INTEGRATING HIV INTO PRIMARY CARE

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NO DISCLOSURE
• Significant public health threat (2015):
  – 36.7 million people globally were living with HIV
  – 2.1 million people became newly infected with HIV
  – 1.1 million people died from AIDS-related illnesses

• Devastating impact:
  – 78 million people have become infected with HIV since the start of the epidemic
  – 35 million people have died from AIDS-related illnesses since the start of the epidemic

UNAIDS 2016 report on 2015 data
• 1.2 million people in the United States are living with HIV infection and 1 in 5 are unaware of their infection.
• MSM, particularly young, African American MSM, are most severely affected by HIV.
• By race, African Americans face the most severe burden of HIV.
• About 24,900 people are living with HIV in South Carolina.
Diagnoses of HIV Infection among Adults and Adolescents, by Race/Ethnicity, 2010–2014—United States and 6 Dependent Areas

Note. Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. All displayed data have been statistically adjusted to account for reporting delays, but not for incomplete reporting.

*Hispanics/Latinos can be of any race.
South Carolina 2015 HIV Cases Count and Percent

<table>
<thead>
<tr>
<th>Age Group</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-19</td>
<td>6</td>
</tr>
<tr>
<td>20-29</td>
<td>38</td>
</tr>
<tr>
<td>30-39</td>
<td>21</td>
</tr>
<tr>
<td>40-49</td>
<td>17</td>
</tr>
<tr>
<td>Over 49</td>
<td>18</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>22</td>
</tr>
<tr>
<td>Black</td>
<td>67</td>
</tr>
<tr>
<td>Hispanic</td>
<td>7</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>Adult/Adolescent</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td></td>
<td>Cases</td>
</tr>
<tr>
<td>White, Not Hispanic</td>
<td>4,551</td>
</tr>
<tr>
<td>Black, Not Hispanic</td>
<td>12,557</td>
</tr>
<tr>
<td>Hispanic</td>
<td>761</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>51</td>
</tr>
<tr>
<td>American Indian/Alaskan</td>
<td>15</td>
</tr>
<tr>
<td>Other</td>
<td>217</td>
</tr>
<tr>
<td>Unknown</td>
<td>46</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18,198</strong></td>
</tr>
</tbody>
</table>
What is HIV

- **Human**
- **Immunodeficiency**
- **Virus**

- HIV is a retrovirus that attacks the immune system.
- Its genetic material, RNA, must be converted into DNA during replication.
- Over time, the immune system and the body loses its ability to fight the virus.
HIV and the Immune System

• The CD4 cells coordinate a body’s immune response to an invader (bacteria, virus, etc.)

• BUT, when HIV enters CD4 cells for reproduction, it damages the CD4 cell, eventually killing it.

• The body’s immune system works hard making more CD4 cells

• Overtime, HIV destroys the CD4 cells faster than the immune system can make new ones

• So, HIV damages the very system that usually protects the body from infection.
Clinical Progression

<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning</td>
<td>No symptoms, no weight loss.</td>
</tr>
<tr>
<td>After few years</td>
<td>Mild weight loss, mouth ulcers, itching, skin disease.</td>
</tr>
<tr>
<td>After several years</td>
<td>Important weight loss, thrush, TB, fever.</td>
</tr>
<tr>
<td>After 10 years</td>
<td>Wasting syndrome, chronic herpes, simplex ulcers, extrapulmonary TB.</td>
</tr>
</tbody>
</table>

5–10 YEARS
Primary Physician’s Role

• Prevent HIV acquisition.
• Detect HIV early.
• Provide basic care to HIV patients.
• Prevent further transmission (Including PrEP)
Preventing HIV Acquisition

• Risk assessment and counseling for all patients.
  – Social history
• Pre Exposure Prophylaxis.
Early HIV Detection

• Routine ‘opt out’ screening from age 13yrs.
  – Rapid HIV testing.
  – 4\textsuperscript{th} Generation HIV testing
• High level of suspicion.
• Identifying symptoms of acute HIV infection.
• Identifying presence of opportunistic infections.
• Presence of abnormal CBCs and chemistries.
  – Leukopenia, hyperproteinemia, elevated LFTs.
HIV Testing

- CDC recommends **routine** HIV testing for ALL patients:
  - Aged 13-64
  - Initiating TB treatment
  - Seeking treatment for STI’s
  - Who are pregnant
- Repeat Screening Recommended
  - Annually people at high risk
  - Before beginning a new sexual relationship
  - When clinically indicated
  - After an occupational exposure
Sensitivity/specificity

- 4th gen: Specificity of 99.5%-100%
- Differentiation assay: 99-99.9%
- NAT: 99.6-99.9%

- 4th gen: Reactive in 62-83% of specimens negative by Western Blot but positive by NAT
HIV-1/2 antigen/antibody combination immunoassay

(+)  (-)

HIV-1/2 antibody differentiation immunoassay

HIV-1 (+)  HIV-1 (-)  HIV-1 (+)  HIV-1 (-) or indeterminate
HIV-2 (-)  HIV-2 (+)  HIV-2 (+)  HIV-2 (-)

HIV-1 antibodies detected  HIV-2 antibodies detected  HIV antibodies detected  HIV-1 NAT

(+): reactive test result  (-): nonreactive test result
NAT: nucleic acid test

HIV-1 NAT (+)  HIV-1 NAT (-)
Acute HIV-1 infection  Negative for HIV-1
Laboratory Testing for the Diagnosis of HIV Infection: Updated Recommendations
http://stacks.cdc.gov/view/cdc/23447
Benefits of HIV testing

