

Managing STDs in the Correctional Setting:

A Guide for Clinicians

2nd Edition

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This guide was developed to assist clinicians in the prevention and management of STDs in correctional settings. It is meant to be a quick resource guide. We encourage users to consult additional references for more complete information.

We welcome your feedback on this guide. Please send your comments to PTCBoston@state.ma.us.

Dedications and Acknowledgments

We hope the second edition of this handbook will be helpful in correctional health practice, and dedicate this handbook to all clinicians who work “behind the walls.”

We also dedicate the second edition to the memory of Dr. Sylvie Ratelle, co-author of the first edition of this handbook.

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Managing STDs in the Correctional Setting: A Guide for Clinicians

2nd Edition

Table of Contents

Chapter 1 Epidemiology & Screening

Chapter 2 Diagnosis and Treatment of Traditional STDs

- Frequently encountered sexually transmitted infections: signs and symptoms; diagnostic laboratory testing; follow-up
- Important findings on physical exam and specimen collection

Chapter 3 Algorithms of Diagnostic Assessment and Management of Syndromes

Chapter 4 Vaccine Preventable STDs

- Hepatitis A
- Hepatitis B
- HPV
- Vaccine resources

Chapter 5 Sexual Assault in Corrections

Chapter 6 Prevention and Public Health Topics

- Risk reduction counseling
- Partner services
- Health education
- Other methods of prevention
- Continuity of care
- Disease reporting
- Public health partnerships and resources

Chapter 7 Appendices

Appendix A Selected websites

Appendix B Public health department STD program contacts (members of the National Coalition of STD Directors)

Appendix C Patient handouts

Chapter One:

Epidemiology and Screening Recommendations

Sexually transmitted diseases (STDs) cause a range of health problems, from mild acute illness to serious long term consequences including: infertility, ectopic pregnancy, chronic pelvic pain, cancer, liver disease, nervous system damage, disease and death of the newborn, increased transmission of HIV (though also an STD, HIV is beyond the scope of this guide), and more. By definition, STDs occur in networks of sexually interactive individuals and require treatment on both the individual and population level. STDs are frequently asymptomatic but cause significant morbidity for the prisoner, his/her sexual partners, their babies and the community. Given that many of these high risk individuals have not, or could not, access health care in the community, incarceration provides an important opportunity to screen for and treat STDs, which should not be missed¹ Early detection, comprehensive treatment, continuity of care, prevention, education, and gathering data to guide care are basic components of public health STD care for correctional settings.²

EPIDEMIOLOGY

STDs account for four of the top five nationally notifiable diseases reported to the Centers for Disease Control and Prevention (CDC),³ and are more prevalent in corrections populations than in the general population. Characteristics markedly associated with incarceration and increased STD risk overlap: age, racial/ethnic minority and socioeconomic status, residence in areas with higher STD and arrest prevalence, and poor access to medical care. STD risk behaviors are more common in juvenile⁴ and adult correctional populations.

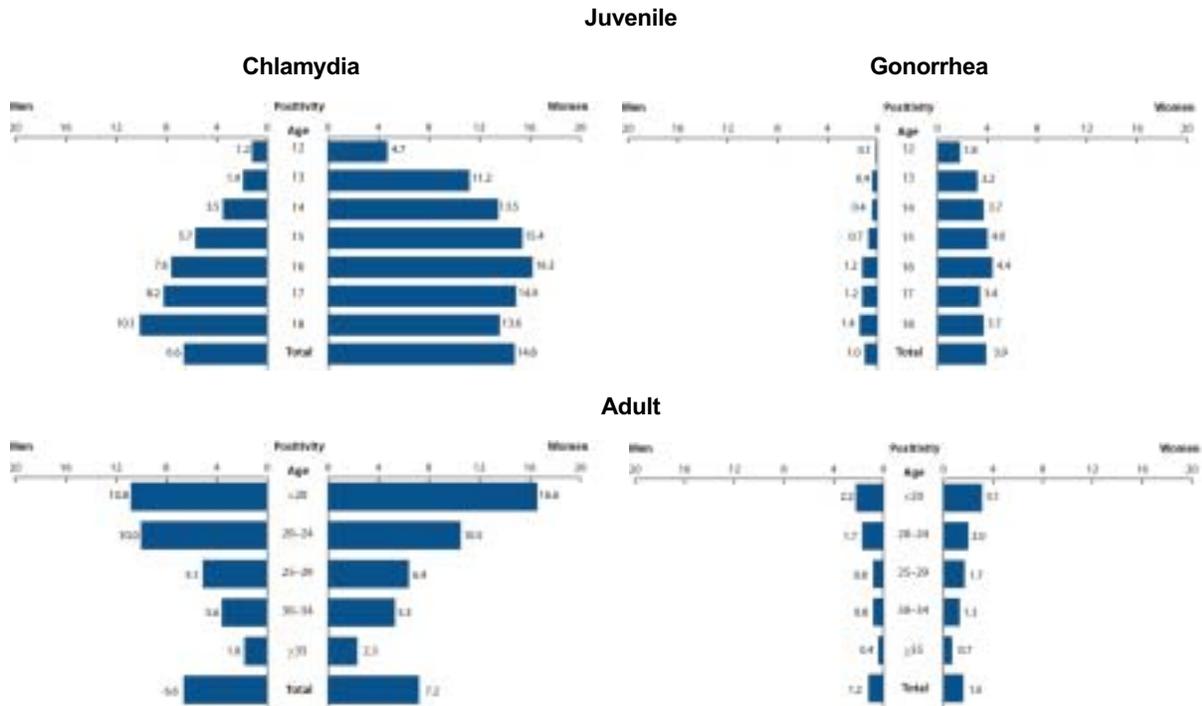
STD rates in corrections vary considerably by locale and, as in the general population, STD rates risk behaviors also vary by demographics. Chlamydia and gonorrhea screening data from multiple correctional facilities reported to the CDC (with some denominator variation in testing across facilities) are illustrated by age, gender, and juvenile/adult facility (see figure below). The range is even more varied across various studies in different geographic locations. The majority of those infected do not report symptoms, as illustrated at three juvenile facilities where adolescent boys testing positive for chlamydial infection, approximately 97% did not report symptoms; of adolescent boys positive for gonorrhea, 93% did not report symptoms.⁵

Syphilis rates have declined over the decades to a fraction of the rates of chlamydia and gonorrhea. Because of the difficulty of defining active cases of reported syphilis, tracking has followed primary and secondary (P&S) syphilis as a subset of active, more infectious, disease. In the correctional and general population⁶, syphilis affects a slightly older population than chlamydia, peaking in 20-24 years-old and also varies substantially by race/ethnicity, and markedly by jurisdiction. Syphilis is more common in jails located in communities with high rates among heterosexuals.⁷

Managing STDs in the Correctional Setting: A Guide for Clinicians

Trichomoniasis is highly prevalent in women, including women older than for the bacterial STDs, consistent with a recent study from San Francisco County Jail which found rates of 25% in women 18-25 years-old, 38% in women 26-35 years-old, and 2% in men across age ranges.⁸

Figure: Chlamydia & Gonorrhea—Positivity by Age and Sex, Corrections Facilities, 2009



*2009 STD Surveillance Report: Special Focus Profiles: Persons Entering Correctional Facilities⁶

SCREENING¹

In the CDC 2010 STD Treatment Guidelines⁹, persons in correctional facilities have been added as a special population. The guidelines state:

Universal screening of adolescent females for chlamydia and gonorrhea should be conducted at intake in juvenile detention or jail facilities.

Universal screening of adult females should be conducted at intake among adult females up to 35 years of age (or on the basis of local institutional prevalence data).

Universal screening should be conducted on the basis of the local area and institutional prevalence of early (primary, secondary, and early latent) infectious syphilis.

The screening of sexually active young men should be considered in clinical settings with a high prevalence of chlamydia (e.g.,... correctional facilities).

¹ Routine HIV testing is also highly recommended in correctional settings, but outside the scope of this guide.

Managing STDs in the Correctional Setting: A Guide for Clinicians

Standards for health care services in corrections also include screening for STDs. The American Public Health Association (APHA) standards¹⁰ include screening (testing of asymptomatic persons) of all prisoners in adult and juvenile facilities, and specifically routine screening for cervical cancer, chlamydia and trichomonas in women. The National Commission on Correctional Health Care (NCCHC) standards^{11,12,13} include diagnostic testing for STDs as part of the initial health assessment, as do the standards of the American Correctional Association (ACA), but not provide disease or gender specific screening and treatment recommendations but instead require recommendations by the local public health authority.

While providing opportunity for screening, the corrections environment also includes obstacles. Often the first obstacle is the idea that screening for STDs is unimportant compared to competing demands. Much of the benefit of STD screening accrues to the greater community, while the cost is immediate, so specific programmatic support and collaboration with public health departments are important. Space and privacy for the interview and exam may be difficult to obtain and security concerns may interfere. The time window available to accomplish screening varies greatly, with only several hours in lock-up units, hours to days to weeks in jails, and longer in prisons, as does the number of persons passing through and competing processing demands. Thus, to be successful, STD screening needs to be integrated into the intake process.¹⁴ With the availability of highly sensitive nucleic acid amplification (NAAT) tests or urine or self-collected vaginal swabs, screening for chlamydia and gonorrhea has become much more feasible.

With time and resources, STD risk factors can be ascertained to guide selective screening. However, for some conditions, this is often impractical, or the underlying prevalence of risk and importance of the disease is such that universal screening is more appropriate.

Though routine screening for **chlamydia** is not practiced in most prisons or jails, routine screening, particularly targeted by gender, age and facility, is supported by a number of cost-effectiveness studies^{14,15}, and 5% or above prevalence has been indicated as cost-effective in women,¹⁶ while another analysis indicating the cost-effective prevalence in men would need to be almost twice that.¹⁷ Other studies utilized other risk factors from interview to further guide routine screening.^{16,18} In jurisdictions implementing comprehensive screening, jails have been the single largest site for diagnosis in men and women,¹⁹ and one of two ecological studies indicated a related decrease in community chlamydia rates subsequent to jail screening.^{20,21} The 2010 Guidelines recommendations are above.

Routine screening for **gonorrhea** has many similarities to chlamydia, but the average lower prevalence has not indicated cost effectiveness in as many populations.¹⁵ The 2010 Guidelines recommend, screening at risk women (age <25, new or multiple sex partners) at least annually.

Routine or mandatory screening for **syphilis** is policy in $\frac{3}{4}$ of state prison systems and $\frac{1}{4}$ of jails by survey. Among all P&S syphilis cases reported nationally among heterosexual men, 5% were diagnosed in incarcerated heterosexual men; among women, 4% of cases were diagnosed in incarcerated women; and of MSM cases only 1% of infections were reported among incarcerated MSM.⁶ While on one hand, jails have been demonstrated key sites for syphilis screening in multiple cities, including impact on community rates;²² on the other hand, the prevalence in some correctional populations approaches nil. It has been chiefly in jurisdictions with high rates of heterosexual transmission that jails have been important and primary sites for controlling outbreaks though screening for syphilis in men, and particularly, in women.^{23,24} Access to a computerized syphilis registry is needed to interpret positive serology and differentiate the (much more

Managing STDs in the Correctional Setting: A Guide for Clinicians

frequent) old treated disease from (less frequent) new or recurrent disease. Rapid screening is available using the RPR card test, and has increased treatment rates dramatically in several high volume sites.²²

Screening for **trichomoniasis** in women can be considered in those at high risk for infection (i.e., women who have new or multiple partners, a history of STDs, exchange sex for payment, or use injection drugs).⁹

Routine laboratory screening for common STDs is indicated for all sexually active men who have sex with men (**MSM**). As recommended in the 2010 Guidelines, the following screening tests should be performed at least annually for sexually active MSM:

- syphilis serology
- urethral gonorrhea and chlamydia in men who have had insertive intercourse during the preceding year (regardless of history of condom use during exposure)
- rectal gonorrhea and chlamydia in men who have had receptive anal intercourse during the preceding year (regardless of history of condom use during exposure)
- pharyngeal gonorrhea in men who have had receptive oral intercourse during the preceding year
- Hepatitis A and B is discussed in the Vaccination section.

Key Points

- Screening for STDs in corrections is the standard of care, particularly chlamydia screening in women less than 35 years-old.
 - To be successful, STD screening needs to be integrated into the intake process.
 - Highly sensitive urine tests are a convenient, accurate tool for testing for gonorrhea and chlamydia-- of great advantage in the correctional environment.
-

Risk Assessment

Assessment of STD risk, based on individual history and behaviors, is an important component of the overall health history. Risk can be used to guide further testing, client-centered education and counseling for STDs, including HIV infection and other communicable diseases. Brief risk assessments have been found feasible and useful at intake despite competing concerns.

¹ Kent CK, Bolan GA. Controlling chlamydia, gonorrhea, and syphilis through targeted screening and treatment in correctional settings. In: Greifinger RB, ed. *Public Health Behind Bars-- From Prisons to Communities*. New York: Springer Science+Business Media; 2007

² Lincoln T, Miles JR. Correctional, Public and Community Health Collaboration in the USA. In: Puisis M, ed. *Clinical Practice in Correctional Medicine*. 2nd ed. St. Louis: Mosby, Inc.; 2006.

³ Centers for Disease Control and Prevention. Summary of Notifiable Diseases --- United States, 2008. *MMWR* 2010;57(54):1-94

⁴ Morris RE, Harrison EA, Knox GW, Tromanhauser E, Marquis DK, Watts LL. Health risk behavioral survey from 39 juvenile correctional facilities in the United States. *J Adolesc Health* 1995;17(6):334-44.

⁵ Mertz KJ, Voigt RA, Hutchins K, Levine WC. Findings from STD screening of adolescents and adults entering corrections facilities: implications for STD control strategies. *Sex Transm Dis* 2002;29(12):834-9

⁶ Centers for Disease Control and Prevention. STDs in person entering correctional facilities. In 2009 Sexually Transmitted Diseases Surveillance. <http://www.cdc.gov/std/stats09/corrections.htm#foot5>. Accessed 1/23/11.

Managing STDs in the Correctional Setting: A Guide for Clinicians

- ⁷ Kahn RH, Voigt RF, Swint E, Weinstock H. Early syphilis in the United States identified in corrections facilities, 1999-2002. *Sex Transm Dis* 2004;31(6):360-4.
- ⁸ Freeman AH, Katz KA, Pandori MW, et al. Prevalence and correlates of *Trichomonas vaginalis* among incarcerated persons assessed using a highly sensitive molecular assay. *Sex Transm Dis* 2010;37(3):165-8.
- ⁹ Centers for Disease Control and Prevention. Sexually Transmitted Diseases Treatment Guidelines, 2010. *MMWR* 2010;59(RR-12):11-12
- ¹⁰ APHA Task Force on Correctional Health Care Standards, editor. Standards for Health Services in Correctional Institutions. Washington, DC: American Public Health Association; 2003
- ¹¹ National Commission on Correctional Health Care. Standards for Health Services in Jails. Chicago: NCCHC; 2008.
- ¹² National Commission on Correctional Health Care. Standards for Health Services in Prisons. Chicago: NCCHC; 2008.
- ¹³ National Commission on Correctional Health Care. Standards for Health Services in Juvenile Detention and Confinement Facilities. Chicago: NCCHC; 2004
- ¹⁴ Hammett TM. Sexually transmitted diseases and incarceration. *Curr Opin Infect Dis* 2009;22(1):77-81
- ¹⁵ Kraut-Becher JR, Gift TL, Haddix AC, Irwin KL, Greifinger RB. Cost-effectiveness of universal screening for chlamydia and gonorrhea in US jails. *Journal of Urban Health* 2004;81(3):453-71.
- ¹⁶ McDonnell DD, Levy V, Morton TJ. Risk factors for Chlamydia among young women in a northern California juvenile detention facility: implications for community intervention. *Sex Transm Dis* 2009;36(2 Suppl):S29-33
- ¹⁷ Gift TL, Blake DR, Gaydos CA, Marrazzo JM. The cost-effectiveness of screening men for *Chlamydia trachomatis*: a review of the literature. *Sex Transm Dis* 2008;35(11 Suppl):S51-60.
- ¹⁸ Nguyen MS, Ratelle S, Tang Y, et al. Prevalence and Indicators of *Chlamydia trachomatis* Infections Among Men Entering Massachusetts Correctional Facilities: Policy Implications. *Journal of Correctional Health Care* 2004;10(4):543-54
- ¹⁹ Pathela P, Hennessy RR, Blank S, Parvez F, Franklin W, Schillinger JA. The contribution of a urine-based jail screening program to citywide male Chlamydia and gonorrhea case rates in New York City. *Sex Transm Dis* 2009;36(2 Suppl):S58-61.
- ²⁰ Barry PM, Kent CK, Scott KC, Goldenson J, Klausner JD. Is jail screening associated with a decrease in Chlamydia positivity among females seeking health services at community clinics?—San Francisco, 1997-2004. *Sex Transm Dis* 2009;36(2 Suppl):S22-8.
- ²¹ Peterman TA, Newman DR, Goldberg M, et al. Screening male prisoners for *Chlamydia trachomatis*: impact on test positivity among women from their neighborhoods who were tested in family planning clinics. *Sex Transm Dis* 2009;36(7):425-9.
- ²² Blank S, McDonnell DD, Rubin SR, Neal JJ, Brome MW, Masterson MB, et al. New approaches to syphilis control. Finding opportunities for syphilis treatment and congenital syphilis prevention in a women's correctional setting. *Sex Transm Dis* 1997;24(4):218-26
- ²³ Kahn RH, Voigt RF, Swint E, Weinstock H. Early syphilis in the United States identified in corrections facilities, 1999-2002. *Sex Transm Dis* 2004;31(6):360-4.
- ²⁴ Kahn RH, Peterman TA, Arno J, Coursey EJ, Berman SM. Identifying likely syphilis transmitters: implications for control and evaluation. *Sex Transm Dis* 2006;33(10):630-5

Chapter Two:

Diagnosis and Treatment of Traditional STDs

FREQUENTLY ENCOUNTERED SEXUALLY TRANSMITTED INFECTIONS: SIGNS AND SYMPTOMS; DIAGNOSTIC LABORATORY TESTING; FOLLOW-UP

SYPHILIS

(*Treponema pallidum* infection)

PRIMARY

- Local lesion at the site of inoculation, typically genital, but could appear anywhere on body. Common non-genital sites include mouth, fingers, breasts.
- May initially appear as a macule or papule, which may progress to typically painless, indurated ulcer with clean base and smooth firm border (the primary chancre).
- Up to 25% present with multiple lesions. Multiple and extensive lesions more common in HIV infected persons.
- Atypical chancres may occur and can mimic herpes (although syphilis is very rarely or never vesicular, and not usually painful) or chancroid.
- Regional adenopathy is classically rubbery, painless, bilateral.

CHANCRE - PRIMARY SYPHILIS



Diagnostic laboratory testing:¹

- **Darkfield microscopy:** Ideal, but generally not available in correctional settings. For use on non-oral lesions only (non-syphilis spirochetes may be present as normal flora in the periodontal spaces). Must be performed by experienced microscopist.
- **Serologic testing for syphilis:** nontreponemal test (e.g., RPR or VDRL). Confirm if positive by a treponemal test (e.g., TPPA or FTA-ABS). Nontreponemal tests may be negative in up to 25% of cases of primary syphilis. Treponemal tests may be more sensitive in primary syphilis.

¹ Association of Public Health Laboratories and Centers for Disease Control and Prevention. Laboratory diagnostic testing for *Treponema pallidum*. Expert Consultation Meeting Summary Report, January 13-15, 2009. Available at <http://www.aphl.org/aphlprograms/infectious/std/Documents/LaboratoryGuidelinesTreponemapallidumMeetingReport.pdf>.

Managing STDs in the Correctional Setting: A Guide for Clinicians

- Some laboratories have begun to screen samples first using automated throughput treponemal tests (enzyme immunoassays (EIA), e.g. BioElisa Syphilis 3.0, CAPTIA Syphilis-G, Eti-syphilis G, TrepCheck IgG EIA, Syphilis EIA II, Syphilis Total, Enzywell Syphilis Screen Recombinant; or chemiluminescence immunoassays, e.g. LIASON Chemiluminescence Assay, Architect Chemiluminescence Assay).² Although a positive treponemal test should have a standard nontreponemal test with titer performed reflexively to guide patient management decisions, if the nontreponemal test is negative in a setting where a clinician suspects primary syphilis (e.g. presence of ano-genital chancre), the nontreponemal test may be falsely negative, and presumptive therapy should be considered, along with additional testing (a different treponemal test, preferably one based on different antigens than the original test, to confirm the results of the original treponemal test).

SECONDARY

- 6 weeks to 6 months after primary lesion resolves.
- Rash (75-90%): macular, papular, squamous (scale), pustular (rare), combination; usually nonpruritic; may involve palms and soles in 60%; the rash may be infectious.
- **Any new onset macular, papular or squamous rash, especially involving the palms and soles, should be evaluated to rule out secondary syphilis.**
- Generalized lymphadenopathy (70-90%).
- Constitutional symptoms (50-80%), most commonly malaise.
- Mucous patches (5-30%): flat patches involving oral cavity, pharynx, larynx, and genitals.
- Condyloma lata (5-25%): moist, heaped, wart-like papules that occur in warm intertriginous areas (most commonly, gluteal folds, perineum, perianal); teeming with treponemes.
- Alopecia (10-15%): patchy occipital and bitemporal, loss of lateral eyebrows.

SECONDARY SYPHILIS



MUCOUS PATCHES

CONDYLOMA LATA

ALOPECIA

Diagnostic laboratory testing:

- **Serologic testing for syphilis:** nontreponemal test (e.g., RPR or VDRL). Confirm if positive by a treponemal test (e.g., TPPA or FTA-ABS). Virtually always positive in secondary syphilis. Prozone reaction may occur if there is an especially high antibody titer, resulting in a false negative nontreponemal test. If clinical suspicion of secondary syphilis is high, the lab should

² Sena AC, et al. Novel *Treponema pallidum* serologic tests: a paradigm shift in syphilis screening for the 21st century. *Clinical Infectious Diseases* 2010; 51(6):700-708.

Managing STDs in the Correctional Setting: A Guide for Clinicians

dilute the serum to at least a 1:16 dilution to rule out the prozone effect.

