HIV Post-Exposure Prophylaxis

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DR. MELISSA MURPHY
INFECTIOUS DISEASE STAFF PHYSICIAN, PORTLAND VAMC
ASSOCIATE PROFESSOR OF CLINICAL MEDICINE, OHSU
HIV LEAD CLINICIAN, PORTLAND VAMC & VA VISN 20
MEDICAL DIRECTOR, OREGON AETC

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For questions or comments contact:
Sarah Weninger
701.328.2366
sweninger@nd.gov
HIV Post-Exposure Prophylaxis (PEP)

Melissa D. Murphy, M.D.
Infectious Disease Staff Physician, Portland VAMC
Associate Professor of Clinical Medicine, OHSU
HIV lead clinician, Portland VAMC & VA VISN 20
Medical Director, Oregon AETC

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No conflicts of interest or relationships to disclose
Post-Exposure Prophylaxis (PEP)

The use of therapeutic agents to prevent infection following exposure to a pathogen

High risk exposures are grouped into:

- Occupational
  - Needle stick or other injury that pierces the skin or draws blood
  - Contact with another person’s blood or other bodily fluids through an open cut or through the eyes, nose or mouth

- Non-occupational
  - Unprotected anal or vaginal sex with a known or likely HIV positive partner
  - Sexual assault
  - Injection drug use with a shared or used needle
Occupational Post Exposure Prophylaxis (PEP)
Case: Poke!

- A 30 y/o female Orthopedics resident gets poked with a needle while performing an arthrocentesis on one of your HIV patients in the ER.

- What else do you want to know?
It was an 18 gauge needle that pierced her left arm after the patient jerked away while she was performing the arthrocentesis. The site of the poke in her left arm bled after the poke and was cleaned thoroughly.

- Visibly bloody synovial fluid was in the syringe.

- The HIV positive source patient takes TDF/FTC/EFV (Atripla) as his antiretroviral regimen and has an undetectable HIV viral load.

- Would you give PEP?

- If so, what antiretrovirals would you utilize?
Number of Confirmed Cases of Occupationally-Acquired HIV Infection in United States, 1985-2013

Occupational Exposure to HIV 1985-2001 (CDC data)

- **57 confirmed** HIV seroconversions in health care workers after occupational exposure to HIV

- **138 cases of possible** transmission in which HIV infection occurred in workers with no known risk factors for HIV infection other than occupational exposure

### Early Cases of Transmission of HIV to Health Care Workers, 1985 to 2001

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Documented Transmission/ Possible Transmission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse</td>
<td>24/35</td>
</tr>
<tr>
<td>Laboratory worker</td>
<td>19/17</td>
</tr>
<tr>
<td>Physician, nonsurgical</td>
<td>6/12</td>
</tr>
<tr>
<td>Physician, surgical</td>
<td>–/6</td>
</tr>
<tr>
<td>Surgical technician</td>
<td>2/2</td>
</tr>
<tr>
<td>Dialysis technician</td>
<td>1/3</td>
</tr>
<tr>
<td>Other technician/therapist</td>
<td>–/9</td>
</tr>
<tr>
<td>Respiratory therapist</td>
<td>1/2</td>
</tr>
<tr>
<td>Health aide</td>
<td>1/15</td>
</tr>
<tr>
<td>Morgue technician</td>
<td>1/2</td>
</tr>
<tr>
<td>Housekeeper</td>
<td>2/13</td>
</tr>
<tr>
<td>Dental worker/dentist</td>
<td>–/6</td>
</tr>
<tr>
<td>Emergency medical technician</td>
<td>–/12</td>
</tr>
<tr>
<td>Other</td>
<td>–/4</td>
</tr>
</tbody>
</table>

Adapted from Do et al, *Infect Control Hosp Epidemiol*, 2003
## Occupational Exposure to HIV
1985-2001 (CDC data)

<table>
<thead>
<tr>
<th>Route of exposure</th>
<th>Documented cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percutaneous (puncture/cut injury)</td>
<td>48</td>
</tr>
<tr>
<td>Mucocutaneous (mucous membrane or skin)</td>
<td>5</td>
</tr>
<tr>
<td>Percutaneous and mucocutaneous</td>
<td>2</td>
</tr>
<tr>
<td>Unknown</td>
<td>2</td>
</tr>
<tr>
<td><strong>Documented cases = 57</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source of Exposure</th>
<th>Documented Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood</td>
<td>49</td>
</tr>
<tr>
<td>Concentrated virus in laboratory</td>
<td>3</td>
</tr>
<tr>
<td>Visibly bloody fluid</td>
<td>1</td>
</tr>
<tr>
<td>Unspecified fluid</td>
<td>4</td>
</tr>
<tr>
<td><strong>Documented cases = 57</strong></td>
<td></td>
</tr>
</tbody>
</table>

