

Managing STD's in the Correctional Setting

An Overview of the “Guide for
Clinicians- 2006”

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Why? Because STDs cause...

From mild acute illness, to serious long term consequences including:

- increased transmission of HIV
- infertility
- ectopic pregnancy
- chronic pelvic pain
- cancer
- liver disease
- nervous system damage or death to the newborn
- ...and they are transmitted

Economic Impact of STDs

CDC estimates:

- 19 million STD infections, including HIV and other non notifiable STDs, occur each year.
- Direct medical costs of approx. \$13 billion annually.

Frequently Encountered STD's in STD Guide

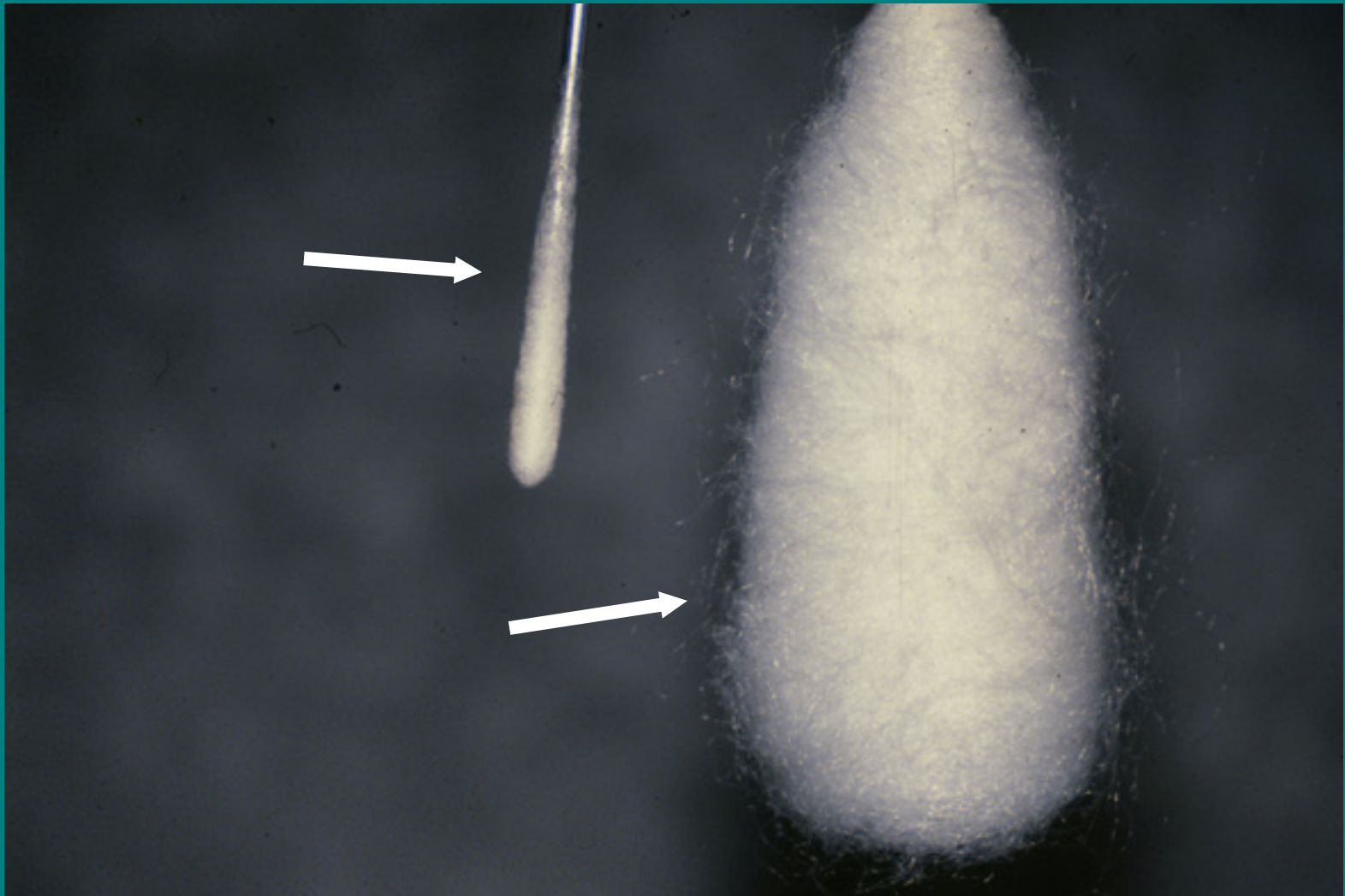
- Syphilis
- Gonorrhea
- Chlamydia
- Trichomonas
- Herpes Simplex Virus
- Genital Warts