- Some laboratories have begun to screen samples first using treponemal tests (enzyme immunoassays (EIA), e.g. BioElisa Syphilis 3.0, CAPTIA Syphilis-G, Eti-syphilis G, TrepCheck IgG EIA, Syphilis EIA II, Syphilis Total, Enzywell Syphilis Screen Recombinant; or chemiluminescence immunoassays, e.g. LIASON Chemiluminescence Assay, Architect Chemiluminescence Assay). A positive treponemal test should have a standard nontreponemal test with titer performed reflexively to guide patient management decisions. If the nontreponemal test is negative, a different treponemal test, preferably one based on different antigens than the original test, should be performed to confirm results of the original treponemal test.

LATENT SYPHILIS

- Latent syphilis is defined by the absence of signs and symptoms of syphilis in the presence of a positive nontreponemal test and positive treponemal test.
 - **Early latent syphilis:** latent syphilis AND less than one year duration of infection, as evidenced by *any one of the following in the year preceding the diagnosis:* (1) documented seroconversion or fourfold or greater increase in nontreponemal titer, (2) unequivocal signs/symptoms of primary or secondary syphilis, or (3) sexual contact with a case of primary or secondary or early latent syphilis. Asymptomatic persons whose only possible exposure was in the prior 12 months also are considered to have early latent syphilis.
 - **Late latent syphilis:** latent syphilis AND more than one year duration of disease (patient does not meet criteria for early latent syphilis).

NOTES ABOUT SYPHILIS

- Syphilis staging is critical for determining the appropriate management of disease, both in terms of type and length of antibiotic therapy, as well as in terms of partner management.
- Clinical signs of neurosyphilis (i.e. cranial nerve dysfunction, meningitis, stroke, acute or chronic altered mental status, loss of vibration sense, and auditory or ophthalmic abnormalities) warrant further investigation and treatment for neurosyphilis. Details of laboratory testing for neurosyphilis are beyond the scope of this document, and clinicians are advised to consult with the CDC STD Treatment Guidelines as well as local experts.
- Although nontreponemal test titers are expected to decline (see below) after adequate treatment, they may remain positive (not all patients serorevert and some may be “serofast”). Treponemal tests generally remain positive for life after adequate treatment. Therefore, they are not used to assess treatment adequacy or reinfection. Both nontreponemal and treponemal tests are needed to make the diagnosis.
- Serologic response in HIV-infected persons generally similar to HIV-uninfected persons. Serological tests for syphilis are equivalent in sensitivity in HIV-infected and non-HIV-infected persons in the majority of patients. If clinical suspicion is high for syphilis and the serologic tests are negative, then biopsy of lesion or rash is recommended.
- Consult health department STD program for managing patients with a positive serology. Information on prior serology results and treatment may be available through the STD program serology databank. Clinical staff are also available to assist in patient management issues.
- **ALL PATIENTS WITH SYPHILIS SHOULD BE ASSESSED FOR HIV INFECTION AND OTHER STDs.**
- **All cases of syphilis must be reported to the health department.**

RECOMMENDED FOLLOW-UP AFTER TREATMENT

Primary and Secondary Syphilis: HIV Negative Patients

- Clinical evaluation at 1-2 weeks, and then one month after treatment to ensure improvement and resolution of symptoms.

Managing STDs in the Correctional Setting: A Guide for Clinicians

- Reexamine serologically and clinically thereafter at 6 and 12 months.
- Fourfold drop in nontreponemal test titers generally expected after 6 months, but clinical trial data demonstrate that >15% of patients with early syphilis treated with the recommended therapy will not achieve this even at 1 year after treatment.
- Consider treatment failure or reinfection if signs and symptoms persist, sustained (2 weeks) fourfold increase in nontreponemal test titer occurs, or nontreponemal test titer fails to decrease after 6-12 months. Reevaluate for HIV infection. Consider performing CSF examination if treatment failure is suspected (assuming reinfection ruled out). If no evidence of neurosyphilis per CSF examination, retreat with three doses of benzathine penicillin.

Primary and Secondary Syphilis: HIV Positive Patients

- Clinical evaluation at 1-2 weeks, and then one month after treatment to ensure improvement and resolution of symptoms.
- Reexamine clinically and serologically thereafter at 3, 6, 9, 12 and 24 months.
- CSF examination if treatment failure suspected (see above). If no evidence of neurosyphilis per CSF examination, retreat with three doses of benzathine penicillin.

Latent Syphilis: HIV Negative

- Serologic (nontreponemal test) evaluation at 6, 12 and 24 months.
- A titer of $\geq 1:32$ should drop fourfold within 12 to 24 months.
- Titers are often low and a fourfold decrease may not occur (serofast).
- If titer increases fourfold, signs and symptoms of syphilis reappear, or an initially high titer ($\geq 1:32$) does not decrease fourfold within 12 to 24 months, perform CSF examination. Even if CSF examination is negative, retreatment for latent syphilis should be initiated.

Latent Syphilis: HIV Positive

- Reexamine serologically and clinically at 6, 12, 18 and 24 months.
- If titer increases fourfold, signs and symptoms of syphilis reappear or an initially high titer ($\geq 1:32$) does not decrease fourfold within 12 to 24 months, perform/repeat CSF examination.

GONORRHEA

PHARYNX

- Generally asymptomatic.
- Otherwise, signs, symptoms, and appearance similar to other causes of pharyngitis.

Diagnostic laboratory testing:

- Culture is the only FDA approved test for the pharynx. However, nucleic acid amplification tests (NAATs) have superior performance to culture for detection of pharyngeal infections caused by *N. gonorrhoeae*. Some commercial and public health laboratories have established performance specifications to satisfy Center for Medicare and Medicaid Services (CMS) regulations for Clinical Laboratory Improvement Amendments (CLIA) compliance prior to reporting results for patient management. Consult with your local laboratory to determine available testing.³

URETHRA (MALE)

- May be asymptomatic (15%-25%).
- Typically purulent urethral discharge often accompanied by dysuria.
- Purulent or mucopurulent urethral discharge is common, but discharge may be clear or cloudy.



Diagnostic laboratory testing:

- NAATs: sensitivity and specificity are the highest compared to other laboratory testing, but varies by NAAT type (e.g. Aptima Combo2 or GC Assay, BD Probetec ET or Qx NG test, Roche COBAS AmpliCor NG test). Preferred specimen is first catch urine (not urethral swab) because in some studies urethral swab samples are less sensitive than urine, although equivalently specific.
- Non-culture, non-amplified tests such as enzyme immunoassays (EIAs) and DNA probe assays are inferior to NAATs, and should not be used.
- Gram stain: Presence of Gram negative intracellular diplococci (GNID) diagnostic for gonorrhea (>95% sensitive and >99% specific). Reliable both to diagnose and exclude gonorrhea in men. Sensitivity less for asymptomatic urethritis (50%). Generally not available in correctional settings.
- Culture: capability for gonococcal culture needs to be maintained in at least some reference laboratories. Culture has the advantage of allowing for antibiotic susceptibility testing, and is therefore the only method that can be used to monitor developing resistance to current treatment regimens.

CERVIX

- Generally asymptomatic.
- Symptoms if present often nonspecific and may include abnormal vaginal discharge, intermenstrual bleeding, dysuria, lower abdominal pain or dyspareunia.

³ Association of Public Health Laboratories and Centers for Disease Control and Prevention. Laboratory Diagnostic Testing for *Chlamydia trachomatis* and *Neisseria gonorrhoeae*. Expert Consultation Meeting Summary Report, January 13-15, 2009. Available at <http://www.cdc.gov/aphl/programs/infectious/std/documents/ctgclabguidelinesmeetingreport.pdf>.

Managing STDs in the Correctional Setting: A Guide for Clinicians

- Generally no signs (90%). If present, mucopurulent, or purulent cervical discharge or easily induced bleeding.



Diagnostic laboratory testing:

- NAATs: sensitivity and specificity are the highest compared to other laboratory testing, but vary by NAAT type (e.g. Aptima Combo2 or GC Assay, BD Probetec ET or Qx NG test, Roche COBAS Amplicor NG test). Preferred specimen is vaginal swab (not cervical swab or urine sample) because vaginal swab specimens are as sensitive as cervical swab specimens and there is no difference in specificity. Cervical swab and urine samples are acceptable, but female urine may have reduced performance when compared to genital swab samples.
- Non-culture, non-amplified tests such as enzyme immunoassays (EIAs) and DNA probe assays are inferior to NAATs, and should not be used.
- Gram stain not reliable (50% sensitive).
- Culture: capability for gonococcal culture needs to be maintained in at least some reference laboratories. Culture has the advantage of allowing for antibiotic susceptibility testing, and is therefore the only method that can be used to monitor developing resistance to current treatment regimens.
- Universal screening of adolescent females recommended at intake in juvenile detention or jail facilities. Universal screening of adult females should be conducted at intake among adult females up to 35 years of age (or on the basis of local institutional prevalence data). Regulations may require testing of all sentenced women.⁴

ANUS/RECTUM

- Most cases asymptomatic.
- Occasional proctitis.
- Anal irritation, painful defecation, constipation, rectal bleeding and/or discharge, tenesmus, mucopus and mucosal erythema.



Diagnostic laboratory testing:

- Culture only FDA approved test for this anatomical site. However, nucleic acid amplification tests (NAATs) have superior performance to culture for detection of rectal infections caused by *N. gonorrhoeae*. Some commercial and public health laboratories have established performance

⁴ Centers for Disease Control and Prevention. Sexually Transmitted Diseases treatment Guidelines, 2010. *MMWR* 2010; 59(RR-12).

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specifications to satisfy CMS regulations for CLIA compliance prior to reporting results for patient management. Consult with your local laboratory to determine available testing.

Follow-up

- Test of cure not recommended unless symptoms persist after treatment, in which case a patient should be evaluated by culture and antimicrobial susceptibility testing of any gonococci isolated.
- Because gonorrhea is prevalent among patients diagnosed and treated for gonorrhea in the preceding months, rescreening is advised 3 months after treatment.
- **ALL PATIENTS WITH GONORRHEA SHOULD BE ASSESSED FOR HIV INFECTION AND OTHER STDs.**
- All cases of gonorrhea must be reported to the health department.

CHLAMYDIA

PHARYNX

- Asymptomatic.

Diagnostic laboratory testing:

- Culture only FDA approved test at this anatomical site. Screening/testing generally not recommended, because infection is rarely detected or transmitted from this site.

URETHRA (MALE)

- Most often asymptomatic.
- Symptoms if present include discharge, dysuria, itching.
- Discharge if present is clear and mucoid.



Diagnostic laboratory testing:

- NAATs: sensitivity and specificity are the highest compared to other laboratory testing, but vary by NAAT type (e.g. Aptima Combo2 or CT Assay, BD Probetec ET or Qx CT test, Roche COBAS Amplicor CT test). Preferred specimen is first catch urine (not urethral swab) because in some studies urethral swab samples are less sensitive than urine, although equivalently specific.
- Non-culture, non-amplified tests such as enzyme immunoassays (EIAs) and DNA probe assays are inferior to NAATs, and should not be used.
- Culture: capability for chlamydia culture needs to be maintained in at least some reference laboratories. However, it is not recommended for routine testing for chlamydia.

CERVIX

- Most often asymptomatic.
- Symptoms if present often nonspecific and may include abnormal vaginal discharge, intermenstrual bleeding, dysuria, lower abdominal pain or dyspareunia.
- Generally no signs (90%). If present, mucopurulent, or purulent cervical discharge or easily induced bleeding.

Diagnostic laboratory testing:

- NAATs: sensitivity and specificity are the highest compared to other laboratory testing, but vary by NAAT type (e.g. Aptima Combo2 or CT Assay, BD Probetec ET or Qx CT test, Roche COBAS Amplicor CT test). Preferred specimen is vaginal swab (not cervical swab or urine sample) because vaginal swab specimens are as sensitive as cervical swab specimens and there is no difference in specificity. Cervical swab and urine samples are acceptable, but female urine may have reduced performance when compared to genital swab samples.
- Non-culture, non-amplified tests such as enzyme immunoassays (EIAs) and DNA probe assays are inferior to NAATs, and should not be used.
- Culture: capability for chlamydia culture needs to be maintained in at least some reference laboratories. However, it is not recommended for routine testing for chlamydia.

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- Universal screening of adolescent females recommended at intake in juvenile detention or jail facilities. Universal screening of adult females should be conducted at intake among adult females up to 35 years of age (or on the basis of local institutional prevalence data). Regulations may require testing of all sentenced women.

ANORECTAL (NON-LYMPHOGRANULOMA VENEREUM)

- Often asymptomatic.
- Symptoms, if present, may consist of rectal pain, discharge, abnormal anoscopy (mucopurulent discharge, pain, spontaneous or induced bleeding).

Diagnostic laboratory testing:

- Culture only FDA approved test for this anatomical site. However, nucleic acid amplification tests (NAATs) have superior performance to culture for detection of rectal infections caused by *C. trachomatis*. Some commercial and public health laboratories have established performance specifications to satisfy CMS regulations for CLIA compliance prior to reporting results for patient management. Consult with your local laboratory to determine available testing.

LYMPHOGRANULOMA VENEREUM (LGV; *C. trachomatis* serovars L1, L2, or L3)

- Most common clinical presentation among heterosexuals is tender, unilateral inguinal and/or femoral lymphadenopathy. Self-limited genital ulcer or papule sometimes occurs at site of inoculation.
- Rectal LGV can result in proctocolitis, with rectal pain, discharge, abnormal anoscopy (mucopurulent discharge, pain, spontaneous or induced bleeding). Untreated rectal LGV can become systemic and/or leading to chronic colorectal fistulas and strictures.

Diagnostic laboratory testing:

- Culture (or other test for *Chlamydia trachomatis*) from lesion swab, inguinal node aspirate, or anorectal mucosa may support the diagnosis.
- NAAT is useful for identification of LGV as well as non-LGV serovars of chlamydia. All commonly available NAATs will identify LGV as *Chlamydia* but will not differentiate serovars or biovars. However, rectal swab is not cleared by FDA for use with NAATs. Some commercial and public health laboratories have established performance specifications to satisfy CMS regulations for CLIA compliance prior to reporting results for patient management. Consult with your local laboratory to determine available testing.
- Serology may be useful to support a diagnosis of inguinal LGV infection but not rectal LGV infection. However, serovar-specific serologic tests are not widely available, comparative data between types of serologic tests are lacking, serologic test interpretation for LGV is not standardized, and diagnostic utility of serologic methods other than complement fixation and some microimmunofluorescence procedures has not been established.
- In the absence of specific LGV diagnostic testing, patients with a clinical syndrome compatible with LGV should be treated for LGV.
- Contact health department STD program for more information on diagnostic testing.

Follow-up for non-LGV chlamydial infections

- Test of cure not recommended unless treatment compliance is in doubt, symptoms persist, or the patient is pregnant. Test of cure should be conducted no earlier than three weeks after completion of therapy.
- Because chlamydial infection is prevalent among patients diagnosed and treated for chlamydial infection in the preceding months, rescreening is advised 3 months after treatment.
- **ALL PATIENTS WITH CHLAMYDIA INFECTION SHOULD BE ASSESSED FOR HIV INFECTION AND OTHER STDs.**
- All cases of chlamydial infection must be reported to the health department.

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Follow-up for LGV chlamydial infections

- Patients should be followed clinically until resolution of illness.
- **ALL PATIENTS WITH LGV SHOULD BE ASSESSED FOR HIV INFECTION AND OTHER STDs.**

TRICHOMONAS VAGINALIS



- Up to 50% of infected women are asymptomatic, although 30% of those who are asymptomatic will become symptomatic within 6 months.
- Symptoms, when present, include “frothy” gray or yellow-green vaginal discharge, pruritus, dysuria, dyspareunia.
- Signs include “frothy” gray or yellow-green vaginal discharge.
- Signs of cervical petechiae ("strawberry cervix" or colpitis macularis) are a classic presentation, but occur in a minority of patients.
- Can also infect Skene's ducts and urethra (infection is not limited to vagina).
- Can cause urethritis in males which may be symptomatic or asymptomatic

Diagnostic laboratory testing:

- Wet preparation of vaginal secretions (sensitivity of ~60-70%). If available, culture should be done if wet preparation microscopy is negative in female patients with signs and symptoms compatible with trichomoniasis.
- Culture in Diamond’s medium or InPouch TV. Culture vaginal secretions for females; urethral swab, urine or semen for males.
- FDA-cleared point of care testing such as immunochromatographic capillary flow dipstick technology (OSOM Trichomonas Rapid Test) or nucleic acid probe (Affirm VP III); both with sensitivity >83% and specificity >97%.
- NAATs for *T. vaginalis* exist on some of the same testing platforms as NAATs for *N. gonorrhoeae* and *C. trachomatis*, but require additional CLIA verification studies before use in clinical care. NAATs have superior sensitivity when compared to culture for diagnosis in males.
- Consult with your local laboratory to determine available testing.
- Screening for *T. vaginalis* in women can be considered in those at high risk for infection (women who have new or multiple partners, have a history of STDs, exchange sex for payment, or use infection drugs).

Follow-up

- Because trichomoniasis is prevalent among patients diagnosed and treated for trichomoniasis in the preceding months, rescreening can be considered 3 months after treatment.
- Topical antimicrobials not recommended.
- Some infections may not respond to the single dose regimen.
- **ALL PATIENTS WITH TRICHOMONIASIS SHOULD BE ASSESSED FOR HIV INFECTION AND OTHER STDs.**

HERPES SIMPLEX VIRUS INFECTION



Primary initial infection

- Papules → vesicles → pustules → ulcers → crusts → healed. Illness lasts 2-4 weeks.
- Often associated with systemic symptoms, including fever, headache, malaise, myalgia (40% men, 70% women); urinary retention/aseptic meningitis in 10% of women.
- Systemic symptoms peak within 3-4 days of onset of lesions and gradually recede over next 3-4 days.
- Local symptoms are predominantly pain (95%), itching, dysuria (60%), vaginal (85%) or urethral (30%) discharge, and tender inguinal adenopathy (80%).
- Painful genital lesions are numerous and bilateral; last an average of 11-12 days; full re-epithelialization takes an average of 17-20 days.
- Inguinal adenopathy peaks in week 2-3 and is often the last finding to resolve. Nodes are firm, nonfluctuant, tender to palpation, and rarely suppurative.
- Primary HSV cervical infection occurs in 90% of primary HSV-2 infection and ~70% of primary HSV-1 infections. The associated cervicitis may be mucopurulent, friable, or frankly hemorrhagic, and discrete ulcerations may be seen. Clinical differentiation from gonorrheal or chlamydial cervicitis may be difficult, although cervical ulceration is more suggestive of HSV.

Recurrent infection

- Prodromal symptoms (localized tingling, irritation) in ~50% begin 12-24 hours before lesions and sometimes without lesions ("false prodrome").
- Duration is shorter than in primary infection: painful genital lesions last 4-6 days; average duration of viral shedding 4 days.
- Lesions tend to be unilateral.
- Symptoms tend to be milder and less severe. Usually there are no systemic symptoms. However, HIV-infected individuals can have prolonged or severe episodes of recurrent HSV.
- Rate of cervical virus shedding in women is 12-20%.
- Average of 2-6 recurrences/year, but highly variable. May recur more often in individuals infected with HIV.
- HSV-2 primary infection is much more prone to recur than HSV-1 primary infection.

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- HSV-2 will recur slightly more frequently and after shorter period of time in men than in women; median 5 recurrences per year compared with 4 in the first year of infection.
- Recurrences are more frequent if the primary episode is prolonged >30 days.

In HIV-infected persons:

- Lesions caused by HSV infection are common, and may be severe, painful, prolonged and atypical.
- Large number and size of ulcers, frequently in the perianal area.
- Chronic HSV-2 ulcers of greater than 1 month duration are considered an AIDS-defining illness in individuals with HIV infection.
- In severely immunocompromised patients, HSV-2 may present as hyperkeratotic verrucous lesions which mimic condyloma.

Laboratory Diagnosis

- Viral culture is the preferred method when lesions are present. Viral recovery depends on the stage of the lesions (vesicles: 90%, ulcers: 70%, and crusted lesions: 30%) and proper collection technique (use of Dacron or Rayon swab; NOT cotton or wood or calcium alginate swab; swab needs to be rubbed on base of unroofed vesicle or ulcer). Culture more commonly positive in primary infection (80% to 90%) as compared with recurrences (30%).
- Polymerase chain reaction (PCR) assays for HSV DNA are more sensitive than culture as lesions begin to heal, and are becoming more widely available. Consult with you local laboratory to determine available testing.
- Type-specific HSV serologic assays measure antibody to glycoprotein G1 for HSV-1 and glycoprotein G2 for HSV-2. Antibodies to HSV develop during the first several weeks after infection and persist indefinitely. Type specific HSV serologic tests may provide useful supporting information to diagnose herpes in patients with (1) recurrent genital symptoms or atypical symptoms and negative HSV cultures, or (2) clinical diagnosis without prior laboratory confirmation.
- IgM antibody testing for HSV is not useful. IgM tests are not type-specific and may be positive during recurrent episodes of herpes, thus are not useful to identify new infection.

Follow-up

- Counseling of infected patients and their partners is critical, for management of disease, helping patients cope with the diagnosis, and preventing sexual and perinatal transmission.
- Suppressive therapy with antivirals reduces frequency of genital herpes outbreaks by 70-80% in patients with frequent recurrences, and can be considered to improve quality of life in patients with frequent recurrences, or as part of a strategy to prevent transmission of HSV-2 infections.

HUMAN PAPILLOMAVIRUS (HPV) INFECTION

External Genital Warts (EGW)

- **Condyloma acuminata:** Cauliflower-shaped, flesh-colored, pink, or hyperpigmented. May be keratotic on skin; generally non-keratinized when present on mucosal surfaces.
- **Smooth papules:** usually dome-shaped and skin-colored.
- **Keratotic warts:** with thick horny layer which can resemble common warts or seborrheic keratosis.
- **Flat papules:** Macular to slightly raised. Flesh-colored, with smooth surface. More commonly found on internal structures (i.e., cervix), but also occur on external genitalia.
- **Sites:** Commonly occur in areas of coital friction. Men: shaft, frenulum, corona, glans, prepuce, meatus, anus, scrotum. Women: posterior introitus, labia minora, labia majora, perineum, vagina, cervix, anus. Perianal warts do not necessarily indicate anal intercourse, but may be secondary to autoinoculation or sexual activity other than intercourse. Cervical and vaginal condylomata are less common than external warts. HPV types causing genital warts can occasionally cause lesions at oral, upper respiratory, upper GI, and ocular locations.