Adapted from Do et al, *Infect Control Hosp Epidemiol*, 2003
Risk of HIV Transmission Following Percutaneous (Needlestick) Exposure

• Pooled analysis of prospective studies on health care workers with occupational exposures suggests risk is approximately 0.3% (95% CI, 0.2% - 0.5%)¹

• Presence or absence of key risk factors may influence this risk in individual exposures

Risk Factors for Seroconversion Following Needlesticks

CDC-sponsored case-control study

33 healthcare workers (HCWs) infected with HIV via predominantly needlesticks compared with 679 HCWs who had been exposed to HIV, but did not seroconvert

Zidovudine (AZT) monotherapy as PEP

– Given to 27% of case patients & 36% of control patients
  (81% risk reduction)

Cardo DM et al. NEJM 1997;337:1485-90
## Risk Factors for Seroconversion

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Odds Ratio*</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deep injury</td>
<td>15</td>
<td>6.0 – 41</td>
</tr>
<tr>
<td>Visibly bloody device</td>
<td>6.2</td>
<td>2.2 – 21</td>
</tr>
<tr>
<td>Device in artery/vein</td>
<td>4.3</td>
<td>1.7 – 12</td>
</tr>
<tr>
<td>Terminally ill SP</td>
<td>5.6</td>
<td>2.0 – 16</td>
</tr>
<tr>
<td>AZT PEP</td>
<td>0.19</td>
<td>0.06 – 0.52</td>
</tr>
</tbody>
</table>

*p<0.01 for all

Cardo DM et al. NEJM 1997;337:1485-90
Other factors that influence risk

- Viral load
- Glove use
  - 50% decrease in volume of blood transmitted\(^1\)
- Hollow bore vs solid bore
  - Large diameter needles weakly associated with increased risk \((p = 0.08)\)\(^2\)
- Drying conditions
  - Tenfold drop in infectivity every 9 hours\(^3\)

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2. Cardo DM et al. NEJM 1997;337:1485-90
Exposure Risks (average, per episode, involving HIV-infected source patient)

<table>
<thead>
<tr>
<th>Exposure Type</th>
<th>Risk Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percutaneous (blood)(^1)</td>
<td>0.3%</td>
</tr>
<tr>
<td>Mucocutaneous (blood)(^2)</td>
<td>0.09%</td>
</tr>
<tr>
<td>Receptive anal intercourse(^3)</td>
<td>1 - 2%</td>
</tr>
<tr>
<td>Insertive anal intercourse(^4)</td>
<td>0.06%</td>
</tr>
<tr>
<td>Receptive vaginal intercourse(^5)</td>
<td>0.1 – 0.2%</td>
</tr>
<tr>
<td>Insertive vaginal intercourse(^6)</td>
<td>0.03 – 0.14%</td>
</tr>
<tr>
<td>Receptive oral (male)(^7)</td>
<td>0.06%</td>
</tr>
<tr>
<td>Female-female orogenital(^8)</td>
<td>4 case reports</td>
</tr>
<tr>
<td>IDU needle sharing(^9)</td>
<td>0.67%</td>
</tr>
<tr>
<td>Vertical (no prophylaxis)(^10)</td>
<td>24%</td>
</tr>
</tbody>
</table>
Estimated Risk of Seroconversion with Percutaneous Injury

# Relative Risk of Infectious Fluids

## Relative Risk of Infectious Fluids in Occupational Exposure to HIV

<table>
<thead>
<tr>
<th>Category of Infectivity</th>
<th>Fluid</th>
</tr>
</thead>
</table>
| Infectious Fluids       | • Blood  
                          • Visibly bloody body fluids |
| Potentially Infectious Body Fluids | • Semen and vaginal secretions  
                                         • Cerebrospinal fluid  
                                         • Synovial fluid  
                                         • Pleural fluid  
                                         • Peritoneal fluid  
                                         • Pericardial fluid  
                                         • Amniotic fluid |
| Not Considered Infectious (Unless Visibly Bloody) | • Saliva, vomitus, and feces  
                                                    • Nasal secretions and sputum  
                                                    • Sweat and tears  
                                                    • Urine |
When should PEP be started?

