

# Occupational and Non-Occupational HIV Post-exposure Prophylaxis

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National Clinicians' Post-Exposure Prophylaxis Hotline  
(PEPline)

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## Seroconversion Following Nonoccupational Postexposure Prophylaxis against HIV

*Methods.* HIV uninfected individuals reporting potential sexual or injection drug use exposures to HIV in the preceding 72 h received a 28-day regimen of antiretroviral therapy and counseling in a nonrandomized trial. The level of HIV antibody was measured 12 weeks after PEP initiation.

*Results.* Of 877 exposed subjects, 702 were evaluable 12 weeks after exposure. Seroconversion was detected in 7 subjects (1%; 95% confidence interval, 0.4%–2%). Three seroconverters reported having no exposures after PEP initiation and, thus, probably represent evidence of chemoprophylactic failure. In the other 4 subjects, additional exposures to HIV after PEP initiation or detection of HIV RNA in plasma specimens obtained at baseline precluded determination of the source of seroconversion. No exposure source was available to assess genetic concordance with the seroconverter's virus.

**Table 1. Treatment and virologic characteristics of seroconverters following receipt of postexposure prophylaxis (PEP).**

Seroconverter	Time to PEP initiation after exposure, h	Antiretroviral therapy	Medication adherence	Plasma HIV RNA level, copies/mL		Antiretroviral resistance mutations <sup>a</sup>
				At baseline	At seroconversion	
1	72.5	ddl and D4T	Poor <sup>b</sup>	<50	3381	None
2	67.5	ZDV and 3TC	Excellent <sup>c</sup>	<50	98,527	None
3	21	ZDV and 3TC, changed to D4T and 3TC <sup>d</sup>	Poor <sup>a</sup>	<50	>500,000	None
4	14	ZDV and 3TC	Excellent <sup>c</sup>	589 and 385 <sup>f</sup>	>500,000	Baseline, none; week 12, M184V
5	55.5	ZDV and 3TC	Excellent <sup>c</sup>	<50	32,278	None
6	45.5	ZDV and 3TC	Fair <sup>d</sup>	<50	268,140	None
7	30.5	ZDV and 3TC, changed to D4T/3TC <sup>d</sup>	Excellent <sup>c</sup>	<50	258,599	None

**Table 2. High-risk sexual behavior before and after receipt of postexposure prophylaxis (PEP).**

Seroconverter	Risk behavior with an HIV-infected partner		Risk behavior with a partner with unknown HIV infection status	
	Before PEP <sup>a</sup>	After PEP <sup>b</sup>	Before PEP <sup>a</sup>	After PEP <sup>b</sup>
1	RAI (1) and IAI (2)	None	RAI (4) and IAI (5)	None
2	None	None	RAI (4) and IAI (4)	RAI (1)
3	None	None	RAI (1) and IAI (1)	ROI (3) and IAI (2)
4	RAI (3), IAI (1), and ROI (4)	None	RAI (8) and ROI (4)	None
5	None	None	RAI (1) and ROI (1)	None
6	RAI (1)	None	RAI (1)	None
7	RAI (1) and IAI (1)	RAI (5) and IAI (3)	None	None

**NOTE.** IAI, unprotected insertive anal intercourse; PEP, postexposure prophylaxis; RAI, unprotected receptive anal intercourse; ROI, unprotected receptive oral intercourse with ejaculation. Numbers in parentheses refer to the number of acts.

<sup>a</sup> In the 6 months prior to enrollment.

<sup>b</sup> Between enrollment and seroconversion.

*Conclusions.* As for occupational exposure, PEP is not completely effective in preventing HIV infection following nonoccupational exposure. Therefore, primary prevention remains essential. In contrast to the occupational setting, the potential source of exposure is rarely available for testing in the nonoccupational setting, and exposures are often not isolated. Thus, it is often impossible to determine whether seroconversion resulted from failure of PEP or from other exposures, posing difficulties for future comparative studies seeking to evaluate the effectiveness of PEP.

