Recommendations for Postexposure Prophylaxis with Exposure to HIV

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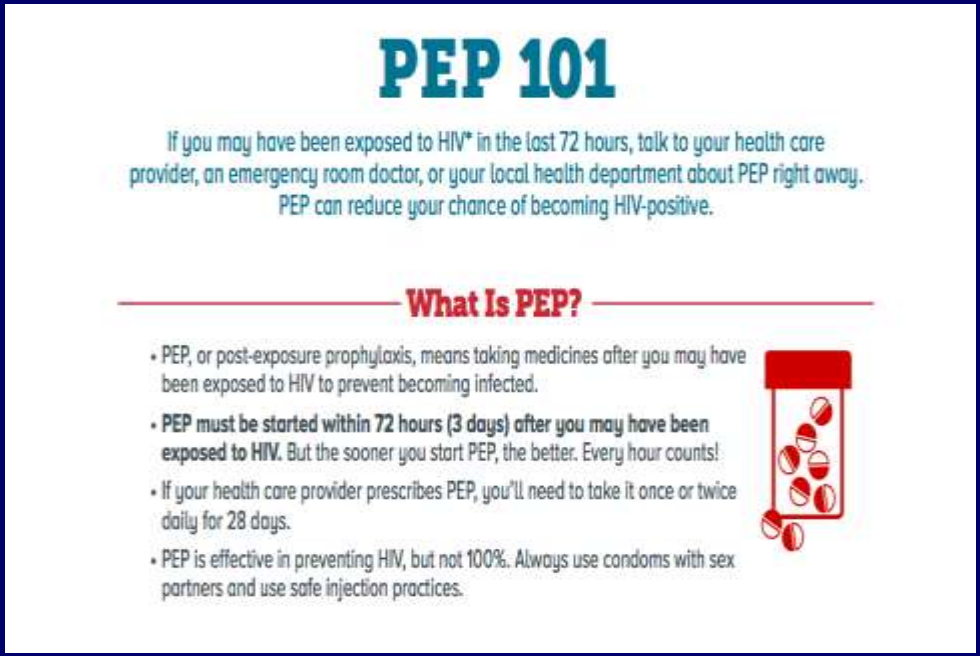


