• I have nothing to disclose
OBJECTIVES

- Present current data for “The Big Four” STDs
- Review disease specifics, testing, & treatment
- Test audience via case quizzes
- Time permitting: review & share sexual history tool
- Open forum on community STD challenges (Q & A)
INTERPRETING STD EPIDEMIOLOGIC DATA

• Lane Co. population growth 2010 to 2017 = 6.5%

• STD surveillance: 2010-13; post IPP 2014 - 2015

• CDC treatment regimen changes 2010, 2012, 2015

• Gonorrhea EPT ceased July 2011, restarted 2015

• Walk-in STD clinic closed 2011, reopened late 2014

• Cases vs. rates, case re-classifications, risk strata
WHAT IS THIS STD?
**SYPHILIS – A FEW KEY CONCEPTS**

- Highly infectious
  - Infectious Dose ~57 organisms
  - Attack rate 1/3 (~90% congenital)

- Clinical stages
  - Primary:
    - Painless sore (chancre) at inoculation site
  - Secondary:
    - Rash, fever, lymphadenopathy, malaise
  - Latent: early latent, late latent
  - Tertiary:
    - Dementia, tabes dorsalis, cardiovascular disease, gummas (soft tissue granulomas)
  - Neurosyphilis and ocular syphilis
TREPONEMA PALLIDUM

- Bacterium
  - Spirochete
  - Motile ("corkscrew")
  - Can’t culture in lab
- Transmission
  - Sexual
  - Trans-placental
  - Pericutaneous following contact with infectious lesions
- Blood born
  - Extremely rare
TREPONEMA PALLIDUM

- Spirochaetales
  - Spirochaetaceae
    - Treponema
      - pallidum (syphilis, yaws), carateum (pinta), denticola
    - Borrelia
      - burgdorferii/afzelii (lyme disease), hermsii/duttoni/parkeri (tick-borne relapsing fever)
- Leptospiraceae
  - Leptospira
    - interrogans (leptospirosis)
- Spirillaceae
  - Spirillum
    - minus (rat-bite fever)
REPORTED CASES OF SYPHILIS*, OREGON 2010–2017

*cases staged as primary or secondary
OREGON: EARLY SYPHILIS 2006 - 2018

*Up to July 2018
EARLY SYPHILIS IN WOMEN, OREGON, 2000 – 2018

Think: Congenital syphilis!
*Up until July 2018
LANE COUNTY SYPHILIS: 2018 UPDATE

Incidence by 10 year age groups:

20-29 > 30-39 >> 40-49 or 50-59

*Updated up to July 2018
CONGENITAL SYPHILIS

• Surprising increase across the US

• Increase in Oregon and Lane County

• Concern: rising syphilis cases in women
CS: CLINICAL PRESENTATIONS

- Miscarriage
- Stillbirth
- Prematurity
- Low birth weight
- Elevated infant mortality

Note: Up to 40% of babies born to women with untreated syphilis may be stillborn or die as a newborn.
CS: SPECIFIC NEWBORN IMPACTS

- Bone changes: periostitis, sawtooth metaphysis, sabre shins
- Thrombocytopenia, anemia, leukopenia/cytosis
- Hepatomegaly, splenomegaly
- Jaundice
- CNS: early leptomenengitis, later meningovascular dz, pituitary involvement with hypoglycemia or DI
- Skin rashes (maculopapular on back, buttocks, posterior thighs, soles)
WHY IS SYPHILIS IMPORTANT?

- Disability & death
  - Aortic aneurysm, CAD, aortic insufficiency
  - Meningovascular syphilis (strokes, seizures)
  - General paresis (progressive dementing illness)
  - Tabes dorsalis (spinal cord involvement)
- Facilitates HIV transmission
  - Increases transmission of HIV virus 2-5x
- Congenital infection of fetus
  - Stillbirth, infant death, developmental delays, bone and tooth deformities, paresis, meningitis, deafness
Phil the syphilis sore: LA County mascot for anti-syphilis campaign

Healthy Penis: San Francisco mascot for anti-syphilis campaign
SYPHILIS TESTING: TRADITIONAL ALGORITHM

Traditional Algorithm

Non-treponemal test (e.g., RPR)
- Reactive
- Non-reactive

Treponemal test (e.g., FTA)
- Reactive
  - Syphilis
- Non-reactive
  - Not syphilis
TRADITIONAL ALGORITHM: PROS AND CONS

• Pros
  • Familiar
  • One confirmation test, typically done reflexively, leads to clear result
  • Rapid, inexpensive
  • Recommended by CDC