Screening for STDs in Corrections

- Standard of care. NCCCHC, APHA, ACA guidelines- within 7-14 days
- Should be integrated into intake process
- Should reflect local prevalence and impact
- Urine nucleic acid amplification tests (NAATs) are a convenient, accurate tool for gonorrhea and chlamydia testing in corrections
- Risk assessment at intake to guide further testing and counseling (e.g. HIV)

Nucleic Acid Amplification Tests

- NAATs amplify and detect organism-specific genomic or plasmid DNA or rRNA
- FDA cleared for urethral swabs from men/women, cervical swabs from women, and urine from both
- Commercially available NAATs include:
 - Becton Dickinson *BDProbeTec*®
 - Gen-Probe *AmpCT, Aptima*®
 - Roche *Amplicor*®
- Significantly more sensitive than other tests





Screening for STDs in Corrections (cont'd)

- Men:
 - Chlamydia: targeted, such as age <25-30 or partner in past 60 days, >1 partner, partner with STD, or evaluating symptoms/urine leuks
 - Gonorrhea: symptoms, in setting of chlamydia, urine leukocytes. Facility rates give guidance.
 - Syphilis: all (driven by impact and elimination goal and statutes)
 - HIV

Screening for STDs in Corrections (cont'd)

- Women:
 - Chlamydia: all vs. targeted, such as age <30 or partner in past 60 days, >1 partner, partner with STD. Facility rates give guidance.
 - Gonorrhea: as for chlamydia
 - Syphilis: all (driven by impact and elimination goal). 12.5% of USA syphilis dx'd in corrections
 - Cervical dysplasia (primarily caused by HPV)
 - Trichomonas- some centers report rates of 40-50%
 - HIV

Chlamydia — Prevalence by age, adult corrections facilities, 2005 (preliminary)



Note: Percent positivity is presented from facilities reporting > 100 test results.

Source: CDC Corrections Prevalence Monitoring Project

Chlamydia — Prevalence by age, juvenile corrections facilities, 2005 (preliminary)

Women

Positivity

Men

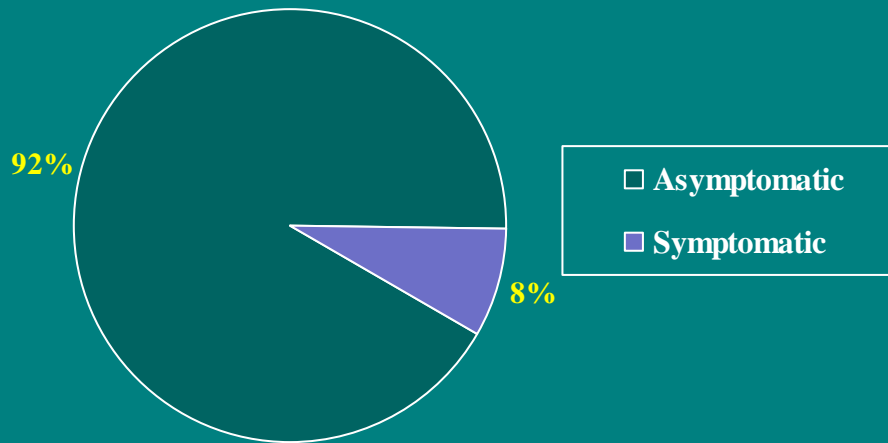


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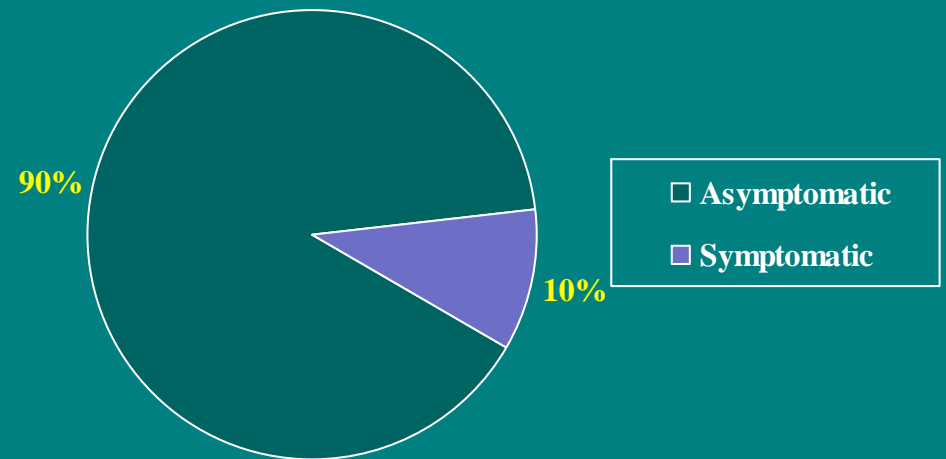
Source: CDC Corrections Prevalence Monitoring Project

Percentage of adolescents with chlamydia that report symptoms from juvenile correctional facilities, 2002-2004

