Objectives

- Review principles of assessing and managing exposures to blood-borne pathogens, HIV and hepatitis B and C
- Provide approach to managing occupational and non-occupational exposures in emergency/urgent care settings
- Share experiences from the national PEPline

Typical Scenarios

- A physician colleague comes to you because he had a needlestick injury from an HIV+ patient 40 hours ago but didn’t seek care. What should you do? What should he do?
- A family member comes to you immediately after visiting an HIV+ cousin hospitalized with pyelonephritis. The patient is one of your patients. The LVN was changing the foley catheter drainage system and some urine splashed into his eye. The patient’s last urine was clear but had 10-20 WBC/HPF and 2-5 RBC/HPF. Do you offer PEP?
- A dental tech comes to you after scratching her skin with a bloody blunt dental tool. The tech’s skin is erythematous where it was scratched, but there is no blood. What should be done?
- A nurse in the ED drew blood from an HCV-positive injection drug user who had a negative HIV test documented 1 month ago. She stuck herself while discarding the needle. What do you do?

Bloodborne Pathogen Exposures

>500,000 exposures annually (???)

Underreporting
Exposed HCWs: Female 67.6%
These are emergencies
Actual disease transmission to HCP is rare
Can have enormous emotional impact
Goals in Post-Exposure Care

Prevent transmission
• Decreased risk of transmission 80% w/AZT PEP

Prevent unnecessary drug toxicity by avoiding unnecessary post-exposure prophylaxis (PEP)

Provide counseling and follow-up

PEPline (888) 448 - 4911
National Clinicians' Post-Exposure Prophylaxis Hotline
www.nccc.ucsf.edu

Free
Faculty: MDs, PharmDs
PEPline available
6 am – 11 pm Pacific
9 am – 2 am Eastern
Off hours: answering service pages clinicians
Average off-hours response time: 3 minutes
1000 calls/month  800 occupational, 200 non-occupational

Updated US Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Postexposure Prophylaxis

MMWR June 29, 2001
and
MMWR September 30, 2005
and
MMWR December or January?

www.cdc.gov
www.nccc.ucsf.edu
www.aidsinfo.nih.gov

National HIV/AIDS Clinicians' Consultation Center
UCSF – San Francisco General Hospital
PEPline (888) 448 - 4911

National Clinicians' Post-Exposure Prophylaxis Hotline
Recommendations on managing occupational exposures to HIV and hepatitis B & C

Perinatal Hotline (888) 448 – 8765 (24 hours)
National Perinatal HIV Consultation & Referral Service
Advice on testing and care of HIV-infected pregnant women and their infants

Warmline (800) 933 – 3413 (M-F 9 am - 8 pm EST)
National HIV Telephone Consultation Service
Consultation on all aspects of HIV testing and clinical care
www.nccc.ucsf.edu

HRSA AIDS-ETC Program & Community Based Programs, HIV/AIDS Bureau & Centers for Disease Control and Prevention (CDC)
Callers to PEPline

- Treating Clinicians: 85%
- MD: 62%
- NP, RN, PA, LVN: 36%
- Other: 2%
- Exposed HCPs: 15%

Steps in Managing BBP Exposures

First aid, crisis management, referral for evaluation & care

Assess risk:
- nature of injury
- type of fluid – infectious?
- source patient factors

Determine whether to offer PEP
Select PEP regimen
Obtain baseline laboratory tests
Counsel the HCW and/or treating clinician
Follow-up care
First Aid, Crisis Mgmt, Referral

Percutaneous: soap and water
   - No trauma from ‘milking’
   - No caustic antiseptic solutions
Mucous membranes: flush with water or saline
Crisis management:
   - Emotional upset is the norm: support; make sure HCP are seen
   - Denial is a close second
   - Refer – time is of the essence

Healthcare worker:
Needlestick from HIV+ source

What’s the transmission risk?
A- 0.3 %
B- 1.3 %
C- 3.0 %
D- 9.0 %
E- 13.0%

Risk of Transmission

Overall risk, percutaneous: 0.3% (3 per 1000)

