



# PEP Rally

**CLINID conference**

Hunter Ratliff

04/17/2025

*Ages, dates, and other identifying information may have been changed  
I have no conflict of interest in relation to this presentation*

# Shortcuts



Case 1: [Start](#)

Case 2: [Start](#) | [summary slide](#)

Occupational post-exposure prophylaxis: [Objectives](#)

- **Risk of transmission:** transfusion | anal | IVDU | needle stick || if source on ART
- **Immediate mgmt:** Surgical resident study | source pt | exposed pt | start PEP?
- **Long term mgmt:** Suggested PEP | other options | duration | testing
- **PEP in pregnancy:** Risk of transmission | PEP | breastfeeding
- **Intrapartum HIV mgmt:** C-section | intrapartum ART

**Takeaway slide**

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# Case #1

## Case 1: HPI



A **50 y/o F** with PMH including hypothyroidism, ADHD p/w **a needle stick injury**

# Case 1: HPI

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A **50 y/o F** with PMH including hypothyroidism, ADHD p/w **a needle stick injury**

- Works in the at WVU, had injury while disposing of **18 gauge needle**
- Punctured the glove on her finger
- Developed bleeding after injury
- **Source patient** HIV (+)

## Terms

- **Exposed patient** = healthcare worker with needlestick injury
- **Source patient** = patient whose blood the healthcare worker was exposed to

## Case 1: Poll

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1. Immediate next steps (right after the needle stick)?
2. What labs should be done on the **exposed patient**?
3. What do you want to know about the **source patient**?

A **50 y/o F** with PMH including hypothyroidism, ADHD p/w **a needle stick injury**

- 18 gauge needle to finger
- Immediate bleeding

## Case 1: Immediate next steps

The **exposed patient** washed the injured area with soap and water

She was already in the ED (at time of needle stick), so labs were obtained

At time of needle stick, **source patient** had already left the ED

### Home meds

- Levothyroxine
- Vyvanse
- Ozempic

Exposed pt	Result
HIV (4G)	Neg
HCV	Neg
Anti-HBs	<b>0.25</b>
HBsAg	Neg
Anti-HBc	Neg

Exposed pt	Result
CBC	Normal
Creatinine	0.8
Alk phos	114
AST	21
ALT	10
Bili	0.7
uPreg test	Neg

# Case 1: Source patient

The **source patient** follows in our clinic

- Diagnosed 2005
- RF: MSM & substance use (sober for 8 years)
- No resistance
- Biktarvy since 2018

Date	HIV VL
-7 mo	TND
-1 yr	<b>39</b>
-1.5 yr	<20
-2 yr	<20
-2.5 yr	<b>49</b>
-3 yr	<20

Labs (2013)	Result
HCV	Neg
Anti-HBs	<b>&gt;40</b>
HBsAg	Neg
Anti-HBc	Reactive

# Case 1: Poll

1. Should she get PEP for HIV?
2. What should be done for PEP

Source	HIV VL	Labs (2013)	Result
-7 mo	TND	HCV	Neg
-1 yr	<b>39</b>	Anti-HBs	<b>&gt;40</b>
-1.5 yr	<b>&lt;20</b>	HBsAg	Neg
-2 yr	<b>&lt;20</b>	Anti-HBc	<b>Reactive</b>
-2.5 yr	<b>49</b>		
-3 yr	<b>&lt;20</b>		

**Source patient**

- RF: MSM & IVDU (sober)
- On Biktarvy

A **50 y/o F** with PMH including hypothyroidism, ADHD p/w **a needle stick injury** from source patient with HIV

Exposed pt	Result
HIV (4G)	Neg
HCV	Neg
Anti-HBs	<b>0.25</b>
HBsAg	Neg
Anti-HBc	Neg

Exposed pt	Result
CBC	Normal
Creatinine	0.8
LFTs	Normal
uPreg test	Neg

# Questions for the group

1. Should she get PEP for HIV?
2. What should be done for PEP





## Does the patient need PEP for HIV?

10 / 13

No (low risk exposure)

0

Maybe (but call source to get labs)

0

Yes, they need PEP



20%

40%

60%

80%

100%

What should we give for HIV PEP?

7 / 13

8



Truvada and Tivicay

Tivicay/Truvada

Truvada tivicay

Truvada and tivicay

Descovy/Doltegravir

Emtricitabine/Tenofovir/Dolutegravi  
r

Truvada plus dolutegrevir

## Case 1: ED course

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A **50 y/o F** with PMH including hypothyroidism, ADHD p/w **a needle stick injury** from source patient with HIV

- Started on Truvada & raltegravir the same day
- Same day started having nausea & fatigue
- Eventual GI upset with emesis

### **Source patient**

Did not ever get labs on the patient before he left the ED

## Case 1: Employee health follow up

A **50 y/o F** with PMH including hypothyroidism, ADHD p/w **a needle stick injury** from source patient with HIV. Was started on tenofovir/emtricitabine & raltegravir (DTF / FTC / RAL) within hours

- Two weeks after needle stick, **doing quite poorly** from a GI standpoint
- Employee health rechecks labs

Exposed pt	Day 0
CBC	Normal
Creatinine	0.8
Alk phos	114
AST	21
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A **50 y/o F** with PMH including hypothyroidism, ADHD p/w **a needle stick injury** from source patient with HIV. Was started on tenofovir/emtricitabine & raltegravir (TDF / FTC / RAL) within hours

- Two weeks after needle stick, **doing quite poorly** from a GI standpoint
- Employee health rechecks labs

Exposed pt	Day 0	Day 14
CBC	Normal	Normal
Creatinine	0.8	Normal
Alk phos	114	<b>260</b>
AST	21	<b>93</b>
ALT	10	<b>223</b>
Bili	0.7	0.3

## Case 1: Poll

A **50 y/o F** p/w **a needle stick injury**  
from source patient with HIV

- Started on tenofovir/emtricitabine & raltegravir (TDF / FTC / RAL) within hours
- Severe nausea & vomiting

Labs (2013)	Result
HCV	Neg
Anti-HBs	<b>&gt;40</b>
HBsAg	Neg
Anti-HBc	<b>Reactive</b>

Exposed pt	Day 0
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from source patient with HIV

- Started on tenofovir/emtricitabine & raltegravir (TDF / FTC / RAL) within hours
- Severe nausea & vomiting

### What's going on?

- Why are the LFTs abnormal?
- Any change in management?

Labs (2013)	Result
HCV	Neg
Anti-HBs	<b>&gt;40</b>
HBsAg	Neg
Anti-HBc	<b>Reactive</b>

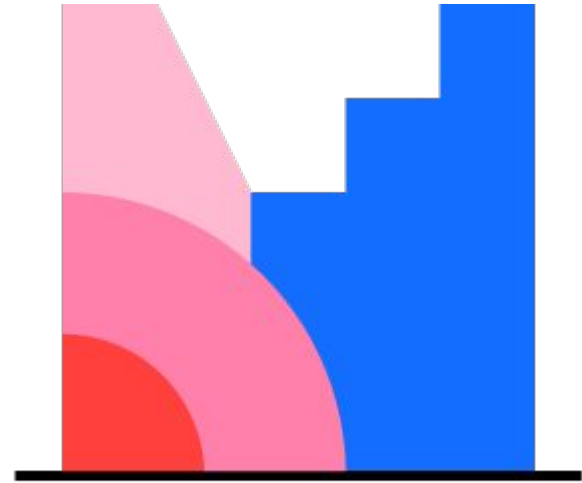
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# Questions for the group



- Why are the LFTs abnormal?
- Any change in management?