- Efficacy of PEP thought to wane with time
- At what point is PEP “no longer worth it”?

![Graph showing the decline of benefits and increase of risks of PEP over time](image-url)
### “Window of Opportunity”

<table>
<thead>
<tr>
<th>Time after virus acquisition</th>
<th>HIV distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 hours</td>
<td>HIV can be found in antigen-presenting cells translocating across the mucosa</td>
</tr>
<tr>
<td>48 – 72 hours</td>
<td>HIV can be found in regional lymph nodes</td>
</tr>
<tr>
<td>5 days</td>
<td>HIV viremia is detectable in blood</td>
</tr>
</tbody>
</table>
Timing of PEP: what’s the evidence?

- Animal models and animal PEP studies: suggest substantially less effective beyond 24 - 36 hours\(^1,2\)
- Case-control study: most subjects in each group received PEP within 4 hours\(^3\)
- Analysis of PEP failures does not suggest a clear cut-off\(^4\)

4. MMWR June 29, 2001:50(RR11);1-42.
Effectiveness of Tenofovir (TDF) PEP in Macaques

**Study Features**
- N = 24 macaques
- Randomized to 6 treatment arms
- SIV inoculated intravenously
- SIV dose 10bx 50% infective dose
- PEP started at 24, 48, or 72 hours
- PEP duration: 3, 10, or 28 days
- PEP regimen: Tenofovir (PMPA) SQ
- Analyzed for antibody and viremia

**Formula**
Tenofovir (PMPA) = \((R)-9-(2\text{-phosphonylmethoxypropyl})\text{adenine}\)

**Source**
Effectiveness of Tenofovir PEP in Macaques

Timing of PEP: An Anecdote

- 13 y/o girl in Italy transfused with one unit of blood from donor who was acutely infected with HIV but not yet HIV-antibody positive
- Seroconversion risk estimated to be virtually 100%
- 3-drug PEP initiated 50 hours post-transfusion, continued for 9 months
- No evidence of HIV infection 15 months later

Timing of PEP: CDC Guidelines

- “PEP should be initiated as soon as possible, preferably within hours rather than days of exposure.”
- Interval after which there is no benefit for humans is not known
- Obtain expert advice when interval has exceeded 24-36 hours

MMWR 2005;54(No. RR-9).
Timeline for Occupational Postexposure Prophylaxis Recommendations

- 1990: CDC suggests consider use of zidovudine for PEP
- 1996: CDC recommends zidovudine for PEP
- 1997: Case control study shows zidovudine PEP reduces HIV transmission risk by 81%
- 1998: CDC recommends risk-based 2-drug (basic) and 3-drug (expanded) regimens for PEP
- 2001: CDC issues guidance for occupational exposures to HIV, HCV, HBV
- 2005: CDC updates basic and expanded regimen options for PEP
- 2013: CDC recommends using 3-drug INSTI-based regimen when PEP indicated
Updated US Public Health Service Guidelines for the Management of Occupational Exposures to Human Immunodeficiency Virus and Recommendations for Postexposure Prophylaxis

2013

David T. Kuhar, MD; David K. Henderson, MD; Kimberly A. Struble, PharmD; Walid Heneine, PhD; Vasavi Thomas, RPh, MPH; Laura W. Cheever, MD, ScM; Ahmed Gomaa, MD, ScD, MSPH; Adelisa L. Panlilio, MD; for the US Public Health Service Working Group