Henderson, Tokars, Ippolito, Gerberding, Bell

Risk Factors

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visibly bloody device</td>
<td>6.2</td>
</tr>
<tr>
<td>Device used in artery or vein</td>
<td>4.3</td>
</tr>
<tr>
<td>Deep injury</td>
<td>15.0</td>
</tr>
<tr>
<td>End-stage AIDS</td>
<td>5.6</td>
</tr>
</tbody>
</table>

Definitions and redefinitions:

- Deep → Intramuscular, sub-Q?
- End-stage AIDS → >1500 copies/mL

Mechanism of Transmission

- Local replication of virus in tissue macrophages or dendritic cells
- Host cytologic T-cells kill productively infected target cells, but if not adequate…
- Replication of HIV in regional lymph nodes within 2-3 days
- Viremia within 3-5 days of inoculation
Infectious Fluids - HIV

Considered infectious
- Blood, tissue
- Semen, vaginal secretions, pus
- Cerebrospinal, amniotic, pericardial, peritoneal, pleural, synovial fluids

Considered Non-infectious (unless visibly bloody)
- Urine, feces, nasal secretions, saliva, gastric fluid, sputum, tears, sweat, vomitus

Percutaneous Exposures

<table>
<thead>
<tr>
<th>Exposure Type</th>
<th>Infection Status of Source</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HIV-Positive Class 1</td>
</tr>
<tr>
<td>Less severe</td>
<td>Recommend basic 2-drug PEP</td>
</tr>
<tr>
<td>More severe</td>
<td>Recommend expanded 3-drug PEP</td>
</tr>
</tbody>
</table>

Mucous membrane exposures and Cutaneous exposures (to non-intact skin*) to blood

Risk of transmission:
- HIV 0.09%
- Hepatitis B – considered to be very small
- Hepatitis C – considered to be very small

*Non-intact skin (portal of entry): evidence of compromised skin integrity (dermatitis, abrasion, open wound, etc)
Deciding whether to recommend PEP

Rapid Tests (a game-changer)

Consent laws per individual State

Decisions often must be made with incomplete source patient information.

Should not delayed until SP lab results are available unless rapid test is pending

Default: can treat and stop
Can be reassuring
Allows time for test results
 Allows time for HCP reconsideration

Decision is the HCP’s - risks and benefits

Timing of PEP

PEP should be initiated as soon as possible, preferably within hours rather than days
(Efficacy decreases with time)

Ideal 1-2 hours. Excellent 4 hours

Window of effectiveness:
24 hours? 36 hours?
>72 hours – no evidence of efficacy
<1 week – possibly, if enormous risk

Reminder: Do not delay PEP pending test results

Standard 3-drug PEP

28-day treatment course
Monitor for toxicities at baseline and 2 wks

Preferred Regimen

Tenofovir + emtricitabine (Truvada)
plus
Raltegravir

Alternative Regimen

Zidovudine + lamivudine (Combivir)

PEP Drug Selection

Alternatives for resistant virus, drug-drug interactions, drug intolerance:
Darunavir/r
Atazanavir/r
Etravirine
Rilpivirine

Basic 2-drug regimens (with expert consultation)
Indications: drug toxicity, drug availability, adherence issues
Tenofovir + emtricitabine (Truvada)
Zidovudine + lamivudine (Combivir)

Indications: Lesser exposures? (with expert consultation)
Pregnancy

PEPline calls from nurses: 4.8% pregnant

Recommendations same, except:
- Avoid efavirenz: teratogenic
- Avoid ddI/d4T combination: lactic acidosis

Note: recommend discontinuing breast feeding while taking ARVs

Window period for HIV

Most seroconvert within 2-3 weeks.
>90% within 1 mo; probably about 100% within 3 mos.

