SEXUALLY TRANSMITTED INFECTIONS IN ST LOUIS

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STDS IN ADOLESCENTS

- Sexually active adolescents have the highest rates of GC, Chlamydia and possibly HPV infections as compared to other age groups.
- Estimates are that while teens (15-19 years) represent 25% of the ever sexually active population, they acquire about one-half of new STIs.
- St. Louis has consistently been in the top 5 cities in the country for Chlamydia, gonorrhea and syphilis over the past several years.
STDS IN ST. LOUIS ADOLESCENTS

• Growing HIV rate in ages 13-24, over 30% of the total new HIV infections

• A teen pregnancy rate of 17.6% vs. 12% national average for the 50 largest cities in the US.
WHY ARE ADOLESCENTS AT GREATER RISK OF CONTRACTING STIS?

• Cervical ectopy
• Immature immune system – do not yet have antibodies to certain diseases
• High risk sexual behaviors
• Fewer use barrier contraception
• Barriers to health care services
CERVICAL ECTOPY
DEVELOPMENTAL CHANGES OF FEMALE CERVIX
ADOLESCENTS ESPECIALLY AT RISK

- Men who have sex with men
- Past history of STI
- Early sexual debut
- Lack of condom use
- Multiple sex partners
- Alcohol or drug use
- Sexual abuse or rape
- Sex with older man or woman
- Anal sex
- Exchanging sex for money, drugs, etc.
SO WHAT ABOUT SEXUAL RISK BEHAVIOR IN YOUTH WITH A HISTORY OF ABUSE OR NEGLECT?

• Have consensual sex earlier
• Have more partners
• Higher rates of teen pregnancy- in Missouri 55% have been pregnant at least once by age 21
BARRIERS TO CARE FOR YOUTH

• Cost
• Lack of insurance
• Worries about confidentiality
• Transportation
• Fragmented services
• Disenchantment with adults

Rosenfeld, S et al. Primary Care Experiences and Preferences of urban Youth, J of Pediatric Health Care, 10(4):151-160, 1996.
### CHLAMYDIA (YTD)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Females</th>
<th></th>
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<th></th>
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<th>Percent Change</th>
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<td></td>
<td>2015 Cases</td>
<td>2015 Rate*</td>
<td>2016 Cases</td>
<td>2016 Rate*</td>
<td>Percent Change</td>
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<td>50 to 59</td>
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<td>2016 Rate*</td>
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<td>8833</td>
<td>729.9</td>
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* Rates are annualized

- **Source:** MODHSS, Missouri Health Surveillance Information System
- **Includes** St. Louis City and St. Louis County cases diagnosed between January 1 and November 30.
- **2016 data are provisional as of 12/12/16.**
- **Rates calculated with 2015 population estimates**
### GONORRHEA (YTD)

<table>
<thead>
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<th>Females</th>
<th>2015 Cases</th>
<th>2015 Rate</th>
<th>2016 Cases</th>
<th>2016 Rate</th>
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<table>
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<tr>
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<td>344.4</td>
<td>2635</td>
<td>457.2</td>
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**Total**: 3593 (296.9) 4577 (378.2) 27%

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### EARLY SYPHILIS (YTD)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>2015 Cases</th>
<th>2015 Rate*</th>
<th>2016 Cases</th>
<th>2016 Rate*</th>
<th>Percent Change</th>
</tr>
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<tbody>
<tr>
<td>Females</td>
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</tr>
<tr>
<td>00 to 09</td>
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<td>10 to 14</td>
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<td>30 to 39</td>
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<td>8.4</td>
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<td>N/A</td>
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<tr>
<td>50 to 59</td>
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<tr>
<td>60+</td>
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<td>27</td>
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<table>
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<td>00 to 09</td>
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<td>15 to 19</td>
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<td>150</td>
<td>26.0</td>
<td>229</td>
<td>39.7</td>
<td>53%</td>
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| Total     | 183        | 15.1       | 256        | 21.2       | 40%            |

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TYPES OF STDS: GENITAL ULCERS

• Diagnosis based on history and PE often inaccurate. All patients with genital ulcers should be tested for syphilis and HSV.

• Even after evaluation, at least 25% of patients have no laboratory-confirmed dx.

• More than one STD may be present.

