Treatment Recommendations for STIs
2014  2015 Guidelines

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No Disclosures
Overview

• Screening
  – USPSTF CT and GC
  – STI in MSM (early syphilis, rectal GC, LGV)

• New Directions
  – Emerging Issues (MG, HCV)
  – Treatment concerns (GC, CT)
  – Syphilis – NS definition, reverse testing algorithm
  – HPV management
  – Trichomonas management
Clinical Prevention Guidance

- Behavioral and biologic risk assessment
- High intensity behavioral counseling (USPSTF)
- Pre-exposure vaccination (HPV, HAV, HBV)
- Male latex condoms
- Male circumcision
- Microbicides
- Emergency contraception
- **Preexposure prophylaxis for HIV**
- Retesting after treatment
Pre-exposure prophylaxis (PrEP)

- Trial in MSM, persons with HIV+ partners, heterosexuals living in high HIV prevalence areas; IDUs show reduction in risk of HIV by 44-90% with daily use of tenofovir (300 mg)-emtricitabine (200 mg)= (Truvada)
- Truvada is well tolerated
  - tenofovir has been associated with acute and chronic kidney disease and declines in bone mineral density but not increased fractures
- Prior to initiation: HIV test or HIV RNA if recent high risk exposure; serum creatinine and UA; hepatitis B serologies, pregnancy test
- Give 90 day supply and monitor q 3 months HIV/STDs; creatinine; pregnancy
Truvada as HIV PrEP

• When people are adherent, once-daily Truvada taken as PrEP provides up to 92% reduction in risk for HIV acquisition

• Recommended for persons:
  – In ongoing relationships with PLWH
  – Sharing injection drug use equipment
  – With a recent and/or repeat bacterial STIs
  – Having unprotected sex with persons of unknown serostatus
PrEP Program Components

• Screening (risk assessment; insurance coverage)
• HIV Testing (to ensure patient is HIV negative)
• STI Testing and Treatment, Hep A&B vaccination
• Kidney Test
• Risk reduction counseling; condoms
• Side effects and adherence counseling
• 1, 3, 6, 9, and 12 month follow ups
Paying for Truvada as PrEP

- No Income - $138% of FPL: Medicaid
- $139% - $400% of FPL: Private Insurance (Subsidies on the Exchange)
- Underinsured
  - Gilead Co-Pay Program for Truvada (no income requirement)
  - Patient Access Network Co-Pay Program (up to %500 FPL)
- Uninsured
  - Gilead Medication Assistance Program
  - Partnership for Prescription Assistance
Chlamydia and Gonorrhea Screening

• Annual screening of sexually active women <25

• Screening of older women at increased risk
  – New sex partner, partner with concurrent partners or more than one partner, or partner with an STI

• Screening older women at low risk of infection not recommended

• CT screening sexually active men
  – Insufficient evidence for general screening; Consider in high prevalence (adolescent clinics, corrections, STD clinics)

• GC screening in men not recommended
MSM

- Recent or concurrent STI and HIV infection
  - rectal gonorrhea and chlamydia (Bernstein 2010, Pathela 2013)
  - Substance abuse, multiple anonymous partners, sex partners through internet
  - Resources for partner services
  - Educational materials and venues for risk reduction messages
Primary and Secondary Syphilis and HIV—Proportion of MSM* Attending STD Clinics with Primary and Secondary Syphilis Who Are Co-infected with HIV, STD Surveillance Network (SSuN), 2013

*MSM = men who have sex with men.

NOTE: Includes sites that reported data on at least 25 MSM with primary and secondary syphilis in 2013. One jurisdiction (Chicago) contributed data from January through June 2013 and the remaining 6 jurisdictions contributed data for all of 2013.
Proportion of MSM* Attending STD Clinics with Primary and Secondary Syphilis, Gonorrhea or Chlamydia by HIV Status†,
STD Surveillance Network (SSuN), 2013

*MSM = men who have sex with men.
† Excludes all persons for whom there was no laboratory documentation or self-report of HIV status.
‡ GC urethral and CT urethral include results from both urethral and urine specimens.

