
Public Health and Service Delivery
Issues in the Scale Up of
Non-Occupational PEP...
& Implications for PrEP

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What is non-occupational PEP? (PrEP?)

- 1) Risk assessment – exposure risk, likely HIV status, baseline risk profile
- 2) HIV testing at initiation and following PEP x months
- 3) **ARV medications for 28 days** and side effect management
- 4) Adherence counseling at initiation and during follow-up
- 5) Risk reduction and/or trauma counseling
- 6) Referrals and linkages: HIV prevention, reproductive health, mental health, substance use, etc.
- 7) Care system to *initiate* and to *follow during* and *after*

Prevention, Care and Additional Expertise Required

Is Non-Occupational PEP Effective?

There are no efficacy data in this setting

- ❑ ethical concerns re control groups
- ❑ feasibility: low per contact transmission →
extremely large sample size

Is PrEP effective and if so, in whom and how?

Seroconversion after PEP

- N = 702 with HIV test 12 weeks after PEP
- 7 seroconversions (**1%**; 95% CI 0.04 – 2%)
- Source rarely available for testing, so
- 3 without post-PEP exposures → PEP failures
- 3 with post-PEP exposures → ?etiology

- PEP is not 100% effective
- Primary prevention is critical

Table 2. HIV risk outcomes among individuals randomized to standard or enhanced risk reduction counseling

| Subjects | Risk Reduction Counseling Arm | | | Upper bound 95% CI |
|--|-------------------------------|----------|-------------------------|--------------------|
| | Standard | Enhanced | Standard minus Enhanced | |
| Change in no. unprotected sex acts at 12 months compared to baseline (no.) | | | | |
| All | -1.8 | -2.3 | +0.5 | +3.9 |
| Less baseline risk ^a | -0.4 | +1.2 | -1.6 | -0.2 |
| More baseline risk ^b | -7.0 | -13.2 | +6.2 | +19.6 |
| 12 month cumulative incidence of re-PEP (%) | | | | |
| All | 23.7 | 16.9 | +6.8 | +13.8 |
| Less baseline risk | 21.1 | 17.2 | +3.9 | +11.8 |
| More baseline risk | 31.5 | 17.1 | +14.5 | +30.7 |
| 12 month cumulative incidence of HIV seroconversion (%) | | | | |
| All | 2.9 | 2.6 | +0.3 | +3.4 |
| Less baseline risk | 0.67 | 2.7 | -2.1 | +0.8 |
| More baseline risk | 12.3 | 2.4 | +9.9 | +20.4 |

^a< 4 baseline sex acts; N = 305 (78%)

^b> 4 baseline sex acts; N = 87 (22%)

Roland, CID in press

“Worst case scenario analysis”

Public Health Impact of PEP Scale-Up

Even with a well-funded research system that provided easy access, a single system for initiation and follow-up during and after PEP, and counseling and support... a very high rate of seroconversion... thus my bias is that while individual good may be significant, the public health impact of PEP is questionable, unless... **STAY TUNED TO THE VERY END...**

WHO guidelines for PEP in resource limited settings: Key Policy Issues

- PEP services must be provided as part of a comprehensive care package including:
 - HIV prevention services and
 - Sexual assault care
- PEP services must be integrated into existing or developing services, not developed on their own
- Optimal service delivery sites and mechanisms must be identified in each setting

Implications for PrEP delivery?

WHO: the ideal package of services should be comprehensive and link with all service providers

- Counseling

- Adherence
- Side effects
- HIV risk reduction
- Trauma

- Clinical follow-up services

- Evaluation of symptoms
- Laboratory evaluation when appropriate

Implications for PrEP + testing and acute HIV sx screening?