• Cons
  • Manual
  • Subjective interpretation
  • False-positives
  • False negatives, especially late syphilis
SYPHILIS TESTING: REVERSE ALGORITHM

Reverse Algorithm

- Treponemal test (eg, EIA)
  - Reactive
  - Non-reactive

- Non-Treponemal test (eg, RPR)
  - Reactive
  - Non-reactive

- Not syphilis
  - Second Treponemal Test (e.g., FTA)
    - Reactive
      - Probably syphilis
    - Non-reactive
      - Not syphilis
REVERSE ALGORITHM: PROS AND CONS

• Pros
  • Objective
  • Can be batched for high volume labs
  • Recommended by public health agencies in Europe and Canada
  • More sensitive and more specific...more cases of syphilis diagnosed and treated

• Cons
  • Unfamiliar
  • Cost
  • Complexity – often second confirmatory test needed, not yet typically done reflexively
  • Disfavored by CDC
KNOW YOUR LABORATORY

• Legacy labs: reverse algorithm
• State Public Health Laboratory: traditional algorithm
• Quest Labs: either algorithm, but order carefully
• Interpath Laboratory: reverse algorithm
• NOTE: Some labs “reflex” and some do not
SYPHILIS LESSONS LEARNED

• It’s time to include syphilis on your differential diagnostic lists: Rashes, mucous patches, alopecia, vaginal or anal discharge, solitary oral ulcer

• Know your lab’s testing algorithm: Reverse or traditional algorithm

• Screen high risk more frequently
SYPHILIS LESSONS LEARNED

• If the tinder is allowed to smolder long enough, a fire will surely start.

• Treatment is dependent on disease staging: Primary syphilis treatment is different than treatment for late latent or tertiary syphilis. If you are uncomfortable with staging, please refer the patient.
WHAT IS THIS STI?
LANE COUNTY HIV: 2010 - 2018

**Up to July 2018**
<table>
<thead>
<tr>
<th>Type of Exposure</th>
<th>Risk per 10,000 Exposures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parenteral</strong></td>
<td></td>
</tr>
<tr>
<td>Blood Transfusion</td>
<td>9,250</td>
</tr>
<tr>
<td>Needle-Sharing During Injection Drug Use</td>
<td>63</td>
</tr>
<tr>
<td>Percutaneous (Needle-Stick)</td>
<td>23</td>
</tr>
<tr>
<td><strong>Sexual</strong></td>
<td></td>
</tr>
<tr>
<td>Receptive Anal Intercourse</td>
<td>138</td>
</tr>
<tr>
<td>Insertive Anal Intercourse</td>
<td>11</td>
</tr>
<tr>
<td>Receptive Penile-Vaginal Intercourse</td>
<td>8</td>
</tr>
<tr>
<td>Insertive Penile-Vaginal Intercourse</td>
<td>4</td>
</tr>
<tr>
<td>Receptive Oral Intercourse</td>
<td>Low</td>
</tr>
<tr>
<td>Insertive Oral Intercourse</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
</tr>
<tr>
<td>Biting</td>
<td>Negligible</td>
</tr>
<tr>
<td>Spitting</td>
<td>Negligible</td>
</tr>
<tr>
<td>Throwing Body Fluids (Including Semen or Saliva)</td>
<td>Negligible</td>
</tr>
<tr>
<td>Sharing Sex Toys</td>
<td>Negligible</td>
</tr>
</tbody>
</table>
PrEP: A VALUABLE TOOL

• PrEP = Pre-exposure prophylaxis
• HIV prevention strategy
• 99% effective if taken daily
• Daily TDF + FTC for pre-exposure prophylaxis
• FDA approved in July 2012
• For persons at increased risk of HIV infection
  • Sexual transmission (MSM, discordant couple)
  • Persons who inject drugs (>70% risk reduction)

Consider adding this service to your practice!
HIV LESSONS LEARNED

• Are we overdue for an HIV outbreak?

• What will my HIV slide look like in 3 years?

• PrEP!
WHAT IS THIS STI?
LANE COUNTY GONORRHEA: 2018 UPDATE

Incidence by decile: 20-29 > 30-39 >> 10-19 & 40-49

*Up to July 2018
GONORRHEA LESSONS LEARNED

- Gone, gone gonorrhea? Nope! But........