NOTE: Six jurisdictions (Birmingham, Chicago, Denver, Hartford/New Haven, New Orleans, and Richmond) contributed data from January through June 2013 and the remaining jurisdictions (Baltimore, Los Angeles, New York City, Philadelphia, San Francisco and Seattle) contributed data for all of 2013.
STI Screening in MSM

• Sexually active MSM +/- HIV (at least yearly)
  – Syphilis serology
  – GC/CT NAAT (urine)

• Receptive oral
  – GC NAAT or culture

• Receptive anal
  – CT/GC NAAT

• Hepatitis A, B, C

More frequent STI screening dependent on risk (3-6 mos)
New Section

• Emerging Issues
  – Role of *Mycoplasma genitalium*
    • Evidence of role in NGU (20%); role in cervicitis and PID emerging
    • No commercially available test (in house NAATs)
    • Treatment implications
      – azithromycin>doxycycline
      – Conflicting data on single dose vs extended dosing
      – Emerging resistance to azithromycin
**Mycoplasma genitalium**

- **Observational studies** – DOX (7 studies; AZM (14 studies))
  - Microbiologic cure rates
    - **Doxycycline (7-9 days):** 37% (median); range 17-94%
    - **Azithromycin (1g):** 91% (median); range 69-100%
- **RCTs**

\[
\begin{align*}
\text{Mena 2009} & : & 45\% & \quad \text{(p=0.002)} \\
\text{Schwebke, 2011} & : & 31\% & \quad \text{(p=0.002)} \\
\text{Manhart, 2013} & : & 30\% & \quad \text{(p=0.41)}
\end{align*}
\]

- **Efficacy of AZM is not consistently high and declining**
## Efficacy of moxifloxacin

<table>
<thead>
<tr>
<th>Study</th>
<th>Reason for treatment</th>
<th>Moxifloxacin dose</th>
<th>Micro Cure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bradshaw 2006</td>
<td>AZM 1g treatment failures</td>
<td>400mg x 10 days</td>
<td>9/9 (100%)</td>
</tr>
<tr>
<td>Ross 2006</td>
<td>PID</td>
<td>400mg x 14 days</td>
<td>3/3 (100%)</td>
</tr>
<tr>
<td>Jernberg 2008</td>
<td>STD sx, or partner sx or MG+ or CT+</td>
<td>400mg x 7 days</td>
<td>3/3 (100%)</td>
</tr>
<tr>
<td>Bradshaw 2008</td>
<td>AZM 1g treatment failures</td>
<td>400mg x 14 days</td>
<td>8/8 (100%)</td>
</tr>
<tr>
<td>Terada 2012</td>
<td>Cervicitis</td>
<td>400mg x 7 days</td>
<td>38/42 (91%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>400mg x 14 days</td>
<td>42/42 (100%)</td>
</tr>
<tr>
<td>Twin 2012</td>
<td>AZM 1g treatment failures</td>
<td>400mg x 10 days</td>
<td>77/77 (100%)</td>
</tr>
<tr>
<td>Walker 2013</td>
<td>AZM 1g treatment failures</td>
<td>400mg x 10 days</td>
<td>3/3 (100%)</td>
</tr>
<tr>
<td>Anagrius 2013</td>
<td>AZM 1g treatment failures</td>
<td>400mg x 7 days</td>
<td>9/9 (100%)</td>
</tr>
<tr>
<td>Manhart 2013</td>
<td>Treatment failures (AZM1g, DOX, both)</td>
<td>400mg x 7 days</td>
<td>17/20 (85%)</td>
</tr>
</tbody>
</table>
Emerging Issues

- **Sexually acquired HCV**
  - Unprotected receptive anal intercourse
  - Rough or poorly lubricated unprotected anal penetration (fisting)
  - Ulcerative STIs (syphilis, LGV)

- **Annual screening**
  - MSM +/- HIV infection
  - Yearly testing with repeat test (HCV prevalence, high risk behavior, ulcerative STI or STI-related proctitis)

- **Acute HCV** may be HCV Ab negative (CD4 <200)
  - HCV RNA with new LFT elevation
Urethritis

- GC (5-20%)
- Chlamydia 15-40%
- *M. genitalium* 5-25%
- *Ureaplasma* 0-20%
- *Trichomoniasis* 5-20%
- HSV 15-30%
- Adenovirus
- Enterics, *Candida*
Urethritis