**Adolescent women with chlamydia
(n=2,766)**



**Adolescent men with chlamydia
(n=2,731)**



Source: CDC Corrections Prevalence Monitoring Project

Diagnosis and Treatment

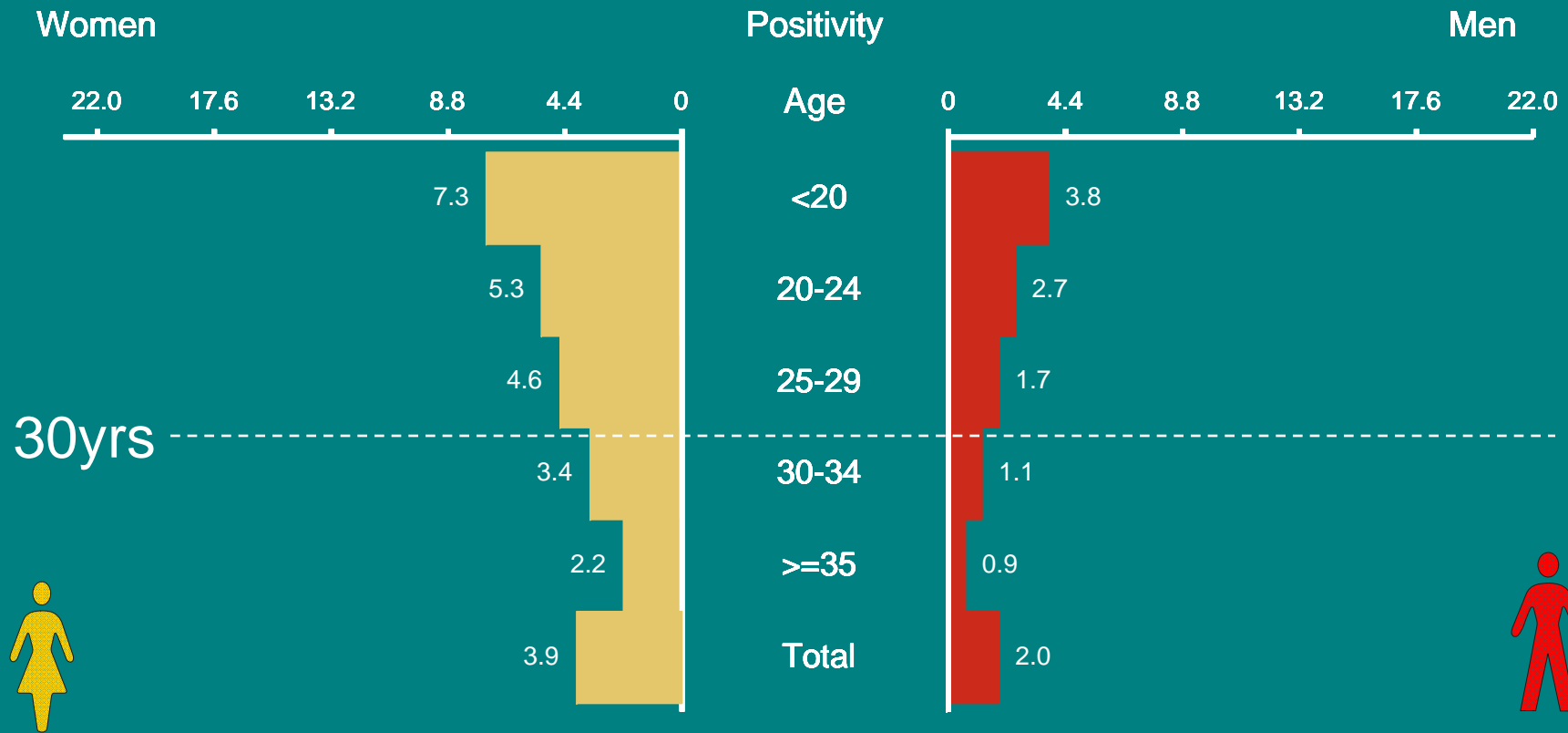
Glossary of Chlamydia Tests

- Culture – needs live organism
- Enzyme Immuno Assay (EIA) – non-live organism, low sensitivity
- Direct Fluorescent Antibody (DFA) – non-live organism, time consuming
- Non amplified NA Hybridization Assay (DNA probe) – low sensitivity
- NAAT – most sensitive tests on the market (sens 90%; spec 99%)

Diagnosis and Treatment Glossary of Chlamydia Tests

- Cervix – any test, NAAT preferred because of high sensitivity
- Male Urethra- any test, NAAT preferred
- Urine – NAAT only
- Rectum- culture or DFA, (NAAT with CLIA validation)
- Medical- legal – culture only

Gonorrhea — Prevalence by age, adult corrections facilities, 2005 (preliminary)



Note: Percent positivity is presented from facilities reporting > 100 test results.

