client’s readiness for change however, requires an **exploration of the client’s ATTITUDES in addition to his/her HISTORY of the behaviors**. The following table lists examples of open-ended staging questions used for assessing a client’s readiness for behavior change for - sexual , substance use, and health care seeking behaviors. These questions are used to begin a dialogue and are often followed by more close-ended questions.

<p>NOTES:</p> <hr/> <hr/> <hr/> <hr/> <hr/>
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Step 1. INTERVIEW

Assessment of:	Staging Questions
Client's knowledge	I don't want to bore you, why don't you tell me what you've heard about: How a person living with HIV/AIDS can prevent giving HIV to others? How a person living with HIV/AIDS can get an STD? How having an STD makes passing HIV to sexual partner more likely? How having an STD can make the HIV more active in your body and complicate treatment?
Client's perception of risk of Transmission:	Are you worried about giving HIV to others? Why or why not?
Sexual/relationship history:	Tell me about your current partner situation ...
If client has a steady partner:	How long have you been seeing that person? What's that relationship like for you? When is the last time you had sexual contact with your partner? And how about with someone other than that person? What about for your (steady) partner? How many partners in previous 3 mo? 1 yr?
If client has no steady partner:	When is the last time you had sexual contact? Was that with someone new to you? And how about the time before? How many partners in previous 3 mo? 1 yr?
Condom use: History of and Attitudes towards	What's your experience been with condom use? What would be the difference between a time you would use a condom versus when you might not? What do you think about using condoms consistently with every partner? Do you see a need to do this? Tell me about your barriers to using condoms?

Continued overleaf...

<p>NOTES:</p> <hr/> <hr/> <hr/> <hr/> <hr/>
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Step 1. INTERVIEW, cont.

<p>Substance use: History of and Attitudes towards</p>	<p>What's your experience been with substance use? What was that like for you? What about your partner (s)? Why do you think we talk to all our patients about substance use? What do you think about getting into a drug treatment program? How is your substance use related to getting STDs and/or HIV? What's your experience been with sharing needles/works? Do you see a need to stop using?</p>
<p>Partner Disclosure: History of and Attitudes towards</p>	<p>What has your experience been with telling your partners about your HIV infection? Do they know about your HIV status? Do you see a need for disclosure? What are your fears (barriers) about telling partner What do you think about having someone else tell them anonymously? Has your partner(s) been HIV tested? When? What was the result? What made you want to get tested for HIV? What do you think about the need for your (steady) partner to be tested? How about the others Tell me about the barriers you having talking with your partner(s) about this</p>
<p>Health Care Seeking: History of and Attitudes towards</p>	<p>How long have you known your HIV status? How did you find out? What's your experience been with getting HIV/AIDS medical care? When was the last time that you were seen? What do you think about getting HIV care on a regular basis? Do you have any barriers to getting care? What's your experience been with taking HIV/AIDS treatments? What do you think about it now? What's your experience been with STD testing? When is the last time you were tested? And what about your (steady) partner? What do you think about the need for you to be tested? And your (steady) partner? Do you have barriers to talking with your partner about this? What about getting on-going case management? Do you see a need for that service at this time?</p>

NOTES:

3.1.2 STEP 2: USE A COUNSELING STRATEGY THAT MATCHES THE CLIENT’S STAGE OF READINESS

The clinician then selects and uses one of the eleven counseling strategies which matches the client’s stage of readiness for change. In this way, the clinician uses a client-centered approach that is most likely to be effective in influencing behavior change. Table 2 below shows the Counseling Strategies matched to SOC.

TABLE 2. COUNSELING STRATEGIES MATCHED TO SOC

Stage of Change	Counseling Strategy
<p>Precontemplative Client sees no need to do the target behavior</p> <p>NO WAY</p>	<p>Story-Telling: Tell client a “story” about a case similar to client.</p> <p>Information Giving: Give information specific to client’s situation.</p> <p>Discuss Impact of Behavior on Others: Help client to see how the behavior is negatively impacting on persons the client cares about.</p>
<p>Contemplative Client sees the need to do the target behavior, but has barriers and so is not ready to take action</p> <p>YES, BUT...</p>	<p>Explore Ambivalence/ Offer Substitutes: Help client see why he/she is ‘on the fence’.</p> <p>Discuss Pros and Cons: by exploring the client’s cost/benefit to change, and</p> <p>Offer substitutes: harm reduction options.</p> <p>Discuss Behavior in Relation to Self- image: Discuss the client’s behavior and whether or not it conflicts with their self-image.</p>
<p>Ready for Action Client is ready to do the target behavior and may have already be trying new behavior</p> <p>LET’S DO IT</p>	<p>Develop a Plan: Help the client to articulate a specific plan detailing how the client will accomplish the behavior change.</p> <p>Build confidence, practice skills, and establish a first step.</p> <p>Increase access to prevention devices and services by referral.</p>

Continued overleaf...