Cost-Effectiveness Studies

- SF program cost effective
 - Highest risk exposures cost saving
 - Analyses extended to 96 U.S. metropolitan areas
- French study
 - Most PEP for low risk exposures
 - Program not cost-effective
- Cost-effectiveness depends on appropriate targeting services

Table 4. PEP adherence outcomes among individuals randomized to standard or enhanced adherence counseling

| Subjects | Adherence Counseling Arm | | | Upper bound 95% CI |
|---|--------------------------|----------|-------------------------|--------------------|
| | Standard | Enhanced | Standard minus Enhanced | |
| Proportion that did not complete 28-day course (%) | | | | |
| All | 21.0 | 18.7 | +2.3 | +8.8 |
| Less baseline risk | 16.8 | 19.9 | -3.1 | +4.2 |
| More baseline risk | 29.6 | 14.0 | 15.6 | +29.9 |
| Mean number of days of PEP completed | | | | |
| All | 23.6 | 24.7 | -1.0 | - 2.3 |
| Less baseline risk | 24.4 | 24.2 | 0.2 | -1.3 |
| More baseline risk | 22.1 | 26.2 | -4.1 | -6.8 |
| Proportion fully adherent in prior 4 days at 1 week following PEP initiation (%) | | | | |
| All | 83.6 | 84.7 | -1.1 | -6.8 |
| Proportion of missed doses in prior 4 days at 1 week following PEP initiation (%) | | | | |
| All | 4.6 | 5.6 | -1.0 | +1.8 |

Proactive follow-up is necessary for PEP retention... we don't know with PrEP yet

- Poor follow-up in all retrospective PEP reviews, following consensual or non-consensual exposures
 - Prospective PEP studies with resources devoted to follow-up, and a comprehensive clinical program that routinely contacts clients by telephone or letter, report very good follow-up
 - PrEP demonstration projects will require careful design to determine “real-world” retention needs
-

Table 1: Exposure Characteristics and Indications for PEP

| Exposure Characteristic | Offer PEP: |
|---|--|
| <p>1) Timing.</p> | <p>As soon as possible, and no later than 72 hours following exposure.</p> <p style="text-align: center;">- AND IF -</p> |
| <p>2) Exposure type.</p> | <ul style="list-style-type: none"> • Receptive anal intercourse; or • Shared injection drug use equipment; or • Insertive anal intercourse; or • Receptive vaginal intercourse; or • Insertive vaginal intercourse; or • Other potentially infectious body fluid on a mucous membrane or non-intact skin; or • Receptive oral intercourse with ejaculation (consider due to lower risk; if oral pathology, risk is higher). <p style="text-align: center;">- AND IF -</p> |
| <p>3) Exposure source.</p> <p>(Note: identifying specific risk groups depends upon the local HIV demographics where the exposure occurred.)</p> | <ul style="list-style-type: none"> • Known HIV-infected; or • Men who have sex with men (MSM) of unknown HIV status; or • Injection drug user (IDU) of unknown HIV status; or • Anonymous (consider); or • Known but with unknown HIV status and risk factor history (consider). |