### **Use of postexposure prophylaxis against HIV infection following sexual exposure does not lead to increases in high-risk behavior**

**Design:** Non-randomized trial of 397 adults with high-risk sexual or drug-use exposures within the prior 72 h.

**Interventions:** Antiretroviral medication for 4 weeks and five counseling sessions.

**Results:** After 12 months following receipt of PEP, the majority of participants (83%) did not request a repeat course of PEP. At 12 months after exposure, 73% of participants reported a decrease compared with baseline in the number of times they had performed high-risk sexual acts; 13% reported no change, and 14% had an increase. Most participants (85%) had no change in the incidence of STD; 8.5% had a

## Risk Reduction Counseling

- ◇ In persons with lower baseline risk who seek PEP following sexual exposures, standard counseling is not inferior to enhanced counseling for reducing subsequent risk behavior
- ◇ When baseline risk is higher, standard and enhanced counseling are not equivalent.
- ◇ Enhanced counseling should be targeted to individuals who report higher baseline risk.

Roland et al. A Randomized Trial of Standard vs Enhanced Risk Reduction Counseling for Individuals Receiving PEP CROI 2006

## PEP and Sexual Assault

- ◇ Interest in PEP for sexual exposures ↑ since 1996 healthcare worker study
- ◇ Acceptance and completion of PEP in sexual assault survivors in developed countries ↓
- ◇ Effective PEP delivery remains a challenge

## Unanswered Questions

- ◇ Adherence to and side effects with PEP in the complex emotional setting of sexual assault and high HIV prevalence
- ◇ Ongoing HIV risk behavior and seroconversion
- ◇ The human and financial resources required to facilitate effective, comprehensive care for sexual assault survivors

## San Francisco: PEP 1

- ◇ 78% subjects returned for a follow-up visit after completing 4 weeks of treatment and reported completing the 28-day course
- ◇ Adherence was by 4-day recall was incomplete despite reports of completing the 28-day course
  - ❖ For example, among subjects questioned at week 2 who were prescribed Combivir, only 79% reported complete adherence for all 4 days combined

## Implications

- ◇ Sexual assault survivors are likely to have had unprotected sex with consensual sex partners
- ◇ This is likely to continue
- ◇ Thus all sexual assault survivors should undergo risk assessment in conjunction with VCT
- ◇ Intensive risk reduction counselling should be targeted at those reporting unprotected sex with consensual partners

## Cape Town Study: 4 Seroconversions

- ◇ 81% of had an HIV test at week 12 or week 26
- ◇ 3 tested + at week 12; 1 tested + at week 26
- ◇ Risk of seroconversion = 3.7% (95% CI 1.0, 9.1)
  - ◇ 1 probable PEP failure/excellent adherence
  - ◇ 1 probable PEP failure/incomplete adherence
  - ◇ 1 unclear infection source (unprotected sex with regular partner of unknown HIV status)
  - ◇ 1 subject who received 2 days of PEP and had multiple other exposures

## Retention

- ◇ Follow-up rates were quite high
  - ❖ 3 withdrawals due to inconvenience
  - ❖ 15 lost to follow-up (only 5 within first 4 weeks)
- ◇ Intense tracking and significant staffing; should not be generalized to a non-study setting
  - ❖ 161 tracing attempts in 52 subjects (1 – 8 attempts)
  - ❖ 42% busy, 15% work problems, 7% family problems, 8% didn't know about appointment

## Conclusions

- ◇ With intensive intervention retention was high, however adherence was often incomplete
- ◇ Adherence counselling and efforts at retaining subjects for follow-up cannot be targeted
- ◇ Ongoing HIV risk is substantial and must be addressed
- ◇ **Thus the focus should be on improved adherence interventions for all, risk assessment and targeted intensified HIV risk reduction counselling, and adequate & comprehensively trained staff**

## Guidelines: How Do They Differ?

- ◇ Time to PEP initiation
- ◇ Source HIV status
- ◇ Medications
- ◇ Lab Monitoring

## Current U.S. Guidelines

	Year	Time to PEP Initiation	Source HIV Status
<b>CDC</b>	2005	72 hours <sup>[1]</sup>	Known: recommend <b>Unknown: case-by-case</b>
<b>New York</b>	2004	<b>36 hours</b> <sup>[1]</sup>	Known: recommend Unknown: recommend
<b>New York/ Pediatric</b>	2004	<b>36 hours</b>	Known: recommend Unknown: recommend
<b>California</b>	2004	72 hours	Known: offer Unknown: offer
<b>California/Sexual Assault</b>	2001	72 hours	Known: recommend Unknown: recommend
<b>Rhode Island</b>	2002	72 hours <sup>[1]</sup>	Known: recommend Unknown: offer

<sup>[1]</sup> Recommends offering PEP beyond this time-frame under certain circumstances.