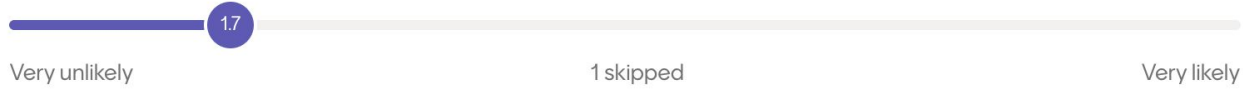


**Mentimeter**

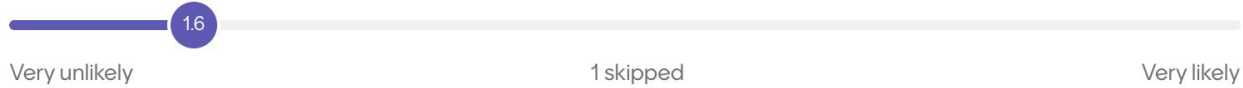


## Why are the LFTs abnormal?

> Acute hepatitis B



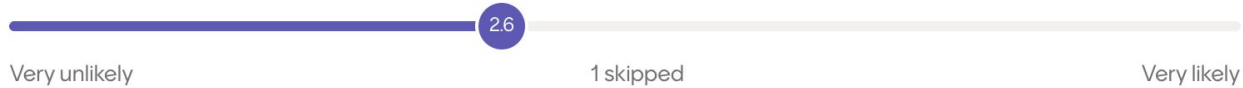
> Acute hepatitis C



> From PEP (TDF / FTC / RAL)



> Something not listed here





## What should we do about the PEP?

9 / 13

Stop it all together

0

Stop, but switch to something else

6

No changes, but watch LFTs closely

3

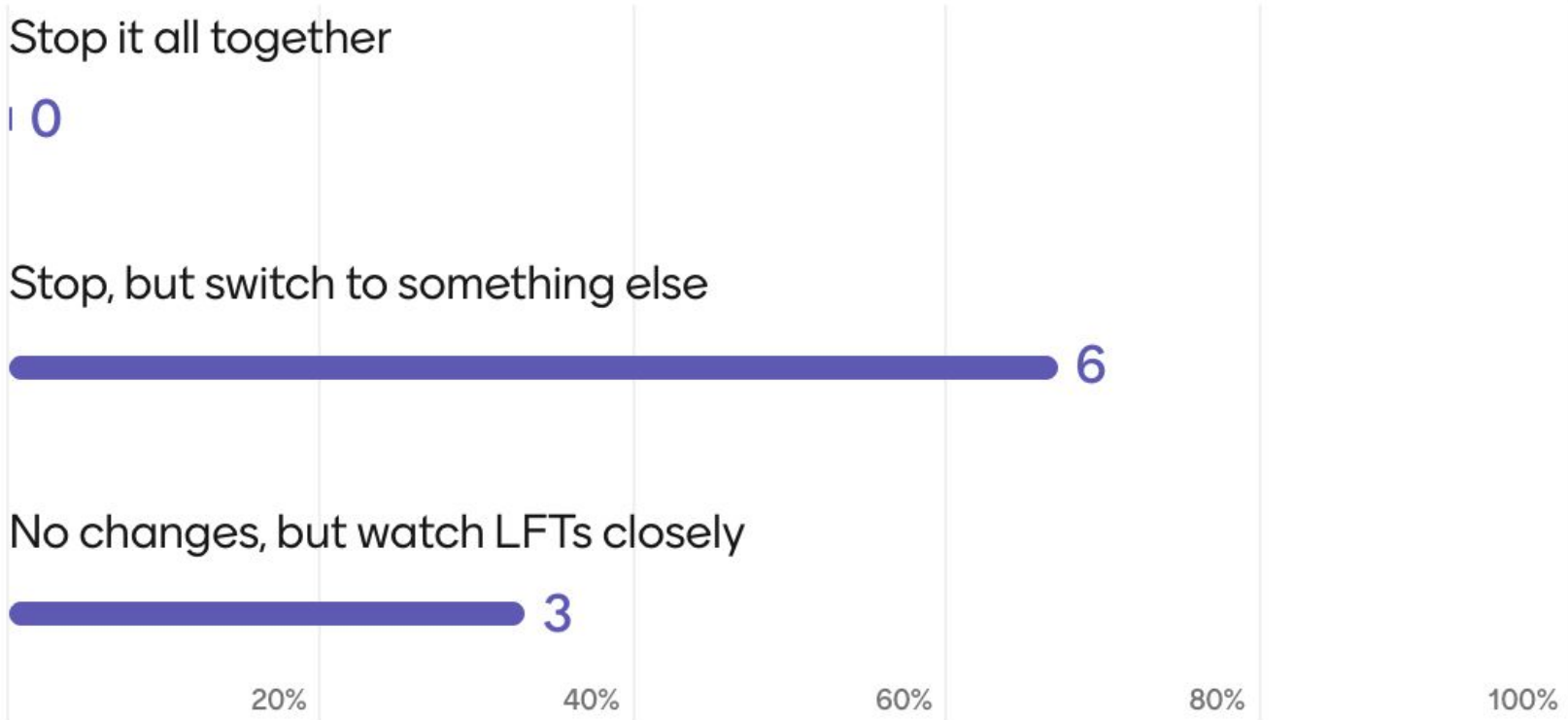
20%

40%

60%

80%

100%



What PEP could we switch to?

7 / 13 9

Descovy/Prescobix

16

Lenacapavir

2

Descovy/prescobix

2

Filtered ?

Biktarvy

biktarvy

Biktarvy

Biktarvy

Biktarvy

Biktarvy

## Case 1: Follow up

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A **50 y/o F** with PMH including hypothyroidism, ADHD p/w **a needle stick injury** from source patient with HIV. Was started on tenofovir/emtricitabine & raltegravir (TDF / FTC / RAL) within hours. Developed GI upset & hepatotoxicity (at 2 weeks)

- **Stopped Truvada & raltegravir** until could be seen in ID clinic after the weekend
- Seen in ID clinic **on day 17** after exposure

## Case 1: Follow up

A **50 y/o F** with PMH including hypothyroidism, ADHD p/w **a needle stick injury** from source patient with HIV. Was started on tenofovir/emtricitabine & raltegravir (TDF / FTC / RAL) within hours. Developed GI upset & hepatotoxicity (at 2 weeks)

- **Stopped Truvada & raltegravir** until could be seen in ID clinic after the weekend
- Seen in ID clinic on day 17 after exposure
  - **Switched to Biktarvy** to finish remaining two week course
  - Checked viral hepatitis labs

Exposed pt	Day 0	Day 14	Day 17
CBC	Normal	Normal	Normal
Creatinine	0.8	Normal	Normal
Alk phos	114	<b>260</b>	<b>197</b>
AST	21	<b>93</b>	<b>93</b>
ALT	10	<b>223</b>	<b>104</b>
Bili	0.7	0.3	0.3

Exposed pt	Day 17
HCV PCR	Neg
HBV PCR	Neg

## Case 1: Most recent follow up

A **50 y/o F** with PMH including hypothyroidism, ADHD p/w **a needle stick injury** from source patient with HIV. Was started on tenofovir/emtricitabine & raltegravir (TDF / FTC / RAL) within hours. Developed GI upset & hepatotoxicity (at 2 weeks) so stopped Truvada & raltegravir and switched to Biktarvy to finish additional 2 week course

- Still some GI upset on Biktarvy, but able to finish the course without further emesis

Exposed pt	Day 0	Day 14	Day 17	Day 33
CBC	Normal	Normal	Normal	Normal
Creatinine	0.8	Normal	Normal	Normal
Alk phos	114	<b>260</b>	<b>197</b>	118
AST	21	<b>93</b>	<b>93</b>	16
ALT	10	<b>223</b>	<b>104</b>	16
Bili	0.7	0.3	0.3	0.4



# Case #2

## Case 2: HPI

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A **32 y/o G3P2** with PMH including gestational hypertension who p/w **a needle stick injury** during her pregnancy

## Case 2: HPI

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A **32 y/o G3P2** with PMH including gestational hypertension who p/w **a needle stick injury** during her pregnancy

- Currently pregnant (**at 38.5 weeks**)
- Works in a dental office, had needlestick 2.5 weeks ago
  - **Source patient** reportedly **HIV & HCV** positive
  - **Exposed patient** believes **source** was taking one pill once a day

## Case 2: HPI

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A **32 y/o G3P2** (@38w) with PMH including gestational hypertension who p/w **a needle stick injury** during her pregnancy from a reported HIV & HCV positive source

The **exposed patient** was seen in the ED:

- HIV & HCV screens: negative
  - HBsAg: negative
  - No anti-HBs was obtained
- BMP: normal
  - No LFTs obtained

## Case 2: Poll

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A **32 y/o G3P2** with PMH including gestational hypertension who p/w **a needle stick injury** during **36th week of pregnancy** from a reported HIV & HCV positive source

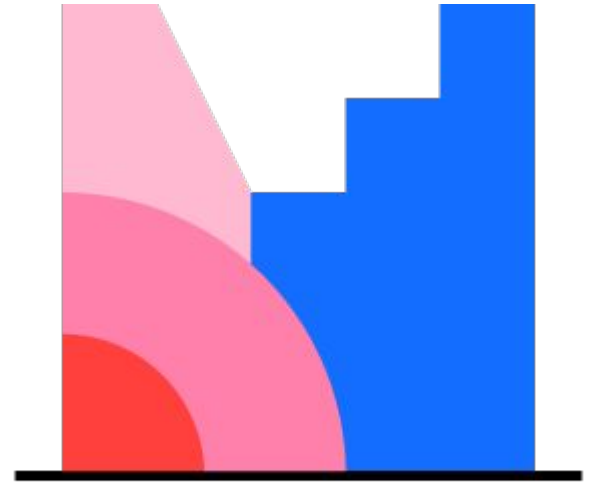
**What's do you tell the MARS line?**

- For HIV PEP?