This report updates US Public Health Service recommendations for the management of healthcare personnel (HCP) who experience occupational exposure to blood and/or other body fluids that might contain human immunodeficiency virus (HIV). Although the principles of exposure management remain unchanged, recommended HIV postexposure prophylaxis (PEP) regimens and the duration of HIV follow-up testing for exposed personnel have been updated. This report emphasizes the importance of primary prevention strategies, the prompt reporting and management of occupational exposures, adherence to recommended HIV PEP regimens when indicated for an exposure, expert consultation in management of exposures, follow-up of exposed HCP to improve adherence to PEP, and careful monitoring for adverse events related to treatment, as well as for virologic, immunologic, and serologic signs of infection. To ensure timely postexposure management and administration of HIV PEP, clinicians should consider occupational exposures as urgent medical concerns, and institutions should take steps to ensure that staff are aware of both the importance of and the institutional mechanisms available for reporting and seeking care for such exposures. The following is a summary of recommendations: (1) PEP is recommended when occupational exposures to HIV occur; (2) the HIV status of the exposure source patient should be determined, if possible, to guide need for HIV PEP; (3) PEP medication regimens should be started as soon as possible after occupational exposure to HIV, and they should be continued for a 4-week duration; (4) new recommendation—PEP medication regimens should contain 3 (or more) antiretroviral drugs (listed in Appendix A) for all occupational exposures to HIV; (5) expert consultation is recommended for any occupational exposures to HIV and at a minimum for situations described in Box 1; (6) close follow-up for exposed personnel (Box 2) should be provided that includes counseling, baseline and follow-up HIV testing, and monitoring for drug toxicity; follow-up appointments should begin within 72 hours of an HIV exposure; and (7) new recommendation—if a newer fourth-generation combination HIV p24 antigen–HIV antibody test is utilized for follow-up HIV testing of exposed HCP, HIV testing may be concluded 4 months after exposure (Box 2); if a newer testing platform is not available, follow-up HIV testing is typically concluded 6 months after an HIV exposure.

Infect Control Hosp Epidemiol 2013;34(9):875-892
2013 USPHS Occupational PEP Guidelines

Summary of Major Changes

- Eliminates evaluation of level of risk to stratify PEP regimen
- All PEP regimens should contain 3 or more medications
- New recommended and alternative PEP regimens
- Follow up may conclude at 4 months if 4th generation HIV testing used

### HIV Postexposure Prophylaxis Regimens

#### Preferred HIV Postexposure Prophylaxis Regimen
- Raltegravir (400 mg PO twice daily) plus Tenofovir DF-Emtricitabine (300 mg-200 mg [1 tablet] daily)

#### Alternative HIV Postexposure Prophylaxis Regimens
May combine 1 anchor drug or drug pair from the left column with 1 pair of nucleoside/nucleotide reverse-transcriptase inhibitors from the right column; prescribers unfamiliar with these agents/regimens should consult physicians familiar with the agents and their toxicities.

<table>
<thead>
<tr>
<th>Anchor Drug</th>
<th>Nucleoside Reverse Transcriptase Inhibitors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raltegravir</td>
<td>Tenofovir DF-emtricitabine</td>
</tr>
<tr>
<td>Darunavir + ritonavir</td>
<td>Tenofovir DF + lamivudine</td>
</tr>
<tr>
<td>Etravirine</td>
<td>Zidovudine-lamivudine</td>
</tr>
<tr>
<td>Rilpivirine</td>
<td>Zidovudine + emtricitabine</td>
</tr>
<tr>
<td>Atazanavir + ritonavir</td>
<td></td>
</tr>
<tr>
<td>Lopinavir-ritonavir</td>
<td></td>
</tr>
</tbody>
</table>

The following alternative is a complete fixed-dose combination regimen, and no additional antiretrovirals are needed:
Elvitegravir-cobicistat-tenofovir DF-emtricitabine
**USPS Guidelines for the Use of Antiretroviral Agents for Occupational Exposures to HIV**

**Alternative Antiretroviral Agents for Use as PEP Only with Expert Consultation**

- Abacavir
- Efavirenz
- Enfuvirtide
- Fosamprenavir
- Maraviroc
- Saquinavir
- Stavudine

**Antiretroviral Agents Generally Not Recommended for Use as PEP**

- Didanosine
- Nelfinavir
- Tipranavir

**Antiretroviral Agents Contraindicated as PEP**

- Nevirapine

Note. For consultation or assistance with HIV PEP, contact the National Clinicians’ Post-Exposure Prophylaxis Hotline at telephone number 888-448-4911 or visit its website at [http://nccc.ucsf.edu/](http://nccc.ucsf.edu/)
Early Reevaluation after Exposure (within 72 hours)

Baseline and Follow-up HIV Testing
- Baseline HIV testing
- Follow-up HIV testing 6, 12, and 24 weeks after exposure
- Follow-up HIV testing at 6 and 16 weeks if 4th generation assay* used

Baseline and Follow-up Laboratory Testing
- Baseline renal and hepatic function tests
- Follow-up renal and hepatic function tests at 2 weeks

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*4th generation combination assay = HIV p24 antigen-HIV antibody test

Case: Splash!