In HIV-Infected Persons

- Lesions may be more extensive and resistant to treatment.
- Condyloma have been associated with a significant risk for transformation into squamous cell carcinoma.

Diagnosis of External Genital Warts (EGW)

- Physical exam: Visual inspection with bright light is generally sufficient for diagnosis of genital warts. Acetic acid evaluation of external genitalia is of limited value. 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.
- Biopsy can be considered for confirmation of EGW if diagnosis uncertain, no response or worsening during standard treatment, patient immunocompromised, or atypical appearance (pigmented, indurated, fixed, bleeding or ulcerated).
- No role of HPV DNA testing for the diagnosis of EGW.

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Follow-up

- Treatment modality should be changed if a patient has not substantially improved after three provider-administered treatments or if warts have not completely cleared after six treatments.
- After diagnosis and successful treatment of EGW, follow-up is not necessary. Patients should return if lesions recur. Regardless of treatment, up to 2/3 of patients will experience recurrences of EGW within 3 to 6 months of therapy. Many patients will experience multiple recurrences after treatment.
- Pap screening frequency is the same for women with or without EGW. The presence of EGW is not an indication for colposcopy.

MOLLUSCUM CONTAGIOSUM

- Caused by poxvirus, no long-term adverse effects.
- Presents as scattered umbilicated papules, usually in genital area but may be disseminated especially in advanced HIV with immunosuppression.
- Treatment: ablative (cryotherapy) as needed.

Diagnosis:

- Visual inspection.

Follow-up:

- None. Return if recurrence.

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Important Findings at Examination & Specimen Collection -- WOMEN

| Examination | Findings | Specimens |
|--|--|--|
| Skin (face, trunk, legs, forearms, palms) | <ul style="list-style-type: none"> • Lesions or rash consistent with secondary syphilis • Disseminated molluscum | <ul style="list-style-type: none"> • Darkfield examination of lesions or rash • Serologic testing for syphilis |
| Head, Ears, Eyes | <ul style="list-style-type: none"> • Alopecia of secondary syphilis • Hearing loss or uveitis compatible with neurosyphilis • Conjunctivitis compatible with chlamydial or gonococcal infection • Jaundice compatible with Fitz-Hugh-Curtis syndrome | <ul style="list-style-type: none"> • Serologic testing for syphilis • Swab of conjunctiva for gonococcal or chlamydial culture |
| Oral Exam (lips, tongue, tonsils, hard & soft palate, buccal mucosal, gums) | <ul style="list-style-type: none"> • Chancre of primary syphilis • Mucous patches of secondary syphilis • Orolabial herpes lesions • Pharyngitis | <ul style="list-style-type: none"> • Serologic testing for syphilis • HSV culture or PCR of lesions • Swab of tonsils and posterior oropharynx for gonococcal NAAT or culture |
| Abdomen | <ul style="list-style-type: none"> • Right upper quadrant tenderness consistent with Fitz-Hugh-Curtis syndrome • Lower abdominal or pelvic tenderness consistent with PID | <ul style="list-style-type: none"> • First catch urine for gonococcal and chlamydial NAAT |
| Lymph Nodes (cervical, axillary, epitrochlear, inguinal/femoral) | <ul style="list-style-type: none"> • Adenopathy (painful or painless) | <ul style="list-style-type: none"> • Aspirate of bubo for gram stain, bacterial culture, and chlamydial culture |
| Musculoskeletal | <ul style="list-style-type: none"> • Joint pain and swelling consistent with disseminated gonococcal infection • Shoulder pain consistent with Fitz-Hugh-Curtis syndrome involving diaphragm | <ul style="list-style-type: none"> • Aspirate of joint fluid for cell count, chemistry, gram stain, and bacterial culture • First catch urine for gonococcal and chlamydial NAAT |
| External genitalia | <ul style="list-style-type: none"> • Pubic hair crabs or nits • Pubic, genital, or perineal skin lesions or eruptions consistent with primary or secondary syphilis (e.g. chancre, condyloma lata), herpes, condyloma acuminata, molluscum contagiosum, or scabies • Inferio-lateral introitus: tenderness, erythema or fluctuant mass consistent with Bartholin's or Skene's gland infection | <ul style="list-style-type: none"> • Scraping for microscopy • Darkfield examination of lesions, HSV culture or PCR of lesions • Serologic testing for syphilis • Swab for gonococcal and chlamydial NAAT or culture |
| Urethral meatus | <ul style="list-style-type: none"> • Discharge (following milking of urethra) | <ul style="list-style-type: none"> • Swab for gonococcal culture • First catch urine for gonococcal and chlamydial NAAT |
| Vagina | <ul style="list-style-type: none"> • Vaginal wall edema or lesions • Vaginal secretions consistent with bacterial vaginosis, trichomoniasis or candidiasis | <ul style="list-style-type: none"> • Vaginal swab for gonococcal and chlamydial NAAT • Swabs of 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); trichomonal culture (Diamonds media or InPouch TV) if available |
| Cervix | <ul style="list-style-type: none"> • Cervical ulcerations, nodules, polyps, friability, cervical petechiae (i.e. strawberry cervix) • Mucopurulent discharge from cervical os | <ul style="list-style-type: none"> • Endocervical swab for gonococcal, chlamydial, perhaps trichomonal NAAT; Pap smear if indicated |
| Uterus and Adnexa | <ul style="list-style-type: none"> • On bimanual exam: cervical motion tenderness or tenderness of uterus or adnexa consistent with PID; adnexal mass consistent with tubo-ovarian abscess | |
| Anus and Rectum | <ul style="list-style-type: none"> • Perianal skin lesions or eruptions consistent with primary or secondary syphilis (e.g. chancre, condyloma lata), herpes, or condyloma acuminata • Discharge compatible with proctitis | <ul style="list-style-type: none"> • Darkfield examination of lesions, HSV culture or PCR of lesions • Serologic testing for syphilis • Swab for gonococcal and chlamydial NAAT or culture |

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Important Findings at Examination & Specimen Collection -- MEN

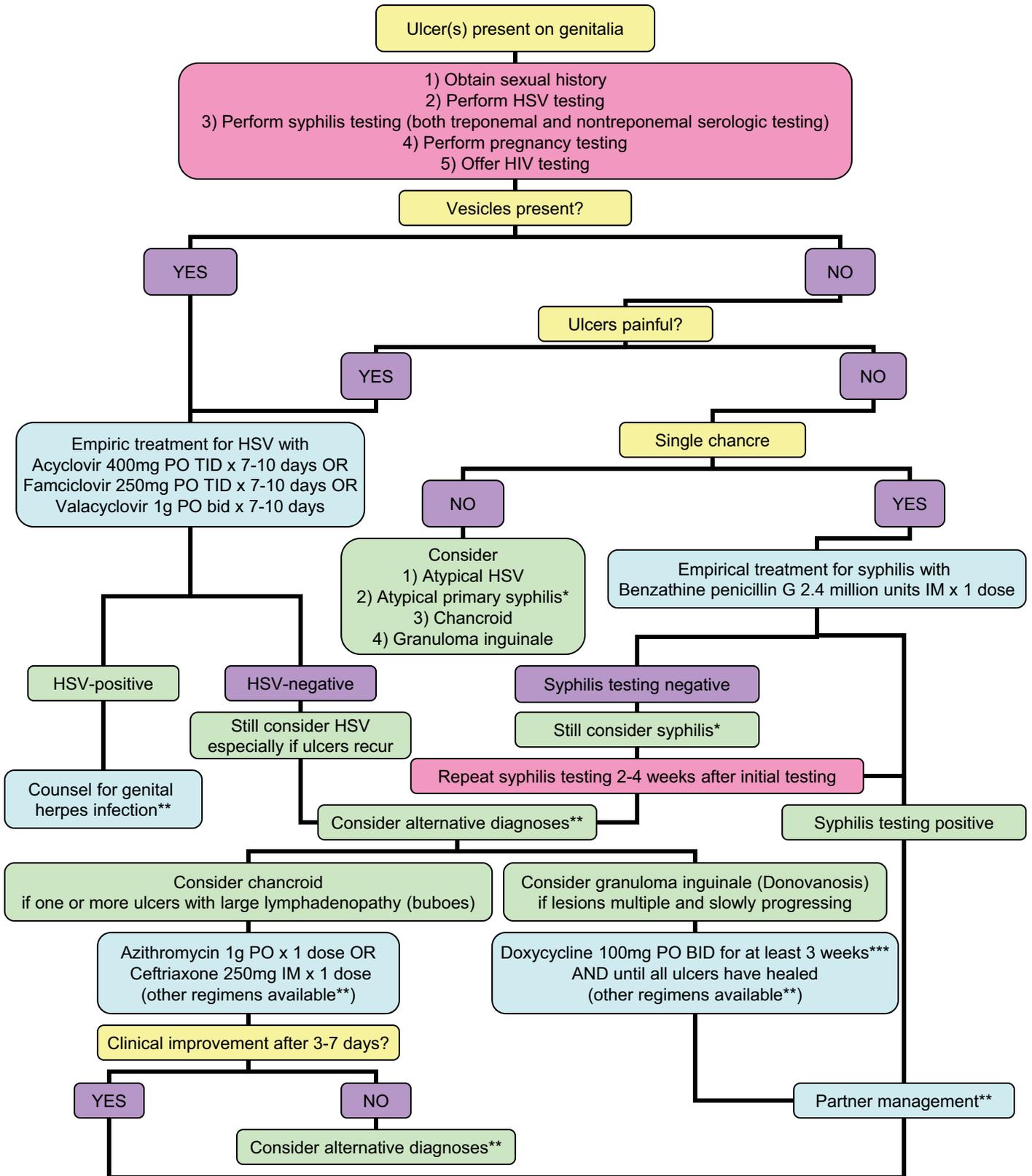
| Examination | Findings | Specimens |
|--|---|--|
| Skin (face, trunk, legs, forearms and palms) | <ul style="list-style-type: none"> • Lesions or rash consistent with secondary syphilis • Disseminated molluscum | <ul style="list-style-type: none"> • Darkfield of syphilitic lesions or rash • Serologic testing for syphilis |
| Head, Ears, Eyes | <ul style="list-style-type: none"> • Alopecia of secondary syphilis • Hearing loss or uveitis compatible with neurosyphilis • Conjunctivitis compatible with chlamydial or gonococcal infection • Jaundice compatible with Fitz-Hugh-Curtis syndrome | <ul style="list-style-type: none"> • Serologic testing for syphilis • Swab of conjunctiva for gonococcal or chlamydial culture |
| Oral Exam (lips, tongue, tonsils, hard & soft palate, buccal mucosal, gums) | <ul style="list-style-type: none"> • Chancre of primary syphilis • Mucous patches of secondary syphilis • Orolabial herpes lesions • Pharyngitis | <ul style="list-style-type: none"> • Serologic testing for syphilis • HSV culture or PCR of lesions • Swab of tonsils and posterior oropharynx for gonococcal NAAT or culture |
| Lymph Nodes (cervical, axillary epitrochlear, inguinal/femoral) | <ul style="list-style-type: none"> • Adenopathy (painful or painless) | <ul style="list-style-type: none"> • Aspirate of buboe for gram stain, bacterial culture, and chlamydial culture |
| Musculoskeletal | <ul style="list-style-type: none"> • Joint pain and swelling consistent with disseminated gonococcal infection | <ul style="list-style-type: none"> • Aspirate of joint fluid for cell count, chemistry, gram stain, and bacterial culture |
| External genitalia | <ul style="list-style-type: none"> • Pubic hair crabs or nits • Skin of penis, scrotum, and perineum may have lesions or eruptions consistent with primary or secondary syphilis (e.g. chancre, condyloma lata), herpes, condyloma acuminata, molluscum contagiosum, or scabies • Pearly penile papules are a variant of normal occurring more commonly in uncircumcised men  | <ul style="list-style-type: none"> • Scraping for microscopy • Darkfield examination of lesions, HSV culture or PCR of lesions • Serologic testing for syphilis |
| Urethral meatus | <ul style="list-style-type: none"> • Meatal condyloma acuminata • Discharge (following milking of urethra) | <ul style="list-style-type: none"> • First catch urine for gonococcal and chlamydial NAAT, or urethral swab for gonococcal culture • If trichomonal urethritis suspected, first catch urine (concentrated 10x) for microscopy or trichomonal culture (Diamonds media or InPouch TV) if available |
| Testes and epididymis | <ul style="list-style-type: none"> • Swelling or tenderness consistent with epididymitis | <ul style="list-style-type: none"> • First catch urine for gonococcal and chlamydial NAAT, or urethral swab for gonococcal culture |
| Anus and Rectum | <ul style="list-style-type: none"> • Perianal skin lesions or eruptions consistent with primary or secondary syphilis (e.g. chancre, condyloma lata), herpes, or condyloma acuminata • Discharge compatible with proctitis | <ul style="list-style-type: none"> • Darkfield examination of lesions, HSV culture or PCR of lesions • Serologic testing for syphilis • Swab for gonococcal and chlamydial NAAT or culture |

Chapter Three:

Algorithms of Diagnostic Assessment and Management of Syndromes

- Genital Ulcer Disease (Male/Female) – Darkfield Unavailable
- Urethritis – Gram Stain Unavailable
- Cervicitis
- Pelvic Inflammatory Disease
- Proctitis
- Vaginal Discharge
- Differential Diagnosis of Vaginitis

Genital Ulcer Disease (Male/Female) – Darkfield Unavailable



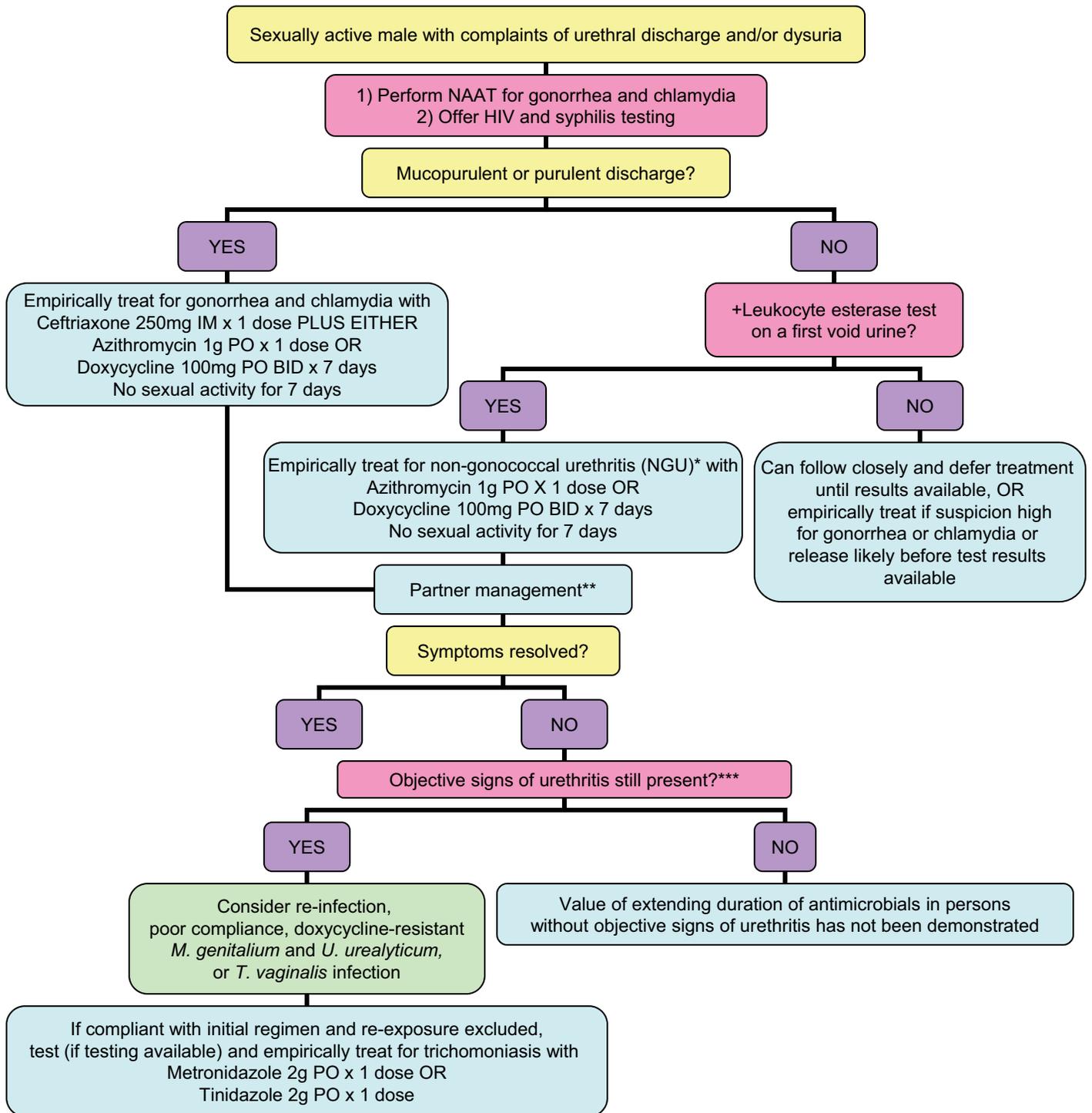
*Especially if MSM or other high-risk sexual history. Up to 25% of primary syphilis cases initially have negative nontreponemal (e.g. RPR) testing.

**See 2010 CDC STD Treatment Guidelines for further details.

***Doxycycline not for use in pregnancy.

Although this algorithm implies patients have mutually exclusive diagnoses, some patients have more than one diagnosis.

Urethritis – Gram Stain Unavailable

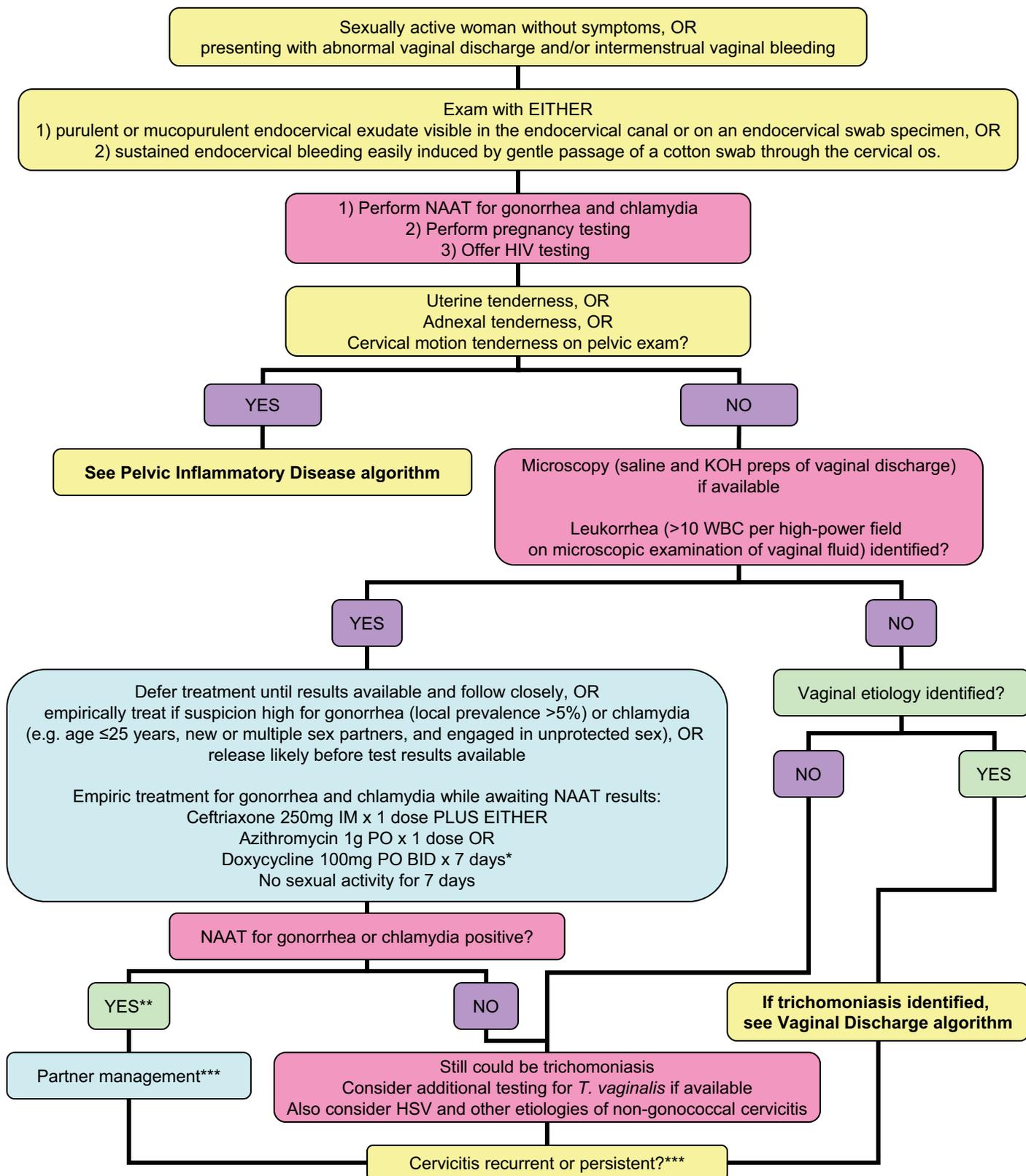


**C. trachomatis* causes 15-40% of cases of NGU, and *M. genitalium* causes 15-25% of NGU. *T. vaginalis*, HSV, and adenovirus can also cause NGU, but data supporting *U. urealyticum* are inconsistent. Most patients with urethritis due to genital herpes infection will have obvious herpetic penile lesions or severe dysuria or meatitis, and many with urethritis due to *T. vaginalis* will have sex partners with trichomonal vaginitis. Enteric bacteria have been identified as an uncommon cause of NGU and might be associated with insertive anal intercourse.