• Diagnosis of urethritis
  – Discharge
  – POC (gram stain $\geq 2$ WBCs, methylene blue or gentian violet) or LE or first void urine
  – IF POC not available, who meet at least one criteria for urethritis, NAAT testing and treated for GC and CT
  – Sx but no signs of inflammation, NAAT testing may identify infection
    • GC or CT treat per recommendations
    • Empiric tx for high risk or unlikely follow-up
GONORRHEA
GISP sites and regional laboratories — United States

University of Washington

Seattle

Portland

San Francisco

Las Vegas

Los Angeles

Orange Co., San Diego

Phoenix

Albuquerque

Denver

Minneapolis

Chicago

Indianapolis

Columbus

Cleveland

Baltimore

Philadelphia

New York City

Greensboro

Cleveland Clinic

Emory University

University of Alabama at Birmingham

Texas Dept. of State Health Services

Honolulu

Tripler AMC

New Orleans

Dallas

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University of Alabama at Birmingham

Texas Dept. of State Health Services
Percentage of Isolates with Elevated Cefixime MICs (≥0.25 μg/ml), United States, 2009–2013*

2010 Treatment Guidelines (Dec): Dual treatment recommended

2012 Update (August): Cefixime no longer recommended

* Preliminary data
Percentage of Isolates with Elevated Ceftriaxone MICs (≥0.125 µg/ml), 2009–2013*

* Preliminary data
Uncomplicated Gonococcal Infections of Cervix, Urethra & Rectum

Ceftriaxone 250 mg as a single intramuscular dose

PLUS

Azithromycin 1 g orally

Alternative:
If Ceftriaxone is not available:
Cefixime 400 mg PLUS azithromycin 1 gram
Proportion of GISP Isolates with Tetracycline Resistance or Elevated Azithromycin MICs (≥2 µg/ml), 2009–2013

- Year 2009: Tetracycline Resistance 0.6%
- Year 2010: Tetracycline Resistance 0.6%
- Year 2011: Tetracycline Resistance 0.6%
- Year 2012: Tetracycline Resistance 0.6%
- Year 2013: Tetracycline Resistance 0.6%
GC Treatment

- No clinical data to support increasing dose of ceftriaxone or azithromycin as part of dual therapy
- Higher ceftriaxone and/or azithromycin doses recommended outside US (UK, Japan) based on modeling not clinical data
- Ceftriaxone treatment failures rare- all outside US
- Azithromycin monotherapy effective not recommended - ease of resistance
- Test of cure not needed after treatment for urogenital or rectal infection (recommended/alternative); recommended for pharynx (alternative)
New Treatment Option

• NIH sponsored RCT (Kirkaldy, CID 2014)
  – Gentamicin 240 mg IM + azithromycin 2 g PO, OR
  – Gemifloxacin 320 mg PO + azithromycin 2 g PO

• Rationale
  – Additive effect, gentamicin and azithromycin *in vitro*
  – Gemifloxacin more active against cipro resistance or GyrA and ParC mutations

<table>
<thead>
<tr>
<th>Location</th>
<th>Gentamicin / Azithromycin</th>
<th>Gemifloxacin / Azithromycin</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n/N</td>
<td>% (L 95% CI)</td>
</tr>
<tr>
<td>Urethra/Cervix</td>
<td>202/202</td>
<td>100% (98.5%)</td>
</tr>
<tr>
<td>Pharynx</td>
<td>10/10</td>
<td>100%</td>
</tr>
<tr>
<td>Rectum</td>
<td>1/1</td>
<td>100%</td>
</tr>
</tbody>
</table>
Suspect Treatment Failures

- Most treatment failure likely due to reinfection
- If tx failure suspect, obtain culture/ susceptibility test
- Treatment
  - If reinfection likely (ceftriaxone/azi); Rx ceftriaxone 250 mg + azithromycin 1 gram
  - If reinfection likely (cefixime/azi), Rx ceftriaxone 250 mg + azithromycin 2 gram
  - If tx failure suspected, Rx gemifloxacin 320 mg + azithromycin 2 g or gentamicin 240 IM + azithromycin 2g
- Report to local or state health department
- Test of cure 7-14 days after retreatment (culture/AST preferred with NAAT)
- Ensure partner tx
CHLAMYDIA
Chlamydia Treatment