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TABLE 2. COUNSELING STRATEGIES MATCHED TO SOC, *cont.*

<p>Action Client has been doing the target behavior for 3-6 months DOING IT</p>	<p>Identify Supports: Help client find a support system. Avoid Cues: Assist client in recognizing and avoiding the cues which lead to risky behaviors. Find Substitutes: Find substitutes for previous risky behavior. Identify Rewards: Help client identify meaningful reward for maintaining the change. Become a Role Model: Help client become a role model of change for peers</p>
<p>Maintenance Client has been doing the target behavior for more than 6 months LIVING IT</p>	<p>Same as Action Stage</p>

NOTES:

Table 3. Precontemplative Counseling Strategy: Giving Information

Examples of Giving Information - for Clients who are Living with HIV/AIDS	
Client’s Assessment of Risk	Have client discuss their perception of their risk of transmitting HIV and their risk of getting a new STD - compare that with the factors known to influence one’s risk of acquiring an infection - review risk of infection formula.
Additional infection with HIV	Discuss issue of additional infection with HIV with a resistant strain. Also, the impact of getting a new STD in stimulating the immune system and increasing HIV viral load
Use Stick Figures to show Transmission	Use stick figure diagrams of the client’s actual sex partner situation to illustrate how their partner’s partners behaviors can impact their own STD/HIV risk.
Mucosal Immunity: the STD/HIV Connection	Explain synergistic relationship between STDs and HIV and describe how STDs increase the chance that a person with HIV, will transmit their infection to a sexual partner. Also, if the partner has the STD, their risk of getting HIV from sex is also higher. Describe the mucous membrane surfaces of the vagina, urethra, rectum, and mouth and how it is affected by STD infections.
Preventing Opportunistic Infections	Discuss opportunistic infections which are preventable if a person with HIV is in care - give the example of PCP which can develop quickly and can be fatal - and is highly preventable
Benefits of HIV Medical Care	Preventive focus - TB, Hepatitis vaccines, flu and pneumonia vaccines, pap smears, etc - all improve overall health of person with HIV. Stress that HIV care means more than anti-viral therapy for HIV.
Future Fertility	Discuss the risks of ectopic pregnancy and infertility related to STD complications of PID and Epididymitis; discuss client’s desire for future pregnancies, relationships between STDs/HIV and poor pregnancy outcomes, neo-natal infection, etc.
STD/HIV Cocaine Connection	Explain connection between cocaine and STD/HIV; how this relates to the exchange of sex for drugs behavior.

<p>NOTES:</p> <hr/> <hr/> <hr/> <hr/> <hr/>
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3.1.3 STEP 3: DOCUMENT THE STAGE, COUNSELING STRATEGY USED, AND CLIENT’S PLAN TO PROVIDE CONTINUITY OF CARE AND EVALUATE EFFECTIVENESS

Finally, the clinician documents the behavioral counseling session in the medical record to provide continuity of care and evaluate effectiveness. This can also be done efficiently without

An additional form by modifying the current visit record to include the following:

Target Behavior _____ **SOC** _____

Target Behavior _____ **SOC** _____

Counseling Strategy used _____

Clients plan (immediate outcome) _____

<p>NOTES:</p> <hr/> <hr/> <hr/> <hr/> <hr/>
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3.2 APPENDIX

THEORETICAL BACKGROUND

Social & Behavioral Science (SBS) research has identified that many factors influence a client’s ability to change: These are known as behavioral determinants or **influencing factors**. Some influencing factors are within the individual “self” including a client’s knowledge, attitudes and beliefs, and skills. Other factors are more external and include a client’s sexual relationship dynamics, the influence of peers, family members and cultural norms. A client’s environment can also play a role in facilitating or creating barriers to behavior change. The clinician’s awareness and understanding of these factors is the first step in performing behavioral counseling.

Counseling Strategies Need to Address Each Client’s Influencing Factors: In order to be effective, a counseling strategy must address a client’s influencing factors; their personal risks and circumstances relating to their risk behaviors. There are no standard ‘messages’ that will result in behavior change. In fact, moving ahead of the client’s readiness can result in increased client resistance and make behavior change less likely. Clinicians need to learn a variety of counseling strategies which can address varying influencing factors identified by clients in relation to his/her risk behaviors and thus their ability to change these behaviors. The counseling also needs to be short-term, directive, and focused on helping the client set and reach a specific, realistic risk/harm reduction goal.

THE STAGE OF CHANGE/TRANSTHEORETICAL MODEL OF BEHAVIOR CHANGE THEORY

Stage of Change/Transtheoretical Model (SOC/TTM) of Behavior Change Theory: SOC Theory postulates that behavior change occurs along a continuum of five stages: Precontemplation (no intention to change), Contemplation (long range intention to change), Preparation (short term intention to change), Action (short term, consistent behavior change), and Maintenance (long term, consistent behavior change). The stages are indicative of underlying influencing factors, such as knowledge, attitudes and beliefs, self-efficacy, perceived norms, sexual relationship dynamics, environmental barriers, et al, which lead to intentions to perform or not to perform the behavior in question. The stages of change are also predictive of present and future behavior. Relapse can occur at any time, and is seen as a normal part of the change process. A client’s stage of readiness will vary depending on the

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target behavior. Staging a client’s readiness for change however, is not, in itself, an intervention that is likely to influence future behavior. The TTM further identifies the “processes of change” that are needed in order for a client to move from one stage to another.