• Genital ulcers increase risk for HIV transmission and acquisition.
HSV: VESICULAR LESIONS
HSV: ULCERATIVE LESIONS
HERPES SIMPLEX VIRUS (HSV)

- Incubation period 2-12 days (avg. 4 days)
- Presentation
  - Single or multiple vesicles on genitals or surrounding skin. Vesicles rupture to form painful, shallow ulcers.
  - Asymptomatic
  - Vaginal discharge
  - Vulvar edema
  - Perineal pain
  - Painful/itchy ulcers and/or vesicles
  - Dyspareunia
  - Urinary outflow obstruction
  - Tender lymphadenopathy
  - Systemic symptoms (e.g. fevers)
HERPES SIMPLEX VIRUS (HSV)

- Perform HSV-PCR or viral culture/typing for first episode, atypical lesions, undiagnosed genital ulcers.
  - Serotypes 1 and 2
  - More than 50 million Americans infected with HSV-2
  - 1.5% of 14-19 year-olds, 10.5% of 20-29 year-olds

- Counseling:
  - Potential for recurrence
  - Sexual transmission & asymptomatic shedding
  - Abstain with symptoms
  - Inform partner
  - Safer sex!
GENITAL HSV: TREATMENT*

- **Systemic antiviral agents control symptoms and signs but do not eradicate latent virus.**
- **First episode** (mean duration 12 d):
  - 7-10 days of acyclovir, famciclovir, valacyclovir
- **Episodic recurrence** (mean duration 4-5 d)
  - 3-5 days of acyclovir or valacyclovir
- **Daily suppressive therapy** (>6 episodes/year):
  - DAILY acyclovir or valacyclovir
  - Reduces but does not eliminate viral shedding.

*Other regimens available
SYPHILIS: CHANCRE
SYPHILIS: CHANCRE
SYPHILIS (*TREPONEMA PALLIDUM*)

- **Primary**: painless ulcer at infection site (chancre). Sharply demarcated border, red smooth base. Incubation period 9-90 days (avg 21 d). Resolves 3-6 wks without rx.
- **Secondary**: Rash, flu-like syndrome, adenopathy, condylomata lata. 6-8 weeks after exposure, 4-10 weeks after onset of chancre.
- **Tertiary**: cardiac (aortitis), neurologic, ophthalmic, auditory, gummas (granulomatous lesions involving skin, soft tissue, viscera, bones).
- **Latent**: asymptomatic. Early latent < 1 year. Late latent > 1 year.
SYPHILIS: GENERALIZED SKIN ERUPTION

CDC teaching files

Seattle STD/HIV Prevention Training Center
Source: Connie Culum, Walter Stamm
SYPHILIS

- **Nontreponemal serologic tests:** VDRL, RPR. If positive, perform titer and treponemal test. Usually becomes negative over time with adequate treatment.

- **Treponemal tests:** FTA-ABS. Most patients remain positive for life even after adequate treatment.

- **Darkfield exam:** specific but insensitive.

- **Treatment:** Intramuscular PCN regimens based on stage of disease

- **LP:** neurologic, ophthalmic, auditory symptoms, tertiary syphilis, titer increases fourfold with rx.

- **Treat sex partners within the last 90 days.**
TYPES OF STDs: VAGINAL DISCHARGE

- Neisseria gonorrhoeae
- Chlamydia trachomatis
- Trichomonas vaginalis
- Bacterial vaginosis
- Candida albicans
VAGINAL DISCHARGE: EXAM

- Discharge: amount, color, odor, consistency
- Cervix: discharge from os, petechiae, edema, friability
  - Surrounding skin/mucosa: erythema, lesions
- Abdominal exam/bimanual exam: if CMT and/or adnexal tenderness, consider PID
URETHRITIS/MALES

- Neisseria gonorrhoeae
- Chlamydia trachomatis
- Mycoplasma genitalium
- Trichomonas vaginalis
- Ureaplasma urealyticum
- Herpes simplex virus
URETHRITIS/MALES

- Presents as discharge, dysuria, occasionally hematuria. Often asymptomatic.
- NGU: *Chlamydia trachomatis* 40-60% of cases.
- Complications include epididymitis, Reiter Syndrome.
- Tests:
  - Amplified DNA test for NG/CT.
GONORRHEA URETHRITIS
VAGINAL DISCHARGE: TESTS

- Amplified DNA probe for GC/CT.
- Wet mount: clue cells, yeast, trichomonads, WBC.
- Trichomonas culture (pouch, rapid PCR)
- pH: $\leq 4.5$ - normal or candida, $>4.5$ - BV or trichomonas infection.
- Whiff test: fishy odor before or after KOH.
CERVICITIS