PEP 101

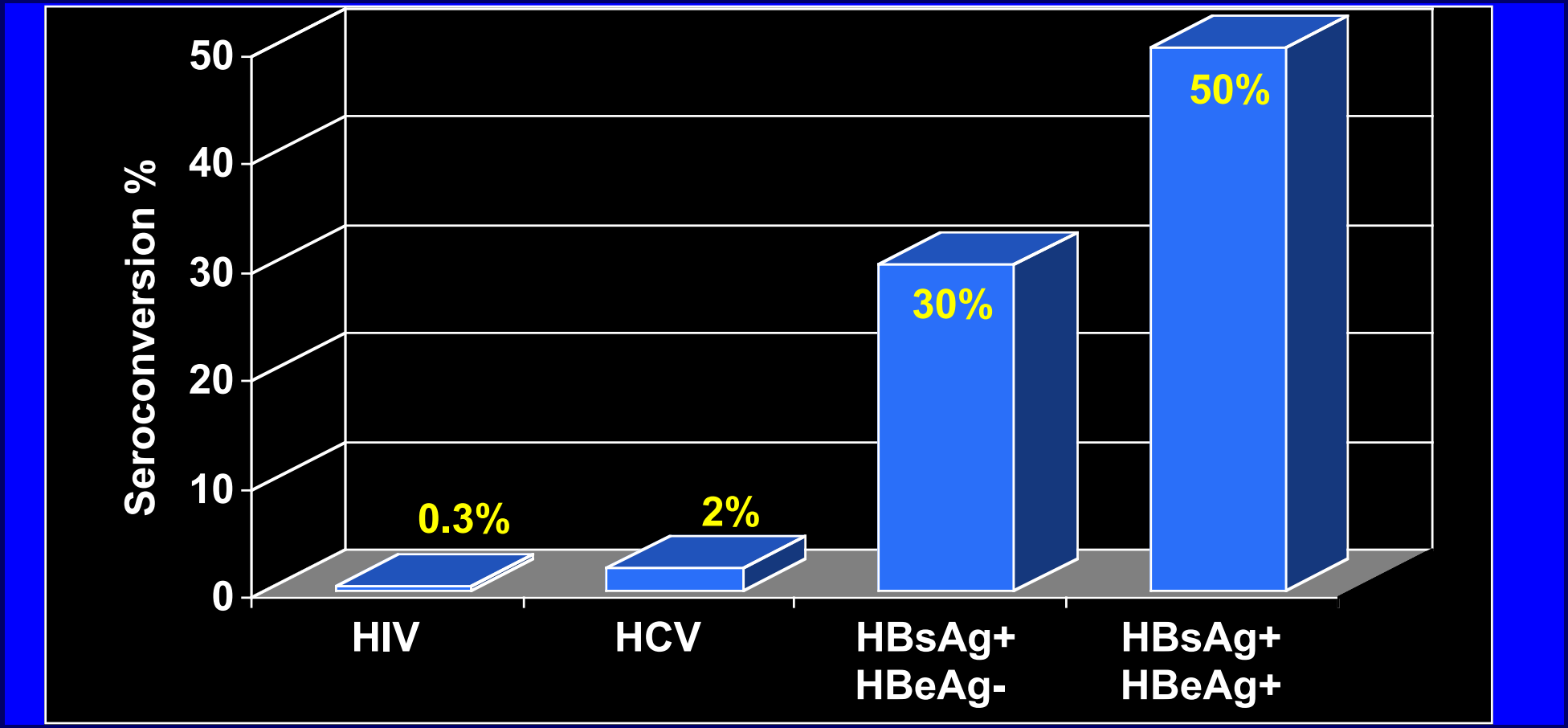
If you may have been exposed to HIV* in the last 72 hours, talk to your health care provider, an emergency room doctor, or your local health department about PEP right away. PEP can reduce your chance of becoming HIV-positive.

What Is PEP?

- PEP, or post-exposure prophylaxis, means taking medicines after you may have been exposed to HIV to prevent becoming infected.
- **PEP must be started within 72 hours (3 days) after you may have been exposed to HIV.** But the sooner you start PEP, the better. Every hour counts!
- If your health care provider prescribes PEP, you'll need to take it once or twice daily for 28 days.
- PEP is effective in preventing HIV, but not 100%. Always use condoms with sex partners and use safe injection practices.

Occupational Blood-borne Exposures

Relative Risk of Seroconversion with Percutanous Injury



From: CDC. MMWR 2001;50 (RR11):1-42.

PEP Categories

- **oPEP –for occupational exposures**
  - HCWs who may experience a cut, needle stick, or other potentially infectious body fluid exposure "on the job"
- **nPEP –for non-occupational exposures**
  - Persons who are potentially exposed to HIV through consensual or forced intercourse, accidental puncture wounds, or IVDU

HIV Exposures

Definition of exposure:

- Percutaneous injury or contact of mucous membrane or non-intact skin with blood, tissue, or other potentially infectious body fluids
  - semen, vaginal secretions, CSF, synovial fluid, pleural fluid, peritoneal fluid, pericardial fluid, amniotic fluid

Not infectious :

- feces, nasal secretions, saliva, sputum, sweat, tears, urine, vomitus

Non-Occupational HIV Exposures

- Sexual contact, consensual or forced
- Accidental cuts or punctures with sharp objects
- Intentional use of contaminated or shared needles for IVDU

Exposures needing nPEP

PEP recommended, if source HIV + or at risk of HIV	PEP ***NOT*** recommended
*Unprotected receptive & insertive vaginal or anal intercourse *Unprotected receptive penile-oral contact with ejaculation *Oral-vaginal contact with blood exposure *Needle-sharing *Injury with blood exposure - needle stick, bite, accident	*Kissing, or oral-oral contact & no mucosal damage *Bites without blood *Needles/sharps exposure not in contact with HIV + or at-risk person *Mutual masturbation – intact skin *Oral-anal contact *Receptive penile-oral contact without ejaculation *Insertive penile-oral contact *Oral-vaginal – no blood exposure