# Questions for the group



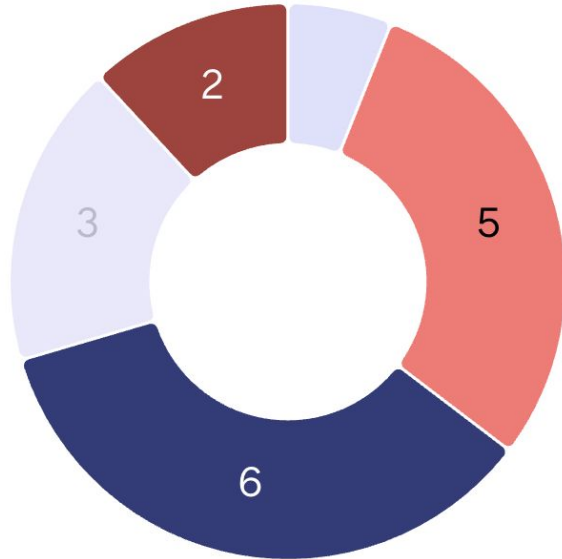
- What to do for HIV PEP?



**Mentimeter**

For simplicity, assume Truvada (TDF/FTC) & Descovy (TAF/FTC) are interchangeable

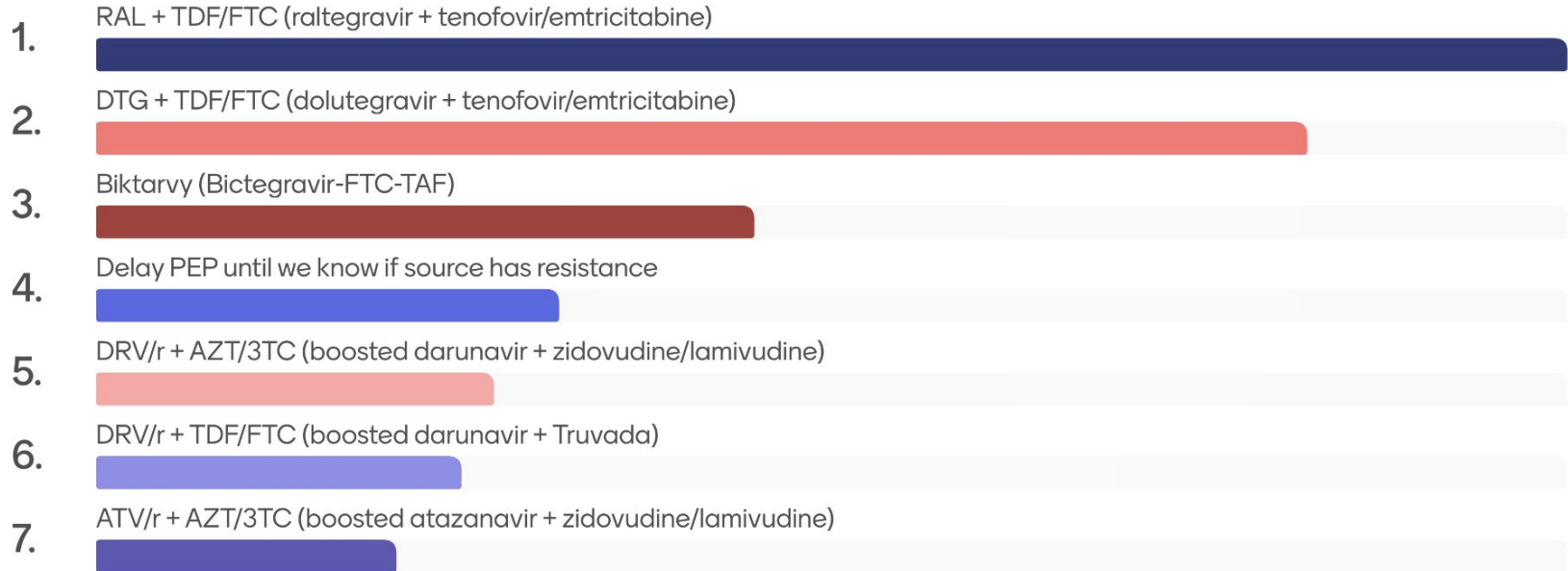
# Which PEP options are preferred (safe & effective) in pregnancy?



- 1 AZT (zidovudine) monotherapy
- 5 DTG + TDF/FTC (dolutegravir + tenofovir/emtricitabine)
- 6 RAL + TDF/FTC (raltegravir + tenofovir/emtricitabine)
- 3 Biktarvy (Bictegravir-FTC-TAF)
- 2 DRV/r + TDF/FTC (boosted darunavir + Truvada)
- 0 Any of the cobicistat-containing regimens

No clear right answer, I just want to test this question type

# What would you pick for this patient?



## Case 2: ED visit

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A **32 y/o G3P2** (@38w) with PMH including gestational hypertension who p/w **a needle stick injury** during her pregnancy from a reported HIV & HCV positive source

- Discharged from ED on **Truvada** (FTC/TDF) & raltegravir (RAL)
- Was given **3 days supply** at the ED

## Case 2: ED visit

---

A **32 y/o G3P2** (@38w) with PMH including gestational hypertension who p/w **a needle stick injury** during her pregnancy from a reported HIV & HCV positive source

- Discharged from ED on **Truvada** (FTC/TDF) & raltegravir (RAL)
- Was given **3 days supply** at the ED
- Out of pocket cost was **over \$4000**
- Employer wouldn't pay for it
  - So only takes 3 days of PEP

## Case 2: ED visit

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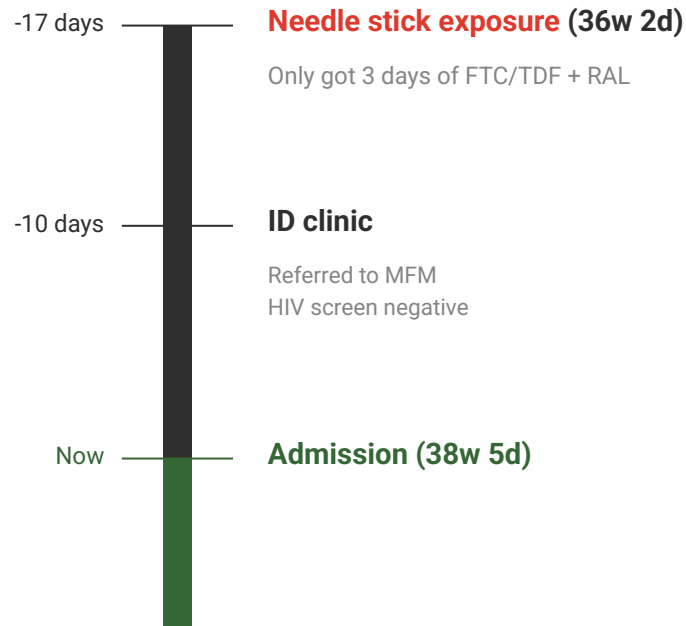
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- Out of pocket cost was **over \$4000**
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  - So only takes 3 days of PEP

Seen by ID outpatient → referred to MFM → admit for in-house observation & possible delivery

## Case 2: Summary

A **32 y/o G3P2** (@38w) with PMH including gestational hypertension who p/w **a needle stick injury** during her pregnancy from a reported HIV & HCV positive source. Only took **3 days** of **FTC/TDF + RAL** due to cost, so admitted for monitoring & possible delivery