Source: CDC Corrections Prevalence Monitoring Project

Gonorrhea — Prevalence by age, juvenile corrections facilities, 2005 (preliminary)



Note: Percent positivity is presented from facilities reporting > 100 test results.

Source: CDC Corrections Prevalence Monitoring Project

Diagnosis and Treatment

Glossary of *N. gonorrhoeae* Tests

- Gram Stain- most reliable in symptomatic males, not cervical or pharyngeal
- Culture – complicated, 100% specific, sensitivity 70-90%
- EIA/DFA – rarely used
- NANA Hybridization Assay – sens 85-90%; spec 95-100%
- NAAT – sens 94-100%; spec over 99%

Diagnosis and Treatment

Glossary of *N. gonorrhoeae* Tests

- Cervix – culture or nucleic acid methods
- Male urethra – culture or nucleic acid methods, g/s in symptomatic men
- Urine – NAATs only
- Rectum – culture only
- Pharynx – culture only
- Medical-legal – culture only

Primary and secondary syphilis — Rates by sex: United States, 1981–2004 and the Healthy People 2010 target



Note: The Healthy People 2010 target for P&S syphilis is 0.2 case per 100,000 population.

Atlanta ranked 2nd highest city at 35 cases per 100,000 population. San Francisco 46/100k.

Primary and secondary syphilis — Age- and sex-specific rates: United States, 2004



Source: CDC/NCHSTP 2001 STD Surveillance Report

Serologic Tests for Syphilis

- Two types:
 - Nontreponemal (qualitative and quantitative)
 - Treponemal (qualitative)
- The use of only one type of serologic test is insufficient for diagnosis.

Nontreponemal Serologic Tests

- Principles
 - Measure antibody directed against a cardiolipin-
lecithin-cholesterol antigen
 - Not specific for *T. pallidum*
 - Titers usually correlate with disease activity and results
are reported quantitatively
 - May be reactive for life
- Nontreponemal tests include VDRL, RPR,
TRUST, USR

Nontreponemal Serologic Tests (continued)

Advantages:

- Rapid and inexpensive
- Easy to perform and can be done in clinic or office
- Quantitative
- Used to follow response to therapy
- Can be used to evaluate possible reinfection

Disadvantages:

- May be insensitive in certain stages
- False-positive reactions may occur
- Prozone effect may cause a false-negative reaction (rare)

Treponemal Serologic Tests

- Principles
 - Measure antibody directed against *T. pallidum* antigens
 - Qualitative
 - Usually reactive for life
- Treponemal tests include TP-PA, FTA-ABS, EIA

Latent Syphilis

- Host suppresses the infection enough so that no lesions are clinically apparent
- Only evidence is positive serologic test for syphilis
- May occur between primary and secondary stages, between secondary relapses, and after secondary stage
- Categories:
 - Early latent: <1 year duration
 - Late latent: ≥ 1 year duration
 - Latent of unknown duration (manage as Late)

Early vs. Late Latent Syphilis

- Criteria for early latent syphilis:
 - Documented seroconversion or 4-fold increase in comparison with a serologic titer obtained within the year preceding the evaluation
 - Unequivocal symptoms of primary or secondary syphilis reported by patient in past 12 months
 - Contact to an infectious case of syphilis past 12 months
 - Only possible exposure occurred within past 12 months
- Patients with latent syphilis of unknown duration should be managed clinically as if they have late latent syphilis.



Syphilis Tests

- Primary syphilis
 - Nontreponemal tests (NT) not yet reactive in 25%
 - Treponemal test (TT) may be more sensitive
- Secondary syphilis, both are reactive
- Prozone effect: no visible reaction if antibody concentration very high- request further dilution
- Latent syphilis is positive NT and TT without symptoms
- NT titers decrease over time after treatment. TT usually positive for life.

Indications for Cerebrospinal Fluid and Ocular Slit-lamp Examinations

- Patients with syphilis who demonstrate any of the following criteria should have a prompt CSF evaluation:
 - Neurologic or ophthalmic signs or symptoms,
 - Evidence of active tertiary syphilis (e.g., aortitis, gumma, and iritis),
 - Treatment failure, or
 - HIV infection with late latent syphilis or syphilis of unknown duration.

