HIV 101 & HIV Testing

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HIV/STD Regional Training
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HIV & AIDS

- HIV = Human Immunodeficiency Virus
- HIV attacks white blood cells (aka T-helper or CD4 cells) that are important for us to fight off diseases and infections
- AIDS = Acquired Immune Deficiency Syndrome
  - AIDS is late stage HIV disease
- Medications can be used to keep the virus from destroying white blood cells and multiplying and keep people from progressing to AIDS
  - Viral suppression = our goal!
What HIV looks like

1. HIV
2. HIV RNA
3. HIV spikes bind to the cell
4. HIV fuses with the cell
5. HIV RNA is released into the cell
HIV Progression

Before HIV Infection

Acute HIV Infection

Chronic HIV Infection

AIDS

Weeks to Months

Years

Infection

= CD4 Cells

= HIV
Acute HIV Infection

• Between 40%-90% of people recently infected with HIV may show signs of acute HIV infection

• Phase of HIV immediately after infection that is characterized by an initial burst of viremia
  – Anti-HIV antibodies are undetectable, HIV-1 RNA or p24 antigen are present
Acute HIV Infection

- Can be commonly missed
- Exercise high degree of suspicion for acute infection if individual presents with s/s and has recent high-risk HIV exposure ~ 2-6 weeks

<table>
<thead>
<tr>
<th>Symptom</th>
<th>manifestation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever (usually &gt;101°F)</td>
<td>Headache</td>
</tr>
<tr>
<td>Fatigue</td>
<td>Nausea</td>
</tr>
<tr>
<td>Swollen lymph nodes</td>
<td>Night sweats</td>
</tr>
<tr>
<td>Weight loss</td>
<td>Rash</td>
</tr>
<tr>
<td>Muscle aches</td>
<td>Diarrhea</td>
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Acute HIV Infection

- Individuals are highly infectious during acute stage
- Results on a traditional HIV antibody test will typically be negative
- Acute infection is identified using NAAT/RNA testing or a test looking for the p24 antigen
How is HIV transmitted?

- Sexual contact
- Sharing of needles or needlestick
- Perinatal transmission (mother-to-child)
- Prior to 1985 in U.S. – blood transfusions

- It is not transmitted via
  - Casual contact
  - Mosquitoes
  - Toilet seats, etc.
What fluids can transmit HIV?

- Blood
- Semen
  - Including pre-seminal fluid (pre-cum)
- Vaginal secretions
- Rectal fluids
- Breast milk
How is HIV transmitted?

- Not all risks are created equally

<table>
<thead>
<tr>
<th>Estimated per-act Probability of Acquiring HIV from an Infected Source</th>
<th>Risk per 10,000 exposures</th>
</tr>
</thead>
<tbody>
<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>Needle-stick</td>
<td>23</td>
</tr>
<tr>
<td>Receptive anal sex</td>
<td>138</td>
</tr>
<tr>
<td>Insertive anal sex</td>
<td>11</td>
</tr>
<tr>
<td>Receptive penile-vaginal sex</td>
<td>8</td>
</tr>
<tr>
<td>Insertive penile-vaginal sex</td>
<td>4</td>
</tr>
<tr>
<td>Oral sex</td>
<td>low</td>
</tr>
</tbody>
</table>
HIV viral load and transmission

- High viral load increases risk of HIV transmission substantially
Prevention strategies

- Condoms and lubricant
- Using clean needles and works and not sharing
- Abstinence
- Reducing number of partners
- Post-exposure prophylaxis (PEP)
- Pre-exposure prophylaxis (PrEP)
- Treatment as Prevention (TasP)
Treatment as Prevention (TasP)

HIV cases diagnosed in Oregon and HIV cases who have died in Oregon, 1981–2014
Treatment as Prevention (TasP)

- There are six classes of drugs and more than 25 types of drugs now available to treat HIV.
  - Highly active antiretroviral therapy (HAART)
- Drugs are given in combination with one another – no monotherapy
  - Several fixed dose combinations (1 a day pills)
- Different drugs target different parts of the HIV viral replication process
Treatment as Prevention (TasP)