# Medications

	2 or 3 Drugs	Nucleoside Analogues (NRTI)	Protease Inhibitor (PI)	Non-Nucleoside Reverse Transcriptase Inhibitor (NNRTI)
<b>CDC</b>	3 drugs	<p><b>Recommend</b> lamivudine or emtricitabine + zidovudine (or tenofovir if used with efavirenz)</p> <p><b>Alternate</b> NNRTI-based: (lamivudine or emtricitabine) plus (abacavir or didanosine or stavudine) PI-based: (lamivudine or emtricitabine) + (zidovudine or stavudine or abacavir or didanosine or tenofovir) except, with Lopinavir/ritonavir (co-formulated as Kaletra) plus (lamivudine or emtricitabine) plus (stavudine or abacavir or tenofovir or didanosine) Triple NRTI Abacavir plus lamivudine plus zidovudine (when an NNRTI- or PI-based regimen should not be used)</p>	<p><b>Recommend</b> lopinavir/ritonavir</p> <p><b>Alternate</b> atazanavir (if tenofovir is used, add ritonavir) fosamprenavir fosamprenavir/ritonavir indinavir/ritonavir nelfinavir saquinavir/ritonavir</p>	<p><b>Recommend</b> efavirenz</p>

	2 or 3 Drugs	Nucleoside Analogues (NRTI)	Protease Inhibitor (PI)	Non-Nucleoside Reverse Transcriptase Inhibitor (NNRTI)
<b>New York</b>	3 drugs	<p><b>Recommend</b> zidovudine + lamivudine + tenofovir</p> <p><b>Alternate</b> stavudine + lamivudine + tenofovir</p>	<p><b>Alternate</b> nelfinavir lopinavir/ritonavir</p>	<p>Consider only if: 1) cannot tolerate either tenofovir or a PI, or 2) exposed to a source with resistant HIV that is sensitive to NNRTIs</p>
<b>California</b>	2 drugs	<p><b>Recommend</b> zidovudine + lamivudine</p> <p><b>Alternate</b> stavudine or tenofovir + lamivudine or emtricitabine</p>	<p><b>If PI Used</b> <b>Recommend</b> lopinavir/ritonavir</p> <p><b>Alternate</b> nelfinavir indinavir atazanavir fosamprenavir others</p>	<p><b>If NNRTI Used</b> <b>Recommend</b> efavirenz</p>
<b>Rhode Island</b>	<p><b>HIV+ source</b> 3 drugs</p> <p><b>Unknown source</b> 2 drugs</p>	<p>zidovudine or stavudine + lamivudine</p>	<p><b>Recommend if HIV+ source</b> indinavir nelfinavir</p> <p><b>Alternate if unknown source</b> indinavir nelfinavir</p>	<p>--</p>

# Laboratory Monitoring

	HIV Antibody					Complete Blood Count				
	Baseline	During PEP	4-6 Weeks	3 Mos	6 Mos	Baseline	During PEP	4-6 Wks	3 Mos	6 Mos
CDC	✓		✓	✓	✓	✓	✓			
New York	✓		✓	✓	✓	✓	✓	✓		
New York/ Pediatric	✓		✓	✓	✓	✓		✓		
California	✓			✓	✓					
California/ Sexual Assault	✓									
Rhode Island	✓		✓	✓	✓	✓	✓	✓		

	Liver Enzymes					Creatinine				
	Baseline	During PEP	4-6 Weeks	3 Mos	6 Mos	Baseline	During PEP	4-6 Wks	3 Mos	6 Mos
CDC	✓	✓				✓	✓			
New York	✓	✓	✓							
New York/ Pediatric	✓		✓							
California										
California/ Sexual Assault										
Rhode Island	✓ <sup>[1]</sup>	✓	✓			✓	✓	✓		

<sup>[1]</sup> If PI prescribed

## : HIV Post-Exposure Prophylaxis Following Sexual Exposure is Started Too Late for Optimal Benefit

- ◇ Purpose: Characterize current post-exposure management of sexual exposures to HIV
- ◇ Methods
  - ❖ Reviewed all sexual exposure calls to the PEpline from 1/1/04 to 8/30/05
  - ❖ Univariate analysis performed on relationship between exposure type, source patient risk, and time to PEpline call