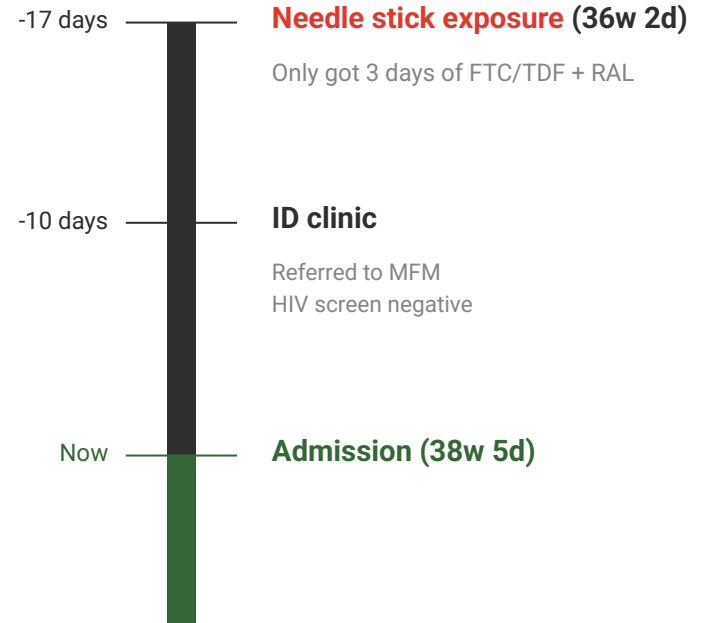


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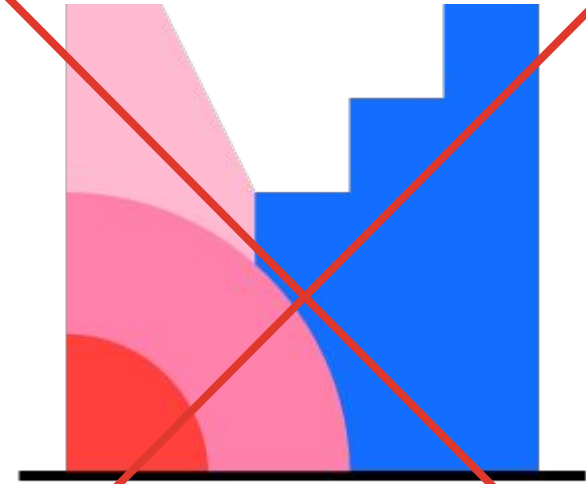
### It's Friday afternoon...

- Work up to be sent?
- What to do if she goes into labor now?
- Empiric management?



## Questions for the group

1. Work up to be sent?
2. What to do if she goes into labor now?
3. Empiric management?



**Mentimeter**

## Case 2: Admission

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A **32 y/o G3P2** (@38w) with PMH including gestational hypertension who p/w **a needle stick injury** during her pregnancy from a reported HIV & HCV positive source. Only took **3 days** of **FTC/TDF + RAL** due to cost, so admitted for monitoring & possible delivery

- Fourth gen HIV screen negative (now 17 days from exposure)
- HIV PCR pending
- Recommend avoiding labor until PCR comes back
- If positive or goes into labor:
  - Start IV zidovudine (AZT) 3 hours before c-section

## Case 2: Hospital course

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A **32 y/o G3P2** (@38w) with PMH including gestational hypertension who p/w **a needle stick injury** during her pregnancy from a reported HIV & HCV positive source. Only took **3 days** of **FTC/TDF + RAL** due to cost, so admitted for monitoring & possible delivery

- HIV PCR comes back negative (molecular lab runs it on a Sunday)
- Uncomplicated vaginal delivery

## Case 2: Hospital course

---

A **32 y/o G3P2** (@38w) with PMH including gestational hypertension who p/w **a needle stick injury** during her pregnancy from a reported HIV & HCV positive source. Only took **3 days** of **FTC/TDF + RAL** due to cost, so admitted for monitoring & possible delivery

- HIV PCR comes back negative (molecular lab runs it on a Sunday)
- Uncomplicated vaginal delivery

### Management of the newborn

- Work up to be sent?
- Do they need PPx?
- Breastfeeding?

## Case 2: Hospital course

---

A **32 y/o G3P2** (@38w) with PMH including gestational hypertension who p/w **a needle stick injury** during her pregnancy from a reported HIV & HCV positive source. Only took **3 days** of **FTC/TDF + RAL** due to cost, so admitted for monitoring & possible delivery

- HIV PCR comes back negative (molecular lab runs it on a Sunday)
- Uncomplicated vaginal delivery

Pediatric ID consulted for the newborn

- They get in touch with **source patient's provider**, he has been undetectable, most recently 5 months ago
- **Post-delivery viral load** on **mother** is **negative**
- No testing of newborn needed; **okay to breastfeed**

# *Occupational* post-exposure prophylaxis

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Links to articles discussed  
here



# Learning objectives

- Describe the **risk of HIV transmission** in occupational exposures
- Review the **immediate management** of occupational HIV exposures, including:
  - Suggested labs (from **source** & **exposed**)
  - Timeline of to start PEP
  - Situations that warrant PEP
- Discuss the **long-term management** of PEP
  - What agents to pick
  - Duration of PEP
  - Follow up testing
- Examine key differences of **PEP in pregnancy**
  - Risk of transmission
  - Which agents to use
  - Risk of breastfeeding
- Review the **intrapartum management** of HIV

# Risk of HIV transmission



For transmission of HIV to occur, must have both

## 1. Infectious body fluid

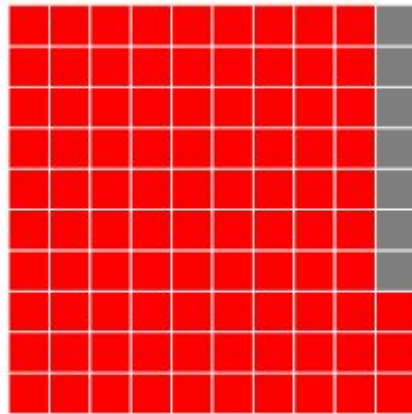
- Blood
- Semen or vaginal fluid
- Amniotic fluid
- Breast milk
- Not saliva!

## 2. Portal of entry

- Percutaneous - Needle stick, IVDU
- Mucous membranes - genitals, anal
- Cutaneous (with non-intact skin)

# Risk of HIV transmission [1]

Transfusion from HIV patient (92.5%)

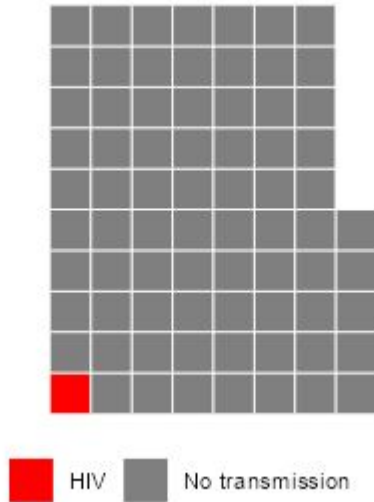


 HIV  No transmission

Exposure	Risk
<b>Blood transfusion, HIV (+)</b>	<b>92.5%</b>
Receptive anal intercourse	1 in 75 (1.4%)
Shared needles (IVDU)	1 in 160 (0.63%)
<b>Percutaneous (needle stick)</b>	<b>1 in 450 (0.23%)</b>
Insertive anal intercourse	1 in 900 (0.11%)
Receptive penile-vaginal intercourse	1 in 1250 (0.08%)
Insertive penile-vaginal intercourse	1 in 2500 (0.04%)

# Risk of HIV transmission [1]

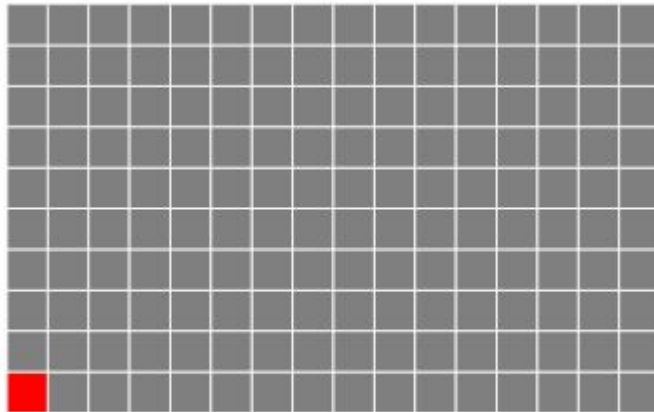
Receptive anal (1 in 75)