- 24 y/o dental technician splashed in the eye during a dental procedure 3 hours ago

- Source patient: 33 y/o male infected with HIV

- What else do you want to know?
Which fluids are potentially infectious for HIV?

- blood?
- saliva?
- sweat?
- feces?
- spinal fluid?
- pleural fluid?
- pus?
- urine?
Potentially infectious for HIV

- blood
- spinal fluid
- pleural fluid
- pus
- semen
- vaginal secretions
- amniotic fluid
- pericardial fluid
- synovial fluid

**NOT infectious**

- urine
- feces
- saliva
- nasal secretions
- gastric fluid
- sputum
- tears
- sweat
- vomitus
Saliva was visibly bloody - in fact, it was mostly blood that splashed her
She rinsed out her eye immediately
Source patient has never taken antiretrovirals, has a CD4 count of “about 500” and a viral load of 20,000 copies/ml when last checked
Oh, and by the way...

– the technician is 8 weeks pregnant!
Case continued

What is her risk of contracting HIV?

What are your PEP recommendations?

How does her pregnancy affect your decision making?
## Preferred PEP regimens

<table>
<thead>
<tr>
<th>Age group</th>
<th>Preferred/alternative</th>
<th>Medication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferred</td>
<td>A 3-drug regimen consisting of tenofovir DF 300 mg <em>and</em> fixed dose combination emtricitabine 200 mg (Truvada®) once daily <em>with</em> raltegravir 400 mg twice daily <em>or</em> dolutegravir 50 mg once daily</td>
<td></td>
</tr>
<tr>
<td>Alternative</td>
<td>A 3-drug regimen consisting of tenofovir DF 300 mg <em>and</em> fixed dose combination emtricitabine 200 mg (Truvada) once daily <em>with</em> darunavir 800 mg (as 2, 400-mg tablets) once daily <em>and</em> ritonavir 100 mg once daily</td>
<td></td>
</tr>
</tbody>
</table>

Adults and adolescents aged ≥13 years, including pregnant women, with normal renal function (creatinine clearance ≥60 mL/min)

To find the latest CDC information on this topic go to: [https://aidsinfo.nih.gov/guidelines/html/1/adult-and-adolescent-arv/0](https://aidsinfo.nih.gov/guidelines/html/1/adult-and-adolescent-arv/0)
Health care providers prescribing PEP should avoid use of DTG for:

- Non-pregnant women of childbearing potential who are sexually active or have been sexually assaulted and who are not using an effective birth control method; and,

- Pregnant women early in pregnancy since the risk of an unborn infant developing a neural tube defect is during the first 28 days.

The preferred PEP regimen for these women is raltegravir, tenofovir, and emtricitabine. However, individual circumstances may dictate consideration of alternatives (e.g., raltegravir is not available). Health care providers seeking advice can call the National Clinical Consultations Center’s PEPline at (888) 448-4911.
You jointly decide on:

TDF/FTC (Truvada) + raltegravir (Isentress)

3 days later she calls complaining of headache, an itchy rash, and URI symptoms

What do you do?
Case continued

Exam:

- VS - T 99.0F  R 14  P 78  BP 134/76
- Gen - alert, tired-appearing, no acute distress
- HEENT - nasal congestion, otherwise benign
- Neck - 3 anterior cervical lymph nodes
- Heart - RRR
- Lungs – bilat CTA
- Abdomen - benign
- Neuro - nonfocal
- Skin - urticarial rash on trunk and legs
Case continued

What could be responsible for her symptoms?

– Could this be acute HIV?

How would you manage her?
Primary HIV Infection

- symptomatic in the majority of newly infected individuals
- symptoms occur 2-6 weeks after exposure to HIV
- median duration of symptoms 15-28 days

### TABLE 5. Expected frequency of associated signs and symptoms among persons with signs and symptoms of acute retroviral syndrome