• Purulent or mucopurulent endocervical exudate visible in canal or on swab and/or

• Friable cervix

• Leukorrhea (>10 WBC/hpf on microscopic examination of vaginal fluid) also usually seen, although not a standardized requirement for diagnosis
CHLAMYDIA

• Most commonly reported STD in the US.
• Prevalence highest in patients ≤ 25 years old.
• Variable manifestations:
  • Women: vaginal discharge, spotting, dysuria, mild abdominal pain, cervicitis.
  • Men: urethritis, epididymitis.
• Asymptomatic infection common, so SCREEN!!
• NAAT can be obtained from urine or cervix
• Treatment:
  • Azithromycin 1 gram po x1
  • Doxycycline 100 mg po BID x7 days
• Sex partners should be treated
GONORRHEA

• Second most commonly reported bacterial STD
• Women: purulent vaginal discharge, urethritis, Bartholinitis or abscess, friable/erythematous cervix. Men: profuse purulent urethral discharge.
• Increasing prevalence of fluoroquinolone-resistant strains across the US → NO CIPRO!!
• Treatment:
  • Ceftriaxone 250 mg IM x1 (no longer 125 mg)
  • Cefixime 400 mg po x1
  • Always co-treat for CT, regardless of CT NAAT result
• Sex partners should be treated
FOLLOW-UP

• Tests-of-cure are no longer recommended.

• Any positive NAATs within 3 weeks of treatment may not be accurate.

• Retesting at three months is recommended especially for chlamydia and gonorrhea to evaluate for reinfection.

• Persistent symptoms may require retesting or alternative evaluation/treatment.
TRICHOMONIASIS
“STRAWBERRY CERVIX”
TRICHOMONIASIS

- Caused by protozoan *Trichomonas vaginalis*.
- Men may have NGU or be asymptomatic
- Infected women have diffuse, malodorous, yellow-green discharge, vulvar irritation. Can be asymptomatic.
- Dx by wet mount (low sensitivity), culture (trich pouch), or PCR (“rapid trich”)
- Treatment:
  - Metronidazole 2 grams po x1 OR
  - Tinidazole 2 grams PO x1 OR
  - Metronidazole 500 mg PO BID for 7 days.
- Sex partners should be treated.
BACTERIAL VAGINOSIS

• Most prevalent cause of vaginal discharge or malodor; replacement of normal Lactobacillus-sp.

• Polymicrobial

• >50% may be asymptomatic

• Not sexually transmitted, but more common in sexually active women

• Thin, white discharge; clue cells on wet mount; ph >4.5, + whiff test

• Rx: metronidazole 500 mg po bid x7 days OR metronidazole gel or clindamycin cream
BV: CLUE CELLS
TYPES OF STDs: EXOPHYTIC PROCESSES

- Genital warts (condylomata acuminata)
- Molluscum contagiosum
- Condylomata lata
- Non-sexually transmitted causes
  - Vestibular papillomatosis
  - Seborrheic keratoses
  - Skin tags
  - Scabies
CONDYLOMA ACUMINATA (GENITAL WARTS)

- 90% HPV types 6, 11
- Incubation period 3 weeks-8 months
- Flat, papular, pedunculated mucosal lesions, commonly around introitus
- Asymptomatic, painful, friable, or pruritic
- Can spread, get very large, distort anatomy, or obstruct urethral meatus
- Eventually most spontaneously regress (slowly), although may persist or recur (30-70%) despite treatment
- Small number undergo malignant transformation
HPV: CONDYLOMA ACCUMINATA
HUMAN PAPILLOMAVIRUS

- Clinical diagnosis
  - Acetic acid not recommended

- Treat with imiquimod or podofilox (patient applied); liquid nitrogen, TCA, surgical/laser removal (provider).
  - Refer mucosal warts for removal.

- Notify partners and reinforce condom use.

- **HPV vaccine is recommended for females and males ages 9-26 years (ideally 11-12 year old)**
  - 3 injections (0,2,6 months)
  - Gardasil: serotypes 6,11,16,18/ Cervarix: serotypes 16, 18
CONDYLOMA LATA
MOLLUSCUM CONTAGIOSUM
ACCESS: WHERE CAN TEENS GO?

• Primary care physician
• Planned Parenthood
• Public STD clinics:
  • City – Connect Care
  • County – North Central Community Health Ctr
• Adolescent Center  314-454-2468
• The SPOT: 4169 Laclede Ave
• The SPOT at Jennings High School
PREVENTION OF STDS