- Our end goal – viral suppression!
- CD4 cells up
- Viral load down
  - Undetectable levels
- HIV treatment is prevention!
  - The ability to transmit HIV is dramatically reduced
HIV Care Continuum

Oregon HIV care continuum, 2014*

- Infected: 7,592
- Diagnosed: 6,605
- In care: 5,768
- On treatment: 5,595
- Suppressed: 4,502

*Number of Oregon residents
HIV in Oregon

HIV cases diagnosed in Oregon, 2010–2014
HIV Testing

- There are a wide variety of tests available to detect HIV
  - Conventional testing through OSPHL or other lab
  - Rapid testing
  - Home testing kits
HIV Testing

- HIV tests look for the presence of antibodies the body produces to fight HIV.
- Window period for HIV that varies depending on type of test used.
- Some tests now can detect the p24 antigen which shows up before antibodies.
HIV Testing in Oregon

OSPHL HIV Testing Algorithm, effective November 1, 2016:

1. Specimen received within 3 days
   - HIV screen (IFA)
     - Reactive
       - Final Lab Result. Complete.
     - Non-reactive
       - Florida for Viral Load Testing
2. Specimen received 3-7 days
   - HIV screen (IFA)
     - Reactive
       - Collect second specimen within 5 days of collection.
     - Non-reactive
       - No tests will be run. Collect a new specimen.
3. Specimen received 7 days or later
HIV Testing in Oregon

• A variety of rapid HIV testing technologies are available
  – CLIA-waived
  – One also available as home testing kit
• Read time varies between 1 minute and up to 20 minutes
• Finger stick or oral fluid
• A positive rapid test always needs to be confirmed with a second test (either rapid or conventional)
Resources available through HIV Program

- Testing through OSPHL
- Required to complete form (Form 44)
- Submit yellow copy with specimen
- Send white copy to us for data entry
- Not meant to pay for routine screening for all
  - If they are asking for a test or have risk, test them and we will pay!
True or False?

- Under Oregon law, a separate written consent for HIV testing is required.
Consent for HIV Testing

• Under Oregon law, a separate written consent for HIV testing is required.
  – **FALSE**
• Previously Oregon law required special informed consent for HIV testing.
• Senate Bill 1502 passed in 2012 removed this requirement.
Consent for HIV Testing

• Now patients must be:
  – Notified testing may occur
  – Given the opportunity to decline if they wish

• Notification may be done in any of the following ways:
  – Verbally through health care provider or their designee
  – In writing through a general medical consent form, brochure, fact sheet, or signage in a waiting area

Oregon Revised Statute 433.045 (§3)
Oregon Administrative Rule, Chapter 333, Division 22, Section 0205
Consent for HIV Testing

• The following language is compliant with the law and could be inserted into a general medical consent form:

You may be tested for HIV. If you want to decline HIV testing, check this box [   ].

• This one of several acceptable approaches you could use.

• You are free to decide what procedure will work best for your practice as long as the patient is notified testing may occur and allowed to decline.
True or False?

- HIV testing must be accompanied by a counseling session (sometimes referred to as pre- or post-test counseling)?
True or False?

- HIV testing must be accompanied by a counseling session (sometimes referred to as pre- or post-test counseling)?
  - FALSE
- The CDC has moved away from its recommendation that counseling accompany each HIV testing event in non-clinical settings.
- Goal is to decrease time and resources necessary to make testing simpler, easier, and more routine.
HIV Testing Process

**Initial Visit**
1. Introduce and Orient Client to Session
2. Conduct Brief Risk Assessment
3. Prepare For Test and Collect Sample

**Return Visit**
4. Check-In With Client
5. Provide Confirmed Results
6. Develop Care, Treatment, and Prevention Plan Based on Results
7. Refer and Link with Medical Care, Social and Behavioral Services

**Individual Rapid HIV Testing Protocol**
- Introduce and Orient Client to Session
- Prepare For and Conduct Rapid HIV Test (10-20 minute read time)
- Conduct Brief Risk Screening
- Provide Initial Results and Follow Protocol for Confirmatory Testing
- Develop Care, Treatment, and Prevention Plan Based on Results
- Refer and Link with Medical Care, Social and Behavioral Services
Questions?