Stage of Change (SOC) and matching TTM processes of change

Stage of Change	Precontemplative	Contemplative	Ready for Action	Action	Maintenance
	Sees no need to do the target behavior	Sees a need to do target behavior, but is ambivalent	Ready to do target behavior soon, or has already started	Doing target behavior consistently for 3-6 months	Doing target behavior consistently for 6 or more months
Processes of Change	Consciousness raising Environmental reevaluation Dramatic relief	Self-reevaluation Decisional balance	Self-liberation	Reinforcement management Helping relationships Counter-conditioning Stimulus control Social liberation	Same as for Action Stage

Adapting Theory to Practice: There are many challenges in implementing behavioral counseling in a busy, real-world, clinical setting. The intervention needs to be **efficient** and able to **fit into the existing clinical flow**. The counseling needs to be short term, completed within a 15 - 20 minute unit of service which may be done while a client is waiting for test results. Because many providers in clinic settings have limited knowledge of SBS and are not trained as counselors, the behavioral counseling needs to be structured with tools that can be used by a wide variety of professional and paraprofessional staff. The behavioral risk assessment should be relatively rapid, allowing more time to be spent on the counseling strategy. Since STDs are known to facilitate HIV transmission and acquisition, the behavioral counseling needs to integrate HIV and STD prevention.

NOTES:

Clients seen in STD and HIV clinics have multiple medical problems and health needs such that the counseling should have broad applicability for use with other health-related behaviors. The intervention should be acceptable to the client population and to the clinic staff. Lastly, many patients/clients with HIV/AIDS see no need for behavior change or have significant barriers yet often have the highest STD morbidity with important public health implications. In a research settings, these clients may refuse to give consent to participate in SBS-based counseling interventions, but in the real world, effective interventions for this more “difficult” subset of patients are a high priority. There is clearly a need for a behavioral counseling approach which recognizes that clients are in different stages of psychological readiness for behavior change and yet is practical enough to be efficiently and effectively used by a wide variety of providers in STD and HIV clinic settings.

Adaptation of SOC/TTM Theory for HIV/STD prevention - Stage-based Behavioral Counseling : In Rochester, New York, STD and HIV services are provided through a collaboration between the University of Rochester and the Monroe County Department of Health. In 1994, this Collaboration developed and implemented Stage-based Behavioral Counseling for STD/HIV prevention. The intervention is an adaptation of SOC/TTM which focuses on sexual, substance use, and health care seeking behavior change. Currently, the Rochester (Monroe County Department of Health) STD Clinic routinely provides one session of Stage-based Behavioral Counseling to all clients/patients seen in clinic, community, and criminal justice settings at each visit. The intervention is likewise used with all clients living with HIV/AIDS during each clinic visit to address their sexual, substance use, and health care seeking behaviors.

The 10 - 20 minute behavioral counseling session is integrated into the HIV pre- and post-test counseling, partner counseling, and STD and HIV case management services. The stage and the counseling strategy used are documented in the Clinic Visit Record to provide continuity for the next provider who sees the patient. All STD/HIV Program staff are trained to provide Stage-based Behavioral Counseling including the nurses and nurse practitioners, physicians, disease intervention specialists, public health representatives, HIV and STD case managers, health educators, and outreach staff (8). Clinicians typically integrate the staging assessment questions into the medical history and utilize an appropriate counseling strategy during and immediately after the examination.

Staging Grids and Protocols: In the development of the counseling intervention, the five stages of change are applied to sexual, substance use, and health care seeking target behaviors relevant to STD/HIV prevention. The resulting Staging Grids and Protocols are used to assess each client’s history of, and attitudinal readiness (intentions) towards change in relation to these target behaviors. The use of these tools provides a standardized and rapid assessment of the intentions of each client as well as the influencing factors that are most relevant (5).

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The Staging Grids can be used to guide the clinician to identify which target behaviors would realistically result in risk reduction for an individual client and then assess the client’s stage of readiness for adopting or adhering to that target behavior. For primary transmission HIV prevention, persons who are living with HIV/AIDS should be assessed in relation to the sexual, substance use, and health care seeking target behaviors (listed above). To correctly identify the appropriate target behavior and classify the client’s SOC, the clinician interviews the client using a series of open-ended questions. Some of the staging questions are already part of a standard medical history. Assessing a client’s readiness for change however, requires an exploration of the client’s ATTITUDES in addition to his/her behaviors.