- Import of adequate treatment: DOC = Ceftriaxone 250mg IM in single dose (Not 125mg, not Levo)

- Import of “dual therapy” for treating GC infection (i.e., Ctx plus 1gm Azith at same time)

- Test the orifice used: Pharynx, rectum, vagina, urethra
GONORRHEA LESSONS LEARNED

• N. gon. resistance no longer present in the USA. (Cefixime 400mg orally in single dose + Azith)

• Expedited Partner Treatment (EPT) for GC is now recommended

• No cephalosporin MICs of concern at this time, but sporadic, high MIC’s for Azith do occur
WHAT IS THIS STI?

Hint: Keratoderma blenorrhagicum

Hint #2: Reiter’s syndrome
REPORTED CASES OF CHLAMYDIA, OREGON 2010–2017

![Graph showing reported cases of chlamydia in Oregon compared to the US from 2010 to 2017. The graph indicates an increase in cases over the years, with Oregon consistently having a higher number of cases per 100,000 population than the US.](image-url)
Chlamydia Reported Cases, by Age and Sex, Oregon 2017

Cases/100,000 population

Age Group (years)


Female  Male

0  1000  2000  3000  4000  5000  6000
LANE COUNTY CHLAMYDIA: 2010 - 2018

Age: 20-29 >> 10-19 >> 30-39 >> 40-49

*Up to July 2018

*Up to July 2018
SCREENING PREGNANT WOMEN

• CDC recommendations
  a.) HIV, syphilis, and HBV for all pregnant women
  b.) Gonorrhea & chlamydia (GC/CT) for those at risk
  c.) Repeat testing as needed

• ACOG recommendations
  a.) HIV, syphilis, HBV, chlamydia for all

• USPSTF
  a.) GC/CT age 24 or less (grade “B”)
  b.) Syphilis for all pregnant women (grade “A”)

CHLAMYDIA LESSONS LEARNED

• Remember partner treatment option (i.e., EPT)

• Remember it frequently travels with gonorrhea

• Remember Reiter’s syndrome: Arthritis, urethritis, conjunctivitis, and keratoderma blenorrhagicum

• Test of cure: No! (unless pregnant, then test at 3 weeks and retest at 3 months [CDC])
RESOURCES

• Taking a sexual history: https://www.cdc.gov/std/treatment/sexualhistory.pdf
• STD diagnosis and treatment: https://www.cdc.gov/std/treatment/default.htm
• National STD curriculum with CME https://www.std.uw.edu
• ACOG toolkit for HPV http://immunizationforwomen.org/toolkit/hpv
• EPT: Expedited Partner Therapy (CDC) https://www.cdc.gov/std/ept/default.htm
THANK YOU!

Patrick F. Luedtke MD, MPH
Senior Public Health Officer

Email: patrick.luedtke@co.lane.or.us

Office: 541-682-8762
OPEN FORUM: Q & A SESSION
THE ABCDs OF STIs

- Access to care
- Behavior
- Communication
- Diagnosis and Treatment
THE ABCDs OF STIs

- **Access:**
  
  - Closure of Public Health clinic in 2011
  
  - The Great Recession: Lost job = lost insurance
  
  - Medicaid expanded, yet access remains limited
THE ABCDS OF STDS

• Behavior
  • Safe sex: 62% of HIV+
  • MSM have unprotected sex (MMWR: November 29, 2013 / 62(47);958-962)
  • Condoms: usage dropped from 1995 to 2010 for all 3 insurance categories (i.e., private, public, none) (Source: CDC National Health Statistics, #60, 10/18/2012)
THE NEW ALPHABET SONG: ABCD-STD

- **Communication**
  - Between PCP and patient (i.e., sexual history)
  - Between PCP and Public Health (i.e., reporting)
  - Between Public Health and the community

- **Diagnosis & Treatment**
  - Missed diagnoses: p. rosea, oral/anal/genital
  - Inappropriate Tx (e.g., Levo, Erythromycin)
  - Missed opportunities to discuss PrEP
IF YOU REMEMBER ONE THING TODAY...

- Test every bodily orifice that is used sexually
- For high risk persons, test every 3 - 4 months
- Syphilis is epidemic in Lane County now
- Differential diagnostic lists should now include select STDs: If you see a rash, think syphilis
- Remember partner treatment: EPT!
- Lane County had a 50% increase in HIV last year. Now is the time to alter that trajectory, remember PrEP
ABOUT LANE COUNTY PUBLIC HEALTH

• OUR MISSION is to promote and protect the long-term health and well-being of individuals, families and our community.

• OUR VISION is optimal health for all people in Lane County.

• Learn more: lane county.org/public health