Kindrick, et al. CROI 2006. Poster #906

## Exposure Characteristics

Exposed Gender	
Male	465 (52.0)
Female	423 (47.2)
Unknown	7 (0.8)
<b>Total</b>	<b>895 (100%)</b>
Exposed Age	
< 12	8 (0.9)
12 – 19	106 (11.8)
> 19	745 (83.2)
Unknown	36 (4.1)
<b>Total</b>	<b>895 (100%)</b>
Source Gender	
Male	694 (77.5)
Female	150 (16.8)
Unknown	51 (5.7)
<b>Total</b>	<b>895 (100%)</b>
Consensual Contact	
Yes	533 (59.5)
No	313 (35.0)
Unknown	49 (5.5)
<b>Total</b>	<b>895 (100%)</b>
SP Risk Category	
Known HIV+	272 (30.4)
High Risk	216 (24.1)
Not High Risk	43 (4.8)
Unknown	364 (40.7)
<b>Total</b>	<b>895 (100%)</b>
Contact Type	
Male – Receptive Anal	191 (21.3)
Male – Insertive Anal	46 (5.1)
Male - Insertive Vaginal	117 (13.1)
Female – Receptive Anal	42 (4.7)
Female – Receptive Vaginal	346 (38.7)
Oral	86 (9.6)
Other	32 (3.6)
Unknown	35 (3.9)
<b>Total</b>	<b>895 (100%)</b>

## Caller Characteristics

Caller Profession	# (%)
MD	542 (59.0)
RN/LVN/PA	127 (13.8)
NP	62 (6.75)
Other Medical	49 (5.3)
Non-Medical	10 (1.1)
Non-occupational	57 (6.2)
Unknown	71 (7.7)
<b>Total</b>	<b>918</b>
Caller Practice Setting	# (%)
ER	278 (30.3)
Ambulatory Care/Outpt	337 (36.7)
Other Medical	131 (14.3)
Non-Medical	25 (2.7)
Unknown	147 (16.0)
<b>Total</b>	<b>918</b>
Caller Location	# (%)
Urban/Suburban	634 (69.1)
Rural	113 (12.3)
Unknown	171 (18.6)
<b>Total</b>	<b>918</b>
Caller Exposure Management Experience	# (%)
≤ 10	594 (64.7)
11 – 50	88 (9.25)
51 – 100	22 (2.4)
> 100	30 (0.1)
Unknown	187 (20.4)
<b>Total</b>	<b>918</b>

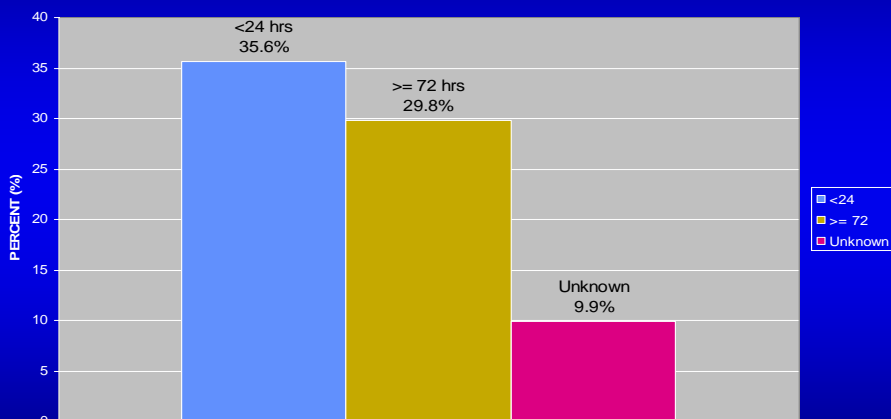
## Treatment Characteristics

Already on PEP	# (%)
Yes	120 (13.4)
No	615 (68.7)
Unknown	160 (17.9)
<b>Total</b>	<b>895 (100%)</b>
PEPline Advice/Already on PEP	# (%)
Stop	12 (10)
Continue same regimen	36 (30)
Continue same # of drugs, different regimen	7 (5.8)
Continue more drugs	15 (12.5)
Continue fewer drugs	18 (15)
Unspecified/Seek Care	12 (10)
Not discussed	20 (16.7)
<b>Total</b>	<b>120 (100%)</b>
PEPline Advice/Not Already on PEP	# (%)
Don't start	148 (19.1)
Start 2	313 (40.4)
Start >2	155 (20)
Unspecified/Seek Care	55 (7.1)
Not discussed	104 (13.4)
<b>Total</b>	<b>775 (100%)</b>