Exploring History & Attitudes for Staging Client’s Readiness

Staging for Sexual and Substance Use Target Behaviors: A series of open-ended questions are used to elicit information in the following content areas:

- R** - Nature and status of current sexual relationship(s)
- N** - Number of partners for both the client and his/her partner(s), and current sexual practices
- T** - Types of sexual contact
 - A** - History of, and attitudes about:
 - C** - condom use
 - A** - avoiding or delaying vaginal/rectal sex
 - D** - disclosing HIV status to partner(s)
 - S** - substance use for client and partner(s)

This outline gives general categories of questions clinicians need to ask in order to “stage” a client’s readiness for change. For specific questions for each content area, refer to Table 2 in the Appendix.

Staging for Health Care Seeking Target Behaviors: A series of open-ended questions are used to elicit information in the following content areas:

- H** - How long has patient known their HIV + status
 - A** - History of and attitudes about:
 - IC** - receiving HIV care at recommended intervals
 - TA** - adhering to prescribed treatments
 - AR** - accepting a referral for case management services
 - STD** - getting STD screening regularly

<p>NOTES:</p> <hr/> <hr/> <hr/> <hr/>
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TABLE 3. STAGING GRID: FOR ANY TARGET BEHAVIOR

SOC	Write in ...	Write in ...	Write in ...
PC	PC- <u>Sees no need to</u>	PC- <u>Sees no need to</u>	PC- <u>Sees no need to</u>
C	C- <u>sees need to, but...</u>	C- <u>sees need to, but...</u>	C- <u>sees need to, but...</u>
RFA	RFA- <u>ready to</u> OR has for <3 months	RFA- <u>ready to</u> OR has for <3 months	RFA- <u>ready to</u> OR has for <3 months
A	A- has consistently for 3-6 months	A- has consistently for 3-6 months	A- has consistently for 3-6 months
M	M- has consistently for >6 months	M- has consistently for >6 months	M- has consistently for >6 months

Stages of Change:

- PC Precontemplative
- C Contemplative
- RFA Ready for Action
- A Action
- M Maintenance

Health Target Behaviors:

- *
- *
- *

<p>NOTES:</p> <hr/> <hr/> <hr/> <hr/>
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3.3 REFERENCES

Reference articles of effective social and behavioral interventions can also be found by using the www.cdc.gov web site.

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SECTION 4

PARTNER MANAGEMENT

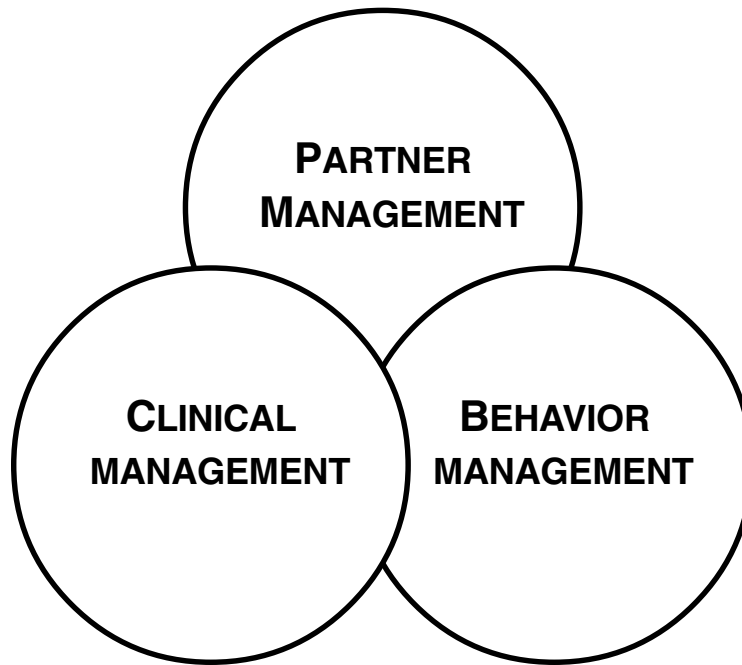
INTRODUCTION

The role of the health care provider is critical to the success of managing current STD and HIV infections and preventing future ones. Surveillance, case detection through risk assessment, screening, treatment, case follow-up, patient education, and partner services are some of the resources available to assist the clinician.

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4.2 PARTNER REFERRAL	4
4.3 REPORTING AND CONFIDENTIALITY	6
4.4 APPENDIX	8
4.5 REFERENCES	14

4.1 BACKGROUND

BREAKING THE CHAIN OF INFECTION



Prevention of STDs and HIV requires a combined approach that focuses on the interrelationships of STDs and HIV. This involves three types of patient services: clinical, behavioral and partner management. Although these are distinct services, there is overlap in their unique contributions to the overall case management of the patient.