Table 2: PEP Interventions

| Component | Options (*recommended) |
|---|--|
| <p>Medications.</p> | <ul style="list-style-type: none"> • *Two-nucleoside analogues: <ul style="list-style-type: none"> ○ Preferred regimen is Combivir (ZDV + lamivudine). ○ Alternative nucleoside analogue combinations include: stavudine or tenofovir in combination with lamivudine or emtricitabine. Abacavir and didanosine should be avoided unless resistance considerations outweigh potential toxicity (hypersensitivity and pancreatitis, respectively). • ± Protease inhibitor (Kaletra or others, see "Medications for PEP") or Efavirenz (consider only when very high-risk exposure and known infected source or resistance characteristics make it difficult to construct a potent two nucleoside regimen). • Full course nevirapine is contraindicated for PEP (per U.S. Public Health Service). Note that short course nevirapine is recommended for the prevention of mother-to-child transmission in resource poor settings. <p>If the exposure source's medication history is accessible, obtain expert antiretroviral resistance consultation immediately. If local consultation is unavailable, call the National HIV Telephone Consultation Service at (800) 933-3413. The hours are: 6 a.m.-5 p.m., Pacific Standard Time (PST), Monday-Friday. <i>Note that this service is available for health care providers only.</i> Consider academic hospital infectious disease consultation after hours.</p> |
| <p>Duration of therapy.</p> | <ul style="list-style-type: none"> • 28 days. |
| <p>Follow-up HIV counseling and testing.</p> | <ul style="list-style-type: none"> • *Baseline. • Four to six weeks (consider). • *Two to three months. • *Six months. |
| <p>Other testing and interventions.</p> | <ul style="list-style-type: none"> • *STD screening and treatment. • *Hepatitis B screening. • *Hepatitis C screening in at-risk populations. • *Hepatitis A and B immunizations. • *Safety labs per specific medications, medical history, and symptoms at baseline and follow-up (e.g., complete blood count [cbc], hepatic function, renal function, amylase, etc.); routine safety labs are not recommended. • *Post-coital contraception if desired. |
| <p>Counseling and referrals.</p> | <ul style="list-style-type: none"> • *Medication adherence counseling. • *Risk-reduction counseling. • *Referrals for substance use and mental health treatment as appropriate. |

Appendix A: Sample Patient Information Sheets

What is PEP and how does this program work?

What is PEP?

PEP stands for post-exposure prophylaxis or post-exposure prevention. It is a program meant to help people who may have been exposed to HIV through sex or injection drug use in the past 72 hours to try to prevent HIV infection. The program includes HIV testing, a 28-day course of anti-HIV medications, and counseling and referrals to help people stay safe and HIV negative in the future.

How risky was my exposure?

It is hard to know exactly what the chance of becoming HIV infected (HIV positive) is from a single exposure to HIV. The information we have comes from research studies of people who were HIV negative and then became HIV positive. Even though the average risk of infection from one exposure is relatively small, there is no way to know the actual risk of any specific exposure. Unfortunately, people do get HIV from a single episode of unprotected sex or shared injection drug use equipment.

Average risks for a single exposure are approximately: receptive anal intercourse 1-3 percent; insertive anal intercourse 0.1–1 percent (1 of 1,000 to 1 of 100); receptive vaginal intercourse (the woman) 0.1–1 percent (1 of 1,000 to 1 of 100); insertive vaginal intercourse (the man); and, receptive oral sex with ejaculation almost zero, although it can happen. These numbers are very small, but health care workers who get a needle stick have a risk of 0.3 percent (3 of 1,000) of getting infected, and PEP is recommended for them. For those who get blood splashed in the eye or mouth, PEP is offered but not recommended. The risk from that kind of exposure is about 0.03 percent (3 of 10,000).

What do we know about the effectiveness of PEP medications?

There are no studies in people who have had sexual or injection drug use exposures to HIV, so we do not know for sure if PEP will work in these cases. There are some related situations where it has been effective. For health care workers who have had a needle stick injury, using AZT after the incident reduced the risk of getting HIV infection by about 80 percent. Babies whose mothers took AZT while they were pregnant were about two-thirds less likely to get HIV. Even babies whose mothers did not take any medicines, but the babies did, were less likely to become infected. Some tests in animals have shown good effect from these medications. It looks like the best effect occurs when the medicines are started as soon as possible. There is likely to be no benefit to using PEP medications if the exposure happened more than 72 hours before.

How else can I stay HIV negative?

Since the chance of getting HIV from one exposure is relatively low, the most important thing you can do is to avoid being exposed again. Each time you have unprotected sex or share needles with someone who may have HIV infection, it is like playing a game of Russian Roulette. It is just a matter of time before luck runs out, and you become infected.