- Effectiveness of azithromycin < doxycycline
  - Data from one NGU trial and several rectal infection studies
- Doxycycline delayed release 200 mg tablets (Doryx)
- Amoxicillin moved to alternative regimen in pregnancy
  - In vitro studies demonstrate PCN induces persistent viable noninfectious *Chlamydia* forms that revert to infectious forms after PCN removal (Wyrick)
  - Earlier amoxicillin Rx studies in CT in pregnancy had major limitations
  - RCT by Kacmar et al. showed higher TOC by LCR w/ azithro vs. amox (95% vs. 80%).
Azithro vs. Doxy RCTs using NAAT

Efficacy

- Hillis 1998: 96% (Azithromycin), 95% (Doxycycline)
- Schwebke, 2011: 95% (Azithromycin), 77% (Doxycycline)
- Manhart, 2013: 90% (Azithromycin), 86% (Doxycycline)
Azithro or Doxy for Rectal CT using NAAT

<table>
<thead>
<tr>
<th>REF</th>
<th>CT + Cohort</th>
<th>Rx</th>
<th>TEST</th>
<th>TOC</th>
<th>Limitations</th>
</tr>
</thead>
</table>
| Drummond     | 85 MSM      | Azithro  | PCR       | 21-372 days          | -Retrospective  
                                           -45% tested >12 wks                                                            |
| Steedman     | 68 MSM      | Azithro  | PCR       | Rec >21 days         | -Retrospective  
                                           -Most repeat CT+ sex after Rx  
                                           -1/3 repeat CT+ tested < 21 days                                               |
| Elgalib      | 165 MSM     | Doxy     | SDA/TMA   | Median 45d IQR 34-88d | -Retrospective  
                                           -Long post-Rx test interval  
                                           -Majority rectal CT pts excluded                                               |
| Hathorn      | 82 MSM/women| 42 Azithro | TMA       | Rec 42 days          | -High lost-to-f/u (~50%)  
                                           -Treatment bias in doxy Rx phase                                              |
| Khosropour*  (Unpublished) | 89 MSM  | 69 Azithro | Culture/TMA (majority culture) | 21-42 days | -Retrospective, prelim data (unpublished)  
                                           -Culture less sensitive assay  
                                           -Possible bias of doxy group cultured more                                    |

*Analysis shown restricted to 21-42 day interval (study included testing up to 180 days)
Treatment of Genital Chlamydia Infection

Hocking et al (University of Melbourne)

- **Meta-analysis** of 23 RCTs (through 2012): 1065 individuals treated with azithromycin, 850 with doxycycline
- **Pooled cure rates**: doxy 97.5%, azithro 94.4%
- Pooled estimate favored doxy (2.2% - 2.7% more efficacious) especially in men
- **Conclusion**: doxy marginally superior to azithro
- Caveats in interpreting and comparing RCTs:
  - Differences in when endpoint was measured
  - Only 4 studies were double blind:
  - 20 RCTS – no sample size calculations
  - Most studies performed in high-risk population (generalizability?)
SYPHILIS
Primary and Secondary Syphilis—Rates of Reported Cases by Sex and Male-to-Female Rate Ratios, United States, 1990–2013

Rate (per 100,000 population) vs. Rate Ratio (log scale)

Year

Male Rate
Total Rate
Female Rate
Male-to-Female Rate Ratio


Rate Ratio (log scale): 16:1 8:1 4:1 2:1 1:1
Primary and Secondary Syphilis—Reported Cases* by Stage, Sex, and Sexual Behavior, United States, 2013

*Of the reported male cases of primary and secondary syphilis, 16.9% were missing sex of sex partner information.
†MSW = men who have sex with women only; MSM = men who have sex with men.
Primary and Secondary Syphilis—Reported Cases* by Sex, Sexual Behavior, and Race/Ethnicity, United States, 2013

*Of the reported male cases of primary and secondary syphilis, 16.9% were missing sex of sex partner information; 2.9% of reported male cases with sex of sex partner data were missing race/ethnicity data.

†MSW = men who have sex with women only; MSM = men who have sex with men.
Syphilis

• No *T pallidum* detection tests available

• Serological response to tx (Sena 2011)
  – Stage (earlier stage more likely to decrease 4x)
  – titer (low titer less to decline than higher titer)

• Time between Benz pcn doses (LL)
  – <9 days is best based on limited PK (nonpregnant)
  – 7 days in pregnant women
    • 40% are below treponemicidal levels after 9 days
    • If a dose is missed, the entire series must be restarted
Evaluate clinically, determine if treated for syphilis in the past, assess risk of infection, and administer therapy according to guidelines if not previously treated.