Clinicians evaluating HIV-infected persons should collect information to determine whether any partners should be notified about possible exposure to HIV. The term partner includes sexual and injection-drug users who share syringes or other injection equipment. (CDC, 2002)

Partner Management: An Established Public Health Practice:

- partner notification (PN) was established as a public health practice by Thomas Parran, Surgeon General, in 1937;
- has been utilized with success since the early 1940's for sexually transmitted disease control and prevention. (Holmes, 1999).

NOTES:

WHAT IS PARTNER MANAGEMENT?

Partner Management is a confidential process, whereby sexual and/or needle sharing partners are:

- informed of their exposure;
- encouraged to seek medical evaluation.

RATIONALE FOR PARTNER MANAGEMENT:

- Early diagnosis and treatment of STD/HIV infection provides partners an opportunity to seek clinical and behavioral intervention services.
- Partner notification provides an opportunity to interrupt disease transmission and to prevent complications by successfully notifying and referring infected and exposed people and their partners for medical evaluation.
- Partner notification may inform a person that they have been engaging in behaviors that increase the risk of STD/HIV transmission, and offers an opportunity to provide counseling and education for reducing such risks.

<p>NOTES:</p> <hr/> <hr/> <hr/> <hr/> <hr/>
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4.2 PARTNER REFERRAL

WHAT DO PATIENTS THINK ABOUT TELLING THEIR PARTNERS?

In-depth interviews on patient beliefs about which partners should be told (Gorbach, 2000) found people who:

Told all partners

- “I would rather tell somebody and have them check and not find it than not tell somebody who has it and is spreading it further. ...So I contacted three people, oh four guys.”
- “I do it because I care about people more than just a roll in the hay.”

Told main partner, not others

- “You tell the most important person and the other ones, they can find out on their own. You don’t care nothing about them no way.”
- “I told my fiance. I didn’t tell no one else because I figured it wasn’t any of their business.”

Told no partners

- “I’m not going to tell no one. I hope they all get some too because it was from one of them.”
- “I didn’t tell (that) lady, no, because I wasn’t talking to her no more at that point.”

Given the variation among patients’ responses about telling their partners, effective partner management strategies need to be incorporated in order to reach the greatest number of people.

MANAGEMENT OF SEX AND INJECTION-DRUG PARTNERS

CDC Sexually Transmitted Disease Treatment Guidelines 2002

- HIV-infected patients should be encouraged to notify their partners and to refer them for counseling and testing. If requested by the patient, health-care providers should assist in this process, either directly or by referral to health department partner-notification programs.
- The guidelines also include the recommendation that if patients are unwilling to notify their partners, or if they cannot ensure that their partners will seek counseling, physicians or health department personnel should use confidential procedures to notify partners. Consult your state laws to determine when (and if) confidential notification may be undertaken.

NOTES:

PARTNER MANAGEMENT STRATEGIES

Often clinicians do not have sufficient time or training to directly manage identification and notification of partners. Provider and Patient (Self) Referral are two complementary notification processes that can be used to facilitate partner management.

Provider Referral:

- occurs with the consent of the infected person. Trained health department personnel locate and notify partners of their risk (names, descriptions, and addresses are voluntarily provided by the patient), and refer to appropriate services.
- ensures patient confidentiality as names, identifying or locating information are not revealed to partners who are notified. Patient (Self) Referral

Patient (Self) Referral:

- The infected patient agrees to inform partners of their possible exposure and refer to appropriate services.

PARTNER MANAGEMENT STRATEGIES INVOLVING THE CLINICIAN

Contract and Dual Referral are two additional methods of partner referral used by trained health department personnel. Clinicians who have the time and training to directly assist patients with partner management may consider using these methods.

Contract Referral

- The provider and patient decide on a time frame during which the patient will contact and refer their partners. If the patient is unable to complete the task within that agreed-upon time period, the provider then has the permission and information necessary to follow-up with the partner.

Dual Referral:

- Occurs when the patient feels that they and their partners would be best served by having both the client and the provider present when the partner is informed.
- The dual approach allows the client to receive direct support in the notification process. The provider is available to give immediate counseling, answer questions; addresses concerns, and provide referrals to other services. (CDC, 1994; CDC, 2001)

NOTES:

4.3 REPORTING AND CONFIDENTIALITY

TIMELY REPORTING

Accurate identification and timely reporting of STDs are integral components of successful disease control efforts. Timely reporting is important for:

- assessing morbidity trends.
- targeting limited resources.
- assisting local health authorities in identifying sex partners who may be infected.

STD/HIV/AIDS should be reported in accordance with local statutory requirements.

Diseases reportable in every state are:

- Syphilis
- Gonorrhea
- Chlamydia
- AIDS

HIV infection and chancroid are reportable in many states.

Reporting Requirements

In some states, the clinician is responsible for reporting these diseases to the health department; in others, both the laboratory and the clinician are responsible.

Because the STD/HIV/AIDS requirements for reporting differ by state, clinicians should be familiar with local reporting requirements. (Celum, 1994; CDC, 2002)

HOW DOES THE HEALTH DEPARTMENT USE THIS INFORMATION?