How does this program work? [Modify per local program]

The first time we see you, we will ask you questions to make sure you might benefit from PEP. We will then talk to you about HIV testing, and about what was going on for you when you got exposed. A health care provider (doctor, nurse practitioner, or physician assistant) will talk to you about your medical history, examine you, and recommend specific medications. We will ask you questions about HIV medicines your partner has used to help us decide which medicines to recommend for you. We will give you a prescription to last until your next appointment, which will be in the next ten days. Over the next week to ten days, you will need to follow up with the HIV counselor to get your HIV test results and talk more about staying safe, and with a health care provider who specializes in PEP to make sure you are taking your medication correctly and tolerating them well. That health care provider will review all your other blood and urine test results with you (we will test you for other sexually transmitted diseases and hepatitis) and will give you a prescription for the rest of the 28 days of medications. You may also be referred to see our social worker so you can get more counseling or other referrals that might help you to stay safe and HIV negative. If you need or want to, you can see the social worker or health care provider again.

We would like you to come back to have another HIV test in two to three months and again in six months. We want to make sure you have stayed HIV negative, and to offer you medical care and support if you become HIV positive.

What other resources are available to me? [Modify per local program]

We have a number of counseling, substance use, mental health, and other resource referrals. Please let us know if there is any other way we can help you. Also, if you do not already have a health care provider, we can get you a regular, primary provider.

If You Have Questions:

To schedule or reschedule an appointment, call the clinic at [Modify per local program].

For questions or problems related to this program or your medicines, call [Modify per local program].

For general information, call the California AIDS Hotline at: (800) 367-2437.

CombivirTM Information Sheet

How should I take my medication?

Combivir may be taken with or without food, but probably causes less upset stomach if it is taken with food. One pill is taken twice a day, in the morning and in the evening, for 28 days. Be sure to drink plenty of fluids with the pills.

Why is it important to take my medications correctly?

The medication must be in the blood stream for it to work to prevent HIV infection. Also, if the medication does not work to prevent HIV infection, drug resistance might develop if the medication is not taken correctly. Drug resistance means that HIV is able to overcome a drug that was at one time working well to keep it from spreading. HIV can develop resistance to PEP medications when they are used at doses lower than the recommended dose, or when doses are skipped. That is why it is especially important to take these medications correctly.

What are the possible side effects of Combivir?

What should I do if I have problems with the medications or questions?

With the start of PEP, there may be temporary side effects such as headache, fatigue, or a general sense of feeling ill. These side effects are likely to get better or even disappear over time. If the side effects are severe report immediately to the emergency department. If they are not severe, please call [Modify per local program].

Appendix B: Sample Scripts of Key Issues to Discuss with Clients

Note that these scripts are intended for use by health care providers as they contain technical information.

1. *Your Risk of Acquiring HIV.*
 2. *Does PEP Work? What Do We Know and Not Know?*
 3. *Medication Side Effects.*
 4. *Baseline and Follow-Up HIV Testing.*
 5. *What If I Am Already HIV Positive?*
-

Appendix C: Sample Clinical Progress Note

This sample Progress Note is provided for adaptation by health care providers for use in their specific clinical setting. The sample contains the key elements of the history, examination, assessment, and plan required to responsibly provide PEP. It is not meant to be used as a data collection tool.

A note like this may be used at the initial point of care and then faxed to the follow-up provider with the patient's permission.

Additional information may be added to an adapted Progress Note, including vaccinations, follow-up of abnormal test results, etc.

Date: / /
MM DD Y

AGE: _____ Gender: F M

EXPOSURE & HIV INFORMATION

Date of Exposure:

/ /

Time of Exposure (range):

: - :

Hours Between Exposure & PEP: _____

Exposure Description:

- Receptive Vaginal Receptive Anal
 Insertive Vaginal Insertive Anal
 Receptive Oral with Ejaculation
 Other - Describe: _____

Source HIV Status

- Known Positive Unknown

Source ARV History:

- None or unknown Yes - Describe: _____

Date last HIV

Test: / /

Result last HIV Test: Positive Negative

Other Exposures in past 6 months (# and type): _____

MEDICAL HISTORY

Pertinent Past Medical History:

Alcohol: _____

Drug Allergies: NKDA or Yes:

Specify: _____

Current Meds: _____

SYMPTOMS

Sx of Possible Acute HIV (Include duration):

Referred for evaluation: Yes No

Physical Assessment

Thrush: Yes No

LAN: Yes No

KS Yes No

Other: _____

Pregnancy Test Result

Positive Negative NA

Assessment and Plan

Possible HIV Exposure Seeking PEP

PEP Meds

Combivir 1 po b.i.d. or Other: _____

Reviewed with patient: Drug information sheet, adverse events, emergency phone numbers, medication adherence, use of alcohol.

Follow-up appointment made

Labs ordered: HIV test , hepatitis serologies , pregnancy test

Notes:

Signature

Date

PEP as an opportunity

- To assess HIV risk
- To support HIV risk reduction
- To assess mental health and other needs
- To address the links between violence and HIV risk

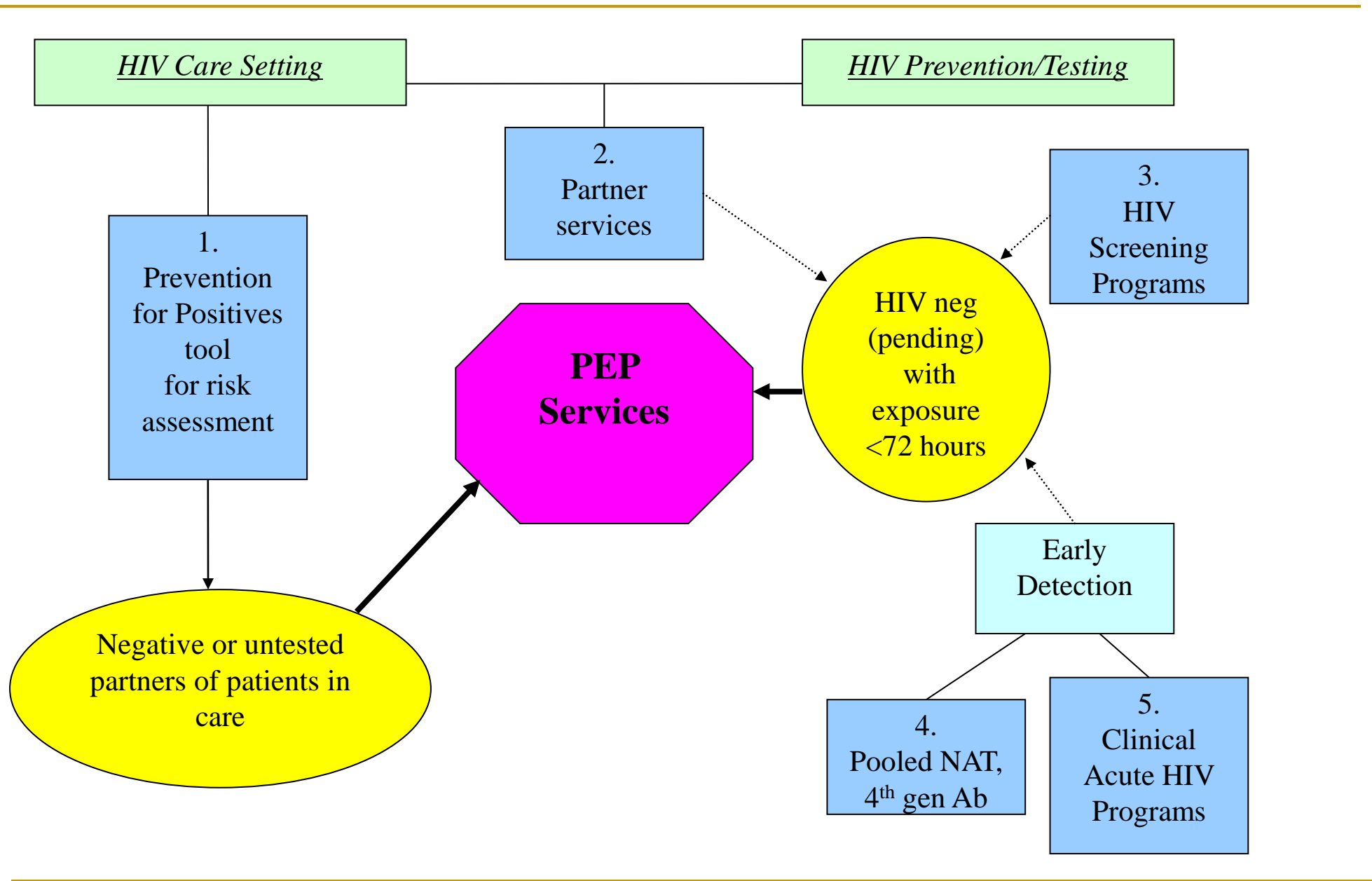
Medication alone will not prevent HIV infection