Most (60%) acute HIV identifiable by history of exposure and viral syndrome

Acute HIV Syndrome: 1-8 weeks

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever</td>
<td>96%</td>
</tr>
<tr>
<td>Rash</td>
<td>70%</td>
</tr>
<tr>
<td>Sore Throat</td>
<td>70%</td>
</tr>
<tr>
<td>Adenopathy</td>
<td>74%</td>
</tr>
<tr>
<td>Myalgias</td>
<td>54%</td>
</tr>
<tr>
<td>Headache</td>
<td>32%</td>
</tr>
</tbody>
</table>

Diarrhea, N-V, malaise, thrush, hepatosplenomegaly, neurological sx, (meningitis/neuropathy, facial palsy)

Oral/genital ulcers—specific
**Window period for HIV**

Most seroconvert within 2-3 weeks.
>90% within 1 mo; probably about 100% within 3 mos.

Most (60%) acute HIV identifiable by history of exposure and viral syndrome

No case of transmission involving exposure during the window period has been reported in the US

Viral load (HIV RNA by PCR or bDNA) not routinely indicated
→ 2-5% false positives
→ results not back in time to change the PEP decision.

**Hepatitis B**

Most HCP have been immunized
Many don’t know whether they responded
Positive HBsAb titre : 10mIU/mL

Hepatitis B vaccine: protective immunity after
1 dose → > 50 %
2 doses → > 70 %
3 doses → > 90 %

Post-exposure
HepB Vaccine >70% benefit as PEP when given w/in 24 hr
HBIG >70% benefit as PEP when given w/in 24 hr

**Exposure Risks: Percutaneous**

**HIV**: 0.3%

**Hepatitis B** (without immunity)
Source has HBsAg+ and eAg-
1 – 6% clinical hepatitis
23 – 37% serologic evidence

Source has HBsAg+ and eAg+
22 – 31% clinical hepatitis
37 – 62% serologic evidence

**Hepatitis C**: 1.8 %

**Infectiousness of hepatitis B and C from “non-bloody fluids”**

**Guidelines:**
Feces, nasal secretions, saliva, sputum, sweat, tears, urine and vomitus are not considered potentially infectious unless they contain blood. The risk of transmission of HBV, HCV and HIV infection from these fluids and materials is extremely low.

**Hepatitis B**
Saliva - infectious, but transmission not common
Urine, feces, nasal secretions, gastric fluid, sputum, tears, sweat, vomitus - can have hepatitis B virus, but transmission doubtful

**Hepatitis C**
Other than HCV-infected blood – transmission risk is low.
### Post-Exposure Prophylaxis for Hepatitis B

<table>
<thead>
<tr>
<th>Vaccination and antibody response status of exposed worker</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Source HBsAg positive</strong></td>
<td><strong>Source HBsAg negative</strong></td>
</tr>
<tr>
<td>Unvaccinated</td>
<td>HBIG x 1 and initiate HB vaccine series</td>
</tr>
<tr>
<td>Previously vaccinated:</td>
<td>HBIG x 1 and initiate HB vaccine series</td>
</tr>
<tr>
<td>Known responder</td>
<td>No treatment</td>
</tr>
<tr>
<td>Known nonresponder</td>
<td>HBIG x 1 and initiate revaccination or HBIG x 2</td>
</tr>
<tr>
<td>Antibody response unknown</td>
<td>Test exposed person for anti-HBs 1. If adequate, no treatment is necessary 2. If inadequate, administer HBIG x 1 and vaccine booster</td>
</tr>
</tbody>
</table>

#### Antibody response unknown
- Test exposed person for anti-HBs
  - If adequate, no treatment is necessary
  - If inadequate, administer HBIG x 1 and vaccine booster

### Hepatitis B Immune Globulin (HBIG)

- **Give “as soon as possible” after exposure**
- Ideally within 24 hours
- Probably still effective 1-2 weeks after exposure
- Usually can wait for SP test result, if unknown

- **Decreases transmission to 24 % when given within 1 week**
- **Decreases transmission to 2.4 % when given with hepatitis B vaccine**
**Hepatitis C**

No prophylaxis

**Incubation: exposure → infection 2-12 wks (mean = 7 wks)**

Infection → HC Ab 6-8 wks

25% clear the infection

HCV viral load at 6 wks, HCV Ab 4-6 mos.