If incubating or primary syphilis is suspected, treat with benzathine penicillin G 2.4 million units IM x 1 and/or repeat in 2-4 weeks.

If at risk for syphilis, repeat RPR in 2 to 4 weeks.
Syphilis Health Check™ Venipuncture

Procedure:

1. Collect Venipuncture Sample (WB, serum, plasma)
2. Dispense 1 Drop of Sample into Sample Port (2 drops if WB or FS)
3. Add 4 Drops of Wash Solution
4. Read Test Device between 10 and 15 Minutes
Syphilis Health Check™ Test Interpretation……

**Negative (Non-Reactive) Valid Test Result**
- Control Line Present
- Test Line Absent
- Full Red color in the sample port

**Preliminary Positive (Reactive) Valid Test Result**
- Control Line Present
- Test Line Present
- Full Red color in the sample port.
Syphilis Treatment
Primary, Secondary, Early Latent

• Penicillin treatment of choice +/- HIV
  – Benz Pcn 2.4 mu IM x 1

• No benefit of additional therapy (Rolfs 1997)
  – Enhanced (IM+oral)

• PCN alternatives
  – Doxycycline, ceftriaxone
  – Azithromycin 2 gm (A2058G mutation/tx failure)
    • MSM>MSW (Su, STD 2012)
    • Do not use in MSM or pregnancy
Evaluation of CNS Involvement

• Clinical signs (neurologic, ocular, auditory, meningitis, stroke) warrant investigation
• CNS invasion in early syphilis +/- HIV is common
  – CSF abnormalities
  – Unknown clinical significance in absence of signs or sx
• Neurosyphilis: CSF tests + reactive RPR + signs/sx
• LP: neuro/ocular sx, serologic treatment failure, tertiary
  – Some studies in HIV+ showed association with CSF abnormalities*
    • RPR ≥ 1:32 and/or CD4 ≤350
  – Unless neurologic signs/sx, value of LP unknown.

* Marra 2004; Libois A, STD 2007; Ghanem CID; Marra CID 2008
HPV Infection

- ACIP HPV vaccine recommendations (MMWR, 2014, Vol 63)
- Podophyllin resin 10-25% (alternative)
  - Case reports of serious systemic toxicity (including death)
  - No clear efficacy benefit when compared with podophyllotoxin
- Case reports of inflammatory responses to imiquimod
  - Worsened inflammatory and autoimmune skin disease
    - psoriasis, vitiligo, and lichenoid dermatoses
- Imiquimod (3.75%) applied daily for genital warts
Risk to Healthcare Workers Treating GW

- HPV DNA can be found in smoke plumes after laser or electrosurgical therapy on EGW, CIN, common warts
- 2 case reports of laryngeal papillomas reported in HCW exposed to smoke plumes during treatment of GW
- Appropriate infection control to prevent possible transmission for anogenital warts and anogenital intraepithelial neoplasias (e.g. CIN) with CO2 laser or electrosurgical procedures (local exhaust ventilation-smoke evacuator)
Anal Cancer Screening

- HPV vaccination of MSM (ACIP 2014)
- Some clinical centers perform anal cytology in high risk populations
- Data are insufficient to recommend routine anal cancer screening with anal cytology
  - More evidence on best screening methods
  - Safety and response to treatment
  - Programmatic considerations
- High risk HPV tests not clinically useful for anal cancer screening (high prevalence of anal HPV infection)
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Bivalent (2vHPV)</th>
<th>Quadrivalent (4vHPV)</th>
<th>9-valent (9vHPV)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand name</td>
<td>Cevarix</td>
<td>Gardasil</td>
<td>Gardasil 9</td>
</tr>
<tr>
<td>VLPs</td>
<td>16,18</td>
<td>6,11,16,18</td>
<td>6,11,16,18,31,33,45,52,58</td>
</tr>
<tr>
<td>Manufacturer</td>
<td>GSK</td>
<td>Merck</td>
<td>Merch</td>
</tr>
<tr>
<td>Manufacturing</td>
<td><em>Trichoplusia ni</em> insect cell line infected with L1 encoding recombinant baculovirus</td>
<td><em>Saccharomyces cerevisiae</em> (Baker’s yeast0, expressing Li</td>
<td><em>Saccharomyces cerevisiae</em> (Baker’s yeast0, expressing Li</td>
</tr>
</tbody>
</table>