Exposure	Risk
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# Risk of HIV transmission [1]

IVDU (1 in 160)

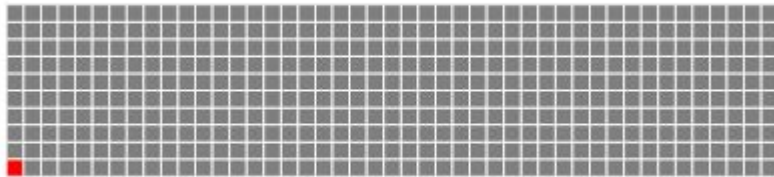


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# Risk of HIV transmission [1]

Needle stick (1 in 450)

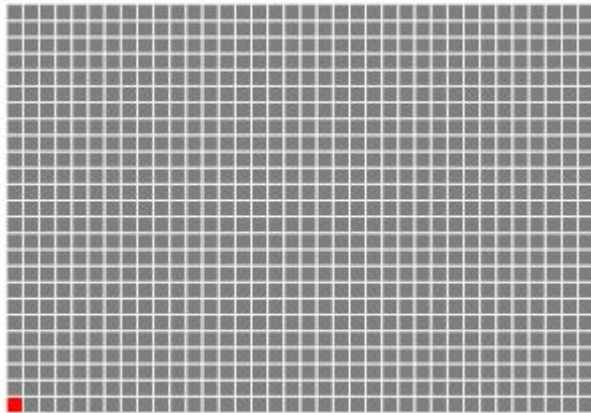


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# Risk of HIV transmission [1]

Insertive anal (1 in 900)

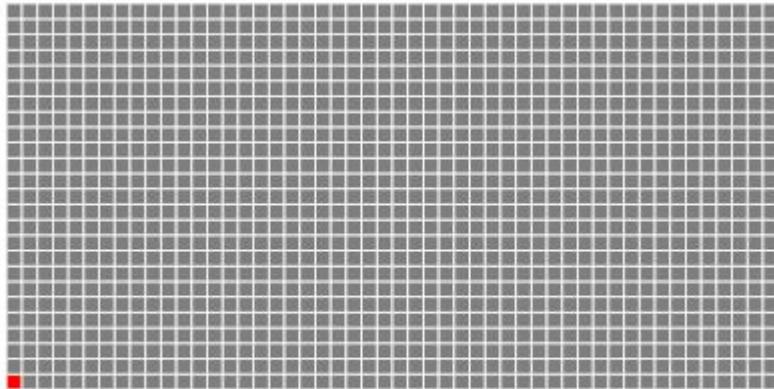


 HIV  No transmission

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# Risk of HIV transmission [1]

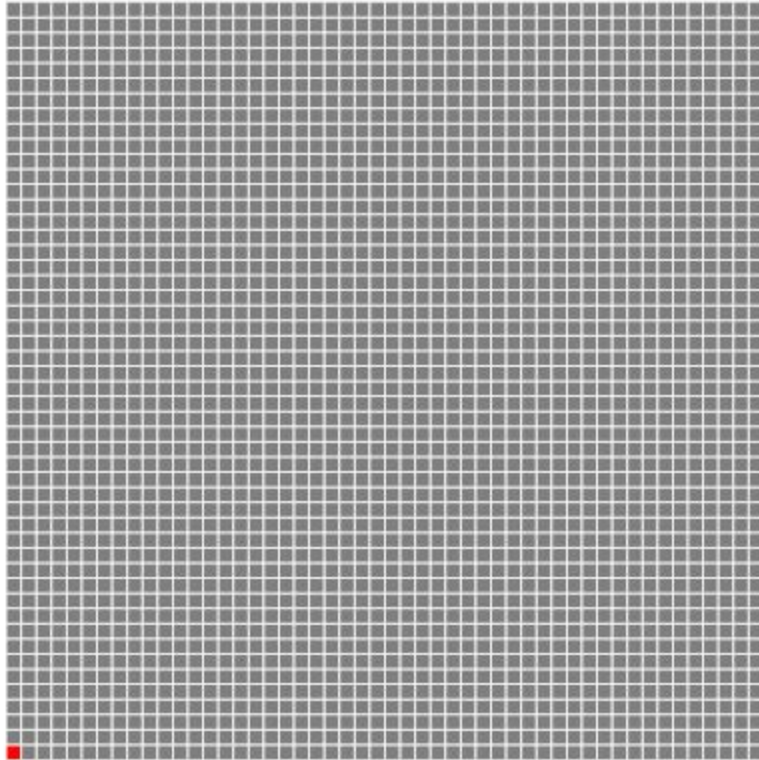
Receptive penile-vaginal (1 in 1250)



 HIV  No transmission

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## Insertive penile-vaginal (1 in 2500)



 HIV  No transmission

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Shared needles (IVDU)	1 in 160 (0.63%)
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# Risk of HIV transmission: if **source** is on ART



Does the **source patient being on ART** reduce the likelihood of transmission?

- **Probably**

By how much?

- **We don't know**

# Risk of HIV transmission: if **source** is on ART

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## **PARTNER study [2]**

- Robust findings for **U=U**
- But only looked at **sexual transmission**

## **The 2020 SHEA guidelines [3]**

- They appropriately highlight that needlestick is similar to single unprotected sexual encounter in terms of transmission risk
- **No cases** of healthcare workers (HCW) living with HIV transmitting to patients if HCW has VL < 1000
- But this is looking at **HCW → patient**, not patient → HCW transmission

# Risk of HIV transmission: if **source** is on ART

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**Studies looking at PWID:** Some observational studies [4] have implied that ART reduces HIV transmission among PWID

- Modeling estimates from Vancouver [5] project that **reduced transmission may be more related to reduced drug use** among PLHIV who are in treatment
- Given the large reduction attributable to reduced drug use, they did not find a large reduction **attributable to ART alone**



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# Immediate management of occupational HIV exposures

- Describe the **risk of HIV transmission** in occupational exposures
- Review the **immediate management** of occupational HIV exposures, including:
  - Suggested labs (from **source** & **exposed**)
  - Timeline of to start PEP
  - Situations that warrant PEP
- Discuss the **long-term management** of PEP
  - What agents to pick
  - Duration of PEP
  - Follow up testing
- Examine key differences of **PEP in pregnancy**
  - Risk of transmission
  - Which agents to use
  - Risk of breastfeeding
- Review the **intrapartum management** of HIV

# Immediate management



1. Wash the area well
  - With soap & water
  - Other agents (alcohol, CHG) are virucidal to HIV
    - No evidence to support their use
2. Report it occupational health

# Immediate management

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## Makary et al (NEJM, 2007) [6]

Survey of 700 surgical residents

- By the end of residency:
  - **99%** had a needlestick
  - **53%** had a needlestick from a **high risk** patient
- Mean (PGY-5): **7.7 exposures**

### Frequently not reported

- 51% did not report their most recent exposure
- 16% involved high risk patient

Who *do* the residents tell?

- Most common: attending (51%)
- Least: significant other (13%)

# Immediate management: **Source patient** [7][8]

## Source patient

- Ideally, source patient should be tested
- If source is known to be HIV (+), ask about:
  - Recent viral load
  - Treatment history
  - Any resistance

If source has *known HIV*, do not delay PEP while awaiting this info!