HCV VL and liver panel at 4, 12, 24 wks (NY)

**Options: Early treatment vs. careful follow-up**

Some have no clinically important sequelae; 20+ years’ latency

---

**HCV Exposure**

![Diagram of HCV Exposure]

Incubation period
2-12 weeks

Symptomatic hepatitis
(10-15%)

Asymptomatic infection
(85-90%)

48-75%
25-52%
10-15%
85-90%

Chronic infection
Spontaneous clearance
Chronic infection


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**Source Patient**

<table>
<thead>
<tr>
<th>Expired Health Care Worker</th>
<th>Follow-Up</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baseline</strong></td>
<td><strong>Baseline</strong></td>
</tr>
<tr>
<td>HIV Ab (rapid)</td>
<td></td>
</tr>
<tr>
<td>Negative (or unk)</td>
<td>None</td>
</tr>
<tr>
<td>Positive (or unk)</td>
<td>None</td>
</tr>
<tr>
<td>HBs Ag</td>
<td></td>
</tr>
<tr>
<td>Negative (or unk)</td>
<td>None</td>
</tr>
<tr>
<td>Positive (or unk)</td>
<td>None</td>
</tr>
<tr>
<td>Vaccinated responder</td>
<td>None</td>
</tr>
<tr>
<td>Vaccinated unk titre</td>
<td>None</td>
</tr>
<tr>
<td>Vaccinated nonresponder</td>
<td>None</td>
</tr>
<tr>
<td>Unvaccinated</td>
<td>HBsAg + Rx</td>
</tr>
<tr>
<td>HCV Ab</td>
<td></td>
</tr>
<tr>
<td>Negative (or unk)</td>
<td>None</td>
</tr>
<tr>
<td>Positive (or unk)</td>
<td>None</td>
</tr>
</tbody>
</table>

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**Exposed Health Care Worker**

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</tr>
<tr>
<td>Positive (or unk)</td>
<td>None</td>
</tr>
</tbody>
</table>

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### Special circumstances

- Found needle
- Needle in park
- Needle in trash
  - Test the needle?
- Human bites

### Why are there no new reported cases?

- Safety devices?
- Better institutional compliance?
- Better education?
- Better habits?
- Less stressful work situations?
- Fewer HIV+ patients in hospitals?
- Decreased viral load in population?
- PEP?
- Poor reporting?
- Stricter case definition?
Is PEP over-prescribed? Yes...and...

‘Over-treatment’ appears to be the preferred initial management strategy in the face of uncertainty

Includes:
- initiating PEP when uncertain
- prescribing expanded regimens

This is a conservative approach from the perspective of the treating clinician

This approach seems to be working!
- No new cases
- Few serious toxicities

Who should provide occupational post-exposure care?

Clinician should be
- knowledgeable (can be expert)
- familiar with PHS Guidelines
- connected to others with expertise

Who should NOT provide occupational post-exposure care?

- Friends/colleagues
- Exposed HCP themselves
- Bosses
- Over-involved
- Inexperienced

Being occupationally exposed can be highly stressful for HCP

I was sort of in emotional and mental shock from the initial incident. (Respiratory Therapist)

Basically, I was panicked and scared and nervous and not sure about the risk of my exposure. (Dentist)

I was devastated. (Physician)

Even though...my exposure was considered a low risk, there is still that anxiety there. (Registered Nurse)
Many HCP felt personally responsible in some way for their exposure, most often because of technique problems or not following procedures.