**See 2010 CDC STD Treatment Guidelines for further details.

***Objective signs of urethritis include mucopurulent or purulent discharge on exam, positive leukocyte esterase test on first void urine, or gram stain of urethral secretions with >5 WBCs per oil immersion field.

Cervicitis

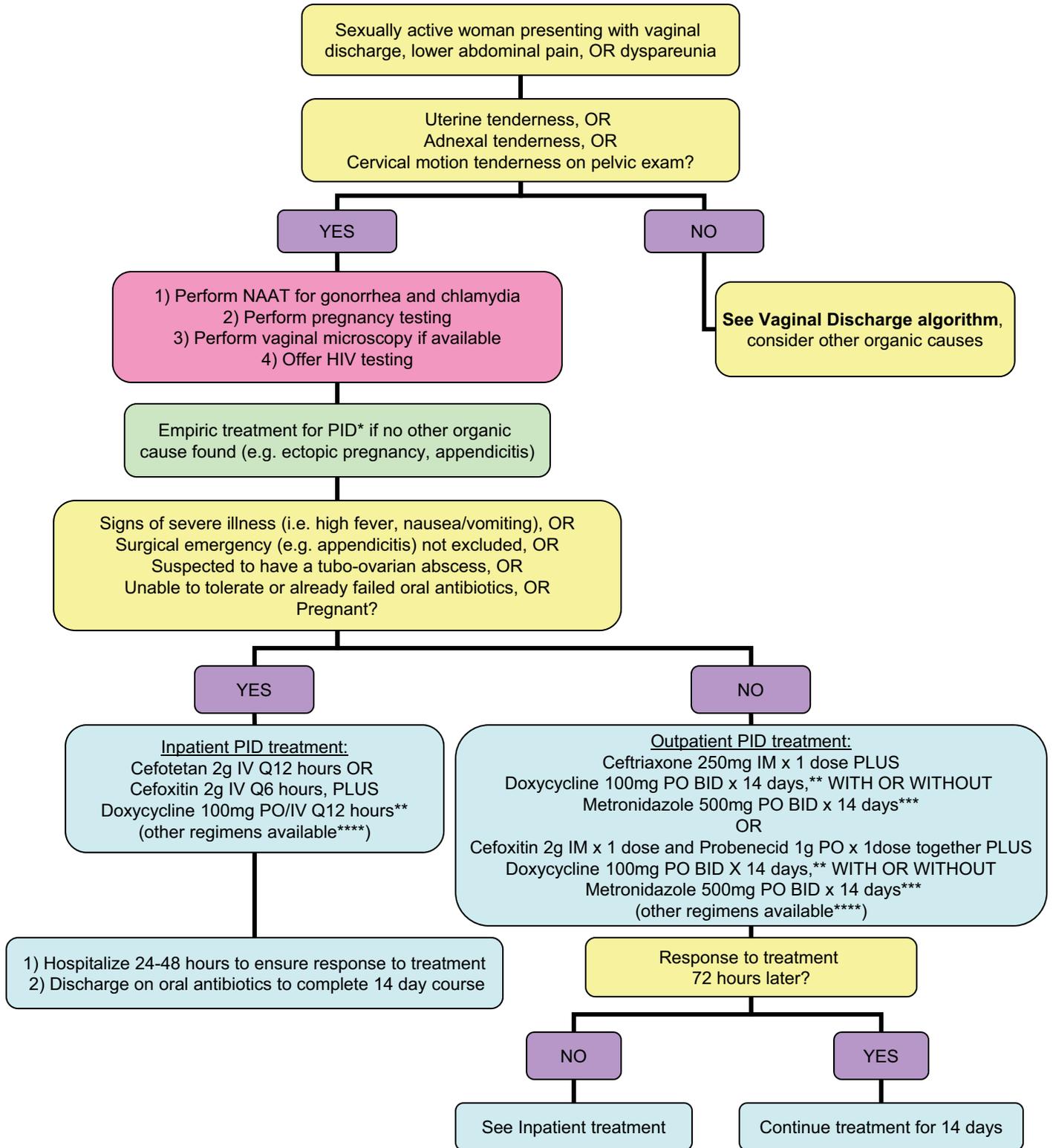


*Doxycycline not for use in pregnancy.

**If gc or chl NAAT is positive, patient should have repeat screening (test of reinfection) in 3-6 months.

***See 2010 CDC STD Treatment Guidelines for further details.

Pelvic Inflammatory Disease



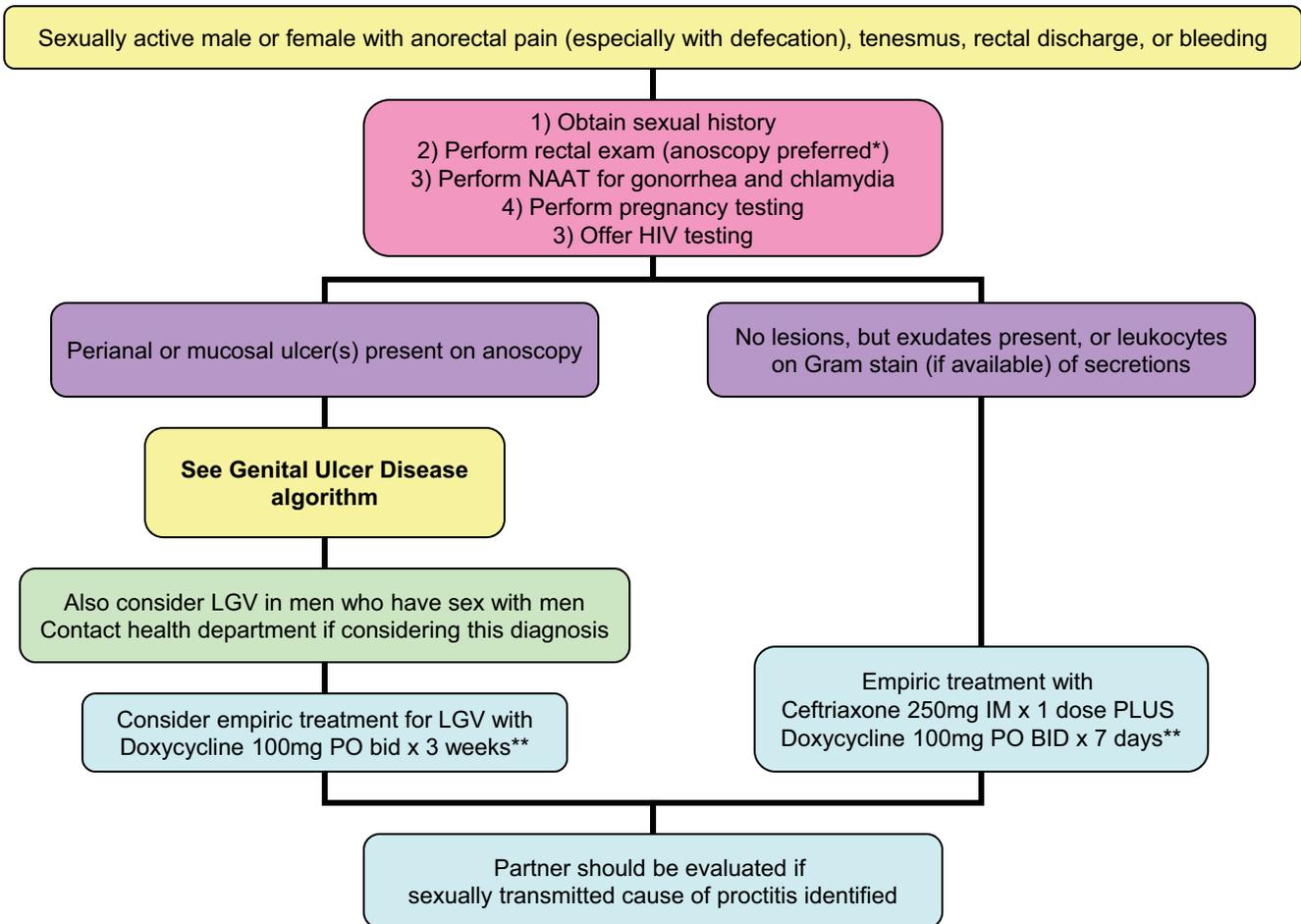
*Sex partners in past 60 days should be examined and treated empirically for gonorrhea and chlamydia, regardless of results of gonorrhea or chlamydia testing in index patient. If gonorrhea or chlamydia NAAT is positive, patient should have repeat screening (test of reinfection) in 3-6 months.

**Doxycycline not for use in pregnancy.

***Add metronidazole if bacterial vaginosis documented or unable to do vaginal microscopy.

****See 2010 CDC STD Treatment Guidelines for further details.

Proctitis

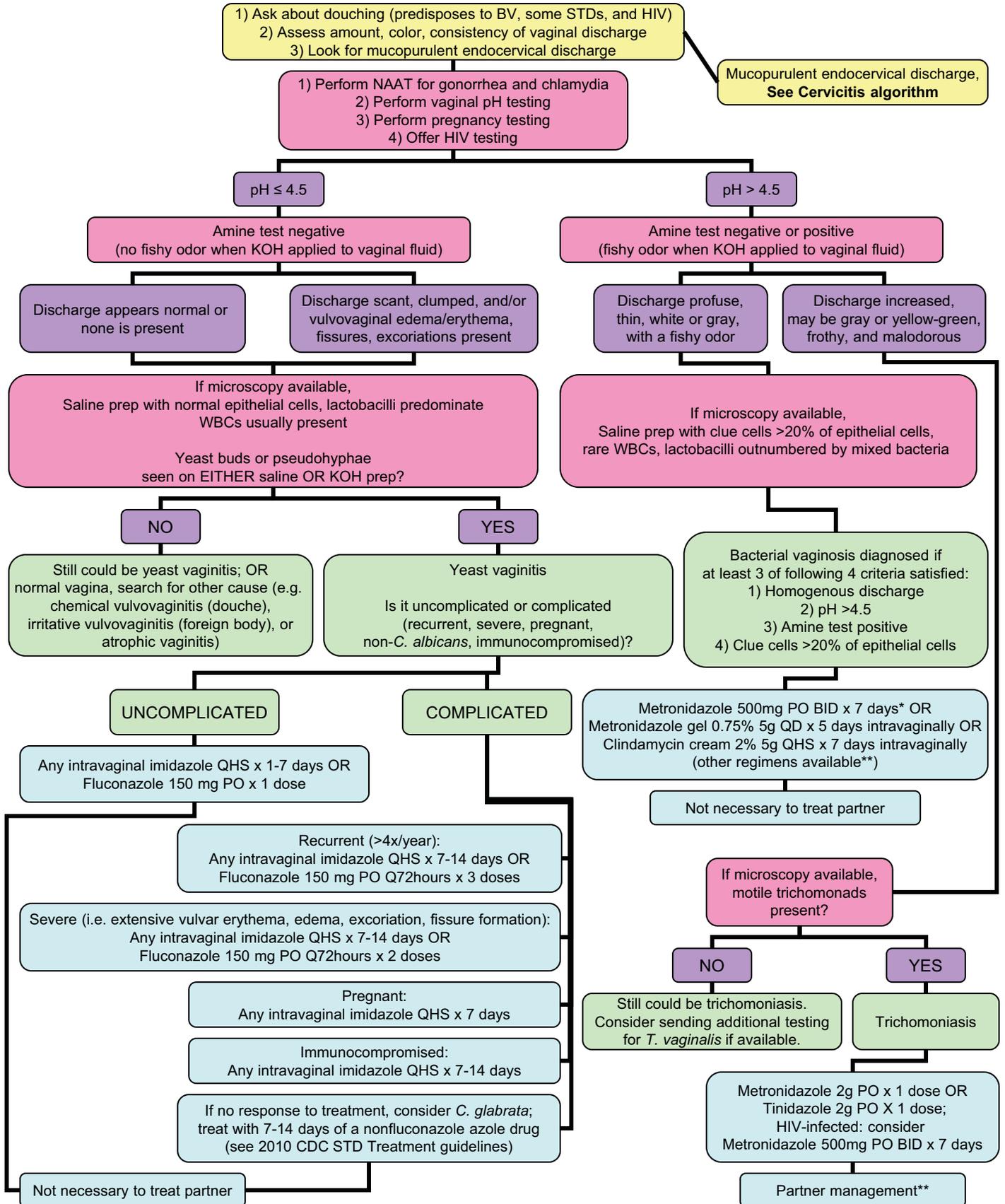


***N. gonorrhoeae*, *C. trachomatis* (including LGV serovars), *T. pallidum*, and HSV are the most common sexually transmitted pathogens involved in proctitis.**

***Anoscopes are cheap, disposable, and easy to use.**

****Doxycycline not for use in pregnancy.**

Vaginal Discharge



*Oral therapy preferred for pregnant women with BV, because of possibility of subclinical upper genital tract disease.

**See 2010 CDC STD Treatment Guidelines for further details.

Although this algorithm implies patients have mutually exclusive diagnoses, some patients have more than one diagnosis.

Differential Diagnosis of Vaginitis

| | Normal | Bacterial Vaginosis | <i>Candida</i> Vulvovaginitis | <i>Trichomonas</i> Vaginitis |
|---------------------------|--|---|---|--|
| Patient Complaints | None | Thin discharge, odor, itch, 50% asymptomatic | Itch, burning, dysuria, thick discharge | Odor, itch, discharge, dysuria |
| Exam Findings | Normal | Thin discharge, fishy smell | Vulvar/vaginal edema/erythema, fissures, excoriations, satellite papules | Cervical petechiae ("strawberry cervix") |
| Vaginal Discharge | Clear to white, colorless, odorless | Increased, homogenous, thin, white to gray, adherent, fishy smell | Thick, clumpy, white, "cottage cheese," increased | Gray or yellow-green, frothy, adherent, increased |
| Vaginal pH | ≤4.5 | >4.5 | Usually ≤4.5 | Usually >4.5 |
| KOH "whiff test" | Negative | Positive | Negative | Often positive |
| Saline Wet Mount | Normal epithelial cells, numerous lactobacilli | Clue cells (≥ 20%), no/few WBCs | Normal epithelial cells, >1:1 ratio of WBCs:epithelial cells, pseudohyphae or budding yeast | Motile flagellated protozoa, >1:1 ratio of WBC:epithelial cell |
| KOH Preparation | Epithelial cell "ghosts" | Epithelial cell "ghosts" | Pseudohyphae or budding yeast | Epithelial cell "ghosts" |

Chapter Four:

Vaccination to Prevent STDs

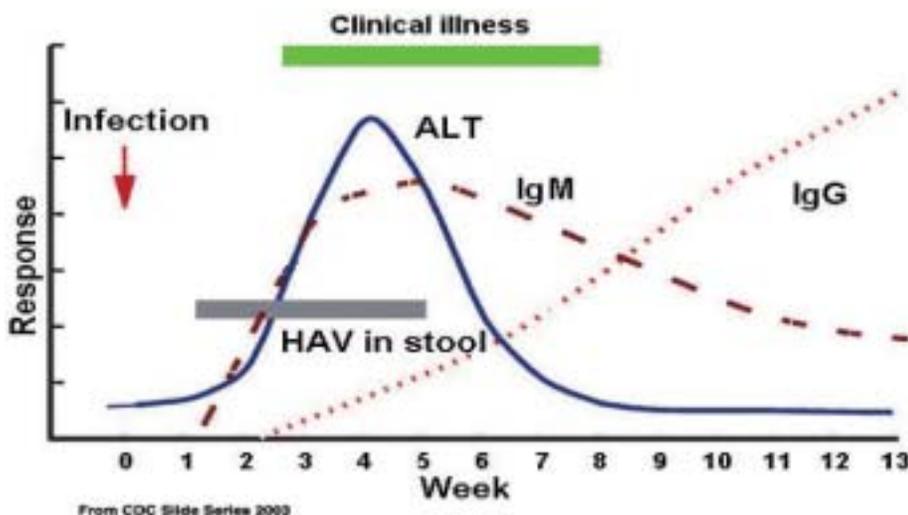
HEPATITIS A

Hepatitis A virus (HAV) is primarily spread through the fecal-oral route and usually results in a self-limited illness. Risk factors for infection include: international travel, sexual or household contact with an infected person, food or water-borne contamination, day care center exposures, living in institutional settings and injection drug use. Among drug users, history of incarceration has been associated with higher rates of hepatitis A infection¹ in particular among those who inject methamphetamines.^{2,3} The incidence of HAV in the United States has declined from 12 to 1 case per 100,000 between 1995 and 2007.⁴ This decline is mostly attributed to increased vaccination in children.

Clinical presentation and diagnosis

HAV causes acute hepatitis but does not result in chronic infection and rarely causes fulminant hepatic failure. The incubation period is approximately 30 days and initial prodrome symptoms include nausea, vomiting, fatigue, malaise, fever, and right upper quadrant pain followed by dark urine, acholic stools and jaundice. The presence and severity of symptoms increases with increasing age. Laboratory abnormalities include marked elevations in serum transaminases (>1000 IU/dL), as well as alkaline phosphatase and total and direct bilirubin. Acute hepatitis A is diagnosed by a positive serum anti-HAV IgM antibody. Anti- HAV IgG antibody becomes detectable during the convalescent stage of the illness and may remain positive for decades. (See Figure 1)

Figure 1⁵



Prevention

Infected individuals are potentially contagious during the incubation period and for approximately one week following the resolution of jaundice. Hygiene, including hand washing and access to clean water and sanitation, is critical to prevention. Since sexual transmission of hepatitis A is through the fecal-oral route, condoms will not be effective, though enhanced and targeted levels of protection such as latex products or dental dams during anal-oral sexual encounters offer some barrier protection. Passive and active immunization against Hepatitis A are safe and highly effective.

Passive Immunization

Household and sexual contacts, and anyone who has shared intravenous drugs with persons infected with hepatitis A, should receive post-exposure prophylaxis as soon as possible after exposure. This should be done within two weeks of exposure and can be given as immune globulin or as a dose of hepatitis A vaccine (though not the combined hepatitis A/B vaccine, since this has not been studied). For otherwise healthy persons between the ages of 12 months and 40 years, the vaccine is preferred. However, for persons younger than 12 months, over 40, immunocompromised and those with chronic liver disease immunoglobulin should be given. For those receiving immunoglobulin, the hepatitis A vaccine series should be initiated at the same time. Also, if someone with hepatitis A is employed as a food handler, all food handlers working with that person should be immunized. Post-exposure treatment is not indicated in those who have received two doses of hepatitis A vaccine.

Active Immunization

Among adolescents and adults, Hepatitis A vaccine should be offered to:

- Men who have sex with men
- Persons who use illegal drugs (either injection or non-injection drugs)
- Persons with chronic liver disease (e.g. due to hepatitis B or C)

Prevaccination serology may be considered to reduce cost depending on the likelihood of prior immunity, and costs/timing of testing and vaccines. Prevaccination testing may be cost-effective for those in areas of high endemicity (northwestern and southwestern United States) or in certain populations (Alaskan natives, American Indians, Hispanics, drug users)⁶(Also see Box in Hepatitis B resection for calculation of cost-effectiveness of prevaccination serology). Recommended dose and schedule for inactivated hepatitis A vaccine are in Table 1, either with hepatitis A vaccine alone or combined hepatitis A and B vaccines. In general, post vaccine serologies for hepatitis A are not necessary due to high response rates to the vaccine. In adults, over 95% of those vaccinated are seropositive after one dose of vaccine and 100% seroconvert after 2 doses. These response rates may be lower in persons infected with HIV, especially if they have a CD4 count <200, in which case post-vaccination serology is recommended one month after vaccination and non-responders should be revaccinated.⁷

Table 1

| Vaccine | Age (yrs) | Dose | Volume (mL) | No. doses | Two-dose schedule |
|-----------|-----------|------------------|-------------|-----------|-------------------|
| HAVRIX®* | 12mo-18yr | 720 (EL.U) | 0.5 | 2 | 0, 6-12 |
| | ≥19yr | 1440 (EL.U) | 1.0 | 2 | 0, 6-12 |
| VAQTA®** | 12mo-18yr | 25 (U) | 0.5 | 2 | 0, 6-18 |
| | ≥ 19yr | 50 (U) | 1.0 | 2 | 0, 6-18 |
| TWINRIX®† | ≥ 18 yr | 720 (EL.U)/20 µg | 1.0 | 3 | 0,1,6 |

*Hepatitis A vaccine, inactivated, GlaxoSmithKline

**Hepatitis A vaccine, inactivated, Merck and Co., Inc.

† Combined hepatitis A and hepatitis B vaccine, inactivated, GlaxoSmithKline

Table adapted from CDC. ⁶

What to do if an inmate is diagnosed with acute hepatitis A?

The health department should be contacted. Close contacts should receive post exposure prophylaxis as noted above. The infected person is considered contagious, and should not return to work duties involving food handling, until one week after their jaundice has resolved. Standard hygienic practices, like hand-washing before preparing or eating food, especially after using the restroom, should be maintained.

Key Points

- **Hepatitis A vaccine is recommended for users of illegal drugs, persons with chronic liver disease, and men who have sex with men**
- **It may be given as two doses on its own, or as three doses when combined with hepatitis B vaccine**
- **A single dose confers immunity in a majority of patients, so do not defer starting series due to short incarceration**

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2. Harkess J, Gildon B, Istre GR. Outbreaks of hepatitis A among illicit drug users, Oklahoma, 1984-87. *Am J Public Health*. 1989;79(4):463-466.
3. Vong S, Fiore AE, Haight DO, et al. Vaccination in the county jail as a strategy to reach high risk adults during a community-based hepatitis A outbreak among methamphetamine drug users. *Vaccine*. 2005;23(8):1021-1028.
4. Daniels D, Grytdal S, Wasley A, Centers for Disease Control and Prevention (CDC). Surveillance for acute viral hepatitis - United States, 2007. *MMWR Surveill Summ*. 2009;58(3):1-27.
5. Hepatitis A: Patient Information. <http://www.gihealth.com/html/education/hepatitisA.html>.
6. Advisory Committee on Immunization Practices (ACIP) Centers for Disease Control and Prevention (CDC). Update: Prevention of hepatitis A after exposure to hepatitis A virus and in international travelers. Updated recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR Morb Mortal Wkly Rep*. 2007;56(41):1080-1084.
7. Kaplan JE, Benson C, Holmes KH, et al. Guidelines for prevention and treatment of opportunistic infections in HIV-infected adults and adolescents: recommendations from CDC, the National Institutes of Health, and the HIV Medicine Association of the Infectious Diseases Society of America. *MMWR Recomm Rep*. 2009;58(RR-4):1-207; quiz CE1-4.