- Ideally, started within **1-2 hours of exposure**
- Cutoff: 72 hours
  - Exceptionally high risk: USPHS says can be up to a week (but likely very reduced effectiveness)

# Immediate management: Exposed patient [8]

## Baseline testing

- HIV, HCV, anti-HBs, HBsAg
- Baseline labs for PEP
- Pregnancy testing

## Counseling the HCW

Discuss what their **risk of acquiring HIV**

- Many HCW may not know the *success of modern HIV treatment*, so they will have **understandable anxiety** about HIV/AIDS

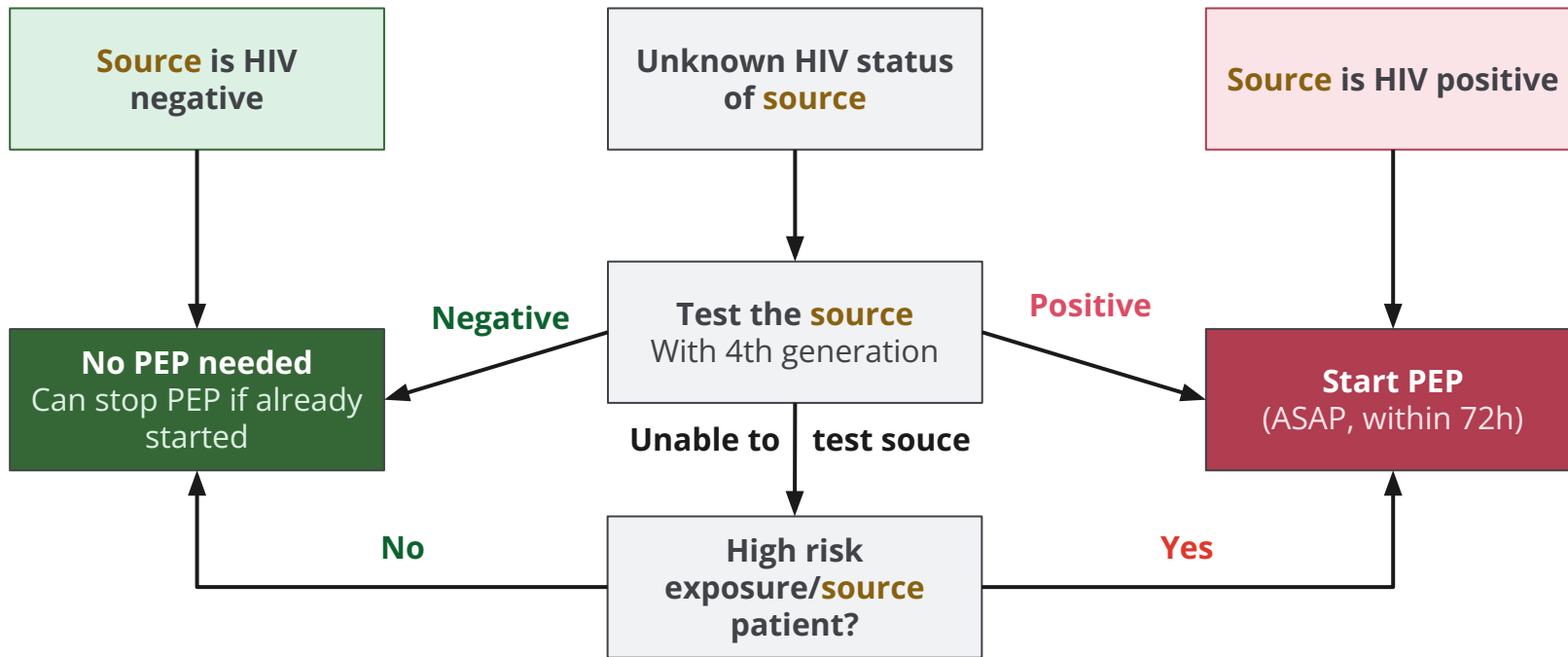
Discuss risk them (**exposed**) **transmitting HIV**

- Highest risk in first 6-12 weeks
- Need for condoms & not donating blood
- Watch out for **acute retroviral symptoms**

Discuss **side effects of PEP**

- One study showed only 60% adherence

# When to start PEP? [8]



Management is different if the **source** is thought to potentially have **acute HIV** (beyond the scope of this talk)



# Long-term management of PEP

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# Suggested PEP: US Public Health Service [9]

## Preferred HIV PEP regimen

**TDF/FTC (daily)**  
Tenofovir /  
Emtricitabine

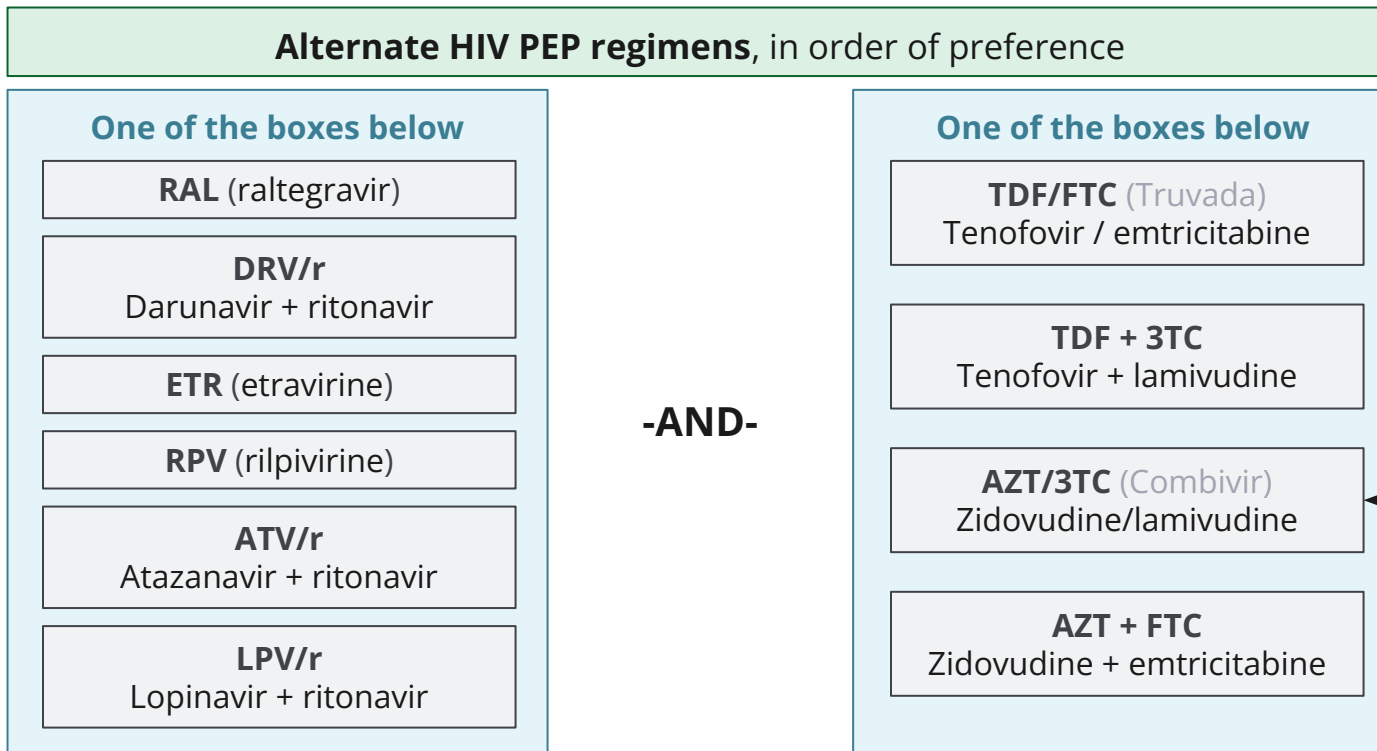
+

**RAL (BID)**  
Raltegravir

Notably, **not updated since 2013**

- This was right around when dolutegravir came to market

# Suggested PEP: US Public Health Service [9]



# Suggested PEP options: CDC & others [7][8][10]



**2 NRTI + integrase inhibitor**

**TDF/FTC (daily)**  
Tenofovir /  
Emtricitabine

+

**DTG (daily)**  
Dolutegravir

# Suggested PEP options: CDC & others [7][8][10]

2 NRTI + integrase inhibitor

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Tenofovir /  
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Dolutegravir

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← Less ideal due to BID dosing

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Raltegravir

← Less ideal due to BID dosing

**TAF/FTC (daily)**  
Tenofovir /  
Emtricitabine

+

**BIC (daily)**  
Bictegravir

← Not listed by CDC [9] (off label)

# Suggested PEP options: CDC & others [7][8][10]

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**TDF/FTC (daily)**  
Tenofovir /  
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+

**DTG (daily)**  
Dolutegravir

**TDF/FTC (daily)**  
Tenofovir /  
Emtricitabine

+

**RAL (BID)**  
Raltegravir

**TAF/FTC (daily)**  
Tenofovir /  
Emtricitabine

+

**BIC (daily)**  
Bictegravir

## 2 NRTI + boosted PI

**TDF/FTC (daily)**  
Tenofovir /  
Emtricitabine

+

**DRV/r (daily)**  
Ritonavir-boosted  
darunavir

Perhaps more affordable

Less ideal due to BID dosing

Not listed by CDC [9] (off label)