I was hurrying, and I picked up some gauze, and the needle was under the gauze, and I just stabbed it right into my finger, really hard, through the glove. (Licensed Practical Nurse)

When I was irrigating the wound, a little bit of saline splashed into my eye, and it was more like two days later that I found out that the patient was HIV positive. I first kind of dismissed it. I wasn’t wearing protective eye wear which is, of course, my own fault. (Medical student)

So I did the procedure that I have done a hundred times, but when I did it, probably because of the awkward position and because of my haste, when I clamped and cut the cord, I did get a spray of blood all over my face and into my eyes. (Physician)

I was drawing blood from an HIV patient...she just got me flustered...when I pulled out the needle, it just hit me in the hand. (Registered Nurse)

Exposure Risks (average, per episode, involving HIV-infected source patient)

<table>
<thead>
<tr>
<th>Exposure Type</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peritoneal (blood)</td>
<td>0.3 %</td>
</tr>
<tr>
<td>Mucocutaneous (blood)</td>
<td>0.09 %</td>
</tr>
<tr>
<td>Receptive anal intercourse</td>
<td>1 – 30 %</td>
</tr>
<tr>
<td>Insertive anal intercourse</td>
<td>0.1 – 10 %</td>
</tr>
<tr>
<td>Receptive vaginal intercourse</td>
<td>0.1 – 10 %</td>
</tr>
<tr>
<td>Insertive vaginal intercourse</td>
<td>0.1 – 1 %</td>
</tr>
<tr>
<td>Receptive oral (male)</td>
<td>0.06 %</td>
</tr>
<tr>
<td>Female-female orogenital</td>
<td>4 case reports</td>
</tr>
<tr>
<td>IDU needle sharing</td>
<td>0.67 %</td>
</tr>
<tr>
<td>Vertical (no prophylaxis)</td>
<td>24 %</td>
</tr>
</tbody>
</table>

Exposures in the Non-occupational Setting

Sexual and injection drug use

Treatment well tolerated and might be effective

Begin ASAP; PEP usually not initiated after 72 hrs

ARVs for 28 days

Other regimens for exposures from source patients with documented or possible ARV drug resistance

Antiretroviral Postexposure Prophylaxis after Sexual, Injection-Drug Use, or Other Nonoccupational Exposure to HIV in the United States: Recommendations from the US Department of Health and Human Services

MMWR 2006

www.cdc.gov
www.aidsinfo.nih.gov
Other Biomedical Prevention Strategies

- Treatment as prevention

- PreExposure Prophylaxis (PrEP)
  - For very high risk persons
  - Highly dependent on adherence
  - Not always effective
  - Major concerns have not materialized
    - Resistance
    - Resumption of unsafe practices
  - Costly

Overview References

- Updated U.S. Public Health Service guidelines for the management of occupational exposures to HIV and recommendations for postexposure prophylaxis. Atlanta: Centers for Disease Control and Prevention, September 30, 2005.
- Antiretroviral postexposure prophylaxis after sexual, injection-drug use, or other nonoccupational exposures to HIV in the United States: Recommendations from the US Department of Health and Human Services. MMWR 2006.
**Source Patient Characteristics**

Identity of Source Patient

- Known: 78%
- Unknown: 22%

**Exposure Fluids**

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood</td>
<td>71.2%</td>
</tr>
<tr>
<td>Other</td>
<td>28.8%</td>
</tr>
<tr>
<td>Infectious</td>
<td>9.6%</td>
</tr>
<tr>
<td>Non-infectious</td>
<td>19.2%</td>
</tr>
</tbody>
</table>

**PEPline recommendations**

- Discontinue PEP: 16.6%
- Decrease drugs*: 26.1%
- No change: 44.4%
- Increase drugs*: 12.8%

* includes changing regimen

**Common reasons PEPline recommended discontinuing PEP**

- PEPline confirmed that negative HIV antibody test results justified discontinuing PEP
- PEPline clarified that an indeterminate or weakly positive HIV Ab test in a SP without risk factors can be considered negative
- PEPline clarified the sensitivity/specificity of the rapid test

**Common reasons PEPline recommended decreasing drugs**

- Source patient HIV antibody status was unknown but the source patient did not have HIV risk factors
- Less severe exposure
Good News About Occupational Transmission