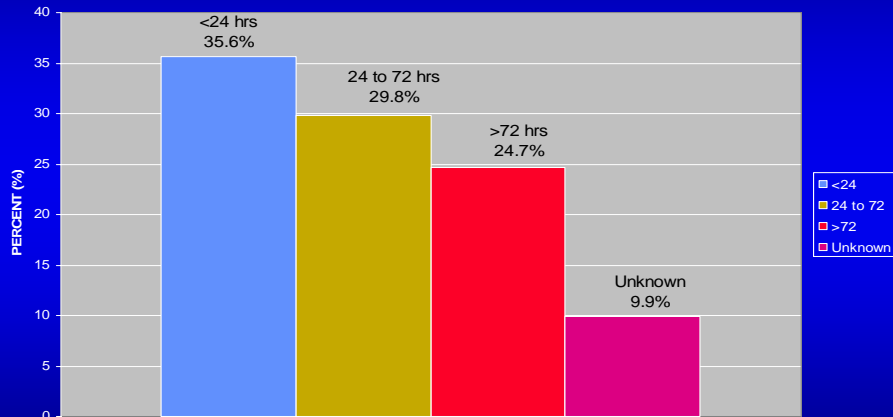
## Results

- ◇ Exposed individuals were equally likely to be men as women
- ◇ 13% of exposed persons were younger than 19 years of age
- ◇ A significant proportion of exposures (35%) involved non-consensual contact
- ◇ Over half of all exposures involved a source patient who was either known HIV+ or at high risk
- ◇ Most exposed persons were not on PEP at the time of the call even though the majority of exposures met USPHS guidelines criteria for PEP consideration
- ◇ Most PEpline callers had little experience with exposure management

### Time From Exposure to Consultation Request, Not Already on PEP (n=766)



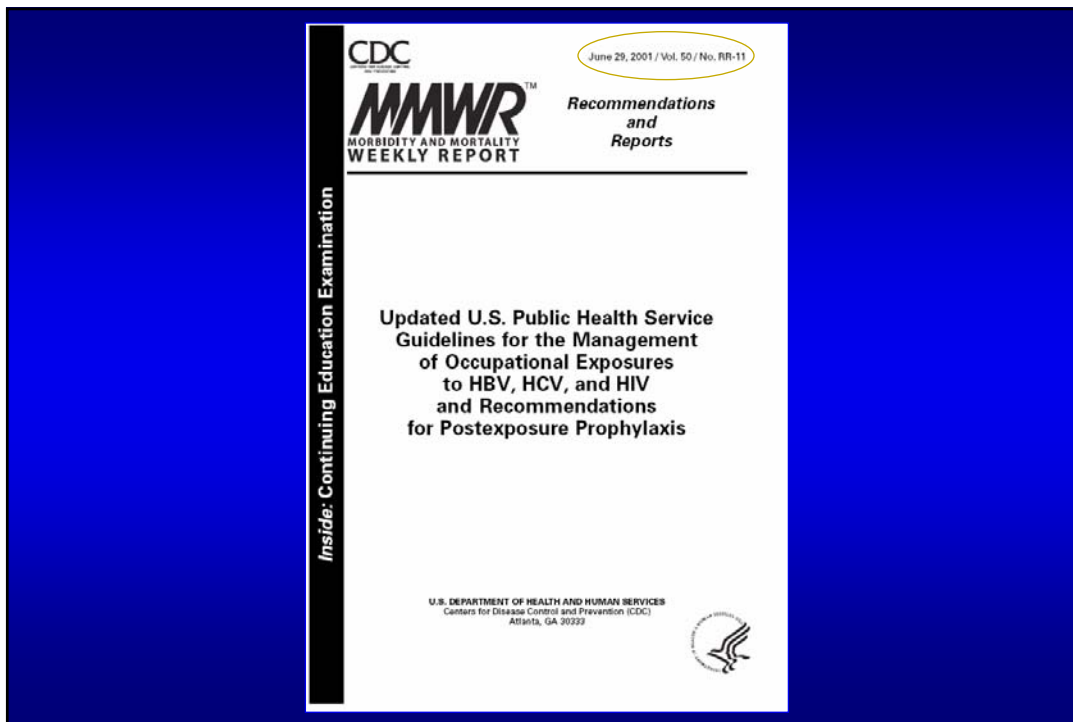
## Time From Exposure to Consultation Request, Not Already on PEP (n=766)