# Follow up: Duration of PEP & monitoring [8]



Duration of PEP: **28 days** from starting

Labs for PEP toxicity

- Monitor CBC, renal function, LFTs
- Obtain labs at **baseline** and **2 weeks**

# Follow up: Duration of PEP & monitoring [8]



Duration of PEP: **28 days** from starting

Labs for PEP toxicity

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Side effects of PEP

- Most common: GI (nausea, vomiting, and diarrhea)
  - Anti-emetics/diarrheals
- If severe, can switch to another regimen
- Watch out for **acute retroviral syndrome**

# Follow up: HIV testing

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For HIV testing:

- If **source patient** is HIV negative, no need for further testing of **exposed patient**
  - Unless worried that **source** had acute HIV
- USPHS (2013) [9]: Baseline, 6 weeks, 12 weeks, 6 months
  - This was before 4th gen screen became widely available
- Modern practice [8]: Baseline, 6 weeks, 3-4 months
- **Extended to 12 months** if **exposed** becomes **coinfected with HCV [8][9]**



# PEP in pregnancy

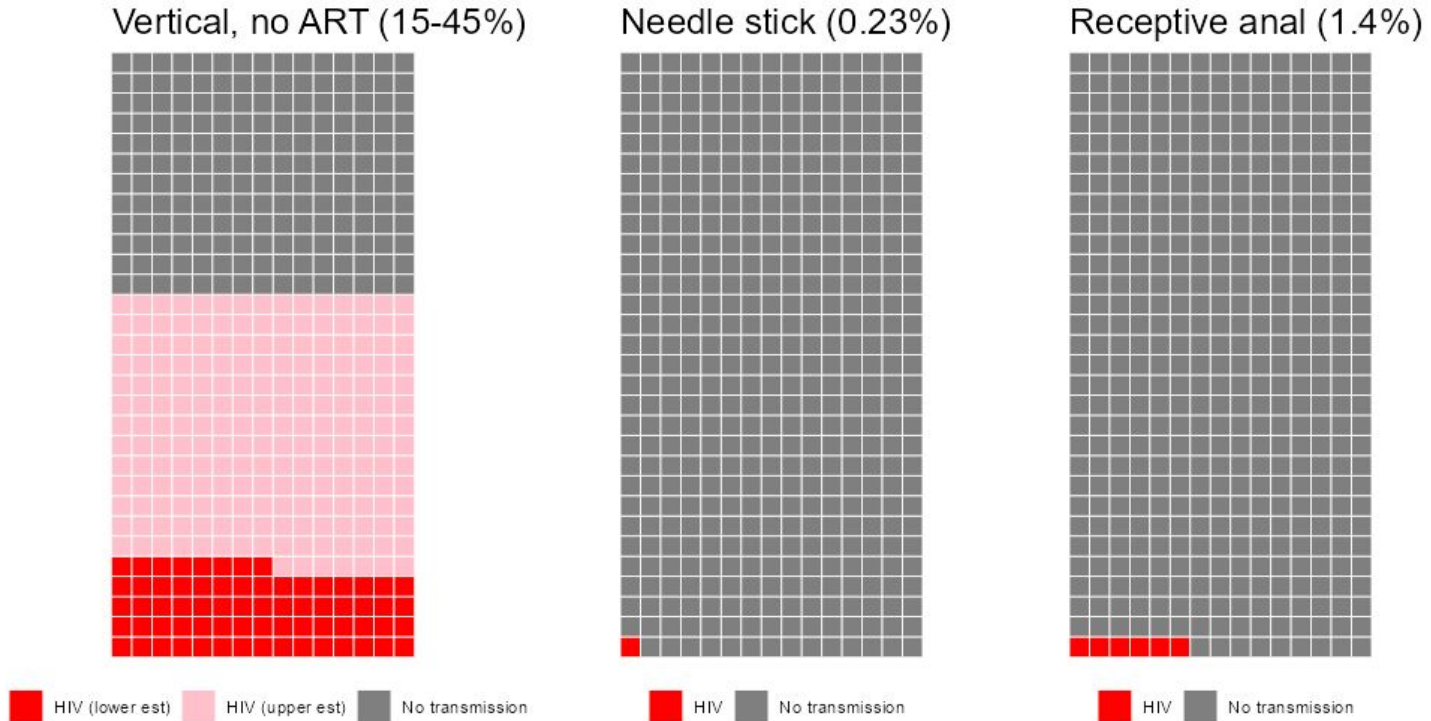
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  - Risk of breastfeeding
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# Risk of vertical transmission



- Transmission rates of HIV (**without ART**) from mother to child range from **15-45%**, including from breastfeeding [11]

# Risk of vertical transmission [11]



# Risk of vertical transmission

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- Transmission rates of HIV (**without ART**) from mother to child range from **15-45%**, including from breastfeeding [11]
- Without breastfeeding, it is estimated [12]
  - 30% of vertical transmissions occur in utero, the majority **during the 3rd trimester**
  - **70% occur during labor & delivery**
- Taking **ART during pregnancy** reduces the risk to **< 2%**
- If the mother has **acute HIV** during pregnancy, this **increases the risk by 2.3** [13]

# PEP in pregnancy [7][8]

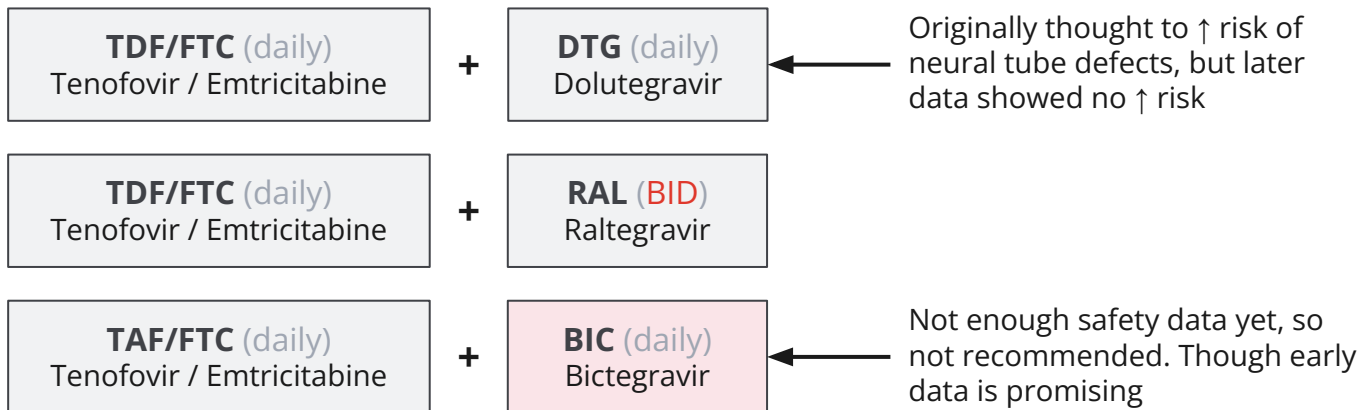
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- Overall, **similar to HIV management in pregnancy** (& PEP in non-pregnant patients)
  - **Long term safety data is lacking**, most short term data is promising
  - Enroll patients in the **Antiretroviral Pregnancy Registry** ([www.APRegistry.com](http://www.APRegistry.com))

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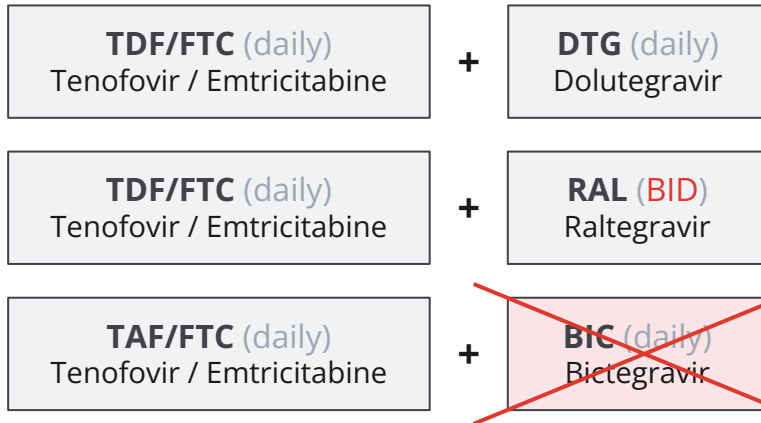
## 2 NRTI + integrase inhibitor