- United States:
  - 57 confirmed cases
  - 138 possible cases
- No confirmed cases since 1999

Is PEP over-prescribed or under-prescribed? Review of PEPline calls

- Assessed PEPline recommendations for the subset of occupational exposure calls when
  - the exposed HCP had received antiretroviral PEP drugs prior to the call and
  - when a specific recommendation was made by the PEPline (N=655)

Institutions’ Key Roles in Organizing Local Systems for Post-exposure Care

- Establish organizational structure for exposure management
- OSHA Blood-Borne Pathogens Standards
- NIOSH Guidelines
- State Laws regarding reporting, etc.
- Hospital regulations
- Written policies and protocols for reporting, evaluating, counseling, treating, and follow-up
- MMWR Guidelines
- Establish procedures to ensure confidentiality

Institutional Exposure Management Plan

- Formal training for all
- Protocols for dealing with equipment
- Basic safety measures: hepatitis B vaccination; sharps containers, gloves, no re-capping, etc.
- Readily available protocol for managing exposures
- Linkage with treating clinicians
- Protocols for obtaining source patient info & F/U
- Non-judgmental attitude
- Occupational/employee health unit
Guideline Definitions: HIV Disease Status

More severe
e.g., large hollow bore needle, deep injury, visible blood, used in artery or vein

Less severe
e.g., solid needle and superficial injury

HIV+ Class 1
Asymptomatic or
Viral load <1500 copies/mL

HIV+ Class 2
Symptomatic
AIDS
Known high VL
Acute seroconversion illness

<table>
<thead>
<tr>
<th>Source Patient</th>
<th>Exposed Health Care Worker</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV Ab (rapid)</td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>None (Window ?)</td>
</tr>
<tr>
<td>Positive (or unk)</td>
<td>HIV Ab (rapid, standard)</td>
</tr>
<tr>
<td>HBs Ag</td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>None</td>
</tr>
<tr>
<td>Positive (or unk)</td>
<td>Vaccinated responder → None</td>
</tr>
<tr>
<td>HCV Ab</td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>None</td>
</tr>
<tr>
<td>Positive (or unk)</td>
<td>HCV Ab</td>
</tr>
</tbody>
</table>

Post-exposure testing for the Exposed

HIV
Antibody at baseline (*Rapid Test*), 6 wks, 3 mos, 6 mos
- consider 12 month if HCV+

HCV
Antibody at baseline and at 4 - 6 mos
HCV RNA- consider at 4-6 weeks ‘if earlier diagnosis needed’
(when SP is HCV+)

ALT recommended at baseline (?)needed?)

HBV Testing—As clinically indicated: HBsAb
(Test susceptible HCW for HBsAg @ 3 & 6 mos)
### Source Patient Exposed Health Care Worker

<table>
<thead>
<tr>
<th>Test</th>
<th>Baseline</th>
<th>Baseline</th>
<th>Follow-Up</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HIV Ab (rapid)</strong></td>
<td>None</td>
<td>None</td>
<td>None (Window ?)</td>
</tr>
<tr>
<td>Negative</td>
<td>None</td>
<td>None</td>
<td>None (Window ?)</td>
</tr>
<tr>
<td>Positive (or unk)</td>
<td>None</td>
<td>None</td>
<td>None (Window ?)</td>
</tr>
<tr>
<td>HBs Ag</td>
<td>None</td>
<td>None</td>
<td>None (Window ?)</td>
</tr>
<tr>
<td>Negative</td>
<td>None</td>
<td>None</td>
<td>None (Window ?)</td>
</tr>
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<td>None</td>
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<td>Positive (or unk)</td>
<td>None</td>
<td>None</td>
<td>None (Window ?)</td>
</tr>
</tbody>
</table>

### Experiences of Health Care Personnel

**Occupationally Exposed to Bloodborne Pathogens**

- Qualitative interviews
- 25 health care personnel who sustained exposures to bloodborne pathogens in their workplace and called the National Clinicians’ Post-Exposure Prophylaxis Hotline (PEPline) for clinical advice
- January 2004 - January 2005