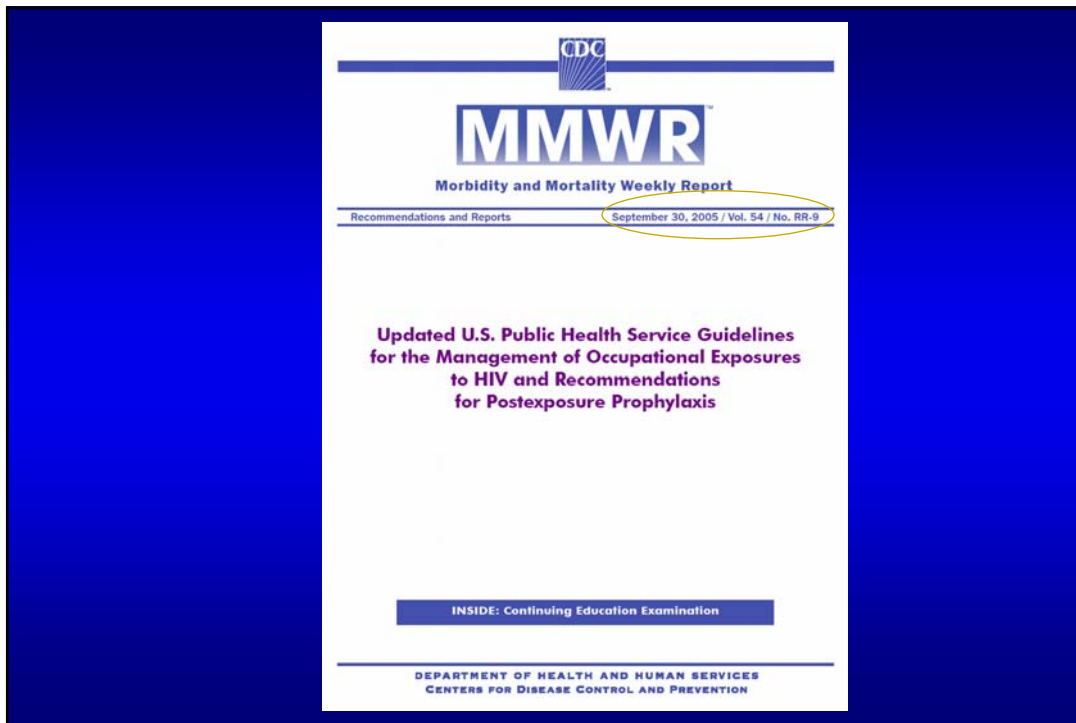


## Conclusions

- ◇ About ¼ of sexual exposure calls to the PEpline occurred >72 hours after exposure
- ◇ Most exposed persons were not on PEP at the time of the call even though the majority of exposures met USPHS guidelines criteria for PEP consideration
- ◇ Most PEpline callers had little experience with exposure management
- ◇ Increased public awareness of PEP and physician education may improve time to PEP after sexual exposures

# Managing Occupational Blood Borne Pathogen Exposures





## Highlights of Guidelines Update

- ◇ No new PEP effectiveness data
- ◇ More/different regimen options
- ◇ Stronger emphasis on
  - ❖ ARV toxicity
  - ❖ Drug-drug interactions
  - ❖ Better follow-up

# Updated PEP Recommendations (No Significant Changes)

**TABLE 1. Recommended HIV postexposure prophylaxis (PEP) for percutaneous injuries**

Exposure type	Infection status of source				
	HIV-positive, class 1*	HIV-positive, class 2*	Source of unknown HIV status†	Unknown source‡	HIV-negative
Less severe§	Recommend basic 2-drug PEP	Recommend expanded ≥3-drug PEP	Generally, no PEP warranted; however, consider basic 2-drug PEP** for source with HIV risk factors††	Generally, no PEP warranted; however, consider basic 2-drug PEP** in settings in which exposure to HIV-infected persons is likely	No PEP warranted
More severe§§	Recommend expanded 3-drug PEP	Recommend expanded ≥3-drug PEP	Generally, no PEP warranted; however, consider basic 2-drug PEP** for source with HIV risk factors††	Generally, no PEP warranted; however, consider basic 2-drug PEP** in settings in which exposure to HIV-infected persons is likely	No PEP warranted