Diagnostic Assessment and Management Algorithms

Genital Ulcer Disease

[Male Urethral Discharge](#)

Pelvic Inflammatory Disease

Vaginal Complaints

2006 STD Treatment Guidelines MMWR 8/4/06



2006 STD Treatment Guidelines- changes

- STD prevention approaches
 - Role of *Mycoplasma genitalium* and trichomoniasis in urethritis/cervicitis
 - Difficult to diagnose these in men
 - Azithro over doxycyline for *M. genitalium*
- Azithromycin for chlamydial infections in pregnancy, better than amoxicillin
 - Meatitis and mod/severe dysuria- think herpes simplex, adenovirus
 - Retest ~3 months after chlamydia treatment in women, and probably men
 - Gonorrhea treatment: ceftriaxone. Cefixime still in guidelines as generic suspension available, cefpidoxime 400mg also an alternative (guidelines note in trial, not pharyngeal). If cephalosporin allergic, ?azithro 2g or desensitize

2006 STD Treatment Guidelines- changes

➤ Vaginitis:

– New tests:

- Affirm VP III- DNA probe: bacterial vaginosis, trichomoniasis, Candida albicans. 45 min.
- QuickVue- bacterial vaginosis
- Pip Activity- “ “
- OSOM- point of care for trichomonas. 10 min.
- Some (not FDA-cleared commercial lab PCR for trichomonas)

– Bacterial vaginosis: 2g vaginal metronidazole x1 no longer an option

– Trichomonas:

- Wet prep ~60% sensitive.
- Tinidazole now also recommended, regimen for resistant. Failing this, can send to CDC for resistance testing

2006 STD Treatment Guidelines- changes

- Scabies: lindane moved to alternative. Permethrin or ivermectin recommended, especially ivermectin for contacts, or whole population at risk if epidemic.
- Emergence of lymphogranuloma venereum proctocolitis among men who have sex with men (MSM)
- Patient-delivered therapy, a form of expedited partner therapy (EPT)
- Syphilis: criteria for spinal fluid examination, azithromycin resistance
- Increasing prevalence of quinolone-resistant *Neisseria gonorrhoeae* in MSM and others. More expected.
- Revised discussion concerning the sexual transmission of hepatitis C
- Post-exposure prophylaxis after sexual assault: HepB vaccine, Rx for chlamydia, gonorrhea, trichomonas, bacterial vaginosis, and offer emergency contraception

Hepatitis B Vaccination

The 1st vaccine preventable
STD

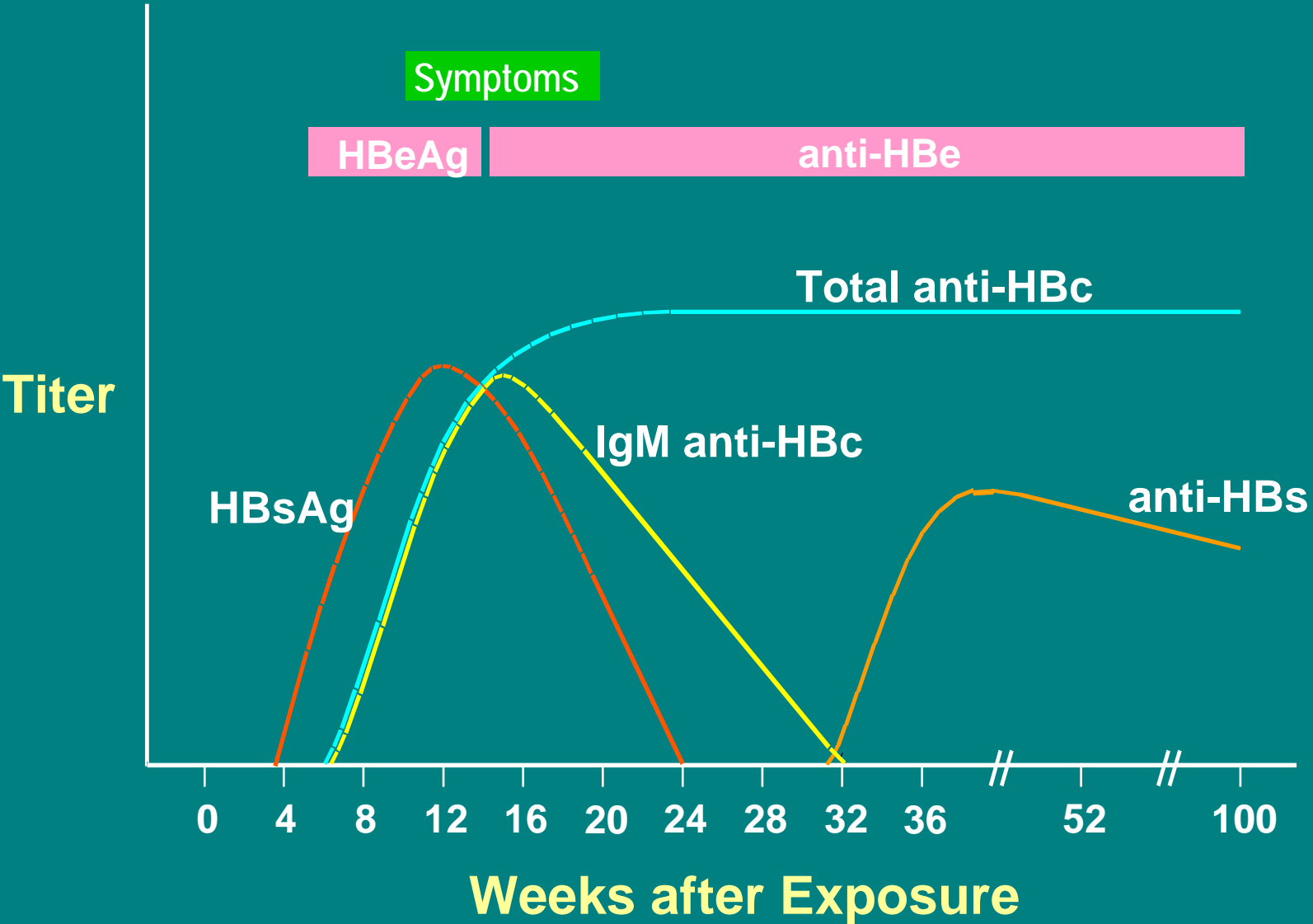
Hepatitis B Vaccination and Interpretation of Serology