HEPATITIS B

In 2007, an estimated 34,000 people were newly infected with hepatitis B virus (HBV) in the United States. A study of reincarcerated women showed an incidence of 12.2 per 100 person years of hepatitis B¹, and several acute hepatitis B outbreaks have been linked to recently incarcerated individuals.² Hepatitis B vaccination during incarceration therefore has important potential benefits for inmates as well as the community. Secondary prevention is also relevant in this setting as 12 to 15 percent of the persons in the US with chronic hepatitis B are released from corrections each year.³

Most exposures to HBV in the United States are from intravenous drug use, sexual activity, and occasionally, occupational exposure. In one-third of cases, the exposure is unknown. Transmission has been documented in cases of long-term household exposure; however HBV is not transmitted by the fecal-oral route or by breast-feeding. The primary reservoir is the chronically infected population who need not be symptomatic to transmit the virus (carriers). An estimated 2% of the jail and prison population has chronic hepatitis B. Many injection drug users have been exposed to HBV and hepatitis C virus (HCV) and approximately 5% have dual infection.

Clinical presentation of acute and chronic hepatitis B

Acute hepatitis B may present as anicteric hepatitis (70% of patients) or icteric hepatitis (30% of patients), and is more severe in those with underlying liver disease. The incubation phase until symptoms lasts 2-5 months and patients may have a prodrome with fever, nausea, vomiting, right upper quadrant pain with subsequent development of jaundice. Serum alanine and aspartate aminotransferase levels are usually quite elevated in acute hepatitis B (AST and ALT >2000IU/L), total and direct bilirubin may or may not be elevated. See Figures 1 and 2 below regarding serologic course of infection in acute versus chronic hepatitis B infection.

IDENTIFICATION OF ACUTE HEPATITIS B SHOULD PROMPT AN EPIDEMIOLOGIC INVESTIGATION BY CORRECTIONAL OFFICIALS, IN COLLABORATION WITH THE APPROPRIATE PUBLIC HEALTH AUTHORITIES.

The likelihood of progression to chronic hepatitis B is greater the earlier in life that infection occurs. For example, approximately 90% of those perinatally infected, 20-50% of those infected between ages 1 and 5, and less than 5 % of those infected in adulthood progress to chronic infection. Many patients with chronic hepatitis B are asymptomatic; others may present with stigmata of chronic liver disease, including splenomegaly, ascites, coagulopathy and encephalopathy; or with complications of chronic hepatitis B such as vasculitis and glomerulonephritis. Chronic hepatitis B typically consists of 2 phases, an early active replication stage ($>10^5$ - 10^6 virions/mL, positive hepatitis B surface antigen [HBsAg] and hepatitis B “e”

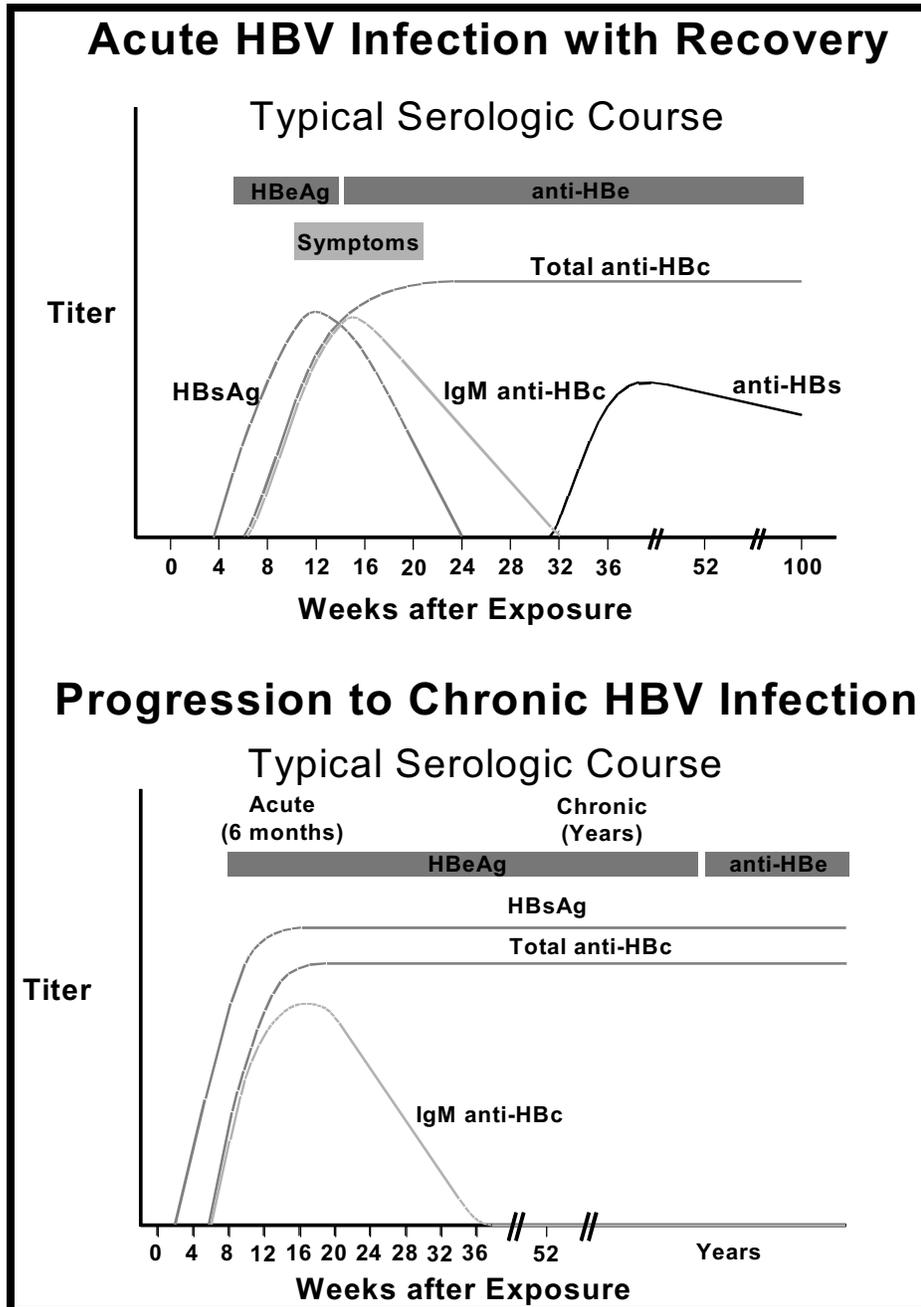
¹ Macalino GE, Vlahov D, Dickinson BP, Schwartzapfel B, Rich JD. Community incidence of hepatitis B and C among reincarcerated women. *Clin Infect Dis* 2005;41(7):998-1002

² Devasia RA, Jones TF, Kainer MA, et al. Two community hepatitis B outbreaks: an argument for vaccinating incarcerated persons. *Vaccine* 2006;24(9):1354-8.

³ National Commission on Correctional Health Care, National Institute of Justice. *The Health Status of Soon-to-be-Released Inmates: A Report to Congress*. Washington, DC: United States Department of Justice; 2002.

antigen [HBeAg], clinical markers of liver injury) and a later low replication stage (lower levels of viral replication, no clinical markers of active liver disease). There is a subset of patients who are HBeAg negative but have active replication (called “precore mutants”); there are important treatment implications for this subset of patients.

Figures 1 and 2⁴



⁴ Centers for Disease Control and Prevention. Prevention and control of infections with hepatitis viruses in correctional settings. MMWR Recomm Rep 2003;52(RR-1):1-36

Interpretation of Hepatitis B serologies

Testing for HBV antigens and antibodies against HBV antigens determines if an individual is susceptible to infection or infected. Usual tests for HBV include HBsAg, antibody to hepatitis B surface antigen (anti-HBs), antibody to hepatitis B core antigen (anti-HBc), and occasionally antibody to hepatitis B e antigen (anti-HBe) (Tables 1 and 2). A negative panel indicates that HBV exposure has not occurred and the individual is susceptible to infection. If the surface antigen is positive, then the patient can be considered infected and further testing should be done to determine whether the infection is acute (anti-HBc IgM positive) or chronic, and the level of activity of the infection in the liver (liver function tests). Immunization is not useful in this scenario. If the core and surface antibodies are positive, then the individual was exposed to HBV, but cleared the infection. Anti-HBs confers immunity and the individual need not be vaccinated. An isolated positive surface antibody is indicative of immunity due to immunization. However, someone who has been vaccinated will not necessarily have an anti-HBs persisting beyond a few months.

If only the core antibody (anti-Hbc) is positive, then four interpretations are possible:

1. A recovering acute HBV infection (“window period”: HbsAg gone, anti-HBs not yet measurable)
2. A resolved distant HBV with anti-HBs present but levels below detection (this is more likely to occur in the presence of hepatitis C or HIV, and thus commonly seen in corrections)
3. A susceptible with false positive anti-HBc (no actual prior HBV) (this is more likely in low risk populations such as blood donors⁵)
or
4. Chronic HBV without detectable HBsAg (DNA may be present in serum or not)⁶.

Vaccination is indicated for interpretation #3, and in the case of end stage renal disease for interpretation #2.⁷ In the setting of injection drug use, other hepatitis B risk factors, hepatitis C or HIV, interpretation #3 becomes less likely, and vaccination is generally not indicated. A cohort study of IDUs supports this approach.⁸ However, it is never harmful to vaccinate, if in doubt. For HIV-infected patients, guidelines now recommend vaccination in the situation of isolated anti-HBc+, and consideration of HBV DNA testing to check for interpretation #4.⁹

Cases of acute hepatitis B should be reported to the appropriate public health authority. If an inmate is identified as having chronic HBV infection, the case should be reported in those states where reporting is required.

⁵ Schiffman RB, Rivers SL, Sampliner RE, Krammes JE. Significance of isolated hepatitis B core antibody in blood donors. *Arch Intern Med* 1993;153(19):2261-6.

⁶ Minuk GY, Sun DF, Greenberg R, Zhang M, Hawkins K, Uhanova J, et al. Occult hepatitis B virus infection in a North American adult hemodialysis patient population. *Hepatology* 2004;40(5):1072-7.

⁷ Centers for Disease Control and Prevention. A comprehensive immunization strategy to eliminate transmission of hepatitis B virus infection in the United States: recommendations of the Advisory Committee on Immunization Practices (ACIP) Part II: immunization of adults. *MMWR Recomm Rep* 2006;55(RR-16):1-33

⁸ Quaglio G, Lugoboni F, Vento S, Lechi A, Accordini A, Bossi C, et al. Isolated presence of antibody to hepatitis B core antigen in injection drug users: do they need to be vaccinated? *Clin Infect Dis* 2001;32(10):E143-4.

⁹ Kaplan JE, Benson C, Holmes KH, Brooks JT, Pau A, Masur H. Guidelines for prevention and treatment of opportunistic infections in HIV-infected adults and adolescents: recommendations from CDC, the National Institutes of Health, and the HIV Medicine Association of the Infectious Diseases Society of America. *MMWR Recomm Rep* 2009;58(RR-4):1-207

Table 1: Interpretation of some of the common hepatitis B panel results

*

| Interpretation of the hepatitis B panel | | |
|---|--|--|
| Tests | Results | Interpretation |
| HBsAg anti-HBc anti-HBs | negative negative negative | susceptible |
| HBsAg anti-HBc anti-HBs | negative negative positive with $\geq 10\text{mIU/mL}^*$ | immune due to vaccination |
| HBsAg anti-HBc anti-HBs | negative positive positive | immune due to natural infection |
| HBsAg anti-HBc IgM anti-HBc anti-HBs | positive positive positive negative | acutely infected |
| HBsAg anti-HBc IgM anti-HBc anti-HBs | positive positive negative negative | chronically infected |
| HBsAg anti-HBc anti-HBs | negative positive negative | four interpretations possible [†] |

Postvaccination testing, when it is recommended, should be performed 1-2 months following the last dose of vaccine. Infants born to HBsAg-positive mothers should be tested 3-9 months after the last dose.

- [†]1. May be recovering from acute HBV infection.
 2. May be distantly immune, but the test may not be sensitive enough to detect a very low level of anti-HBs in serum.
 3. May be susceptible with a false positive anti-HBc.
 4. May be chronically infected and have an undetectable level of HBsAg present in the serum.

Table 2: Interpretation of hepatitis B virus serologic testing¹⁰

| | | | | Serologic markers |
|--------|-----------------|---------------------------|-----------|--|
| HBsAg* | Total anti-HBc† | IgM [§] anti-HBc | Anti-HBs¶ | Interpretation |
| — | — | — | — | Susceptible, never infected |
| +** | — | — | — | Early acute infection, , transient (up to 18 days) after vaccination |
| + | + | + | — | Acute infection |
| — | + | + | — | Acute resolving infection |
| — | + | — | + | Recovered from past infection and immune |
| — | + | — | — | Chronic infection |
| — | + | — | — | False positive (i.e., susceptible); past infection; “low-level” chronic infection ^{§§} : passive transmission to infant born to HBsAb+ mother |
| — | — | — | + | Immune if concentration is >10mIU/mL, passive transfer after HBIG administration |

* Hepatitis B surface antigen.

† Antibody to hepatitis B core antigen.

§ Immunoglobulin M.

¶ Antibody to hepatitis B surface antigen

** To ensure that an HBsAg-positive test result is not a false positive, samples with repeatedly reactive HBsAg results should be tested with an FDA-c appropriate, neutralizing confirmatory test

§§ Persons positive for only anti-HBc are unlikely to be infectious except under unusual circumstances involving direct percutaneous exposure to large quantities of blood (e.g. blood transfusion and organ transplantation).

¹⁰ Centers for Disease Control and Prevention. Sexually Transmitted Diseases Treatment Guidelines, 2010. MMWR 2010;59(RR-12):11-12

PRIMARY PREVENTION¹¹

Who should be vaccinated for Hepatitis B?

Preexposure

- All adults who receive a medical evaluation in a correctional facility should be administered hepatitis B vaccine, unless they have proof of completion of the vaccine series or serologic evidence of immunity to infection. The vaccine series should be started for those who have never been vaccinated, irrespective of the length of their stay, and the series should be completed for those incompletely immunized (strongly recommended). See Table 3.
 - For persons who did not receive medical evaluation upon entry into correctional custody, vaccination should be considered for those who lack proof of previous vaccination or immunity (recommended). Priority should be given to those with chronic liver disease and HIV. Optimally, all inmates should be vaccinated, if not already known to be immune.
 - Catch-up vaccination of already incarcerated, previously unvaccinated persons, or persons known to be susceptible to infection, should be considered in facilities in which routine hepatitis B vaccination of entering inmates is being established. Priority should be given to vaccination of contacts of known HBsAg-positive persons (e.g., cellmates or persons living in the same cell block or dormitory) (recommended).
 - An appropriate vaccination dose and schedule should be selected to facilitate completion of the vaccine series while the person is in custody. For previously unvaccinated persons held in a correctional facility for <6 months, the vaccine series should be initiated and completed by using a 4-month schedule (0, 1–2, and 4 months) (recommended). See Table 4.
 - In terms of series completion, one dose of vaccine is better than no dose, two doses are better than one, and three doses are better than two. Vaccination should not be withheld solely on the basis of the possibility that three doses will not be achieved. Also, vaccines should be administered even if there is an interruption in the vaccination schedule.
 - Vaccination information, including date of administration, dose, and manufacturer should be included in the medical record, and an immunization record should be given to the incarcerated person upon release (standard practice).
 - Discharge planning should include transfer of immunization records to the person's medical home to ensure completion of the vaccine series for persons not fully vaccinated while in the correctional facility, and for all fully vaccinated persons as well (standard practice).

¹¹ Centers for Disease Control and Prevention. Prevention and control of infections with hepatitis viruses in correctional settings. MMWR Recomm Rep 2003;52(RR-1):1-36

Table 3: Groups recommended for preexposure hepatitis B vaccination¹²

| |
|--|
| <p>Universal</p> <ul style="list-style-type: none">• All infants, and• All children and adolescents not previously vaccinated. <p>Adults recommended to receive hepatitis B vaccination</p> <p>Persons at risk for infection by sexual exposure</p> <ul style="list-style-type: none">• Sex partners of hepatitis B surface antigen (HBsAg) positive persons• Sexually active persons who are not in a long-term, mutually monogamous relationship (e.g., persons with more than one sex partner during the previous 6 months)• Persons seeking evaluation or treatment for a sexually transmitted disease• Men who have sex with men <p>Persons at risk for infection by percutaneous or mucosal exposure to blood</p> <ul style="list-style-type: none">• Current or recent injection-drug users• Household contacts of HBsAg-positive persons• Residents and staff of facilities for developmentally disabled persons• Health-care and public safety workers with reasonably anticipated risk for exposure to blood or blood-contaminated body fluids• Persons with end-stage renal disease, including predialysis, hemodialysis, peritoneal dialysis, and home dialysis patients <p>Others</p> <ul style="list-style-type: none">• International travelers to regions with high or intermediate levels (HBsAg prevalence of $\geq 2\%$) of endemic HBV infection• Persons with chronic liver disease• Persons with HIV infection• All other persons seeking protection from HBV infection |
|--|

¹² Centers for Disease Control and Prevention. A comprehensive immunization strategy to eliminate transmission of hepatitis B virus infection in the United States: recommendations of the Advisory Committee on Immunization Practices (ACIP) Part II: immunization of adults. MMWR Recomm Rep 2006;55(RR-16):1-33

Table 4: Recommended dosages of licensed hepatitis B vaccines

| Age group (yrs) | Recombivax HB ^{®*†} | | Engerix-B ^{®**§} | | Twinrix [®] | |
|---|------------------------------|-------------------|---------------------------|-------------------|----------------------|-----|
| | µg | mL | µg | mL | µg | mL |
| Persons ≤19 (including infants born to HBsAg mothers) | 5 | 0.5 | 10 | 0.5 | — | — |
| Persons 11-15 | 10 | 1.0** | — | — | — | — |
| Persons ≥20 | 10 | 1.0 | 20 | 1.0 | 20 ^{††} | 1.0 |
| Dialysis patients and other immunocompromised persons | 40 | 1.0 ^{§§} | 40 | 2.0 ^{¶¶} | — | — |

- Both vaccines are routinely administered in a 3-dose series, which includes schedules of: 0, 1, and 6 months; 0, 2, and 4 months; 0, 2, and 6 months; and for adolescents, 0, 12, and 24 months.

† Manufactured by Merck & Co. Inc., Whitehouse Station, New Jersey.

§ Manufactured by GlaxoSmithKline Biologicals, Rixensart, Belgium.

¶ Manufactured by GlaxoSmithKline Biologicals, Rixensart, Belgium.

** Administered in a 2-dose schedule at 0 and 4-6 months.

†† Twinrix is only licensed for persons aged >17 years, and contain both hepatitis A and hepatitis B vaccine antigens administered as a 3-dose schedule

§§ Special formulation.

¶¶ Two 1.0 ml doses administered at one site, in a 4-dose schedule at 0, 1, 2, and 6 months.

Prevaccination and Postvaccination Testing

Who should have serologic testing prior to vaccination?

- Prevaccination serologic testing should be considered for adult incarcerated populations and is likely to be cost-effective when the prevalence of immunity from prior infection and vaccination exceeds 25%–30% (see Box next page) (indicated).
 - To assist correctional facilities in determining whether to conduct prevaccination testing, periodic serologic surveys of incoming inmates can be used to determine the prevalence of markers of immunity to HBV infection (Standard practice).
 - Testing for anti-HBs provides the best measure of immunity to HBV infection, because it detects infection or vaccine-induced immunity (standard practice). (Caveat: see isolated anti-HBc.)
 - When prevaccination testing is done, the first dose of vaccine should be administered at the same time the blood sample is obtained to ensure optimal vaccination coverage (Table 5) (recommended).
 - Regardless, checking HBV serology is indicated for those with HIV, hepatitis C and other liver disease as part of routine care, as well as those with risk factors for hepatitis B, particularly in longer term settings.

Managing STDs in the Correctional Setting: A Guide for Clinicians

- In addition, all pregnant women should be tested for HBsAg even if previously vaccinated or tested. Because of the high risk for HBV infection among incarcerated populations, testing should be performed even if the woman was tested before incarceration. The HBV vaccine is not contraindicated during pregnancy.

Who should have serologic testing after vaccination?

- Postvaccination testing is not indicated for healthy adults (not recommended).
- For persons with special conditions (e.g., immunodeficiency, HIV infection, or chronic hemodialysis), or who are likely to be exposed to HBV (e.g., sex partner of HBsAg-positive person or health-care worker), postvaccination testing for anti-HBs is recommended 1 to 2 months after completion of the vaccination series. Nonresponders (anti-HBs <10 mIU/mL) in this category should be revaccinated (strongly recommended). *(Comment: Ninety percent of healthy adults will manifest protective serum antibody concentrations, however, individuals older than 30 years, active alcoholics, persons with HIV, and other chronic conditions have an increased risk of non-response. Nonresponders to the second series should be checked for HBsAg if not already done.)*

Box: Method to determine cost-effectiveness of prevaccination screening for hepatitis B vaccination*

The breakeven point for the cost of prevaccination serologic testing, when first vaccine dose is administered at the time of blood draw, is

$$T = P1 \times [P2 + P2(P3)] \times v$$

where

T = cost of serologic test (anti-HBc or anti-HBs);

P1 = prevalence of past infection/imunization;

P2 = percentage of recipients of first dose who actually receive a second dose;

P3 = percentage of recipients of doses 1 and 2 who receive dose 3;

[P2 + P2(P3)] = average number of doses for a person starting the series; and

v = cost per dose of vaccine, including administrative costs.

*Using this formula for **hepatitis A** vaccination assumes no vaccination is administered at the time of the blood draw. For hepatitis A vaccination, T = cost of serologic test for anti-hepatitis A virus (HAV); T = P1 x v. For more prevaccination information regarding hepatitis A. See full CDC document.