The health department uses reported information to:

- trace sources of infections.
- ensure treatment of partners.
- document neighborhoods in need of specific resources.
- record the types of infections that exist in the community in order to improve diagnosis, treatment and prevention.

NOTES:

Services Offered By Local Health Departments:

- partner notification activities are conducted by experienced disease intervention specialists (DIS) who have been specifically trained to carry out provider referral services in a tactful and confidential manner.
- telephone consultation for clinicians with questions about patient management (e.g., record search for a history of a positive blood test for syphilis).
- provide educational materials for patients.
- offer selected laboratory services depending on locale.

Before public health representatives conduct a follow-up of a positive STD-test result, it is recommended that they consult the patient’s health-care provider to verify the diagnosis and treatment, and to ensure that there are no issues to prevent contacting the patient. (Celum, 1994; CDC, 2002)

<p>NOTES:</p> <hr/> <hr/> <hr/> <hr/> <hr/>
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4.4 APPENDIX

PROGRAM MANAGERS

Donna Cecere
Dept of Health & Social Services
3601 "C" Street, Suite 540
P.O. Box 240249
Anchorage, AK 99524-0249
907/269-8056
907/561-0453 (FAX)

Mike O'Cain
Alabama Department of Public Health
STD Division
201 Monroe Street, Suite 1440
P.O. Box 303017
Montgomery, AL 36104-3704
334/206-5350
334/206-2768 (FAX)

Kaleemulla Sayyed, MD
Division of HIV/STD
Arkansas Department of Health
4815 West Markham, Slot 33
Little Rock, AR 72205-3867
501/661-2503
501/661-2082 (FAX)

Tai Ripley, R.N.
STD Control Program
Department of Health
LBJ Tropical Medical Center
P.O. Box F
Pago Pago, AS 96799-9706
011-684-633-4606
011-684-633-5379 (FAX)

Frank Slaughter
Senior Public Health Advisor
Office of HIV/STD & Hepatitis C Svcs
3815 North Black Canyon Hwy
Phoenix, AZ 85015-5351
602/230-5900
602/230-5818 (FAX)

Kerry Kenney
County of Los Angeles
Preventive Health Services
2615 South Grand Avenue, Room
Los Angeles, CA 90007-2608
213/744-3334
213/741-9246 (FAX)

Romni Neiman
California DHS
STD Control Branch
Suite 201, 1947 Center Street
Berkeley, CA 94704-1155
510/883-6655
510/849-5057 (FAX)

Wendy Wolf, M.P.A.
STD Prevention and Control Svcs
City Clinic
356 7th Street
San Francisco, CA 94103-4030
415/487-5501
415/495-6463 (FAX)

Terri Tiller-Taylor
STD/AIDS Field Services Section
DCEED-STD-A3, Colorado Dept.
of Public Health and Environment
4300 Cherry Creek Drive, South
Denver, CO 80246-1523
303/692-2685
303/782-0904 (FAX)

Heidi Jenkins
Bureau of Public Health
STD Program
410 Capitol Avenue MS11STD
P.O. Box 340308
Hartford, CT 06134-0438
860/509-7924
860/509-7743 (FAX)

John Heath
STD Control Program
Department of Health
717 14th Street, N.W., Suite 950
Washington, DC 20005-3214
202/727-9860
202/727-3345 (FAX)

Catherine Mosley, RN
STD Program Administrator
Delaware Division of Public Health
HIV/STD/HCV
P.O. Box 637
Dover, DE 19903-0637
302/739-4745
302/739-6617 (FAX)

Karla Schmitt, Chief
Florida Department of Health
Bureau of STD Prev & Control
4052 Bald Cypress Way
Bin A-19
Tallahassee, FL 32399-7012
850/245-4303
850/414-8103 (FAX)

Kidsen K. Iohp, M.P.H.
Health Program Manager
Department of Health Services
P.O. Box PS 70
Palikir
Pohnpei, FM 96941-9999
011-691-320-2619
011-692-320-5263 (FAX)

Veronica Hartwell
Director, STD/HIV Program
Georgia Department of Human Resources
2 Peachtree Street, N.W.
15th Floor, Suite 470
Atlanta, GA 30303-3142
404/657-2700
404/657-2715 (FAX)

Bernadette P. Schumann
STD/HIV Coordinator
Bureau of Communicable Disease
Government of Guam
P.O. Box 2816
Agana, GU 96932-2816
0-671-735-7135
0-671-734-5910 (FAX)

Roy Ohye
STD/HIV Prevention Program
Department of Health
3627 Kilauea Avenue, Room 304
Honolulu, HI 96816-2399
808/733-9287
808/733-9291 (FAX)

John Katz
Division of Health Protection
Department of Public Health
Lucas State Office Building
321 E. 12th Street
Des Moines, IA 50319-0076
515/281-4936
1-800-831-6292 (FAX)