- To further develop comprehensive and coordinated prevention services in numerous settings
-

Integrating PEP (and PrEP?) into screening, prevention and care programs

- Programs aimed at diagnosis of HIV infection
 - Screening (CTR vs routine screening)
 - Acute infection detection
- “Prevention for positives” efforts
- Partner services

Note nearly all are EECHP priorities and identified in Holtgrave modeling



Additional Information for Those with Deeper Interest in PEP

PEP: Pre-existing and ongoing HIV risk and sexual assault

- Sexual assault survivors are likely to have had unprotected sex with consensual sex partners
 - Thus all sexual assault survivors should undergo risk assessment
 - Appropriate risk reduction counselling should be targeted at those reporting unprotected sex with consensual partners
-

Who should be offered PEP?

Potentially infected body fluid on mucous membrane or non-intact skin

Exposure Characteristics

AND

Source Characteristics*

Unprotected:

- Receptive or insertive anal intercourse
- Receptive or insertive vaginal intercourse
- Receptive oral sex with ejaculation
- Shared injection equipment
- Other

- Known HIV positive
- MSM
- Past or present IDU
- Commercial sex worker
- Anonymous
- LOCAL EPIDEMIOLOGY

* Guidelines vary; SF experience is unknown status partner common and seen in seroconverters

Appropriate targeting of services

- Provide PEP following exposures associated with HIV transmission risk
 - not following negligible exposures
 - Counseling about the risk of acquiring HIV infection based on the exposure type and the source's HIV status (or the likelihood of HIV infection when the HIV status is unknown)
 - facilitates informed clients' decisions
 - results in desirable prescribing patterns
-

Initial access

- Medication initiation
 - starter packs (e.g. 3-4 day supplies) can be used in emergency and urgent care settings or
 - provided through a pharmacy following telephone consultation.
 - Counseling about side effects, adherence and how to access follow-up care
-

Care during and after PEP

- When initial care occurs in ED, PEP follow-up services addressing adherence, symptoms and risk behavior should be provided within several days
 - Ideal schedule of follow-up visits and PEP dispensing is not known.
 - After PEP: ongoing risk reduction and/or trauma counseling, follow-up HIV testing and referrals for assistance with psychosocial issues
-

Develop effective follow-up system

- Retention during PEP dispensing stages
- Retention during PEP adherence stage
- Retention for follow-up HIV testing
 - for its own sake and as tool for future risk reduction counseling



Barriers to optimal PEP service delivery

- Absence of standard practices regarding PEP dispensing and follow-up schedules
 - Lack of coordination between service delivery systems available during and outside of business hours
 - Lack of effective follow-up and tracking systems
-

Guidelines: How Do They Differ?