**TABLE 2. Recommended HIV postexposure prophylaxis (PEP) for mucous membrane exposures and nonintact skin\* exposures**

Exposure type	Infection status of source				
	HIV-positive, class 1†	HIV-positive, class 2†	Source of unknown HIV status‡	Unknown source¶	HIV-negative
Small volume**	Consider basic 2-drug PEP††	Recommend basic 2-drug PEP	Generally, no PEP warranted§§	Generally, no PEP warranted	No PEP warranted
Large volume¶¶	Recommend basic 2-drug PEP	Recommend expanded ≥3-drug PEP	Generally, no PEP warranted; however, consider basic 2-drug PEP†† for source with HIV risk factors§§	Generally, no PEP warranted; however, consider basic 2-drug PEP†† in settings in which exposure to HIV-infected persons is likely	No PEP warranted

**MMWR**

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# CDC Non-Occupational vs Occupational Guidelines

	Number of Drugs	Nucleoside Analogues (NRTI)	Protease Inhibitor (PI)	Non-Nucleoside Reverse Transcriptase Inhibitor (NNRTI)
<b>Non-Occupational</b>	3 drugs (with option of 2 drugs)	<b>Recommended</b> ◆Lamivudine (3TC) or emtricitabine (FTC) + zidovudine (AZT) (or tenofovir (TDF) if used with efavirenz (EFV)) <b>Alternate</b> ◆NNRTI-based: (3TC or FTC) plus (abacavir (ABC) or didanosine (ddI) or stavudine (d4T)) ◆PI-based: (3TC or FTC) + (AZT or d4T or ABC or ddI or TDF) ◆Triple NRTI: ABC plus 3TC plus AZT (when an NNRTI- or PI-based regimen should not be used)	<b>Recommended</b> ◆Lopinavir/ritonavir (LPV/r) <b>Alternate</b> ◆Atazanavir (ATV) (if TDF is used, add ritonavir) OR ◆Fosamprenavir (f-APV) +/- RTV boost OR ◆Indinavir/ritonavir (IDV/r) OR ◆Nelfinavir (NLF) OR ◆Saquinavir/ritonavir (SQV/RTV)	<b>Recommended</b> ◆Efavirenz (EFV)
<b>Occupational</b>	2 drugs (with option of 3 drugs)*  *3 drugs in NY State	<b>Recommended Basic</b> ◆(3TC or FTC) + (AZT or TDF) <b>Alternate Basic</b> ◆(3TC or FTC) + (d4T or ddI) <b>Preferred Expanded</b> ◆Basic regimen PLUS <b>Alternate Expanded</b> ◆Basic regimen PLUS	<b>Recommended Basic</b> ◆None <b>Alternate Basic</b> ◆None <b>Preferred Expanded</b> ◆LPV/r <b>Alternate Expanded</b> ◆ATV +/- RTV boost OR ◆f-APV +/- RTV boost OR ◆IDV/r OR ◆SQV/r OR ◆NLF OR	<b>Preferred Expanded</b> ◆None <b>Alternate Expanded</b> ◆EFV

# Philosophical Differences

## Occupational

- ❖ Transmission risks generally are very low
- ❖ ARV toxicity risk is non-trivial
- ❖ Completion rates are low

2 Drugs for lower risk exposures

## Non-Occupational

- ❖ Transmission risks may be higher
- ❖ ARV toxicity generally is manageable
- ❖ Exposed may already be infected