SECONDARY PREVENTION¹³

Postexposure Prophylaxis

- After any percutaneous (e.g., sharing injection-drug equipment or human bite) or mucosal (e.g., sexual) exposure to blood, an unvaccinated person should begin the vaccine series, and the exposure incident should be evaluated to determine if additional postexposure prophylaxis (i.e., HBIG) is required (Table 6). (strongly recommended).
 - The first dose of hepatitis B vaccine should be administered immediately, and the remaining doses 1 and 6 months later (Table 5) (standard practice).
 - For an exposed person who has begun, but not completed, the vaccine series, subsequent vaccine doses should be administered as scheduled (standard practice).
 - The person who was the source of the exposure should be tested for HBsAg, even if that person was previously vaccinated. If the source person is HBsAg-positive, HBIG (0.06 mL/kg body weight intramuscular) should be administered to the exposed person as soon as possible and ≤ 7 days after the exposure (standard practice).
 - Postexposure prophylaxis is not necessary for a fully vaccinated person after exposure to HBV. (not recommended).
 - Any blood spills should be cleaned wearing gloves and should be cleaned using a 1:10 dilution of one part household bleach to ten parts water or other approved product.
 - Persons who are known to be infected with Hepatitis B should not share personal items such as toothbrushes, razors, syringes, or glucose monitors with others as these could contain small amounts of blood. They should also be reminded that hepatitis B can be transmitted through sex, through sharing needles, syringes or drug preparation equipment, needlesticks, contact with blood or open sores of an infected person.

¹³ Centers for Disease Control and Prevention. Prevention and control of infections with hepatitis viruses in correctional settings. MMWR Recomm Rep 2003;52(RR-1):1-36

Table 5: Postexposure prophylaxis for exposure to hepatitis B virus in correctional settings¹⁴

| VACCINATION AND ANTIBODY RESPONSE STATUS OF EXPOSED PERSON* | TREATMENT WHEN SOURCE IS FOUND TO BE: | | |
|---|--|----------------------------|---|
| | HBsAg [†] positive | HBsAg negative | HBsAg unknown or not available for testing [§] |
| Unvaccinated | HBIG [¶] x 1, and initiate HB vaccine series ^{**} | Initiate HB vaccine series | Initiate HB vaccine series |
| Previously Vaccinated | | | |
| Known responder ^{††} | No treatment | No treatment | No treatment |
| Known nonresponder ^{§§} | HBIG x 2, or HBIG x 1, and initiate re-vaccination ^{¶¶} | No treatment | Treat as if source were HBsAg positive [§] |
| Antibody response unknown | Test exposed person for anti-HBs ^{***} 1. If adequate, no treatment is necessary ^{†††} 2. If Inadequate, administer HBIG x 1 and vaccine booster | No treatment | Treat as if source were HBsAg positive [§] |

* Persons who have previously been infected with HBV are immune to reinfection and do not require post-exposure prophylaxis.

† Hepatitis B surface antigen.

§ Inmates should be considered persons at probable high risk.

¶ Hepatitis B immunoglobulin; dose is 0.06 mL/kg body weight intramuscularly.

** Hepatitis B vaccine

†† A responder is a person with adequate levels of serum antibody to HBsAg (i.e., anti-HBs ≥ 10 mIU/mL).

§§ A nonresponder is a person with inadequate response to vaccination (i.e., anti-HBs < 10 mIU/mL).

¶¶ The option of administering one dose of HBIG and reinitiating the vaccine series is preferred for nonresponders who have not completed a second vaccine series. For persons who previously completed a second vaccine series but failed to respond, 2 doses of HBIG are preferred.

*** antibody to HBsAg.

††† For persons with ongoing exposure, such as health-care workers, recheck anti-HBs level in 1-2 months.

¹⁴ Centers for Disease Control and Prevention. Prevention and control of infections with hepatitis viruses in correctional settings. MMWR Recomm Rep 2003;52(RR-1):1-36

TREATMENT OF HEPATITIS B¹⁵

Acute Hepatitis B Treatment

Treatment is generally supportive. Antiviral therapy may be indicated in cases of severe or protracted illness, fulminant hepatic failure, in those with chronic liver disease, those with hepatitis C or D co-infection, the immunocompromised or in the elderly. These patients should be managed with the consultation of a liver and/or infectious diseases specialist.

Chronic Hepatitis B Treatment

- Inmates identified as having chronic HBV infection during medical screening should be evaluated to determine the presence and extent of chronic liver disease, coinfection with HIV or HCV, and the potential benefit of antiviral therapy. Therapies for treatment of hepatitis B include interferon-alpha, adefovir, entecavir, lamivudine, telbivudine and tenofovir. Other agents are in clinical trials. Treatment of patients with chronic hepatitis B should be conducted in consultation with a specialist experienced with these treatment regimens (standard practice). Specific treatment regimens are beyond the scope of this handbook.
- All long-term correctional facilities should establish criteria for identifying prisoners who might benefit from treatment, on the basis of the latest treatment guidelines (standard practice).
- Discharge planning for persons with chronic HBV infection should include referral to medical care, risk-reduction programs, and social services necessary to maintain behavior change; vaccination of contacts should also be arranged before patient discharge (standard practice).
 - Identify the source of infection and provide appropriate postexposure prophylaxis (Table 5) to nonimmunized contacts at risk for infection (standard practice).
 - Persons diagnosed with acute hepatitis B should be observed for progressive liver dysfunction and evidence of acute liver failure (Standard practice).

Further information regarding vaccine reimbursement and financial coverage is discussed in the Vaccine Resources section.

Key Points

- **Hepatitis B vaccination is recommended for all those in correctional settings unless already known to be immune.**
- **Even a single dose may confer immunity, and if the series is interrupted, it can be resumed at any point, so administering even a single dose is worthwhile (though administering the full series, even with gaps is favorable).**
- **The 0, 1-2, and 4 month schedule is recommended for adults expected to be incarcerated for less than 6 months.**
- **Many younger inmates have now likely been vaccinated prior to adolescence, particularly if born after 1991.**

¹⁵ Centers for Disease Control and Prevention. Prevention and control of infections with hepatitis viruses in correctional settings. MMWR Recomm Rep 2003;52(RR-1):1-36

Managing STDs in the Correctional Setting: A Guide for Clinicians

- **Checking HBV serology is indicated for those with HIV infection, hepatitis C and other liver disease as part of routine care, as well as those with risk factors for hepatitis B, particularly in longer term settings.**
- **Checking serology prior to vaccination is not likely to be cost effective except in populations with high prevalence of immunity (typically >25-30%).**
- **In HIV infected and hemodialysis patients, and sex partners of persons with chronic hepatitis B, verify response to the HBV vaccine by checking anti-HBs 1-2 months after the series.**
- **Identification of acute hepatitis B should prompt an epidemiologic investigation by correctional officials, in collaboration with the appropriate health authorities**

Hepatitis B lab nomenclature¹⁶

HBsAg: *Hepatitis B surface antigen* is a marker of infectivity. Its presence indicates either acute or chronic HBV infection.

anti-HBs: Antibody to hepatitis B surface antigen is a marker of immunity. Its presence indicates an immune response to HBV infection, an immune response to vaccination, or the presence of passively acquired antibody. (Also known as HBsAb, but this abbreviation is best avoided since it could be confused with HBsAg.)

anti-HBc (total): Antibody to hepatitis B core antigen is a nonspecific marker of acute, chronic, or resolved HBV infection. It is not a marker of vaccine-induced immunity. It may be used in prevaccination testing to determine previous exposure to HBV infection. (Also known as HBcAb, but this abbreviation is best avoided since it may be confused with other abbreviations.)

IgM anti-HBc: IgM antibody subclass of anti-HBc. Positivity indicates recent infection with HBV (≤ 0.6 mos). Its presence indicates acute infection.

HBeAg: Hepatitis B “e” antigen is a marker of a high degree of HBV infectivity, and it correlates with a high level of HBV replication. It is primarily used to help determine the clinical management of patients with chronic HBV infection.

Anti-HBe: Antibody to hepatitis B “e” antigen may be present in an infected or immune person. In persons with chronic HBV infection, its presence suggests a low viral titer and a low degree of infectivity.

HBV-DNA: HBV deoxyribonucleic acid is a marker of viral replication. It correlates well with infectivity. It is used to assess and monitor the treatment of patients with chronic HBV infection.

¹⁶ from CDC, www.cdc.gov, and Immunization Action Coalition, Needle Tips, www.immunize.org

HUMAN PAPILLOMA VIRUS (HPV) VACCINATION

United States immunization recommendations are constantly evolving. Between 2006 and 2007, guidelines issued by the CDC's Advisory Committee on Immunization Practices (ACIP) underwent such great expansion that the table displaying the recommended immunization schedule for persons aged 7-18 years occupied its own page, for the first time in the history of immunization guidelines. What follows is a brief discussion of disease-specific epidemiology, vaccine recommendations, and pre- and post-licensure safety data, specifically for HPV vaccine, and resources for staying up to date on recommendations.

Human Papillomavirus Disease and Prevention¹⁷

Over 90 subtypes of human papillomavirus (HPV) can infect human epithelium, and over 30 of these have been associated with genital infections. Genital HPV infection is incredibly common, and most persons are infected with genital HPV at some point during their sexually active lifetimes. Although most infected persons remain asymptomatic, genital HPV disease has been associated clinical conditions ranging from genital warts, to low- and high-grade cervical cytological abnormalities, to cervical, vulvar, vaginal, anal, and penile cancers.

In June 2006, the FDA licensed quadrivalent HPV (HPV4) vaccine, which prevents disease from HPV types 6, 11, 16, and 18. In October 2009, the FDA licensed a second HPV vaccine, bivalent HPV2, which prevents disease from HPV types 16 and 18. HPV4 vaccine series efficacy against the 4 vaccine types is estimated to be 99% in women and 89% in men against genital warts; 98% against cervical intraepithelial neoplasia (CIN) 2/3 or adenocarcinoma in situ (AIS); 100% against vulvar or vaginal intraepithelial neoplasia (VIN or VaIN) 2/3; and 75% against anal intraepithelial neoplasia 2/3.¹⁸ Data indicate HPV2 vaccine series efficacy against the 2 vaccine types is estimated to be 93% against cervical intraepithelial neoplasia (CIN) 2/3 or adenocarcinoma in situ (AIS).¹⁹

Current vaccination guidelines recommend vaccination for all 11-12 year old girls with 3 doses of either HPV2 or HPV4 vaccine,²⁰ and permissive vaccination of 11-12 year old boys with 3 doses of HPV4.²¹ This vaccination series can be started as young as age 9 years (at the discretion of the provider). ACIP has also recommended catch-up vaccination for all women aged 13-26 years, and has a permissive recommendation that is the same for men in the same age group, even for individuals who have already become sexually active or for those with a prior history of abnormal Pap smears or genital warts, because of the partial protection that

¹⁷ CDC. Quadrivalent HPV vaccine: recommendations of the ACIP. *MMWR* 2007;56(RR-2).

¹⁸ Gardasil® package insert, revised 12/2010. Available at

http://www.merck.com/product/usa/pi_circulars/g/gardasil/gardasil_pi.pdf. Accessed January 17, 2011.

¹⁹ Cervarix® package insert, revised 08/2010. Available at http://us.gsk.com/products/assets/us_cervarix.pdf. Accessed January 17, 2011.

²⁰ CDC. FDA licensure of bivalent human papillomavirus vaccine (HPV2, Cervarix) for use in females and updated HPV vaccination recommendations from the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2010;59:626-9.

²¹ CDC. FDA licensure of quadrivalent human papillomavirus vaccine (HPV4, Gardasil) for use in males and guidance from the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2010;59:630-2.

Managing STDs in the Correctional Setting: A Guide for Clinicians

HPV vaccine is likely to provide against disease caused by types to which an individual has yet to be exposed. Pap smear screening guidelines remain uniform for all women, whether vaccinated or not, because 30% of cervical cancers are caused by types not in HPV vaccines.

Table 1: HPV vaccine schedule (same for HPV2 or HPV 4 vaccine).*

| Dose | Schedule | Minimum Interval** |
|----------------------|--------------------------------------|---|
| 1st dose = 0.5 mL IM | 0 months | -- |
| 2nd dose = same | 1-2 months post 1 st dose | 4 wks after 1 st dose |
| 3rd dose = same | 6 months post 1 st dose | 12 weeks after 2 nd dose AND 24 weeks after 1 st dose |

*The same HPV vaccine should be used for the entire vaccination series. However, if the vaccine provider does not know the HPV vaccine product previously administered, either HPV vaccine can be used to complete the series to provide protection against disease caused by HPV 16 and 18.

**Doses received after a shorter-than-recommended dosing interval should be readministered. There are no maximum intervals – if schedule interrupted, vaccines do not need to be repeated.

Pre- and Post-Licensure Safety Data for HPV Vaccines Compared to Other Vaccines

Table 2 compares package insert pre-licensure safety data between Tdap, HPV4, and HPV2. The majority of patients receiving HPV vaccines experienced a sore arm at the site of injection, and a sizeable minority of patients also experienced local redness and swelling, but fever was a relatively rare occurrence. These side effects have also been borne out in post-licensure surveillance.

Table 2: Pre-licensure safety data summary.

| | Tdap^{22, 23} 10-18 years | HPV4¹⁸ 9-26 years | HPV2¹⁹ 10-25 years |
|----------------------------|--|---|--|
| Injection-site pain | 75-78% | 84% | 92% |
| Erythema | 21%*** | 25% | 48% |
| Swelling | 21-23%*** | 25% | 44% |
| Fever | 5% | NS | NS |

***Tdap non-inferior to Td vaccine

Post-licensure surveillance of HPV4 and other vaccines has identified reports of syncope, mostly occurring within 15 minutes of vaccination. These fainting spells were rarely associated with falls severe

²² Adacel® package insert, revised 01/09. Available at <http://www.fda.gov/BiologicsBloodVaccines/Vaccines/ApprovedProducts/ucm172481.htm>. Accessed January 17, 2010.

²³ Boostrix® package insert, revised 01/10. Available at <https://www.gsksource.com/gskprm/htdocs/documents/BOOSTRIX.PDF>. Accessed January 17, 2011.

Managing STDs in the Correctional Setting: A Guide for Clinicians

enough to cause skull fractures and intracranial bleeds. There were also reports of motor vehicle collisions occurring because of fainting that occurred while driving home several minutes after receiving vaccination. This has led to reiteration of ACIP general recommendations following immunization, “Although syncopal episodes are uncommon and severe allergic reactions are rare, vaccine providers should strongly consider observing patients for 15 minutes after they are vaccinated.”²⁴

VACCINE RESOURCES

For the most up-to-date ACIP recommendations, either comprehensive or vaccine-specific, the ACIP website www.cdc.gov/vaccines/pubs/ACIP-list.htm is useful and frequently updated. *MMWR* publications having to do with vaccine recommendations are best found through this website.

Vaccine Information Statements (VIS) are information sheets produced by the CDC that explain risks and benefits of vaccination to vaccine recipients or their parent/caregivers. Federal law (the National Childhood Vaccine Injury Act) requires that VIS be handed out whenever certain vaccinations are given, before each dose. Up-to-date versions in many languages are available at www.immunize.org/vis, a website sponsored by the Immunization Action Coalition which partners with the CDC to deliver VIS.

For marketing materials and educational information targeted at specific groups (e.g. adolescents, young adults, adults, or people with specific diseases and conditions), the CDC website <http://www.cdc.gov/vaccines/spec-grps/default.htm> provides health care providers with reproducible posters, flyers, web banners and web buttons designed to explain vaccinations to the public.

Vaccination in correctional facilities and other “nontraditional” vaccination settings has been increasingly recognized as an important means to deliver vaccines to at risk populations.²⁵ Budget constraints may limit how many individuals can be vaccinated, but at minimum those who are at higher risk for further liver damage should be protected. The Federal Vaccines for Children Program (VFC) provides vaccines, including hepatitis A and B and Human Papilloma Virus, to juveniles aged less than 19 years, and the vast majority of states are vaccinating for hepatitis B and HPV in juvenile facilities²⁶. In addition to juvenile facilities, VFC can be used to cover vaccines for those 18 year old or younger who are in adult facilities. For most adults, cost is a substantial barrier and must be born by state and local corrections or health departments. The federal Section 317 grant program is the primary funding source for the immunization program in all territories, state health departments, and some major city health departments. When funding has been allocated, high coverage rates have been achieved.²⁷ Experience in the juvenile system shows successful hepatitis B vaccination, that along with school based programs is now protecting young adults seen in corrections.^{28,29} Community outbreaks of hepatitis A in drug users, homeless and correctional populations

²⁴ CDC. General recommendations on immunization: recommendations of the ACIP. *MMWR* 2006; 55(RR-15).

²⁵ Adult Immunization Programs in Nontraditional Settings: Quality Standards and Guidance for Program Evaluation,” *MMWR* 2000,49(RR-1)

²⁶ Henderson, C. E., Rich JD, Lally MA . HPV vaccination practices among juvenile justice facilities in the United States. *J Adolesc Health* 2010;46(5): 495-8.

²⁷ Centers for Disease Control and Prevention. Prevention and control of infections with hepatitis viruses in correctional settings. *MMWR Recomm Rep* 2003;52(RR-1):1-36

²⁸ Lincoln, T., R. W. Tuthill, et al. Viral Hepatitis, Risk Behaviors, Aminotransferase Levels, and Screening Options at a County

Managing STDs in the Correctional Setting: A Guide for Clinicians

have been addressed in some regions through vaccination in corrections. These and other model hepatitis A and B vaccination programs in adult and juvenile correctional facilities are described on the web.^{30,31} In Scotland, the universal vaccination of all prisoners, within two years of the initiative's implementation, had a dramatic impact on vaccination rates in injection drug users in the community.³² Experience in Texas demonstrated on a large scale that broad completion of hepatitis B vaccination can be achieved. The importance of electronic information systems in the process, the greater vaccination rates achieved in prisons than jail settings, and the direct effect of allocation and withdrawal of funding all were demonstrated.³³

Standing orders for vaccination are nationally recommended to improve immunization rates. Draft standing orders are available on the internet at www.immunize.org.

Prior vaccination records outside of corrections are usually not available in most regions, though more regions are creating vaccine registries. Often, prior hepatitis B immunization can be inferred from school attendance with knowledge of school policy, or prior military service. State by state information on laws requiring childhood hepatitis B immunization and mandating hepatitis B immunization before entry into elementary or middle school are available at: www.immunize.org/laws/hepb. The earliest full year of birth with mandated immunization before entry into middle school is that from 1986, starting in several of states).³⁴ Policies for hepatitis B vaccination are available by branch of service at <http://www.vaccines.mil>. Hepatitis A immunization is required for all deployments.³⁵

Adults Only Vaccination: A Step-by-Step Guide is a 157-page guide that presents a comprehensive description of all aspects of a vaccination program from assessing vaccine indications and contraindications to determining billing codes. The guide was published in 2004. Developed by staff at the Immunization Action Coalition, reviewed for technical accuracy by key staff at the CDC, and is available at www.immunize.org/guide/.

Correctional Center. *Journal of Correctional Health Care* 2006;12(4): 249-261.

²⁹ Staples-Horne M, Duffy, K, Rorie MT. Juvenile corrections public health collaborations: opportunities for improved health outcomes. *Public Health Behind Bars-- From Prisons to Communities*. R.B. Greifinger. 2007: New York, Springer Science+Business Media.

³⁰ Centers for Disease Control and Prevention. Prevention and control of infections with hepatitis viruses in correctional settings. *MMWR Recomm Rep* 2003;52(RR-1):1-36

³¹ Hepatitis A, B, and C Prevention Programs. National Alliance of State and Territorial AIDS Directors (NASTAD). <http://www.hepprograms.org/>

³² Hutchinson SJ, Wadd S, Taylor A, Bird SM, Mitchell A, Morrison DS, et al. Sudden rise in uptake of hepatitis B vaccination among injecting drug users associated with a universal vaccine programme in prisons. *Vaccine* 2004;23(2):210-4.

³³ Hepatitis B vaccination of inmates in correctional facilities--Texas, 2000-2002. *MMWR Morb Mortal Wkly Rep* 2004;53(30):681-3.

³⁴ Scott PT, Niebuhr DW, McGready JB, Gaydos JC. Hepatitis B immunity in United States military recruits. *J Infect Dis* 2005;191(11):1835-41.

³⁵ Hepatitis A Infection and Hepatitis A Vaccine Information Paper. Military Vaccine Agency. 1 March 2007. <http://www.vaccines.mil/documents/1032MIP-HepatitisA.pdf>

Chapter Five:

Sexual Assault and STDs

CORRECTIONAL HEALTH PROVIDER'S RESPONSE TO AN INMATE REPORTING SEXUAL ABUSE^{1,2}

Per National Prison Rape Elimination Commission Standards for inmate victims of sexual abuse:

- *The level of medical/mental health care provided to the inmate victim must match the community level of care generally accepted by the medical/mental health professionals in the community*
- *Treatment services must be provided free of charge to the victim and regardless of whether the victim names the abuser*
- *Correctional medical and mental health practitioners are required to report allegations or incidents of sexual abuse that occurred or may occur in a correctional facility, unless precluded by federal, state, or local law. The situation in which an inmate discloses previous sexual victimization in the community to a medical or mental health practitioner is different*

Correctional Health Care Provider Response:

1. In a timely manner, evaluate the extent of any physical injuries and provide emergency medical treatment as needed
2. Initiate an emergency mental health referral upon completion of the medical evaluation
3. Upon completion of the medical and mental health evaluation, determine whether a referral to an outside (Sexual Assault Nurse Examiner [SANE] designated) hospital for sexual assault evidence collection is warranted
 - a. Factors to be considered:
 - Time frame between the alleged assault and complaint (up to 96-120 hours)
 - If the assault occurred > 120 hours (and/or outside of correctional custody), the health care practitioner should determine whether the patient could benefit from counseling, treatment, or other therapeutic interventions
 - Patient consent
 - Patient's 18 years old and older have the right to refuse medical/mental health care after receiving counseling about the potential value of the services available

¹ Jolin K. Inmate Sexual Assault: A S.A.N.E Response to Care: MA SANE Program Inmates as SANE Patients Protocol. International Association of Forensic Nurses 16th Annual Scientific Assembly, 9/19/2008. <https://m360.iafn.org/event/session.aspx?id=573>

² Commonwealth of Massachusetts, Executive Office of Health and Human Services, Department of Public Health, Bureau of Community Health Access and Promotion. (2010). Massachusetts Sexual Assault Nurse Examiner Program Protocols.