- Time to PEP initiation
 - 72(+) vs 36 hours
- Source HIV status
 - Known HIV+ vs unknown
- Medications
 - 2 vs 3
- Lab Monitoring
 - HIV antibody
 - Safety labs

**Offering HIV Post-Exposure Prophylaxis (PEP)
Following Non-Occupational Exposures
Recommendations for Health Care Providers in the
State of California**



**Arnold Schwarzenegger
Governor
State of California**

**Kimberly Belshé
Secretary
Health and Human Services Agency**

**Sandra Shewry
Director
Department of Health Services**

**Prepared by:
The California Task Force on Non-Occupational PEP
and the California Department of Health Services,
Office of AIDS**

June 2004

California HIV/AIDS Service Referrals

Provided by the California Department of Public Health, Office of AIDS

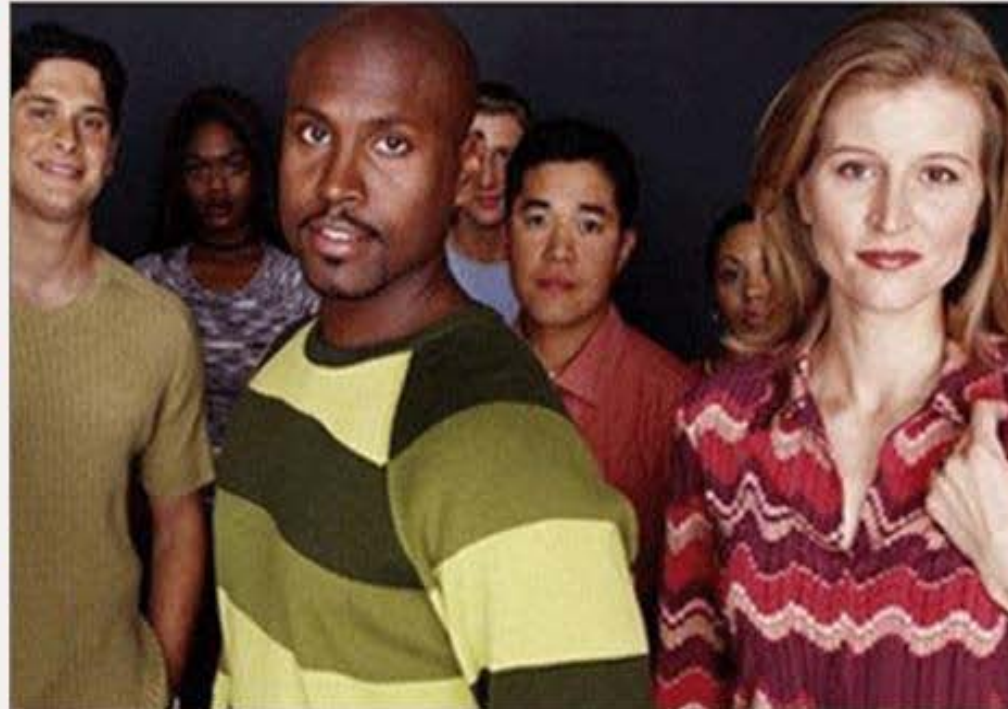
Call 1-800-367-2437 or get [Live Help](#) M-F 9am-5pm (PST)