- Primary reservoir is the chronically infected who are not symptomatic
- 2% jail/prison population estimated to have chronic hepatitis B
- 12-15% of chronic hepatitis B in US are released from corrections yearly

Hepatitis B Vaccination and Interpretation of Serology

- Negative Hepatitis B Panel – no exposure, not immune
- If HBsAg +, patient is infected, check IgM anti-HBc for acute or chronic, and LFTs
- If anti-HBs +, anti-HBc +, patient was exposed, infection cleared, immune
- If anti-HBs+, anti-HBc -, patient was vaccinated, immune

Acute Hepatitis B Virus Infection with Recovery Typical Serologic Course



Hepatitis B Vaccination and Interpretation of Serology

- What if only the anti-HBc is positive?
 1. Recovering acute HBV infection (“window”)
 2. Resolved distant HBV – more likely to occur in hepatitis C or HIV co-infection
 3. False positive (especially low risk populations)
 4. Chronic HBV without detectable HBsAg
 - Vaccination is usually only indicated for #3. Some divergence of opinion.

Hepatitis B Vaccination and Interpretation of Serology

- Hepatitis B vaccination is recommended for those in correctional settings unless immune
- Even a single dose can confer immunity, can be resumed if interrupted
- 0, 1-2, 4 month schedule recommended for adults incarcerated <6 months
- Many younger inmates may have been vaccinated prior to adolescence
- Immunization record to patient upon release and transfer of immunization records