Evaluation of Non-Occupational Exposures

- **HIV status of the potentially exposed person**
  - baseline rapid testing should be conducted to ensure they are not already HIV-positive
- **Timing and frequency of exposure**
  - nPEP should be initiated within 72 hours of exposure
- **Risk of HIV acquisition based on type of exposure**
- **HIV status of the exposure source**
  - often difficult to obtain for non-occupational exposures

Other Considerations for Possible Sexual Exposures

- Prophylaxis for bacterial STIs, trichomoniasis
- Testing for Hepatitis B and C
- Pregnancy prevention for female patients
- Counseling and other support for survivors of sexual assault

Shared Principles for All Types of PEP

- Importance of quick initiation of PEP following possible HIV exposure
- Importance of HIV tests for the potentially exposed patient
- Use of a “complete” three-drug regimen for PEP
- Duration of treatment is 28 days
- Follow-up testing required at 6 weeks and 3 months (with newest, 4th-generation Ag/Ab tests)

Review

1) What is the risk for contracting HIV?
2) Are there factors that might affect this risk?
3) How effective is PEP?
4) Is it too late to start PEP?
5) What is the current PEP regimen
6) How long should the HCW be followed
7) Other Issues
    a) Advice about getting pregnant
    b) What if the HCW was breast feeding

- A 24 y/o female presents to the ER with a h/o sexual assault by a man who she met at a bar a few hours prior to the assault
- Patient reports that both she and the man had indulged in alcohol
- On leaving the bar he assaulted her and she reported it as receptive anal sex
- She does not know the HIV status of her assaliant
- On exam she has multiple tears in her anal mucosa with bleeding

Lessons learned from oPEP: Documented HIV Seroconversions in HCW
Through June 2000

N = 56

- 49: Blood
- 1: Visible bloody body fluid
- 3: Unspecified fluid
- 3: Concentrated virus in laboratory

From: CDC. MMWR Surv. Report 2000;11:No. 2.

Review

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Estimated Transmitted Risk

Exposure Type if Source HIV-infected	*Estimated Risk*
Needle-sharing exposure	0.67% (1/150)[1]
Receptive anal intercourse	0.5% (1/200) to 3% (6/200)[2,3]
Receptive vaginal intercourse	0.1% (1/1000)[3,4]
Insertive anal intercourse	0.065% (1/1500)[3,4]
Insertive vaginal intercourse	0.05% (1/2000)[3,4]
Oral sex with ejaculation	Conflicting data, but felt to be low-risk. PEP recommended for performer of oral sex who receives ejaculate.[5,6]

Other Likely Risk Factors

- **Viral load**
  - As with occupational exposures, increased amount of HIV present in the source patient's blood or body fluids increases risk of transmission
- For sexual exposures, non-intact mucous membranes increases risk of transmission

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Evidence of Efficacy of PEP

- Animal models: high level of protection when started within 24 hours[1]
- OR = 0.19 for zidovudine use in case-control study[2]
- Two drugs, three drugs:
  - No direct evidence that more effective than 1 drug
  - Cases of seroconversion despite 3-drug PEP imply efficacy less than 100%[3,4]

1. Tsai C-C et al. J Virol 1998;72:4265-73.
2. Cardo DM et al. NEJM 1997;337:1485-90.
3. Jochinsen EM et al. Arch Int Med 1999;159:2361-3.
4. MMWR June 29, 2001 / 50(RR11);1-42

Review

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When should PEP be started?