Managing STDs in the Correctional Setting: A Guide for Clinicians

- Health practitioners must obtain informed consent from the patient before reporting information about prior sexual victimization that **did not occur** in a correctional setting, unless the patient is < 18 years old
- b. If patient chooses **not to go** the hospital:
 - A refusal of treatment form should be signed by the patient
 - Patient's refusal should be documented in the patient's health record
 - STD testing, pregnancy testing, prophylactic treatment, and follow-up medical care and mental health counseling should be offered/provided [SEE POST EXPOSURE PROPHYLAXIS]
 - "Safe housing" should be considered
 - *If prior sexual victimization occurred outside the correctional setting, the health practitioner needs to obtain informed consent before sharing the information with correctional staff making health, housing, program, education, and work decisions*
- 4. If patient consents to hospital sexual assault services and meets time frame requirements for evidence collection:
 - a. Secure and seal any clothing/bedding involved during the assault in clean paper bags
 - For chain of custody purposes, write on the bag:
 - Articles collected, date/time of collection, name of person collecting articles
 - If patient is wearing the clothes worn at the time of the assault, do not remove them. Clothing will be collected during the evidence collection process. Send extra change of clothing with patient to the hospital
 - b. Initiate patient transfer paperwork:
 - Provide a brief description (SOAP note) of the patient being referred. For example:
 - S:** "I have been sexually assaulted" (Include date/time, location. Do not note details of the assault)
 - O:** Vital signs. Patient teary, pale, poor eye contact
 - A:** Possible sexual assault
 - P:** Send patient to hospital for further evaluation/sexual assault evidence collection
 - Complete/sign release of information form
 - Health history summary (medical/mental health diagnoses, immunizations, current medications/treatments, allergies)
 - Provide name and phone number of the patient's attending physician, primary mental health clinician and/or psychiatrist at the correctional facility
 - c. Contact emergency department charge nurse notifying that the patient is being sent for sexual assault services
 - d. A female correctional officer should escort a female patient

Managing STDs in the Correctional Setting: A Guide for Clinicians

Note:

**SANE availability and services vary from state to state
It is important to refer to local SANE protocol**

When patient arrives at a SANE designated emergency department (ED) he/she should be offered the following services:

- Psychological evaluation and counseling for post-traumatic psychological condition. Medical examination for injuries; evidence collection/documentation for reported sexual assault (either through the SANE program, if available, or through medical staff if SANE is not available); testing, treatment and counseling for sexually transmitted infections; and pregnancy counseling and prevention when indicated. The patient can choose or refuse any of these procedures
- If forensic evidence is to be completed, a SANE will be contacted after the patient is medically cleared by ED physician. The ED physician will be available to the SANE for medical consultations and to order necessary medication, testing, and treatments. If the SANE is not available, the ED physician and/or trained ED nurse will perform the evidentiary exam following SANE protocols.
- Discharge instructions will be reviewed with the patient. In order to insure continuity of care, a copy of these instructions will be sent to the referring correctional health care provider. The instructions will be put in a sealed envelope and given to the patient's escorting correctional officer for return to the facility

Upon the patient's immediate return to the correctional facility, the correctional health care provider should:

1. Review treatment and discharge aftercare with the patient:
 - a. Follow-up medical examinations and /or treatments
 - b. Medications
 - c. Follow-up laboratory pregnancy/STD testing
 - *Patients who have positive tests should receive counseling and have access to all pregnancy-related medical services that are lawful in the community*
2. *Refer patient to mental health for follow-up counseling services for continuous assessment of the psychological impact of the victimization, including the risk of suicide or self-harm, and any resulting mental health treatment needs*
3. "Safe housing" for the patient should be considered

Considerations for abuser:

- *Correctional medical/mental health practitioners must use their professional judgment to determine the appropriate treatment and services for individuals with a recent or previous history of sexual abusiveness*

Managing STDs in the Correctional Setting: A Guide for Clinicians

CDC Recommended Post Exposure Prophylaxis for Sexual Assault³

At initial post-assault examination:

Advise the patient about the possibility and risks of infection transmission as indicated by the particulars of the assault as described by the patient.

- STD testing within 5 days of a sexual assault will likely be testing for exposure to an STD that occurred before the assault
- Note: State laws limit the evidentiary use of a person's previous sexual history, including evidence of previously acquired STDs, as part of an effort to undermine the credibility of the victim's testimony
- Compliance with follow-up visits is poor among patients who have been sexually assaulted. Therefore, preventative therapy after a sexual assault is encouraged
- The following prophylactic regimen is suggested by the CDC as preventative therapy:
 - *For gonorrhea:*
 - **Ceftriaxone** 250 mg IM , single dose
 - Indicated for uncomplicated gonococcal infections at all sites (genital, anal, and pharyngeal)
 - Safe for pregnant women and adolescents
 - Contraindicated for allergies to penicillin/cephalosporins
 - OR-
 - **Cefixime** 400mg oral, single dose [less effective against pharyngeal gonorrhea and is not currently recommended for this site. Limited data exists for its effectiveness against incubating syphilis]
 - OR-
 - If patient is allergic to penicillin or cephalosporin
 - **Azithromycin** 2 gm oral, single dose
 - Indicated for uncomplicated gonococcal infections at all sites (genital, anal, and pharyngeal)
 - Safe for pregnant women and adolescents
 - Contraindicated for previous hypersensitivity to azithromycin
 - *For Chlamydia:*
 - **Azithromycin** 1 gm oral, single dose
 - Indicated for Chlamydia infection at all sites
 - Safe for adults, pregnant women, adolescents
 - Note: Single dose is important for patients at risk for poor adherence to multi-dose regimens
 - OR-

³ Centers for Disease Control and Prevention. Sexually Transmitted Diseases Treatment Guidelines, 2010. MMWR 2010;59(RR-12):11-12

Managing STDs in the Correctional Setting: A Guide for Clinicians

If patient is allergic to azithromycin, erythromycin or other macrolide antibiotics:

- **Doxycycline** 100 mg orally, twice a day for 7 days
 - Indicated for Chlamydia infection at all sites
 - Contraindicated in pregnancy or during lactation
 - May cure incubating syphilis; requires 7 days of adherence to prescribed regimen; may interfere with efficacy of oral contraceptives. Patients should be advised to use back-up contraception for the duration of treatment
- *For Trichomoniasis:*
 - **Metronidazole** 2 gm oral single dose
 - Safe for adults, pregnant women and adolescents
 - Contraindicated for metronidazole allergy
 - Metronidazole has an Antabuse effect. Do not administer if patient has consumed alcohol. Counsel the patient not to consume alcohol during treatment
- *For Hepatitis B*
 - Ages 11-19 years old
 - **Hepatitis B Vaccine** [Engerix B or Recombivax]
 - Engerix B: 10mcg/0.5ml IM
 - OR-
 - Recombivax 5 mcg/0.5 ml IM
 - Adults > 19 years old
 - Engerix B: 20 mcg/1 ml IM
 - OR-
 - Recombivax: 10 mcg/1ml IM
 - Indicated for Hepatitis B prophylaxis
 - Safe for adults and children
 - Contraindicated for yeast allergy (very rare)
 - Administer if the patient is known not to be immune or if the patient's status is unknown. Follow-up doses for vaccine should be administered 1-2 and 4-6 months after the first dose
- *Emergency contraception (EC)*
 - EC is indicated within 120 hours post- assault but should be administered as soon as possible post-assault to maximize efficacy
 - All female sexual assault patients should be offered information about the option of EC at the time of the initial post sexual assault visit
 - Baseline testing should be offered. However, if the patient does not consent to be tested for pregnancy, she should still be offered EC, as there are no contraindications in cases of rape

Managing STDs in the Correctional Setting: A Guide for Clinicians

- Progestin-only products are known to cause less side effects such as nausea and vomiting and are also known to be the most effective type of EC
- Levonorgestrel is the frequently used product that is FDA approved for use as EC
 - **Levonorgestrel** 1.5 mg oral, single dose
 - If EC pills are taken when the woman is pregnant or if pregnancy occurs despite use, they will not harm the developing fetus
 - Contraindicated if known established pregnancy reported by the patient or known hypersensitivity to any component of the product.
 - According to the World Health Organization, there are no restrictions for use of EC in the case of rape
 - Although not common with progestin-only EC, nausea and vomiting may occur. If vomiting occurs within 2 hours of administration, an antiemetic may be considered, and the EC dose should be repeated
- *Recommendations for post-exposure HIV assessment/treatment of adults ideally within 36 hours but not beyond 72 hours of sexual assault*
 - If possible, assess risk for HIV infection in the assailant
 - Evaluate characteristics of the assault event (type of sexual encounter: anal sex, vaginal sex, mucosal tears, use of barrier methods; also HIV status of assailant, if available) that might increase risk for HIV transmission
 - If PEP is being considered, consult with a specialist in HIV treatment prior to initiating antiretroviral therapy (ARV) since the choice of ARV regimen can be somewhat complicated
 - If the patient appears to be at risk for HIV transmission from the assault, discuss antiretroviral prophylaxis, including toxicity and lack of proven benefit
 - If the patient chooses to start antiretroviral PEP, provide enough medication to last until the next return visit; reevaluate the patient 3-7 days after initial assessment and assess tolerance of medications
 - If PEP is started, perform CBC and serum chemistry (including liver function tests) at baseline (initiation of PEP should not be delayed, pending results)
 - Perform HIV antibody test at original assessment; repeat at 6 weeks, 3 months, and 6 months
- *Side effect management*
 - Considering the combination of antibiotics, emergency contraception, and possibly antiretrovirals the patient may be receiving; pre-treating with an antiemetic 30 minutes prior to medication administration should be considered
- *CDC follow-up recommendations for post sexual assault medical examinations*
 - After the initial post-assault examination, follow-up examinations provide opportunity to:

Managing STDs in the Correctional Setting: A Guide for Clinicians

- Detect new infections acquired during or after the assault
 - Examination for STDs can be repeated within 1-2 weeks of the assault
 - Since infectious agents acquired through assault might not have produced sufficient concentrations of organisms to result in positive test results at the initial examination, testing can be repeated during the follow-up visit, unless prophylactic treatment was provided
 - If treatment was provided, testing should be conducted only if the patient reports symptoms
 - If treatment was not provided, follow-up examination should be conducted within 1 week to ensure that results of positive tests can be discussed and that treatment is provided
 - Serologic tests for syphilis and HIV can be repeated 6 weeks, 3 months, and 6 months after the assault if initial test results were negative and infection in the assailant is unknown
- Complete hepatitis B vaccination, if indicated
- Complete counseling and treatment for other STDs
- Monitor side effects and adherence to post exposure prophylactic medication, if prescribed

Summary of the Prison Rape Elimination Act of 2003 and Its Relevance to STD's

The Prison Rape Elimination Act of 2003 (PREA) was signed into federal law on September 4, 2003. It is the first act of Congress to address the issue of sexual assault of the incarcerated population. Congress summarizes that the intent of PREA is “to provide for the analysis of the incidence and effects of prison rape in Federal, State, and local institutions and to provide information, resources, recommendations, and funding to protect individuals from prison rape.”

The authors note there has been insufficient research and insufficient data reported on prison rape. At highest risk for sexual assault are the mentally ill and the juvenile population (who are five times more likely if housed in an adult facility). Prison rape is often not reported and victims get insufficient if not any treatment. Congress found that correctional staff was not properly trained to prevent or manage a sexual assault. Rape increases violence against inmates, staff, and outside communities, as well as incurs physical and psychological effects that impair the ability to function in society. Public health risks include spread of sexually transmitted diseases and increases in medical and mental health care expenditures.

In *Farmer v. Brennan*, (1994), the Supreme Court ruled that the ignorance of substantial sexual assault risk constitutes deliberate indifference and violates prisoners' rights under the Cruel and Unusual Punishments Clause of the Eighth Amendment. PREA was to “establish a zero-tolerance standard for the incidence of prison rape in prisons in the United States”. Reduction in medical and mental health costs were also a goal of the act. Reduction in the spread of STD's is therefore an inherent goal though not formally noted in the Act.

The Act created the National Prison Rape Reduction Commission which performed a “factual study of the penological, physical, mental, medical, social, and economic impacts of prison rape in the United States” including an assessment as to what extent prison rape contributes to the spread of HIV and other sexually transmitted diseases. Based on the report from the commission, a set of national standards was adopted regarding the prevention, detection, reduction, and punishment of prison rape, as well as a possible list of improvements for consideration by correctional facilities. Correctional accreditation organizations that receive federal funds are required to adopt these standards.

The standards are at http://nprec.us/publication/standards/adult_prisons_and_jails/ Archived: 15:52:26 Aug 20, 2009. They are divided into addressing Adult Prisons and Jails, Lockups, Juvenile Facilities, and Community Corrections standards. Each standard is subdivided into “Prevention and Response Planning”, “Prevention”, “Detection and Response”, “Monitoring”, and supplemental appendices. The standards are organized into mandatory Standard Statements, and a discussion that is for guidance and not mandatory. The “Detection and Response” chapter includes Standards for Medical and Mental Health Care. Depending on the agency, these can include Medical and Mental Health Screenings – History of Sexual Abuse, Access to Emergency Medical and Mental Health Services, and Ongoing Medical and Mental Health Care for Sexual Abuse Victims and Abusers. Discussion about and screening for STD's of both the perpetrator and victim are found in “Ongoing Medical and Mental Health care” standard, recommending screening for HIV, viral hepatitis and other STD's.

Chapter Six:

Prevention and Public Health

Not only should incarcerated individuals be provided quality STD/HIV and viral hepatitis screening and treatment services but, in addition, harm reduction education and interventions. These services should be developed through collaborations between correctional and public health agencies or associations, academia and other community partners. Services may take many forms: screening or testing and treatment; disease specific counseling for infected individuals including partner management; risk reduction counseling; education about prevalence of disease, signs, symptoms and transmission; and/or providing vaccines or condoms. These prevention activities vary across the country not only in facility type (short term vs. long term) but by who these services are provided.

Besides looking at what types of prevention services may be provided, we should also consider the reason why they are especially important for this population both during and following incarceration. Even though the desired belief is that inmates are not engaging in risk behaviors behind bars (unprotected sexual intercourse, tattooing, drug use), the reality is that these activities do occur and place incarcerated individuals at risk for HIV/STDs/Hepatitis transmission. While difficult to quantify or even estimate the level of these activities, studies have shown that sexual activity occurs during incarceration and in-custody transmission of STDs including syphilis, hepatitis B, and HIV have been documented.^{1,2,3,4}

COUNSELING

Counseling inmates on risk reduction is both appropriate and necessary, not only to protect the patient while in custody, but to encourage persistence of these health behaviors long after release.⁵ Being imprisoned by itself, is a risk reduction strategy whereby opportunities to engage in such activities are diminished but not obliterated.⁶ In fact, one could consider the risk is higher since inmate populations have a higher prevalence of STD's and bloodborne pathogens. If the patient has sex with another inmate (consensual, coerced, or forced), they may have a higher likelihood of contracting an infection than if they were out of custody. It is essential that risk reduction strategies are integrated in programs designed to prepare the inmate for release back into society. Upon release, the patient may lose some of the support systems they enjoyed while

¹ Jafa, K., McElroy, P., et. al. "HIV transmission in a state prison system, 1988-2005" PLoS ONE 4(5): e5416.

² Macalino, GE., Vlahov, D., et.al. Prevalence and incidence of HIV, HBV, and HCV infections among males in Rhode Island prisons. American Journal of Public Health 2004; 94(7): 1218-1223.

³ Taussig, J., Shouse, R. L., et al. Centers for Disease Control and Prevention. HIV transmission among male inmates in a state prison system- Georgia, 1992-2005. Morbidity and Mortality Weekly Report 2006;55(15):421-426.

⁴ Wolfe, MI, Xu, F., et al. An outbreak of syphilis in Alabama prisons: Correctional health policy and communicable disease control. American Journal of Public Health 2001;91(8):1220-1225

⁵ Zack B. HIV Prevention: Behavioral interventions in correctional settings in Public Health Behind Bars-- From Prisons to Communities. R. B. Greifinger;New York, Springer Science+Business Media, 2007

⁶ Gough E, Kempf MC, Graham L, et al. HIV and hepatitis B and C incidence rates in US correctional populations and high risk groups: a systematic review and meta-analysis. BMC Public Health;10:777.

Managing STDs in the Correctional Setting: A Guide for Clinicians

incarcerated, and they often return to communities where the risk behaviors are prevalent and encouraged. Non-medical interventions such as housing, employment, and financial security are often influential factors that can affect the patient's ability to maintain their reduction in risk behaviors. Additionally, any mental health or addiction disorders need to be addressed and managed concordantly, as these conditions put the patient at higher risk of engaging in risk behaviors and hinder maintenance if the patient has been able to achieve risk reduction. By treating the patient as a whole, their needs can be more concisely met and the programs are rendered more effective, thereby reducing the risk for everyone inside and outside.

Risk reduction counseling itself differs greatly in correctional facilities. We no longer can rely on the mantra of "practice safe sex" when all the paraphernalia needed to practice is considered contraband in most states and jurisdictions. Custody enforces the statute that sex is illegal and a violation of rules and regulations. Some correctional personnel may even believe those who don't abide by those rules should suffer the potential consequences including the acquisition of hepatitis C, HIV or any other STD. Such infections, or the lack of treatment of them, should not be seen as part of the punishment. Once released, these infections could be spread to others in the community.

Studies have suggested that risk reduction interventions work most effectively early in the incarceration period.⁷ Most often it is the younger or newer inmates that are at higher risk as they are adjusting to a new place with new situations. They may be acting out of rebellion or trying to find a way to fit in and have not yet realized that they could be caught and the punishment that follows hasn't been experienced yet. Though all may benefit from risk reduction strategies, many long-term inmates may not demonstrate significant risk reduction as they no longer participate in illicit behaviors or have developed other strategies to minimize risk based on years of prison adaptation.

Typically counseling occurs between an inmate and a medical provider or other health professional either at the time of providing voluntary testing and or at time of test positive notification and/or treatment. The clinician can also provide individual counseling when the patient requests an exam or testing for a suspected infection. While taking the history, the clinician can educate the patient of how certain infections are transmitted and assess their risk behaviors. Basic signs and symptoms of other STD/bloodborne infections can be reviewed with the patient to inform them what they are, and to possibly uncover any occult co-infection. All individuals who seek STD, hepatitis C or HIV testing should be encouraged to undergo testing for the other said infections, as these are commonly diagnosed in conjunction with one another.

Once the results are available, the clinician can take the opportunity not only to provide treatment (if necessary), but to further advise risk reductions strategies so to protect the patient from becoming susceptible in the future.

In counseling a patient about any lifestyle change, assessing their willingness to change can direct the conversation to what is relevant to the patient, thereby making the session more effective for the counselor and the patient. Borrowing from Transtheoretical Model (a.k.a. Stages of Change model), the stages of precontemplation, contemplation, action, maintenance and relapse can be applied to any behavioral change including risk reduction. By assessing a patient's individual risk for exposure, the clinician can assess the

⁷ RAB Lubelczyk, PD Friedmann, SC Lemon, MD Stein, DR Gerstein. HIV Prevention Services in Correctional Drug Treatment Programs: Do They Change Risk Behaviors? AIDS Education and Prevention 2002: 14(2); 117-125.

Managing STDs in the Correctional Setting: A Guide for Clinicians

patient's stage of readiness and work on goal setting.⁸ Further training in this is available through the Behavioral Intervention STD/HIV Prevention Training Center in Rochester at www.CHBT.org. For STD's and other infections, the precontemplative patient may only be ready for general health information. Perhaps they could start to personalize how they and their families would be impacted if they were infected. Once a patient becomes contemplative, they are more open to discussion about why they think they should avoid risk and what barriers they may need to overcome. The active patient can start developing and implementing a plan for change, often one small step at a time. In order to maintain risk reduction, the patient needs avoid situations that may put them at risk, and negotiate with themselves how they will act if the risky situation is unavoidable. The patient that relapses needs reassurance that although they have put themselves at risk, it is still imperative that they continue to work on their health behaviors. A relapse (or risky event) does not mean failure and the clinician should provide encouragement and support.

Resources

A number of evidence based models are available www.effectiveinterventions.org, including:

- Project START Project START is an individual-level, multi-session intervention for people being released from a correctional facility and returning to the community. It is based on the conceptual framework of Incremental Risk Reduction, and focuses on increasing clients' awareness of their HIV, STD, and hepatitis risk behaviors after release and providing them with tools and resources to reduce their risk.
- RESPECT is an individual, client-focused, interactive HIV and STD risk reduction counseling model based on Project RESPECT- that evaluated a 2-session and 4-session counseling interventions utilizing the RESPECT protocol, and found that risk taking behaviors were reduced in both counseling models. Delivery of brief didactic prevention messages were also evaluated, but did not result in significant behavior changes.

PARTNER SERVICES

Partner services (PS) / partner counseling and referral services / partner notification^{9,10,11} for sexual or drug-injection partners and social contacts (usually in the community) is often indicated in order to locate and treat others with the same STD, as well as to identify persons at-risk for other STDs/HIV, who can then be offered testing, education and risk reduction counseling, to reduce the general burden of STDs/HIV in the community.

⁸ PA Coury-Doniger et al. Introducing Rochester STD/HIV Behavioral Counseling: A method of Stage Based Behavioral Counseling. Center for Health and Behavioral Training, Rochester, NY 2000.

⁹ Centers for Disease Control and Prevention. Recommendations for partner services programs for HIV infection, syphilis, gonorrhea, and chlamydial infection. MMWR 2008;57(No. RR-9)

¹⁰ Centers for Disease Control and Prevention. Sexually Transmitted Diseases Treatment Guidelines, 2010. MMWR 2010;59(RR-12):11-12

¹¹ Passin, W.F. et al. A systematic review of HIV partner counseling and referral services: client and provider attitudes, preferences, practices, and experiences. Sex Transm Dis 2006;33(5), 320-9

Managing STDs in the Correctional Setting: A Guide for Clinicians

There are eight essential principles that form the foundation of Partner Services delivery. Partner Services is client centered/client focused; confidential; voluntary and non-coercive; free; evidence based; culturally, linguistically, and developmentally appropriate; accessible and available to all; and comprehensive and integrative -- part of an array of medical, prevention and case management services for persons with HIV infection or other STDs and their partners.