Anne Williamson, M.H.E.
STD/AIDS Program Manager
Bureau of Clinical & Prev. Services
Department of Health & Welfare
450 W. State Street, 4th Floor
Boise, ID 83720-0001
208/334-6526
208/332-7346 (FAX)

Janice M. Johnson
Westside-Cntrs for Dis. Control
Chicago Department of Health
2160 W. Ogden Avenue
Chicago, IL 60612-4219
312/747-0128
312/747-0160 (FAX)

Charles Rabins, M.P.H.
Chief, STD Section
Illinois Department of Public Health
525 West Jefferson Street
Springfield, IL 62761-0001
217/782-2747
217/524-5443 (FAX)

Jim Beall
Indiana State Department of Health
Division of HIV/STD
2 North Meridian Street
P.O. Box 1964
Indianapolis, IN 46204-3021
317/233-7426
317/233-7663 (FAX)

R. Allen Mayer
STD Control Program
Department of Health & Environment
109 SW 9th Street
Mills Building, Suite 605
Topeka, KS 66612-1215
785/296-5598
785/296-5590 (FAX)

David Raines
Department for Health Services
Cabinet for Human Resources
275 East Main Street
Frankfort, KY 40621-2321
502/564-4804
502/564-5715 (FAX)

Dennis Dorst
STD Control Program
Office of Public Health
Department of Health and Hospitals
325 Loyola Avenue, Room 616
New Orleans, LA 70112-1829
504/568-5320
504/568-5279 (FAX)

Vacant
Director (TBD)
Division of STD Prevention
MA Dept of Public Health
305 South Street, Room 560
Jamaica Plain, MA 02130-3515
617/983-6940
617/983-6962 (FAX)

Glen Olthoff
Communicable Diseases & Epi.
Baltimore City Health Department
210 Guilford Avenue, 3rd Floor
Baltimore, MD 21202-3621
410/396-4448
410/625-0688 (FAX)

Scott Tulloch
Division of STD Control
Maryland Department of Health
and Mental Hygiene
201 W. Preston St, Room 307-B
Baltimore, MD 21201-2323
410/767-0859
410/333-5529 (FAX)

Bob Woods, M.A., L.S.W.
STD/HIV Program Manager
Bureau of Health
State House, Station 11
151 Capital Street
Augusta, ME 04333-0001
207/287-5199
207/287-6865 (FAX)

Altina Anien
Republic of Marshall Islands
Ministry of Health Services
P.O. Box 16
Majuro, MH 96960-0016
011-692-625-3355
011-692-625-3432 (FAX)

Mark A. Miller, M.B.A.
Manager, STD Program
Michigan Dept of Community Health
2479 Woodlake Circle, #380
Okemos, MI 48864-5941
517/241-0870
517/241-0875 (FAX)

Julia Ashley, Assistant Manager
STD and HIV Section
Infectious Dis Epi, Prev & Control Div
Minnesota Department of Health
717 Delaware St., SE, Box 9441
Minneapolis, MN 55440-9441
612/676-5698
612/676-5739 (FAX)

Nyla DeArmitt
STD Control Program
St. Louis Division of Health
634 N. Grand Blvd., Room 320
St. Louis, MO 63103-1002
314/612-5218
314/612-5244 (FAX)

Mary Muna
HIV/STD Prevention Program
Department of Public Health
Lower Navy, Hill/Middle Road
Mariana Islands
Saipan, MP 96950-0409
0-670-664-4040
0-670-234-8930 (FAX)

Mike Cassell
STD Program Manager
STD Control Program
Department of Public Health
P.O. Box 1700
Jackson, MS 39215-1700
601/576-7715
601/576-7909 (FAX)

Bruce Deitle, Section Supervisor
STD/HIV Prev., MT Dept of Public
Health and Human Services
1400 Broadway, C-211
P.O. Box 202951
Helena, MT 59601-5231
406/444-9028
406/444-2920 (FAX)

Evelyn Foust
HIV/STD Prev & Care Section
Dept of Health & Human Services
P.O. Box 29601
Raleigh, NC 27626-0601
919/733-9490
919/733-1020 (FAX)

Kirby Kruger
Div. of Disease Control/STD Prog
ND Department of Health
600 E. Boulevard Avenue
State Capitol Building
Bismarck, ND 58505-0660
701/224-2378
701/328-1412 (FAX)

Dan Harrah
STD Control Program
Division of Disease Control
Department of Health
P.O. Box 95007
Lincoln, NE 68509-5007
402/471-2937
402/471-3601 (FAX)

David R. Ayotte, M.S.P.H., Chief
STD/HIV Program
New Hampshire Division of Public
Health Services
6 Hazen Drive
Concord, NH 03301-6510
603/271-4481
603/271-4934 (FAX)

Jerry Carolina
STD Control Program
New Jersey Dept of Health
and Senior Services
3635 Quakerbridge Rd., Box 369
Trenton, NJ 08625-0369
609/588-7476
609/588-7462 (FAX)