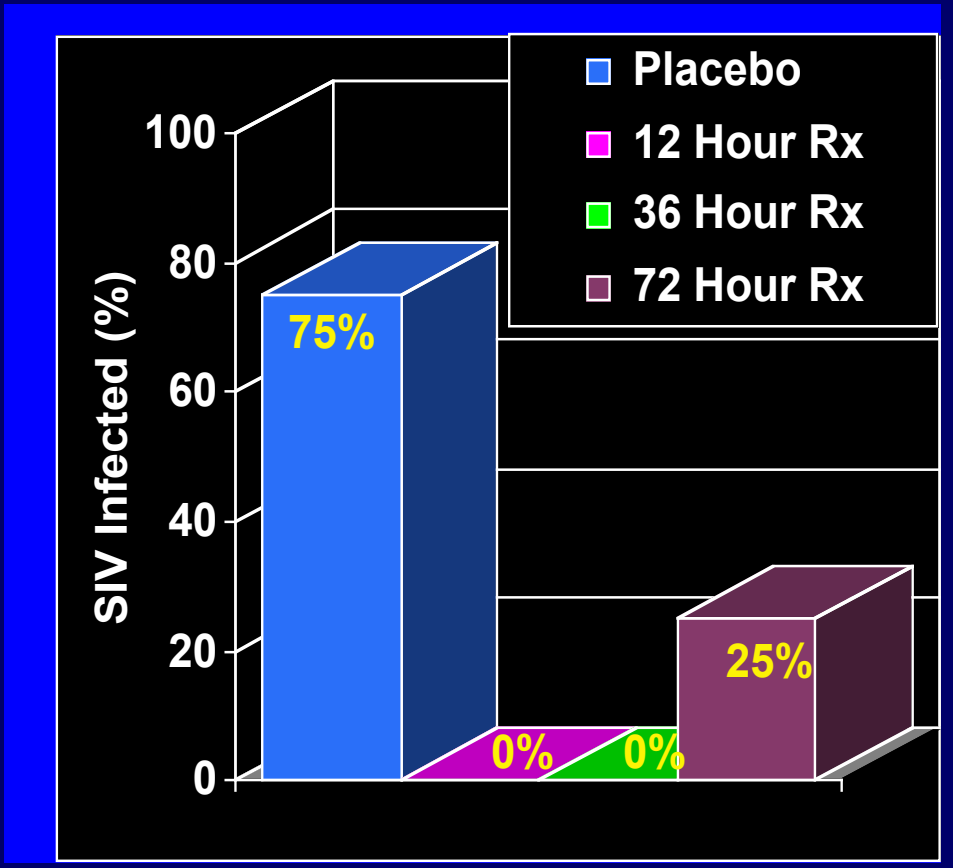
Tenofovir (PMPA) for HIV-2 PEP in Macaques

Study Design

- Methods
  - HIV-2 inoculated intravaginally
  - N = 16 female macaques
- Regimens
  - Control vs. Tenofovir regimens
  - PEP started @ 12, 36, or 72 h
  - PEP Rx for 28d

From: Otten RA et al. J Virol 2000;74:9771-5.

Results (% Infected)