Five partner services referral strategies include:

1. **Provider referral:** whereby a health-department based disease intervention specialist (DIS) confidentially notifies a partner or a social contact of possible exposure to STD/HIV. In partner services, the term *provider* is used for the DIS.
2. **Third-party referral:** when a professional other than a health department staff (e.g., a correctional physician) notifies a partner or social contact of exposure to STD/HIV.
3. **Self-referral:** when an infected patient accepts full responsibility for informing a partner or social contact of possible exposure to STD/HIV and referring the partner or social contact to appropriate services. A partner services provider or third party correctional clinician helps the index patient determine when, where, and how to notify the partner or social contact as well as how to prepare for potential reactions. This process is also known as patient referral.
4. **Dual referral:** when an infected patient, together with a provider (a partner services provider or third party) notifies a partner or social contact of possible exposure to SDT/HIV. The strategy allows the provider to give direct support to the infected patient during the notification process and offer the partner or social contact immediate access to counseling, testing, and other information resources (e.g., referrals).
5. **Contract referral:** when an infected patient identifies a specific partner or social contact to notify of possible exposure to STD/HIV and agrees to do so within a specific time frame, with the understanding that if notification does not occur within the designated time frame, the partner services provider or third party will notify the partner or social contact.

Evidence supports provider referral over patient (self) referral. Partner services are usually provided by the public health department, and taking advantage of their expertise and local knowledge is advantageous when available. Collaborations between correctional health and public health departments are recommended to develop protocols and agreements that outline roles and practices, and to provide training for the component of partner services to be provided by correctional health staff. Laws and regulations on partner notification vary by state. Several states require that practitioners warn persons known to be at risk for infections with a communicable disease, and others permit, but do not require, practitioners to warn persons at risk. Planning should include the possibility that partners might include other inmates, correctional facility staff, or visitors and the relevant legal concerns. (Also see Sexual Assault).

Partner services and state regulations may also differ on HIV infection, syphilis, and other STDs,

Managing STDs in the Correctional Setting: A Guide for Clinicians

from state to state. The CDC recommends that partner services programs should offer services to

- All persons with newly diagnosed or reported early syphilis and/or HIV infection.
- If resources permit, the same is recommended for gonorrhea, and for chlamydia.

High priority index patients with chlamydia and gonorrhea include:

- Men with pregnant partners,
- Pregnant women,
- Persons engaging in behaviors with substantial risk of transmission to multiple partners, persons co-infected with HIV and other STDs, and
- Persons with recurrent STDs.

The recommended period from which sexual partners are considered exposed and sought out also varies according to the time of exposure to the index case:

- 60 days before symptoms or diagnosis of gonorrhea and chlamydia in the index case,
- 3 months plus duration of symptoms of primary syphilis,
- 6 months plus duration of symptoms of secondary syphilis, and
- 12 months before diagnosis of early latent syphilis.

Referral to a Partner Services Provider (e.g., disease intervention specialist) can be done effectively by correctional health staff with a simple “opt-out” introduction to meeting with the Partner Services Provider included in the client-centered, non-judgmental discussion of treatment and risk reduction. For example: “A Disease Intervention Specialist will meet with you soon, and you can discuss other concerns you might have about your partners with her/him.”

A Partner Services Provider is specially trained to talk with patients and their partners about STDs/HIV, other medical information, how to reduce their risk, and how to notify sexual and/or drug-injection partners. Partner Services Providers will talk with patients about their options, and help patients set up a plan for partners who need to be notified, offered testing, and referral services.

Partner Services works best when partners are informed of their exposure as soon as possible. This helps quickly reduce the spread of infection to other people, from the patient and their partners. Notification should be prompt and in private, though this may be hindered in the correctional setting.

The health and safety of patients and their partners are very important. If the patient does not feel comfortable talking with their partners because they are concerned that their partner might hurt them, it is important not to tell them about an STD/HIV exposure, or at least wait until a later time until the situation can be reassessed. Partner Services Providers are trained to work with situations like this and can be a great resource for patients.

Patients can also notify their partners about exposure to STD/HIV using an anonymous online service called inSPOT (www.inspot.org). InSPOT is a website-based STD/HIV partner notification service that lets people anonymously notify their sex partners via email about their exposure and that they should seek STD/HIV testing and/or medical care. The website also lets people enter their ZIP code and find a testing location of their choice.

Managing STDs in the Correctional Setting: A Guide for Clinicians

Self-referral: patients are more successful at notifying partners if specific methods and content are discussed and practiced, including coaching on communicating clearly the name of the infection, where partners can go for follow-up health care, avoiding blame (“As my test was positive, I’m worried about your health...”). Possible partner reactions can be discussed and responses practiced for each partner. Notification should be prompt and in private.

Interviewing patients (including partner elicitation) and notification of partners are specialized skills that improve with training. In-depth Partner Services training is available through regional STD/HIV Prevention Training Centers (see appendix), as well, an online manual is available from the Navy and Marine Corps Public Health Center (see references).¹²

Expedited Partner Therapy

In many jurisdictions, health care providers are permitted to practice expedited partner therapy (EPT)¹³ as an alternative partner management strategy for reducing infection and re-infection with chlamydia or gonorrhea. EPT involves health care providers treating the sex partners of patients diagnosed with chlamydia or gonorrhea without previous medical evaluation. EPT is typically accomplished by health care providers providing medication or prescription for medication to patients to give to his/her partner(s). EPT is permitted in an increasing number of states, prohibited, and uncertain in some, and the subject of current legislative consideration in others. Providers can visit www.cdc.gov/std/ept to assess the status of EPT authorization and implementation in their individual jurisdiction and to obtain other materials and resources on the subject. The state health department website may also provide state-specific information and supporting materials.

Any medication or prescription provided for EPT should be accompanied by written materials that contain:

- Treatment instructions, including length of time to avoid sexual activity
- Appropriate warnings about taking medications (if the partner is pregnant or has an allergy to the medication) and side effects;
- General health counseling and risk reduction messages;
- A statement advising that partners seek personal medical evaluation, particularly women with symptoms of STDs or pelvic inflammatory disease (PID), and testing for other STDs/HIV.

Single dose oral medication is recommended.

No studies have been published involving EPT for gonorrhea or chlamydia among men who have sex with men (MSM).

EPT is not recommended for the routine management of patients with syphilis.

¹² Navy and Marine Corps Public Health Center. *HIV-STI Prevention: Sexual Partner Services*, Technical Manual NEHC–TM–HP-6100.02 C. 4/17/2009 at: http://www-nehc.med.navy.mil/downloads/sexual_health/pcrs.pdf

¹³ Centers for Disease Control and Prevention. *Expedited partner therapy in the management of sexually transmitted diseases*. Atlanta, GA: US Department of Health and Human Services, 2006

HEALTH EDUCATION

Many facilities have a health education program that usually includes risk behavior counseling around behaviors (e.g. sex, substance abuse, tattooing) or specific diseases (e.g. STDs, HIV, and hepatitis C). Patients may attend these because of personal experience, curiosity, knowledge of someone infected, or to get “good time. The effectiveness of these models differs by their specific design. For instance, active programs designed for groups or individuals seem to influence patient more than passive booklets or posters (which are still important to start the patient thinking about their own level of risk). Studies suggest it is less important which risk behavior is the focus, but rather the way reduction strategies are delivered. Because of the environment, patients are wary from whom they get their information. Peer educators are generally welcomed, as well as members of the local health department, other community groups, AIDS organizations, and the facility’s health care staff. Many facilities have correctional sponsored, closed-circuit television channels (“inmate TV.”) where educational programs and videos can be easily shown to a great number of the general patient population.

OTHER METHODS FOR HEPATITIS/HIV/STD PREVENTION

Correctional facilities can prevent STDs by treating within institution prevalent cases and vaccinating against vaccine preventable infections such as hepatitis B¹⁴ (see Chapter 4). Post exposure prophylaxis (HIV, hepatitis B) should be available in corrections, and education regarding its availability is appropriate. Vaccination against human papilloma virus may be provided in juvenile detention facilities. Additionally, CDC recommends offering voluntary HIV testing in correctional settings..

The World Health Organization (WHO), the United Nations Office on Drugs and Crime (UNODC), and United Nations AIDS Program (UNAIDS) issued in 2007 recommendations that incarcerated persons should have access to the same public health prevention services for STDs and HIV that are available in the broader community. This recommendation includes education on STD and HIV prevalence, transmission, prevention, symptoms, and treatment.¹⁵ According to the 2007 WHO guidance, condoms are the “single, most efficient, available technology to reduce the sexual transmission of HIV and other sexually transmitted diseases” and should be “discreetly available such that all inmates can access them without being observed by staff or other inmates and without having to ask for them.”¹³

In the U.S., condoms are available in the Los Angeles, San Francisco, New York, Philadelphia, and Washington D.C. jails, and in Mississippi and Vermont prisons. Of particular note is that where jails and prisons have instituted programs for providing condoms, they have maintained these programs.^{16,17} In fact,

¹⁴ Centers for Disease Control and Prevention. Prevention and control of infections with hepatitis viruses in correctional settings. *MMWR Recomm Rep* 2003;52(RR-1):1-36

¹⁵ World Health Organization, UN Office on Drugs and Crime, UNAIDS. Interventions to address HIV in prisons: Prevention of sexual transmission. Evidence for action technical paper 10 June 2007. Available at : http://www.who.int/hiv/iduOMS_E4Acomrehensive_WEB.pdf Retrieved 11 November 2010.

¹⁶ Hammett, T., Harmon, P., et al. 1996-1997 Update: HIV/AIDS, STDS and TB in Correctional Facilities. U.S. Department of Justice, 1999.

¹⁷ May, JP, Williams, EL. Acceptability of condom availability in a U.S. jail. *AIDS Education and Prevention*. 2002;14(Suppl.

Managing STDs in the Correctional Setting: A Guide for Clinicians

they would not maintain their programs if the availability of condoms was associated with safety and security threats or drug trafficking. The methods of distribution vary and include models such as: provision by public health nurses after an individual medical counseling session or as part of a discharge packet; provision by outside agencies after health education sessions or HIV testing and counseling; or purchased through the commissary.

In 2006, the CDC released a report documenting HIV seroconversion during incarceration in the GA prison system in which they recommended that condom programs be piloted and evaluated for effectiveness in jails and prisons.¹⁸ In the most recent HIV Guidelines for Corrections, the CDC recommended that those facilities with existing condoms programs evaluate and report on their efforts and that those without an existing program consider the feasibility of establishing one.¹⁹ The first condom dispensing machine in a US jail was installed in San Francisco. Pre/post evaluation of the installation showed that condom availability did not increase sexual activity and that access to condoms was acceptable to correctional staff.²⁰

CONTINUITY OF CARE

The vast majority of incarcerated people return home, even from prisons. About 11 million pass through jails nationally each year, and often are briefly incarcerated. Given that treatment of most STDs requires follow-up visits, it is important that care be continued whether the patient is still incarcerated or not. Risk reduction education, testing for reinfection (recommended for chlamydia and gonorrhea at 3 months), further evaluation of problems encountered during STD evaluation, other health care problems besides STDs frequently require care to continue after reentry into the community. Long recognized in public health and in the current reentry initiatives, multiple other domains (such as housing, education, employment, family role) are key to health and wellness, often taking precedence over health care as such.^{21,22,23}

Several discrete program elements have been successful at promoting continuity of care:

1. Collaboration with the community programs and public health departments.²⁴

B):85-91.

¹⁸ Centers for Disease Control and Prevention. HIV Transmission Among Male Inmates in a State Prison System—Georgia, 1992-2005. *Morbidity and Mortality Weekly Report*, 2006;55:421-426

¹⁹ Centers for Disease Control and Prevention. HIV Testing Implementation Guidance – Correctional Settings. January 2009: 1-38. Available at: <http://www.cdc.gov/hiv/topicstesting/resources/guidelines/corectinal-settings>. Last accessed 2 July 2009.

²⁰ Sylla, M., Harawa, N., et al. The first condom machine in a US jail: the challenge of harm reduction in a law and order environment. *American Journal of Public Health* 2010;100(6): 982-985.

²¹ Travis J, Solomon AL, Waul M. From prison to home: The dimensions and consequences of prisoner re-entry. Washington, DC: The Urban Institute Justice Policy Center; 2001 June 2001.

²² Re-Entry Policy Council. Report of the Re-Entry Policy Council: Charting the Safe and Successful Return of Prisoners to the Community. New York: Re-Entry Policy Council; 2004 December 2004.

²³ National Commission on Correctional Health Care and National Institute of Justice. The Health Status of Soon-to-be-Released Inmates: A Report to Congress. Washington, DC, United States Department of Justice, 2002.

²⁴ Kent, C. K. and G. A. Bolan. Controlling chlamydia, gonorrhea, and syphilis through targeted screening and treatment in correctional settings. *Public Health Behind Bars-- From Prisons to Communities*. R. B. Greifinger. New York, Springer Science+Business Media, 2007.

Managing STDs in the Correctional Setting: A Guide for Clinicians

2. Case management.
3. Personal connection with health care worker before discharge.
4. Dually based health care workers who work with patients/clients both in the corrections program and are available in the community. This addresses elements 2 and 3 and brings a community perspective into the correctional institution, and vice versa
5. Schedule of appointments for follow-up health care in the community. This basic step was found to be a leading predictor of follow-up and was rated as very helpful by patients with chronic health conditions released from jail.
6. Written information on the care plan for the patient that clearly states the purpose, at the appropriate literacy level, and includes anticipatory problem-solving strategies (i.e. what to do if financial coverage for services is not in place).²⁵
7. A prepared summary record of important health information, medications, allergies, diagnostic studies, vaccinations, and other important data available to the community health provider at, or prior to, the first visit. Electronic health records can assist this process. Electronic transfer between compatible or shared systems has been implemented in some locations.
8. Medical benefits at release. Given the critical nature of the first days and weeks post release, avoiding gaps in services is important, and having necessary benefits available promptly upon release is key, not just for medical care and medications, but for other requirements such as food, housing and transportation.
9. Outreach to locate the patients in need of medical follow-up, as described in the section on collaborations with public health departments.

DISEASE REPORTING

Reporting of newly diagnosed infectious diseases is required in every state in the country. All medical providers, including those providing care within a correctional setting must report as required either by state statute and/or regulation. There may be some variability by state, but in general all states require notification when a case of infectious disease has been diagnosed and/or treated. This is true for the most common STDs (chlamydia, gonorrhea and syphilis) as most state and local STD programs generally adhere to the national notifiable STD case definitions as developed by the Council of State and Territorial Epidemiologists and the National Centers for Disease Control and Prevention (CDC). The specific data elements required may vary by state but generally the name, age or date of birth, race and gender are required as well as the specific disease diagnosed, laboratory findings, and/or whether the individual has been treated. In some states, the specific treatment provided is also required.

The responsible health authority, who oversees the quality, accessibility, and timeliness of health care services, should ensure reporting protocols are in place to assure accurate, timely and complete reporting to the appropriate entity (county, state, township). Dependent on the type (short term vs. long term) and/or the size of the facility, the duty may be the physician who diagnosed and/or treated the individual, the

²⁵ Mellow, J. Written health informational needs for reentry. *Public Health Behind Bars-- From Prisons to Communities*. R. B. Greifinger. New York, Springer Science+Business Media, 2007.

Managing STDs in the Correctional Setting: A Guide for Clinicians

supervising physician or medical director, the infectious disease nurse, or an administrator. A system for periodically monitoring adherence to required reporting protocols should be developed.

Timely, complete and accurate reporting of STDs among persons in the correctional setting is important in order to demonstrate the burden of disease in the community, assist public health programs to target efforts in the community and to ensure correct and appropriate treatment of these infectious diseases.

PUBLIC HEALTH DEPARTMENT PARTNERSHIPS

Collaboration between corrections and community public health programs is important in decreasing burden of infection in those incarcerated and among the general public. However, there are marked variations in the structure of public health and correctional systems throughout the country. Some states have public health systems providing considerable direct patient care and services, whereas in other states the direct service role is much more limited. Regardless of the model, public health and the health of the incarcerated are best served by collaborative efforts.^{26, 27}

Public health departments have a mandate to prevent illness in the general population. Public health departments work with correctional facilities to address health needs of their inmates, thereby advancing public health in the community, and corrections should be proactive in these initiatives.^{28, 29} Corrections and community-based organizations (CBOs), in turn, need to collaborate to served shared patients and clients (though traditionally at different times) and their families.

Public health department and corrections collaborations can include:

- Educational programs
- Other prevention programs
- Testing/screening
- Case reporting
- Information/records
- Counseling
- Partner services/notification
- Outbreak investigation
- Treatment/prophylaxis
- Discharge planning
- Staff training
- Policy and program design

²⁶ Re-Entry Policy Council. Report of the Re-Entry Policy Council: Charting the Safe and Successful Return of Prisoners to the Community. New York: Re-Entry Policy Council; 2004 December 2004.

²⁷ Lincoln, T., J. R. Miles, S. Scheibel. Community health and public health collaborations. *Public Health Behind Bars-- From Prisons to Communities*. R. B. Greifinger. 2007:New York, Springer Science+Business Media.

²⁸ Hammett TM. Public health/corrections collaborations: Prevention and treatment of HIV/AIDS, STDs and TB. Washington, D.C.: U. S. Department of Justice, Office of Justice Programs, National Institute of Justice; 1998.

²⁹ Klein SJ, O'Connell DA, Devore BS, Wright LN, Birkhead GS. Building an HIV continuum for inmates: New York State's criminal justice initiative. *AIDS Educ Prev* 2002;14(5 Suppl B):114-23.

Managing STDs in the Correctional Setting: A Guide for Clinicians

Some practical examples of collaboration to improve disease control in different locales include:

- Special arrangement to speed up test processing and test result communication.^{30, 31}
- consultation for access to STD data to determine whether asymptomatic reactive syphilis serology represents treated or untreated disease
- Health department and correctional site receipt of test results simultaneously and shared release status information such that the health department can start locating the patient immediately if released.^{32, 33}
- For patients who were not located and treated, an alert is placed in the jail and STD clinic medical record to indicate that, if the patient returns to the site, he or she should be automatically treated³⁴

One national review of public health and corrections identified and recommended further implementation of four key facilitators of collaboration:

1. Public health agency collection and dissemination of data on the burden of infectious disease in inmate populations.
2. Correctional representation in HIV (and STD) planning groups.
3. Public health agency funding for services and staff in correctional facilities.
4. Recognition of the importance and benefits of interventions in corrections to the health of the greater community.³⁵

In the 14 years since that was written, significant action along these lines has occurred, yet much remains to be done.³⁶

³⁰ Kent CK, Bolan, GA. Controlling chlamydia, gonorrhea, and syphilis through targeted screening and treatment in correctional settings in *Public Health Behind Bars-- From Prisons to Communities*. Greifinger. 2007: New York, Springer Science+Business Media.

³¹ Kahn, R. H., R. Joesoef, et al. Overview of Sexually Transmitted Diseases. *Clinical Practice in Correctional Medicine*. M. Papis. Philadelphia, PA, 2006: Mosby: 175-181.

³² Kent CK, Bolan, GA. Controlling chlamydia, gonorrhea, and syphilis through targeted screening and treatment in correctional settings in *Public Health Behind Bars-- From Prisons to Communities*. R.B. Greifinger. 2007: New York, Springer Science+Business Media.

³³ Gift, T. L., T. Lincoln, et al. A cost-effectiveness evaluation of a jail-based chlamydia screening program for men and its impact on their partners in the community. *Sexually Transmitted Diseases* 2006;33(10): S103–S110.

³⁴ Kent CK, Bolan, GA. Controlling chlamydia, gonorrhea, and syphilis through targeted screening and treatment in correctional settings in *Public Health Behind Bars-- From Prisons to Communities*. R.B. Greifinger. 2007: New York, Springer Science+Business Media.

³⁵ Hammett TM. Public health/corrections collaborations: Prevention and treatment of HIV/AIDS, STDs and TB. Washington, D.C.: U. S. Department of Justice, Office of Justice Programs, National Institute of Justice; 1998.

³⁶ Chow, J. M., M. R. Joesoef, et al. Responding to the burden of STD, HIV, and viral hepatitis in correctional populations through program collaboration and integration. *Sex Transm Dis* 2009;36(2 Suppl): S1-2.

Appendix A

Selected Websites:

STDs

- National Network of STD/HIV Prevention Training Centers: www.stdhivpreventiontraining.org
- The Practitioner's Handbook for the Management of Sexually Transmitted Disease. Published by the Seattle STD/HIV Prevention Training Center. Available on the internet at www.STDhandbook.org
- 2010 STD Treatment Guidelines: <http://www.cdc.gov/STD/treatment/2010>
- Centers for Disease Control and Prevention STD site: <http://www.cdc.gov/std>
- American Social Health Association: www.ashastd.org
- National Coalition of STD Directors: <http://www.ncsddc.org/>
- Planned Parenthood: Sexually Transmitted Diseases: <http://www.plannedparenthood.org/health-topics/stds-hiv-safer-sex-101.htm>
- Hepatitis A, B, and C Prevention Programs (at National Alliance of State and Territorial AIDS Directors (NASTAD)): <http://www.hepprograms.org>
- Syphilis Algorithms, California STD/HIV PTC: <http://www.stdhivtraining.org/>

Hepatitis, Vaccines

- Centers for Disease Control and Prevention Hepatitis site: <http://www.cdc.gov/hepatitis>
- Immunization Action Coalition: <http://www.immunize.org>

Correctional Health

- American Correctional Health Services Association: <http://www.achsa.org>
- Centers for Disease Control and Prevention Correctional Health site: <http://www.cdc.gov/correctionalhealth>
- National Commission of Correctional Health Care: <http://www.ncchc.org>
- Society of Correctional Physicians: <http://www.corrdocs.org>

Appendix B

National Coalition of STD Directors 2010 - 2011 Full Members

Alabama

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