- HPV routine vaccination at age 11 or 12
- Gardasil is licensed for males and females
- Also for females 13 through 26 and males 13 through 2, if not previously vaccinated
- Also for MSM through age 26 and for immunocompromised, if not previously vaccinated
- **December 10, 2014 FDA approved for use in females ages 9-26 and males ages 9-15; ACIP also includes males up to 26 in MMWR
Trichomonas Epidemiology

NAAT prevalence of TV, CT, and GC infections among 7593 U.S. women age 18–89, by age group

Ginocchio CC  
**T vaginalis**

- Consider screening of those receiving care in high prevalence settings (STD clinics, corrections) or asymptomatic persons at high risk of infection (multiple sex partners)
  - Lack data on screening/tx to reduce adverse events or disparities
  - Screening decisions informed by epidemiology

**NAATs for diagnostic testing**
- APTIMA *T vaginalis*; BD Probe Tec TV Qx amplified DNA Assay
  - A molecular test-resolved algorithm (negative wet prep followed by NAAT - Aptima TV - sensitivity 87.5–96.6%, specificity of 97.7–100% (Nye)

**Retesting 3 mo after treatment**

- Tx Metronidazole 2 g or Tinidazole 2 gm

- Nitroimidazole resistance 4-10% (Kirkaldy 2012, Schwebke 2006)
### Trichomonas vaginalis and HIV in Women

**TV is an independent risk factor for HIV acquisition**

<table>
<thead>
<tr>
<th>Event</th>
<th>Odds Ratio (CI)</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increases probability of acquiring HIV</td>
<td>OR 2.6 (CI:1.4–4.7)</td>
<td>Hughes, 2012</td>
</tr>
<tr>
<td>More likely to test positive for HIV</td>
<td>HR 2.1 (CI:1.1–4.0)</td>
<td>Mavedzenge, 2010</td>
</tr>
<tr>
<td>Associated with incident HIV</td>
<td>OR 2.7 (CI:1.3–6.0)</td>
<td>Van der Pol, 2008</td>
</tr>
</tbody>
</table>

**Maternal TV is a risk factor for vertical transmission**

<table>
<thead>
<tr>
<th>Event</th>
<th>Relative Risk (CI)</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increases HIV vertical transmission risk</td>
<td>RR 1.7 (CI:1.0–2.9)</td>
<td>Gumbo, 2010</td>
</tr>
</tbody>
</table>
*T vaginalis* and HIV infection

- Women with HIV infection should receive screening at entry to care and annually if sexually active
  - associated with PID (Moodley 2002)
  - Treatment reduces genital HIV shedding (Kissinger 2009, Anderson 2012)

- Longer treatment course better in women
  - metronidazole 500mg BID x7d (vs. 2g)-less TV at TOC/3 mo
    - RR 0.46, CI:0.21–0.98 (Kissinger, 2010)
  - Potential factors- BV infection, arv, changes in vaginal ecology

- No data to recommend extended treatment in men

- Retesting 3 mo after treatment
Bacterial Vaginosis

• Treatment- metronidazole oral or gel, clindamycin cream

• Recurrent BV
  – biweekly suppressive MTZ gel (RCT) for 4-6 mo
  – oral metronidazole followed by boric acid and suppressive metrogel
  – Metronidazole (10-14 days with vaginal gel or oral tablets) or a weeklong course of oral tinidazole (limited data)
  – No data on suppressive tinidazole, oral clindamycin/vaginal cream
  – no support of any available probiotic as adjunctive or replacement therapy to antibiotics in BV

• Awaiting more data
  – Vitamin D deficiency; contraceptives and BV risk
  – *L. crispatus* vaginal capsule (LACTIN-V) for BV prevention
Sexual Assault in Adults

• Initial exam individualized
  – NAAT for GC, CT; NAAT or POC test for trichomonas
  – HIV, syphilis, hepatitis B

• Prophylaxis
  – Empiric tx for GC, CT, trichomonas
  – Emergency contraception
  – Post exposure hepatitis B vaccination
  – HPV vaccination
  – HIV PEP individualized according to risk (algorithm)
Look for the CDC’s 2015 STD Treatment Guidelines on or after June 5!

http://www.cdc.gov/std/