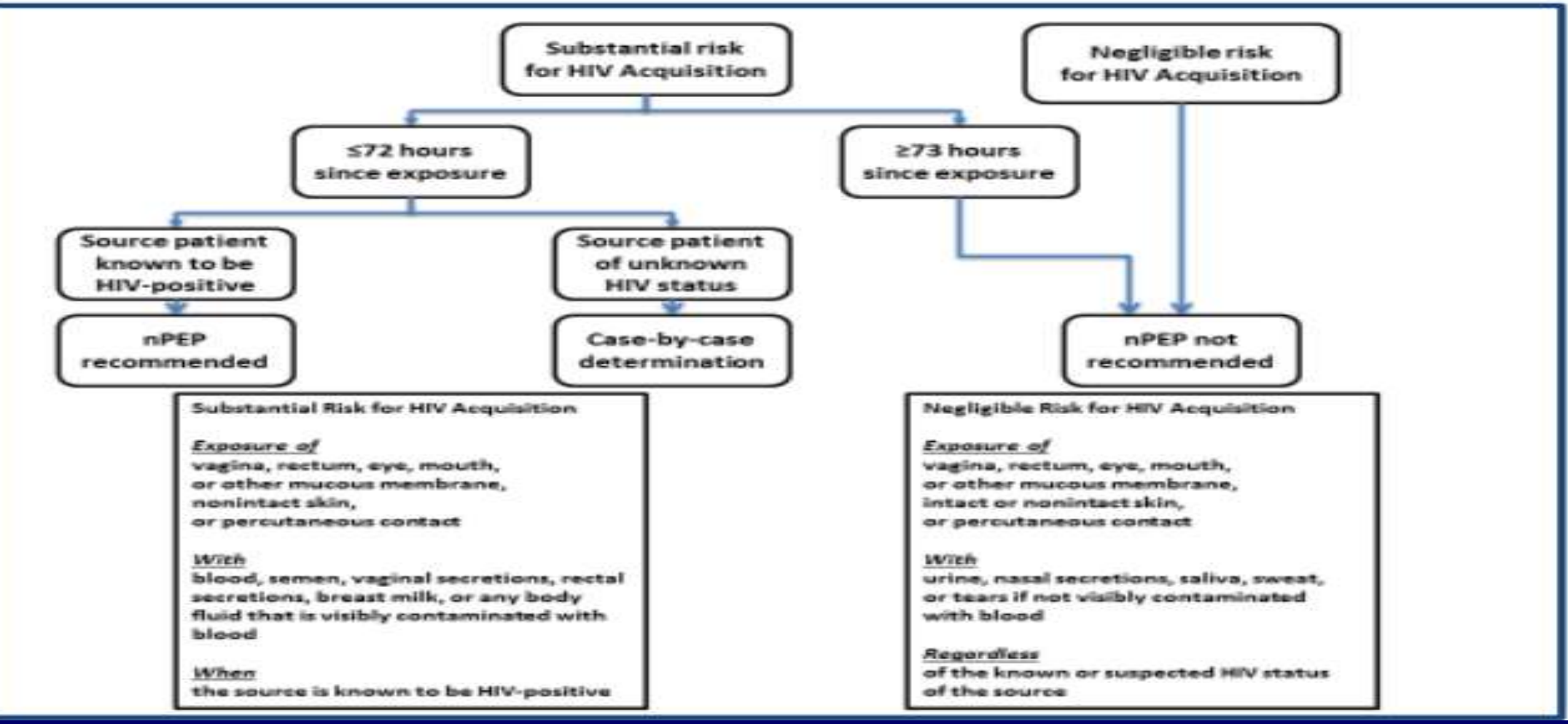


Timing of PEP: CDC Guidelines

- “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).

Recommendation for the use of nPEP



2016 nPEP Guidelines Update

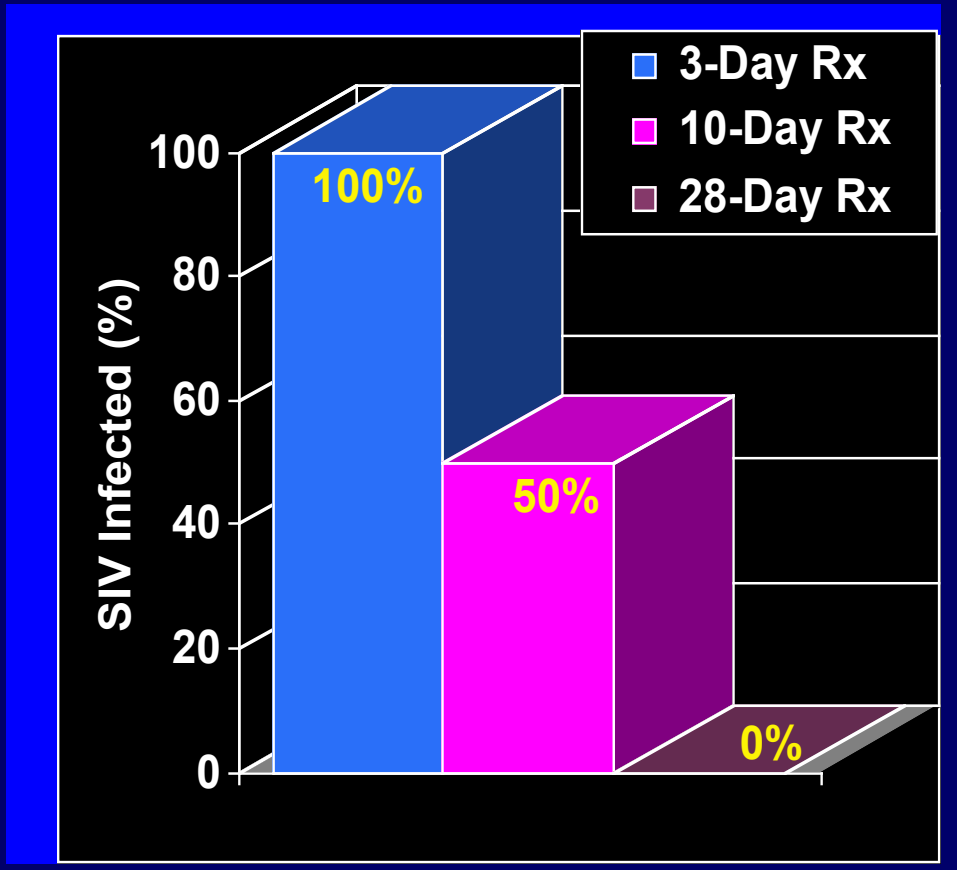
How Long Should PEP be Administered?
Tenofovir (PMPA) for SIV PEP in Macaques