3 Drugs for all exposures

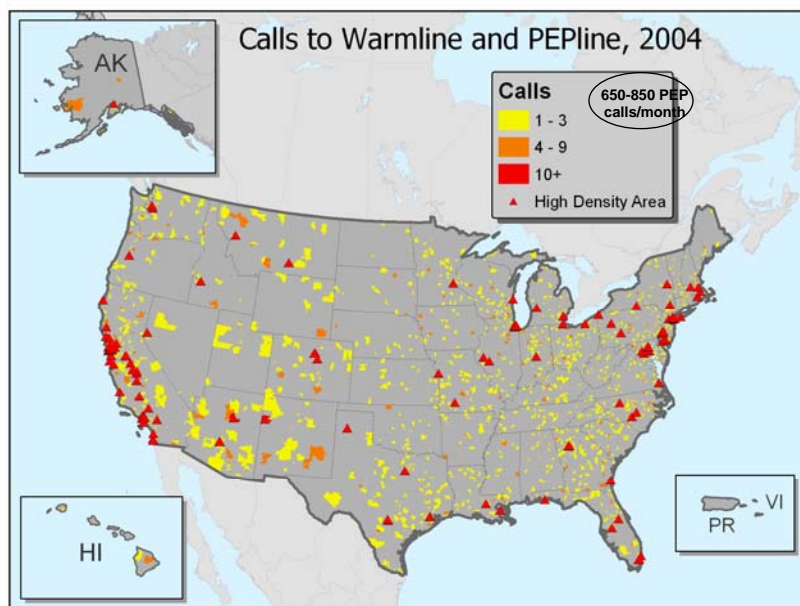
# Occupational PEP Failures

TABLE 6. Reported instances of failure of combination drug postexposure prophylaxis (PEP) to prevent HIV-infection among health-care personnel exposed to HIV-infected blood through percutaneous injury

Year of incident	Device	PEP regimen*	Time to first dose (hrs)	No. of days to onset of retroviral illness	No. of days to document seroconversion†	Source-patient		
						HIV-infection status	On anti retrovirals	Virus resistant to antiretrovirals§
1992 <sup>¶</sup>	Biopsy needle	ZDV, ddl	0.5	23	23	AIDS, terminally ill	Yes	Unknown
1996 <sup>**</sup>	Hollow-bore needle	ZDV, ddl <sup>††</sup>	1.5	45	97	Asymptomatic HIV infection	No	Not tested
1997 <sup>**</sup>	Large or hollow-bore needle	ZDV, 3TC, IDV <sup>§§</sup>	1.5	40	55	AIDS	Yes	No
1998 <sup>¶¶</sup>	Hollow-bore needle	ZDV, 3TC, ddl, IDV	0.7	70	83	AIDS	Yes	Yes
1999 <sup>***</sup>	Unknown sharp	ddl, d4T, NVP <sup>†††</sup>	2.0	42	100	AIDS	Yes	Yes
2001 <sup>§§§</sup>	Phlebotomy needle	ZDV, 3TC, IDV <sup>¶¶¶</sup>	1.6	24	~90	AIDS	Yes	Yes

## National Clinicians' Post-Exposure Prophylaxis Hotline (PEPline)

- ◇ For health care workers managing exposures to blood and other potentially infectious body fluids
- ◇ HIV, HBV, and HCV exposure management expertise
- ◇ Around-the-clock access to clinician consultants at (888) 448-4911
- ◇ 20,000+ calls since inception (1997)
- ◇ Funded by HRSA and CDC





## PEPline Indications for Expanded Regimen

- ◇ Large inoculum size
  - ❖ More severe injury
  - ❖ Longer duration of contact
  - ❖ Larger fluid volume
  - ❖ Higher concentration of virus/unit volume (source viral load)
- ◇ Concern about ARV resistance in source's virus

## PEPline Consensus

- ◇ Nevirapine NOT recommended
- ◇ Efavirenz recommended sparingly
  - ❖ CNS toxicity is poorly tolerated and can impair work performance
  - ❖ Hypersensitivity reaction mimics HIV seroconversion
  - ❖ Potentially teratogenic
- ◇ PEP is not contraindicated for pregnant women

## Issues Without Consensus

- ◇ Incremental benefit of more vs fewer drugs
- ◇ Point at which it's too late to start PEP
- ◇ Infectivity of "found" or discarded sharps
- ◇ Infectivity of unusual fluids (e.g., non-bloody CSF, joint fluid, pus, peritoneal fluid, vitreous fluid)
- ◇ Infectivity of virus with extensive ARV resistance
- ◇ Definition of "high" and "low" source viral load
- ◇ Probability of serious ARV toxicity over short treatment course in non-infected persons



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## HRSA AETC National Telephone Consultation Services

### National HIV Telephone Consultation Service

(Warmline) 800 / 933 - 3413

Consultation for clinicians with HIV management questions

### National Clinicians' Post-Exposure Prophylaxis Hotline

(PEPline) 888 / 448 - 4911

Recommendations for managing occupational exposures to bloodborne pathogens

### National Perinatal HIV Consultation and Referral Service

(Perinatal Hotline) 888 / 448 - 8765

Advice on HIV testing in pregnancy and managing HIV-infected pregnant women and their exposed babies

University of California San Francisco

San Francisco General Hospital

Supported by

Health Resources and Services Administration (HRSA)

AIDS Education and Training Centers (AETCs)

and Centers for Disease Control and Prevention (CDC)