<table>
<thead>
<tr>
<th>Symptom/sign</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever</td>
<td>96</td>
</tr>
<tr>
<td>Lymphadenopathy</td>
<td>74</td>
</tr>
<tr>
<td>Pharyngitis</td>
<td>70</td>
</tr>
<tr>
<td>Rash</td>
<td>70</td>
</tr>
<tr>
<td>Erythematous maculopapular with lesions on face, trunk and sometimes extremities, including palms and soles; mucocutaneous ulceration involving mouth, esophagus or genitals</td>
<td></td>
</tr>
<tr>
<td>Myalgia or arthralgia</td>
<td>54</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>32</td>
</tr>
<tr>
<td>Headache</td>
<td>32</td>
</tr>
<tr>
<td>Nausea and vomiting</td>
<td>27</td>
</tr>
<tr>
<td>Hepatosplenomegaly</td>
<td>14</td>
</tr>
<tr>
<td>Weight loss</td>
<td>13</td>
</tr>
<tr>
<td>Thrush</td>
<td>12</td>
</tr>
<tr>
<td>Neurologic symptoms: Meningoencephalitis or aseptic meningitis; peripheral neuropathy or radiculopathy; facial palsy; Guillain-Barré syndrome; brachial neuritis; or cognitive impairment or psychosis</td>
<td>12</td>
</tr>
</tbody>
</table>
Could She Have Primary HIV Infection?

Several features of her current illness make primary HIV infection unlikely

- Only three days since the exposure
- Presence of nasal congestion
- Rash is urticarial
HIV Tests: Time to Positivity

- HIV RNA (plasma)
- HIV p24 antigen
- HIV antibody

Days:
- 0
- 11
- 17
- 22
- 30
- 40
- 50
- 60
- 70
- 80
- 90
- 100

HIV infection

4th generation Ab/Ag
2nd generation IA
1st generation IA

Eclipse
AHI

Viral detection with NAAT
Antibody detection with 3rd generation IA

Early HIV infection
Western blot positive
Post-Exposure Prophylaxis: Core Principles

Optimal duration unclear, 28 days is recommended

Consult an HIV specialist when HIV drug resistance in the source patient is suspected
Post-Exposure Prophylaxis: Core Principles

• Balance risks vs benefits

• Timing: the sooner, the better

• Make a decision
  – PEP can always be discontinued, but you can’t get the 1st 24 hours back!
Situations for Which Expert Consultation Advised

- Delayed exposure report (eg. longer than 72 hours)
- Unknown source (eg. needle in sharps disposal)
- Known or suspected pregnancy in exposed person
- Exposed person breast-feeding
- Known or suspected ARV drug resistance in source patient
- Serious medical illness in exposed persons
- Toxicity occurring in exposed person taking PEP regimen

non-Occupational Post Exposure Prophylaxis (nPEP)
In one study of rural emergency departments in one state: ⁴

54% offered STD prophylaxis treatment to sexual assault patients.
18% had no sexual assault protocols in place
13% offered on-site HIV testing only
Only 9% offered nPEP
Common reasons providers give for not prescribing nPEP

- Concern of drug side effects
- Concern of drug resistance: there is a potential risk of drug resistance with poor nPEP adherence and HIV exposure
- Perception of "low-risk" exposure
- No or limited health insurance
- Lack of knowledge of nPEP guidelines
nPEP TREATMENT NEEDS POST-SEXUAL EXPOSURE

VISIT aidsetc.org

Substantial Risk for HIV Acquisition

≤72 hours since exposure

Source known to be living with HIV

nPEP IS RECOMMENDED as soon as possible

≥72 hours since exposure

Source of unknown HIV status

Case-by-Case Determination

Negligible Risk for HIV Acquisition

nPEP NOT Recommended

Substantial Risk for HIV Acquisition

Exposure of vagina, rectum, eye, mouth, or other mucous membrane, non-intact skin, or percutaneous contact

With blood, semen, vaginal secretions, rectal secretions, breast milk, or any body fluid that is visibly contaminated with blood

When the source is known to be living with HIV

Negligible Risk for HIV Acquisition

Exposure of vagina, rectum, eye, mouth, or other mucous membrane, non-intact skin, or percutaneous contact

With urine, nasal secretions, saliva, sweat, or tears if not visibly contaminated with blood

Regardless of the known or suspected HIV status of the source
### nPEP Treatment Guidelines

<table>
<thead>
<tr>
<th>Truvada®</th>
<th>PLUS</th>
<th>Isentress®</th>
</tr>
</thead>
<tbody>
<tr>
<td>tenofovir disoproxil fumarate (tenofovir DF or TDF) (300 mg) with emtricitabine (200 mg) once daily</td>
<td></td>
<td>raltegravir (RAL) 400 mg twice daily</td>
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<td>OR</td>
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<tr>
<td>Tivicay®</td>
<td></td>
<td>dolutegravir (DTG) 50 mg daily</td>
</tr>
</tbody>
</table>

Addendum to HIV Prophylaxis for Adults after Sexual Assault: Recommendations for Healthcare Providers, Oregon Health Authority October 14, 2016.
Key concepts for providers

- Evaluate persons rapidly for nPEP when care is sought ≤72 hours after a potential exposure.