Study Design

- Methods
  - SIV inoculated IV
  - N = 24 macaques
- Regimens
  - Control vs. Tenofovir regimens
  - PEP started @ 24, 48, or 72 h
  - PEP Rx for 3, 10, or 28d

From: Tsai CC et al. J Virol 1998;72:4265-73.

Results for PEP Started @ 24h



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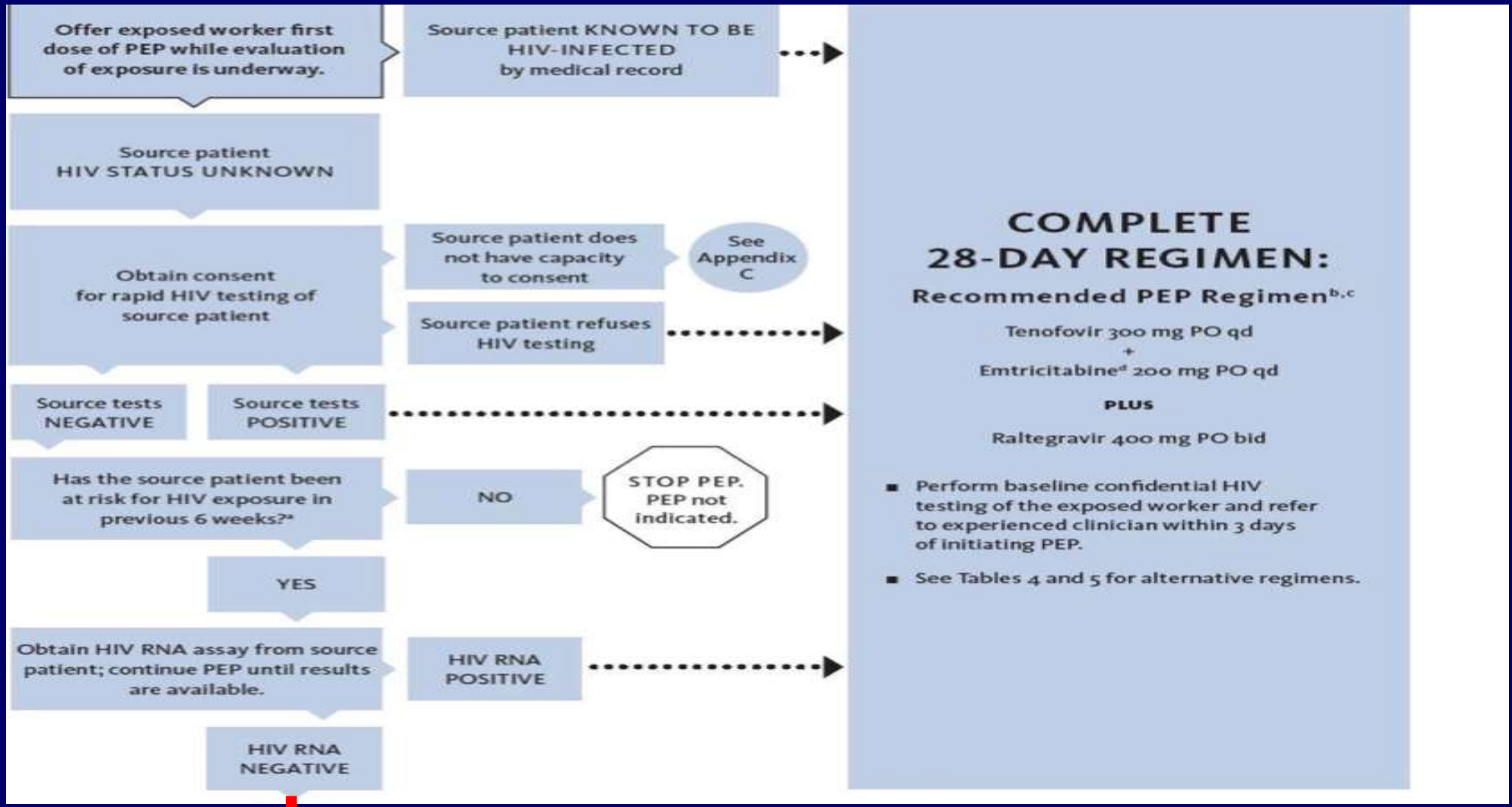
Updated Guidelines for Antiretroviral Postexposure Prophylaxis After Sexual, Injection Drug Use, or Other Nonoccupational Exposure to HIV—United States, 2016