- Early diagnosis, linkage to care and initiation of ART:
  - Reduces viremia, decreases rate of viral mutation, lowers viral set point and viral reservoir
  - Preserves immune function and slows progression of disease
  - Decreases severity of disease
  - Reduces HIV transmission

http://stacks.cdc.gov/view/cdc/23447
Home testing: FDA approved

<table>
<thead>
<tr>
<th>Tradename</th>
<th>Infectious Agent</th>
<th>Format</th>
<th>Specimen</th>
<th>Use</th>
<th>Manufacturer</th>
<th>Approval Date</th>
<th>STN</th>
</tr>
</thead>
<tbody>
<tr>
<td>OraSure HIV-1 Oral Specimen Collection Device</td>
<td>HIV-1</td>
<td>Oral Specimen Collection Device</td>
<td>Oral Fluid</td>
<td>For Use with HIV diagnostic assays that have been approved for use with this device.</td>
<td>OraSure Technologies Bethlehem, PA</td>
<td>12/23/1994</td>
<td>BP910001</td>
</tr>
<tr>
<td>OraQuick In-Home HIV Test</td>
<td>HIV-1, HIV-2</td>
<td>Immunoassay</td>
<td>Oral fluid</td>
<td>Over-the-counter (OTC) diagnostic home-use test. A positive result is preliminary and follow-up confirmatory testing is needed.</td>
<td>OraSure Technologies Bethlehem, PA</td>
<td>07/03/2012</td>
<td>BP120001</td>
</tr>
</tbody>
</table>

[http://www.fda.gov/BiologicsBloodVaccines/BloodBloodProducts/ApprovedProducts/LicensedProductsBLAs/BloodDonorScreening/InfectiousDisease/nm080466.htm#anti_HIV_CollectionTestingHomeUseKits](http://www.fda.gov/BiologicsBloodVaccines/BloodBloodProducts/ApprovedProducts/LicensedProductsBLAs/BloodDonorScreening/InfectiousDisease/nm080466.htm#anti_HIV_CollectionTestingHomeUseKits)
Goals of Treatment

- Improve quality of life
- Reduce HIV-related morbidity and mortality
- Restore and/or preserve immunologic function
- Maximally and durably suppress HIV viral load
- Prevent HIV transmission
PrEP: Candidates

Substantial risk of acquiring HIV infection

• **Men who have sex with men (MSM)**
  – HIV-positive sexual partner
  – Recent bacterial STI
  – High number of sex partners
  – History of inconsistent/no condom use
  – Commercial sex work

PrEP: Candidates

Substantial risk of acquiring HIV infection

• **Transgender individuals**
  – Engaging in high-risk sexual behaviors

www.hivguidelines.org
PrEP: Candidates

Substantial risk of acquiring HIV infection
• Heterosexual women and men
  – HIV-positive sexual partner
  – Recent bacterial STI
  – High number of sex partners
  – History of inconsistent/no condom use
  – Commercial sex work
  – High-prevalence area or network

PrEP: Candidates

Substantial risk of acquiring HIV infection

• **Injection drug users (IDU)**
  – HIV-positive injecting partner
  – Sharing injection equipment
  – Recent drug treatment (but currently injecting)

PrEP: Clinical Eligibility

- Documented negative HIV test
- No signs/symptoms of acute HIV infection
- Normal renal function
- No contraindicated medications
- Documented hepatitis B infection & vaccination status

Symptoms of Acute HIV Disease

- Fever
- Malaise
- Sore throat
- Diffuse lymphadenopathy
- Headache
- Diarrhea
- Rash
Main symptoms of Acute HIV infection

Systemic:
- Fever
- Weight loss

Central:
- Malaise
- Headache
- Neuropathy

Pharyngitis

Mouth:
- Sores
- Thrush

Lymph nodes:
- Lymphadenopathy

Esophagus:
- Sores

Skin:
- Rash

Muscles:
- Myalgia

Liver and spleen:
- Enlargement

Gastric:
- Nausea
- Vomiting
Opportunistic Conditions

- Pneumocystis pneumonia (PCP)
- Mycobacterium Tuberculosis
- Varicella zoster virus Infection
- Oropharyngeal candidiasis
- Herpes Simplex Virus infection
- Human Papillomavirus
- Cervical dysplasia
- Anal dysplasia
- Mycobacterial Avium Complex
- Cryptococcosis
- Histoplasmosis
- Toxoplasmosis
- Cytomegalovirus

- Oral hairy leukoplakia (EBV)
- Progressive multifocal leucoencephalopathy
- Human Herpes Virus-8
- Bacterial Pneumonia (Streptococcus and H.Influenza)
- Bartonellosis
- Enteric bacterial infections
- Kaposi’s sarcoma
- Hodgkin’s and non-Hodgkin’s lymphoma
- Cryptosporidiosis
- Microsporidiosis
- Coccidioidomycosis
Your Role Continues

- Keep on managing their primary care issues
- Screen for DM, lipid disorders, anemia, CKD
- ALWAYS watch for drug-to-drug interaction between their HAART and your medications; PPIs, Statins, OCPs etc.
- Consult with their HIV provider if any interactions
- Encourage adherence to HAART
- Mental health screening
- Continue education to prevent transmission to others
  - Safe sex practices
  - Disclosure of status to sexual partner (could be criminal if not done!)
You Are Not Done Yet!

• Health Maintenance
  – Immunization update (live virus are contraindicated; zoster, smallpox and anthrax)
  – Pap smears, mammogram, DRE and colonoscopy
• Annual dental and ophthalmology exam
• Tuberculosis screening
Resources

- CDC.gov
- AETC National Resource Center
- IAPAC
Now You Are Done

Any Questions ?