### PEPline Recommendations

<table>
<thead>
<tr>
<th>PEPline Recommendation</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discontinue PEP</td>
<td>109*</td>
<td>16.6%</td>
</tr>
<tr>
<td>Decrease Number of ARV Drugs</td>
<td>171*</td>
<td>26.1%</td>
</tr>
<tr>
<td>No Change</td>
<td>291</td>
<td>44.4%</td>
</tr>
<tr>
<td>Increase Number of ARV Drugs</td>
<td>84*</td>
<td>12.8%</td>
</tr>
<tr>
<td>Total</td>
<td>655</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

*Significantly different (p<.001) from reference category, No Change.
A nurse in the ED sustains a needlestick from an i.v. needle that was just removed from a 28 year old woman who was treated for cocaine overdose. The needle was not visibly bloody. The “stick” drew a drop of blood. The patient is sexually active with multiple partners but denies sexual activity for the past month. She has not had symptoms of a viral infection in the past 3 months. The nurse happens to know she is HIV-negative. Regarding HIV, what would you do?

A – Reassure the nurse; no PEP  
B – Obtain an HIV viral load and ELISA from the SP; begin PEP.  
C – Obtain an HIV viral load and ELISA from the SP; no PEP.  
D – Obtain blood for HIV Ab from the SP; begin PEP depending on results.  
E – Institute 28-day course of PEP because patient might be in the Window period and no testing will rule this out.

The nurse was given PEP. She tolerated it well until 15 days into therapy, when she developed a rash on her trunk and extremities. She feels “warm” from the rash but has no fever.

Examination reveals T = 38.3, a maculopapular rash without mucous membrane involvement, and no other abnormalities. Routine laboratory tests (CBC, chemistries) are normal.

What do you do? What DO you do?

Experiences of Health Care Personnel Occupationally Exposed to Bloodborne Pathogens

- Being occupationally exposed can be highly stressful for HCP.
- Many HCP felt personally responsible in some way for their exposure, most often because of technique problems or not following procedures.
- Colleagues, treating clinicians and consultants provided invaluable support for decision-making.
- Most HCP who took PEP reported experiencing side effects, of variable severity. Side effects played a major role in compounding stress for many HCP.

Despite protocols and procedures, deciding what to do after an exposure was difficult for HCP

It was just frustrating to make that decision after being exposed…at the time, not necessarily knowing the ultimate risk involved…you just want a clear answer. (Registered Nurse)

After my exposure, I went home and my daughter just said, “absolutely you are not waiting!” My gut feeling was that I probably was supposed to do something right away. (Registered Nurse)
Colleagues, treating clinicians and consultants provided invaluable support for decision-making

I appreciated being able to just discuss this with someone … you don’t normally find yourself being on the other end.  
(Dentist)

Most helpful was just the clinical consultant being there. Just the emotional support, you know, because I wasn’t getting that anywhere else. (Licensed Practical Nurse)

I talked with them [PEPline consultants] probably three times that first day …I felt like I wasn’t in this by myself. (Physician)

Despite side-effects, most HCP who were prescribed PEP took the medications for the recommended 28-day duration

I just tried to comply. Zero doses missed. (Physician assistant)

That middle dose was very difficult. Trying to work and do that I had missed a couple of doses. (Registered Nurse)

I developed pretty extensive headaches on it and some nausea. And, after seven or eight days I actually discontinued the use of it. (Physician)

I just took the medications for three days and felt horrible. (Respiratory therapist)

Most HCP who took PEP reported experiencing side-effects, but the severity of them was variable. Side-effects played a major role in compounding stress for many HCP

[After my exposure] I was sort of in shock. And then the next day I was physically compromised because of the medications. (Respiratory therapist)

I have compassion for every human being who has to take these meds. I was depressed, I was weak, I was nauseous. If I thought that I would have to do this for more than 30 days, I don’t know what I could have done for a month. It’s just like it destroyed my life for a month. (Registered Nurse)