from the
Centers for Disease Control and Prevention,
U.S. Department of Health and Human Services

Preferred 28-day antiretroviral medication regimens for nPEP

Adults and adolescents aged ≥ 13 years, including pregnant women, with normal renal function (creatinine clearance ≥ 60 mL/min	A 3-drug regimen Tenofovir DF 300 mg and fixed dose combination emtricitabine 200 mg (Truvada) once daily + raltegravir 400 mg twice daily or dolutegravir 50 mg once day

PEP Following Exposure at Henry Ford



Stop PEP

Other Updates to the PEP protocol

- If rapid HIV test result negative but risk for HIV exposure in the previous 6 weeks in source pt. **HIV VL of source patient recommended.** PEP should be initiated and continued until results of HIV VL are available.
- **Baseline HIV testing of the exposed person should always be obtained** even if the exposed person declines PEP.
- Whether exposed person accepts or declines PEP Rx **if PEP is indicated, repeat HIV testing at 4 weeks and 12 weeks.**

…and what do you do if PK is exposed to a patient on a failing regimen?

- PK a 39-year-old nurse sticks herself in the finger with a needle used to draw blood from an HIV-infected patient. The source patient's most recent CD4 count was 135 cells/mm^3 and HIV RNA 26,400; the source patient is on tenofovir+ emtricitabine+ efavirenz and is about to go on a new regimen.

  a) What PEP regimen would you recommend?

“If the source-person’s virus is known or suspected to be resistant to one or more of the drugs included in the PEP regimen, the selection of drugs to which the source patient’s virus is unlikely to be resistant is recommended.”

- Centers for Disease Control and Prevention-

From: CDC. MMWR 1998;47:No. RR-7.

Other Unanswered Questions

1) What if TS tells you she is trying to get pregnant
2) What if she is pregnant?
3) What about Breast Feeding

Take Home Points

1) Asses patient for HIV exposure
2) If Exposure occurred
   a) Test both patient and source for HIV at baseline
   b) 1st dose of ART to be given ideally within 2 hrs after exposure, while waiting for results
3) All exposed persons to be offered a 3 drug regimen of Truvada+Raltegravir for 28 days
4) Repeat testing at 6 weeks and 3 months.

HIV Consult Line

- Free service for providers
- Access to HIV expert 24 hours a day, 7 days a week
- Can reach us
  - https://www.henryford.com/hcp/academic/medicine/divisions/id/hiv-consult
  - Urgent, call: (313)-575-0332

Payment Options for Post-Exposure Prophylaxis Following Non-Occupational Exposures Including Sexual Assault (nPEP)

Private Insurance	**PEP is covered. Large co-pay may be a consideration.**
No Insurance	**Gilead Patient Assistance** **Merck Patient Assistance Program**
Medicaid in MI	

HIV: PEP Resources

- Clinician's PEP Hotline 888-448-4911
- Reporting to CDC 404-893-0485