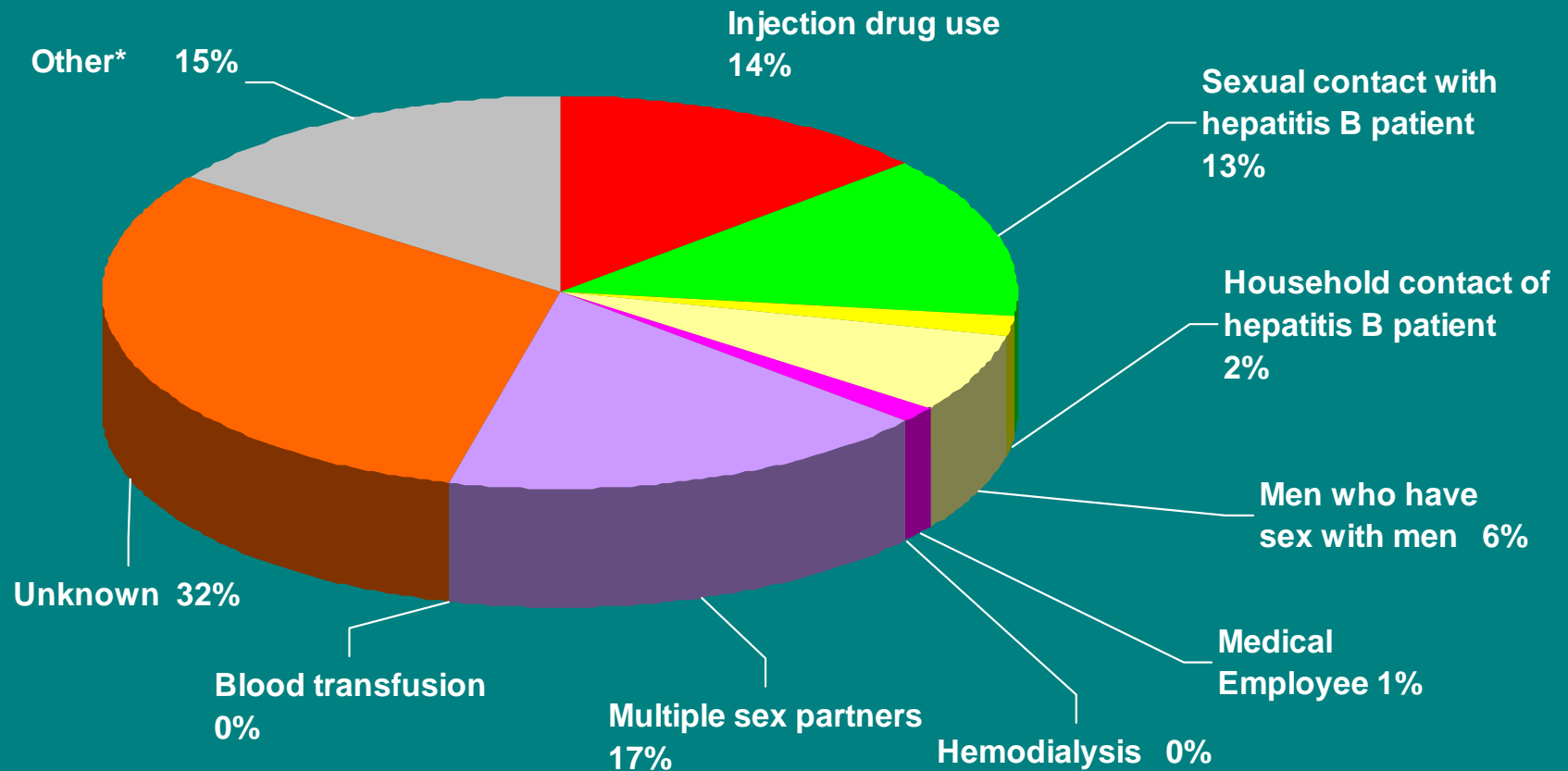
Hep B Vaccine: National Recommendations

- 1) Infants, ages 11-15 “catch up”, and thru age 18 (VFC)
 - 2) Over 18 – high risk:
 - Occupational risk (HCWs)
 - Hemodialysis
 - Multiple sex partners (>1 in past 6mo)
 - Prior STD
 - MSM
 - IDU
 - HIV, hep C, other liver disease
 - 3) High risk sites:
 - STD clinics
 - HIV C&T sites
 - **Correctional settings**
 - Substance abuse treatment programs
 - Institutions for developmental disability
- Pre-vaccination HepBcore if cost effective, typical > 25-30%
 - Post-vaccination testing if response critical (HCW, HIV, hemodialysis, partners). 1-2 months after last shot

Hepatitis B Vaccination and Interpretation of Serology

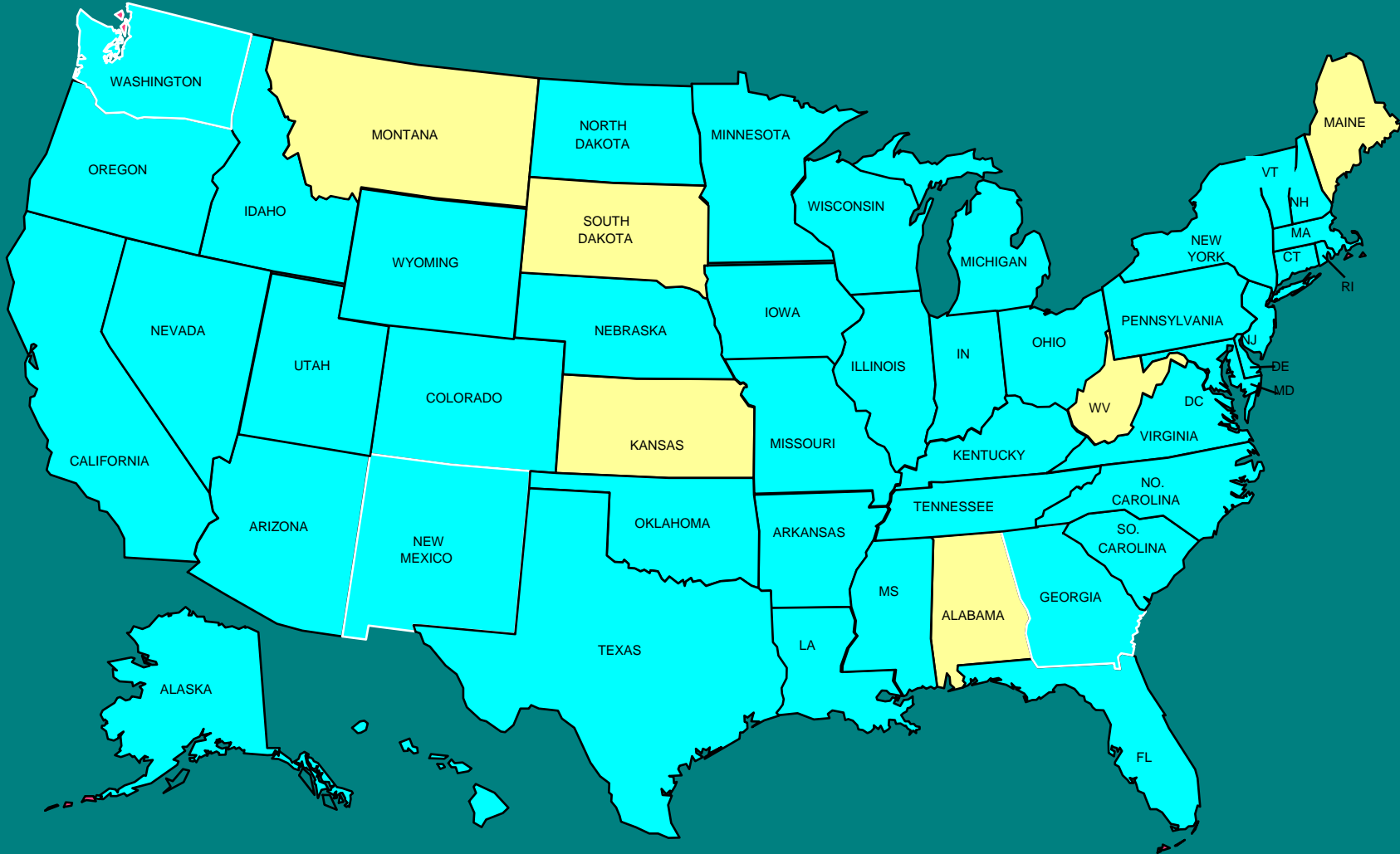
- Check HBV serology in those with HIV, hepatitis C and other liver disease, as well as those with risk factors
- Checking immunity prior to vaccination is not likely to be cost effective except if there is a high prevalence (>25-30%)
- In HIV, hemodialysis, and sex partners of chronic HBV persons, check response to vaccine 1-3 months after series with anti-HBs
- In acute HBV, an epidemiologic investigation is warranted