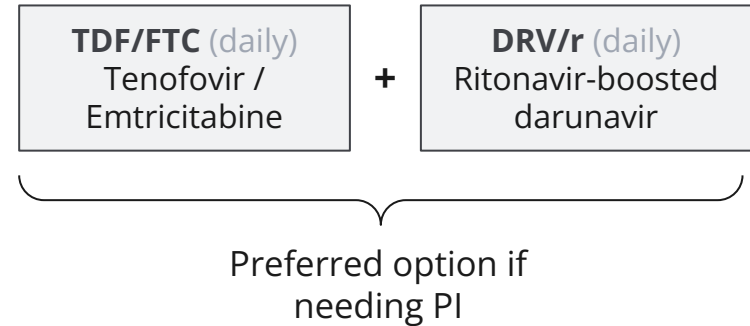
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## 2 NRTI + integrase inhibitor



## 2 NRTI + boosted PI



# PEP in pregnancy [7][8][9]

## 2 NRTI backbone

### TxF / xTC

Tenofovir / Emtricitabine  
Tenofovir / Lamivudine

### AZT / 3TC

Zidovudine / Lamivudine

**AND**

## Integrase inhibitor

### DTG

Dolutegravir

### RAL

Raltegravir

**OR**

## PI

### ATV/r

Atazanavir (boosted)

### DRV/r

Darunavir (boosted)

**OR**

## NNRTI

### RPV

Rilpivirine

Must use ritonavir for boosting, as cobicistat boosted regimens have higher rates of virologic failure

# Breastfeeding & PEP [8]

Breastfeeding is **not a contraindication for PEP**

- But should discuss infant's potential **risks of HIV transmission** & exposure to ART
- May consider “**pump & dump**” or storing breastmilk while awaiting results of **source patient's** HIV screen

Risk of transmission in breastmilk	
<b>HIV</b>	There is risk of transmission; the <b>highest risk</b> is during <b>acute HIV</b>
<b>Tenofovir Lamivudine Dolutegravir</b>	All three have been detected in breastmilk at <b>low levels</b> (subtherapeutic)
<b>Raltegravir</b>	Studies have been mixed



# Perinatal HIV management

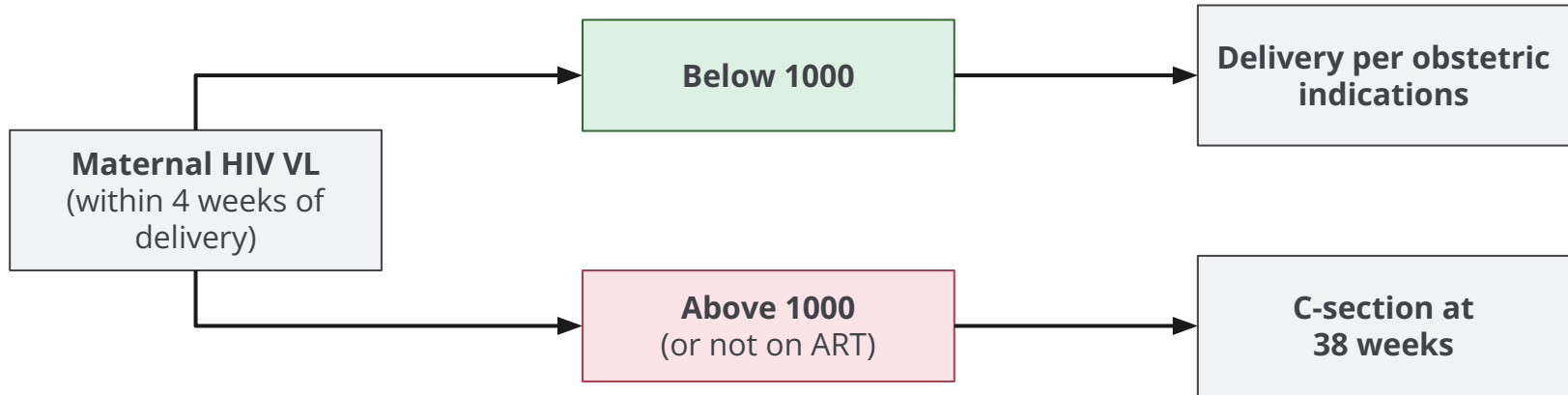
**Biggest priority**  
Having mom on ART

- Describe the **risk of HIV transmission** in occupational exposures
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# Intrapartum HIV: Mode of delivery [14]

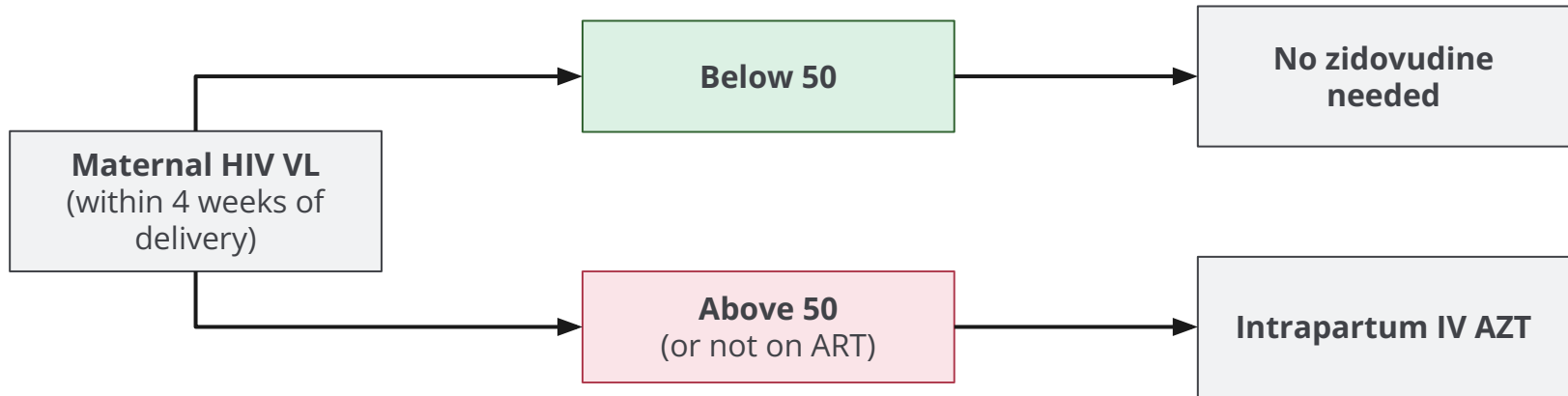
Historically, **C-sections** have been associated with **lower risk of mother to child transmission**

- Largely based off of data before widespread use of ART in pregnancy was common
- Now, mode of delivery is **largely informed by maternal viral load** (ideally within 4 weeks of delivery)



# Intrapartum HIV: ART [14]

- Women should keep taking their ART before/during/after delivery
- Indications for **IV zidovudine** (ideally **started 3 hours before delivery**)
  - **VL below 50**: No benefit
  - **50 - 1000**: consider AZT
  - **>1000**: AZT (along with C-section)



# Learning points & take aways

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# Learning points & take aways

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- Risk to HIV transmission from occupation needle sticks are around 1 in 450, but likely lower if the source patient is on ART
- In the event of a needle stick, wash the area with soap & water and immediately report to occupational health or the ED to start PEP (ideally within 1-2 hours)
  - Ideally, obtain data on the source patient including HIV, HCV, and HBV status
  - For sources known to be HIV positive, recent viral load & treatment history is helpful
- HIV PEP is indicated when the source has HIV (or high risk source patient)
  - Suggested PEP: 28 days of TxF/xTC -plus- INSTI (DTG, RAL, ?BIC) or booster PI (DRV/r)
  - Monitor for toxicity (labs at baseline, 2 weeks) and side effects
  - Exposed patient should have HIV screen at baseline, 6 weeks, and 3-4 months (unless HCV+)
- PEP is similar in pregnancy (but perhaps more important given risk of transmission with acute HIV)
- At time of delivery, C-section & intrapartum AZT if VL is above 1000 &/or 50 (respectively)

Slides available on [hunteratliff1.com/talk/](https://hunteratliff1.com/talk/); Citations available via QR code or via the “citations” button on the website