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Live Help

Chat with a staff member to get help finding services

Start >>

Other Information & Services

[General Info/Testing & Prevention \(CDC\)](#)
1-800-232-4636

[General Info/Treatment \(US DHHS\)](#)
1-800-448-0440

[Treatment Hotline \(Project Inform\)](#)
1-800-822-7422

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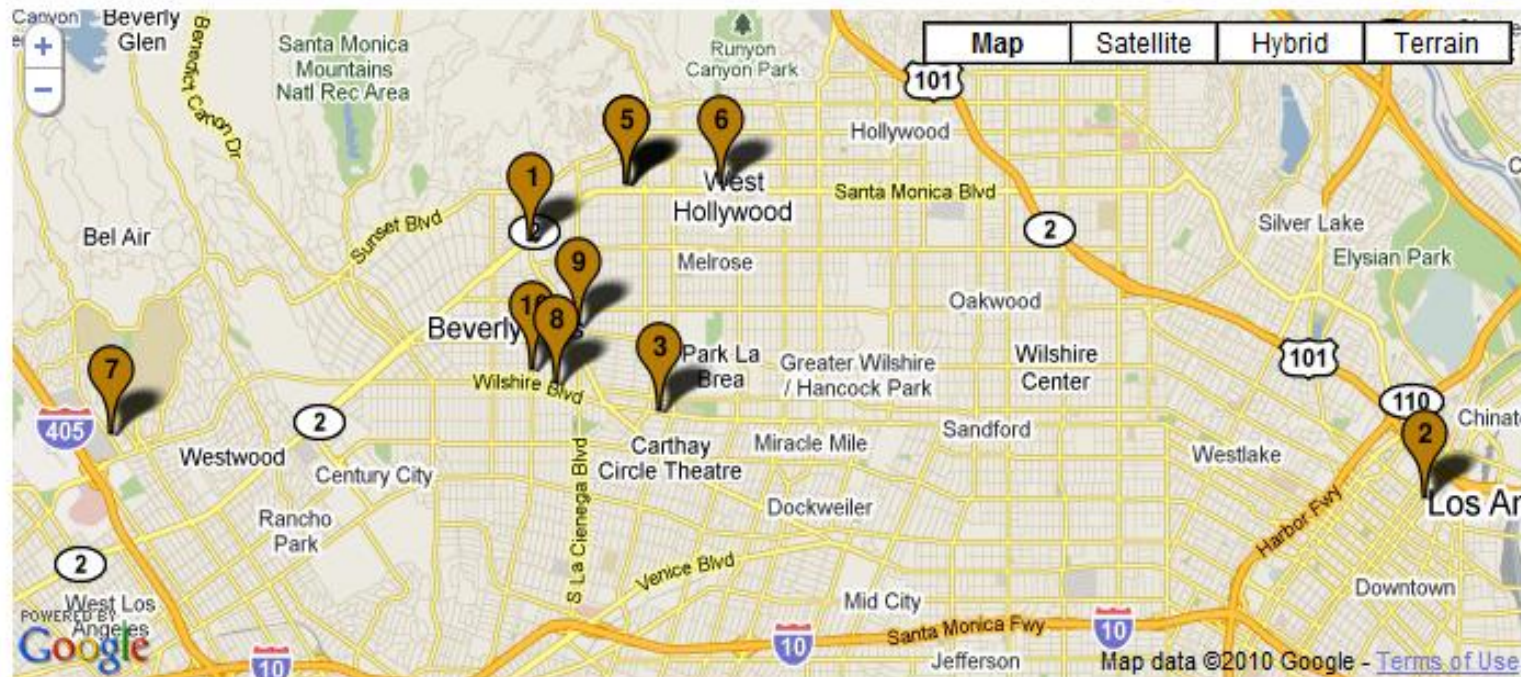
[Check All](#) | [Uncheck All](#)

Primary Services

- Primary Care
- HIV/AIDS Medical Treatment
- STD Services/Testing
- Hepatitis Services/Testing
- TB Services/Testing

Additional Services

- Alternative/Complementary Medicine
- Dental Care
- Family Planning



| | Name of Organization | Approx. Distance ▲ | Service Categories |
|----|---|--|--|
| 1. | Los Angeles Gay and Lesbian Center 745 N San Vicente Blvd West Hollywood, California 90069 323-993-7400 http://laqlc.convio.net/site/PageServer?pagename=Y_C_Locations_Hours | 1.86 Get Directions | STD Services/Testing |
| 2. | The Saban Free Clinic Seniel Ostrow 8405 Beverly Blvd Los Angeles, California 90048 323-653-1990 http://www.thesabanfreeclinic.org | 2.27 Get Directions | Primary Care STD Services/Testing Hepatitis Services/Testing Dental Care Family Planning ⊕ More |