Risk Factors Associated with Reported Hepatitis B, 1990-2000, USA

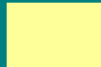


*Other: Surgery, dental surgery, acupuncture, tattoo, other percutaneous injury

Hepatitis B Vaccine School Entry Laws, 2003



Implemented



No School Entry Laws

Hep B: post-exposure prophylaxis

- After any percutaneous (e.g., sharing injection-drug equipment or human bite) or mucosal (e.g., sexual) exposure to blood
- If not immune, start (or continue) hep B vaccination immediately
- If the source person is HBsAg-positive, HBIG should be administered to the exposed person as soon as possible and ≤ 7 days after the exposure

Continuity of Care

- Vast majority of the incarcerated return home
- The treatment of most STDs requires follow-up visits
- Addressing other health care problems besides STDs is frequently needed
- Partner services (contact notification)

Continuity of Care

- Successful program elements
 - Collaboration with the community and DPH
 - Case management
 - Contact with health care worker before d/c
 - Dually based health care workers
 - Schedule community appointments
 - Prepare a summary record (electronic record)
 - Medical benefits upon release

6 partner management strategies:

1. Patient (self) referral- patient informs partner(s) and refers to services
2. Provider notification- with consent, the health provider notifies partners and treats or refers to services
3. Provider referral- with consent, trained health department personnel (DIS) confidentially locate, notify partners and refer to services/treat
4. Contract referral- provider and patient decide on time by which the patient will contact and refer partner (should be <7d). If pt unable to complete, then provider has consent and info needed to follow-up with the partner.
5. Dual referral- patient chooses to have provider and self present when the partner is informed.
6. Patient-provided treatment (expedited partner therapy)

Which partner management process do you think has the most success in notifying partners?

✓ Provider Referral

Meta-analysis of partner notification effectiveness research (Macke, Am J Prev Med 1999) reviewed outcomes of research studies on partner notification concluded:

- “fair evidence that provider referral generally ensures that more partners are notified and medically evaluated than does self (patient) referral”
- “good evidence that partner notification is a means of newly detecting infections”

Appendices In STD Handbook

- Appendix A : References and Resources
- Appendix B: Web Site Links for Health Department STD Programs
- Appendix C: Patient Handouts in English and in Spanish

Good Resources

- National Network STD/HIV Prevention Training Center website:
 - *The Practitioner's Handbook for the Management of Sexually Transmitted Disease*
 - STD case studies, slide sets, photo library, curriculum, and more
- *STD Clinical Intensive Continuing Medical Education Module*- an online course at: <http://www.bu.edu/cme/std/>
- CDC website:
 - Sexually Transmitted Diseases Treatment Guidelines, 2006 (MMWR R&R 8/4/06)
 - Hepatitis in Corrections (MMWR R&R 1/24/03),
 - Correctional Health Care section, STDs
- *Clinical Practice in Correctional Medicine*. M. Puisis editor, Mosby, 2nd edition, 2006.

To request copies of handbook:

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Available on-line at:

[http://www.mass.gov/dph/cdc/stdtcmai/clinicians_
managing_std.pdf](http://www.mass.gov/dph/cdc/stdtcmai/clinicians_managing_std.pdf)

Questions?
Suggestions?