- Do an HIV test before initiating nPEP (if rapid testing not possible, send blood to lab and initiate nPEP immediately – follow-up with results and patient asap stopping nPEP only if test result is confirmed positive).

- All persons offered nPEP should be prescribed a 28-day course of a 3-drug antiretroviral regimen, and given the first dose ON SITE ASAP after the exposure.
• **Adherence** to recommended dosing for 28 days without interruption **is essential**

• **Emphasize** that severe adverse effects from nPEP are **rare**, but review possible side effects and reinforce the limitedness of such effects

• **Follow-up is important** for additional counseling and monitoring
Clinician-to-clinician assistance with PEP-related decisions

AETC National Clinician Consultation Center's (NCCC) Post-Exposure Prophylaxis Hotline (PEPline): 888-HIV-4911 (888-448-4911) 9:00 AM - 9:00 PM ET, 7 days/week

The AETC NCCC PEPline works with providers to:

- Assess the risk of exposure
- Determine the appropriateness of prescribing PEP
- Select the best PEP regimen
- Provide recommendations for follow-up testing
Post-Exposure Prophylaxis Line (PEPline)
888-HIV-4911
Refer nPEP patients for discussion about initiation of PrEP
What is PrEP?
What is Pre-Exposure Prophylaxis, or PrEP?

- A prevention strategy in which individuals at highest risk of HIV infection take a medication regularly (along with continued behavioral risk-reduction strategies) to prevent HIV infection.
- Truvada was approved for HIV PrEP by the FDA in July 2012 and is a fixed dose combination of tenofovir and emtricitabine.
- Truvada is modestly effective at reducing Herpes Simplex (HSV) acquisition and has reduced the rate of Hepatitis B acquisition in certain populations.¹,²,³

Truvada is tenofovir/emtricitabine (TDF/FTC) and is currently the only medication approved by the FDA for PrEP

Slide courtesy of Brian Wood, MD University of Washington
Who should be offered PrEP?

Consider offering PrEP to HIV-negative adults 18 and over who in the last six months have had one or more of the following:

- Any sex partner with HIV or HIV risk factors (IDU or MSM)
- Condomless vaginal or anal sex with a partner of unknown HIV status who is known to be at substantial risk of HIV infection
- A bacterial sexually transmitted infection (gonorrhea/chlamydia/syphilis)
- Injected drugs and shared needles/equipment
- Used non-occupational post-exposure prophylaxis (nPEP = taking antiretrovirals within 72 hours of a recent exposure to prevent becoming infected with HIV)
- Survival/transactional sex
- Participated in a drug treatment program
- Interest in trying to conceive with a partner who is HIV-positive

Research studies suggest that men or transgender persons engaging in receptive anal sex benefit the most from PrEP.
Key messages in efficacy:

• When taken daily with excellent adherence, PrEP is over 90% effective for preventing HIV (CDC)

• Maximum drug levels are reached in *rectal tissues after 7 days* and in *blood and vaginal tissues after 20 days*

• If planning to stop PrEP, continue PrEP for 28 days after last potential HIV exposure

• PrEP does not prevent gonorrhea, chlamydia, syphilis, genital warts, herpes, or Hepatitis C
There were over 77,000 PrEP users in 2016.

That’s a 73% increase year over year since 2012.

Only 77,000 of the 1.2 million people at highest risk of HIV had access to PrEP.
References:


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QUESTIONS?

Melissa D. Murphy, M.D.
Infectious Disease Staff Physician, Portland VAMC
Associate Professor of Clinical Medicine, OHSU
HIV lead clinician, Portland VAMC & VA VISN 20
Medical Director, Oregon AETC
info@oraetc.org
Thank You to Our Speaker:

Dr. Melissa Murphy
- Infectious Disease Staff Physician, Portland VAMC
- Associate Professor of Clinical Medicine, OHSU
- HIV lead clinician, Portland VAMC & VA VISN 20
- Medical Director, Oregon AETC

CEU: [https://www.ndhealth.gov/hiv/Provider/](https://www.ndhealth.gov/hiv/Provider/)

Next Lunch and Learn: November 28 at 12pm CT

Sexual Orientation and Gender Identity