Al Chowning, M.P.H.
Public Health Division/STD
Health Department
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, NM 87505-4173
505/476-3611
505/476-3638 (FAX)

Vener DeFriez, RN
Nevada State Health Department
Bureau of Disease Control and
Intervention Services
505 East King Street, Room 304
Carson City, NV 89710-4761
775/684-5938
775/684-5999 (FAX)

Steve Brooks, Program Manager
STD Control Section
Department of Health
ESP, Corning Tower
Room 1168
Albany, NY 12237-0670
518/474-3598
518/474-3491 (FAX)

Steve Rubin
Bureau of STD Control
NYC Department of Health
125 Worth Street
Room 207/Box 73
New York, NY 10013-4006
212/295-5415
212/788-4431 (FAX)

Timothy Bahns
Ohio Department of Health
HIV/STD Prevention
246 N. High Street
Bldg 35, 7th Floor
Columbus, OH 43215-2429
614/728-9256
614/728-0876 (FAX)

Mark Turner
HIV/STD Service
Mail Drop 0308
Oklahoma State Dept of Health
1000 N.E. 10th Street
Oklahoma City, OK 73117-1207
405/271-4636
405/271-5149 (FAX)

Jan Karius
Oregon Health Division
STD Program, Suite 745
800 NE Oregon Street
Portland, OR 97232-2162
503/731-4026
503/731-4082 (FAX)

Martin Goldberg
Division of Disease Control
Department of Public Health
500 South Broad Street
Philadelphia, PA 19146-1613
215/875-5637
215/545-8362 (FAX)

Steve Kowalewski
STD Control
State Department of Health
P.O. Box 90
Harrisburg, PA 17108-0090
717/787-3981
717/772-4309 (FAX)

Trinidad Garcia, Ph.D.
Puerto Rico Department of Health
AIDS Affairs and Transmissible
Diseases Central Office
P.O. Box 70184
San Juan, PR 00936-8184
787/274-5565/5566
787/274-5523 (FAX)

Caleb T. Otto, M.D.
Chief of Public Health
Ministry of Health
P.O. Box 6027
Koror, PW 96940
011-680/488-2552
011-680/488-1211 (FAX)

Larry Reynolds
Chief, Office of Communicable Dis.
Rhode Island Department of Health
Three Capitol Hill
Cannon Bldg.
Providence, RI 02908-5097
401/277-1365
401/222-2488 (FAX)

Lynda Kettinger
South Carolina Dept of Health
and Environment Control
Mills/Jarrett Complex
1751 Calhoun Street
Columbia, SC 29201-2606
803/737-4110
803/737-3979 (FAX)

David Morgan
Office of Disease Prevention
Department of Health
615 E. 4th Street
Pierre, SD 57501-1700
605/773-3737
605/773-5509 (FAX)

Drema Mace
STD/HIV Program
Tennessee Department of Health
Cordell Hull Bldg., 4th Floor
425 Fifth Avenue, North
Nashville, TN 37247-0001
615/532-8516
615/715-3857 (FAX)

Casey S. Blass
HIV/STD Health Resources Div
Bureau of HIV & STD Prevention
1100 West 49th Street
Austin, TX 78756-3101
512/490-2515
512/490-2538 (FAX)

John R. Contreras
Bureau of Epidemiology
Department of Health
P.O. Box 142104
Salt Lake City, UT 84114-2104
801/538-6191
801/538-9923 (FAX)

Casey Riley
Bureau of STD/AIDS Control
Department of Health
P.O. Box 2448, Room 112
Richmond, VA 23218-2448
804/786-6267
804/225-3517 (FAX)

Lucien A. Moolenaar, DDS, MPH
Deputy Commissioner
Public Services
#48 Sugar Estate
St. Thomas, VI 00802
340/774-0117
340/777-4001 (FAX)

Marilyn Richards-Prouix
STD/TB Program Chief
VT Department of Health
108 Cherry Street, Box 70
Burlington, VT 05402-0070
802/863-7245
802/863-7314 (FAX)

Larry Klopfenstein
Director, STD/TB Services
Department of Health
Bldg. 14
P.O. Box 47842
Olympia, WA 98504-0001
360/236-3460
360/236-3470 (FAX)

Anthony Wade
Director, STD Program
Department of Health & Family Svcs
1 West Wilson Street, Room 318
P.O. Box 2659
Madison, WI 53701-2659
608/266-5810
608/266-2906 (FAX)

Margaret Taylor
Dept of Health & Human Resources
Bureau for Public Health/STD Program
350 Capitol Street, Room 125
Charleston, WV 25301-1757
304/558-2950
304/558-6478 (FAX)

Roger Burr
STD Prevention Program
Div. of P.H., Br of Preventive Med.
Hathaway Bldg., Room 520
Cheyenne, WY 82002-0001
307/777-6013
307/777-5279 (FAX)

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A Production of
The Eastern Quadrant
STD/HIV Prevention Training Centers
October, 2002