Updates in HIV Prevention and Treatment

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Disclosures

- Served on Gilead Advisory committee

Objectives

- Articulate HIV epidemiology in U.S. and New Mexico
- Describe updates in HIV testing recommendations
- Identify key differences in HIV pre-exposure and post-exposure prophylaxis
- Access key resources for NM practitioners and patients

Interactive Section: Poll Everywhere

- pollev.com/projectechod101
- Text: PROJECTECHOD101 to 22333

Question #1

Jon is a 25 yo cis-gender male, presenting today with painful urination. Upon discussion, you find that he has one regular sexual partner, a cis-gender woman, with whom he frequently has condomless intercourse.

Should this patient receive HIV preexposure prophylaxis (PrEP)?

Yes

No

Should this patient receive HIV preexposure prophylaxis (PrEP)?

Yes

No

Should this patient receive HIV preexposure prophylaxis (PrEP)?

Yes

No

Question #2

Jake is a 19 yo cis-gender male, presenting today for to establish care. Upon discussion, you find that he has multiple sexual partners with whom he frequently has condomless insertive and receptive intercourse.

Should this patient receive HIV PrEP?

Yes

No

Should this patient receive HIV PrEP?

Yes

No

Should this patient receive HIV PrEP?

Yes

No

Question #3

Melissa is a 35 yo transgender female (DMAB, on gender affirming hormones for 2+ years) and chronic kidney disease related to PCKD. She routinely has intercourse with male and female cis-gender patients. She wonders about the best option for protecting herself from HIV.

What medication would you recommend for this patient?

- Emtricitabine-Tenofovir disoproxil (Truvada)
- Emtricitabine-Tenofovir alafenamide (Descovy)
- Emtricitabine-Tenofovir alafenamide-Bictegravir (Biktarvy)

What medication would you recommend for this patient?

Emtricitabine-Tenofovir disoproxil (Truvada)

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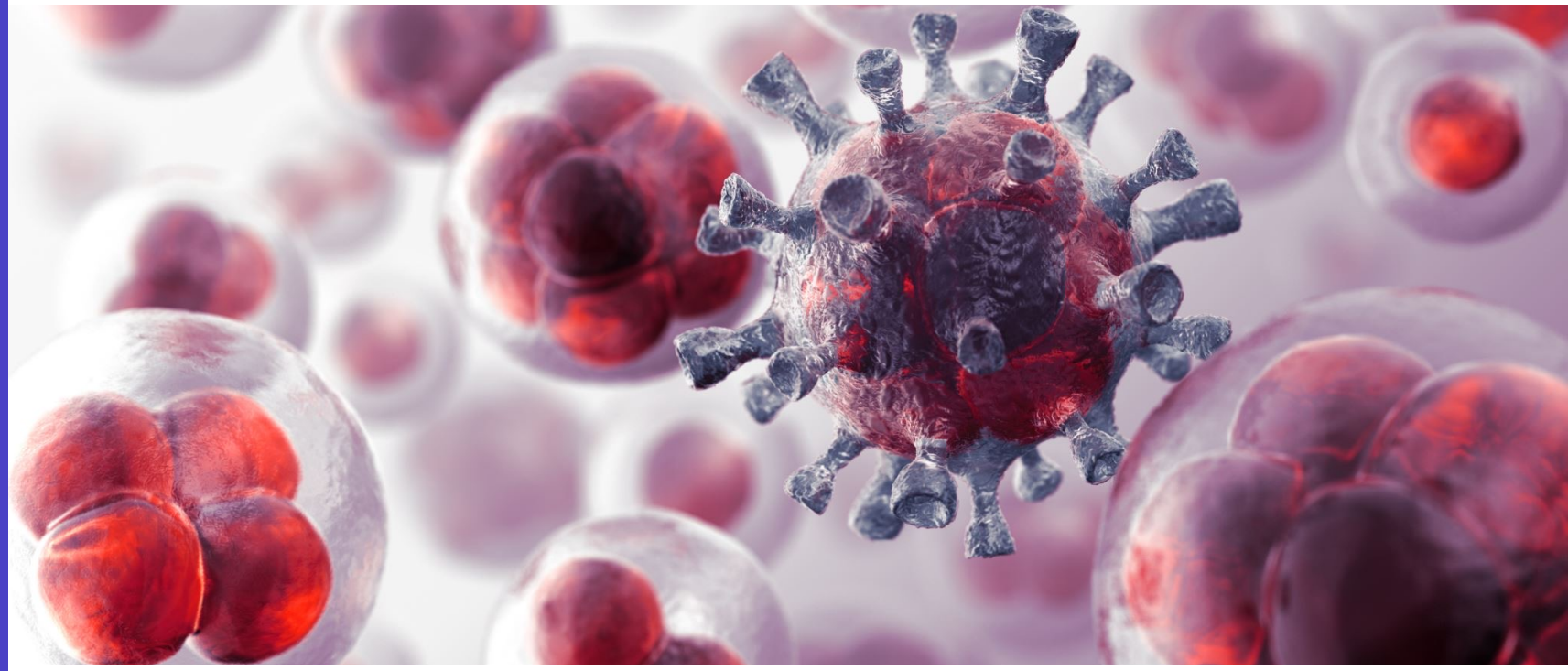
Emtricitabine-Tenofovir alafenamide-Bictegravir (Biktarvy)

Is HIV that important today?



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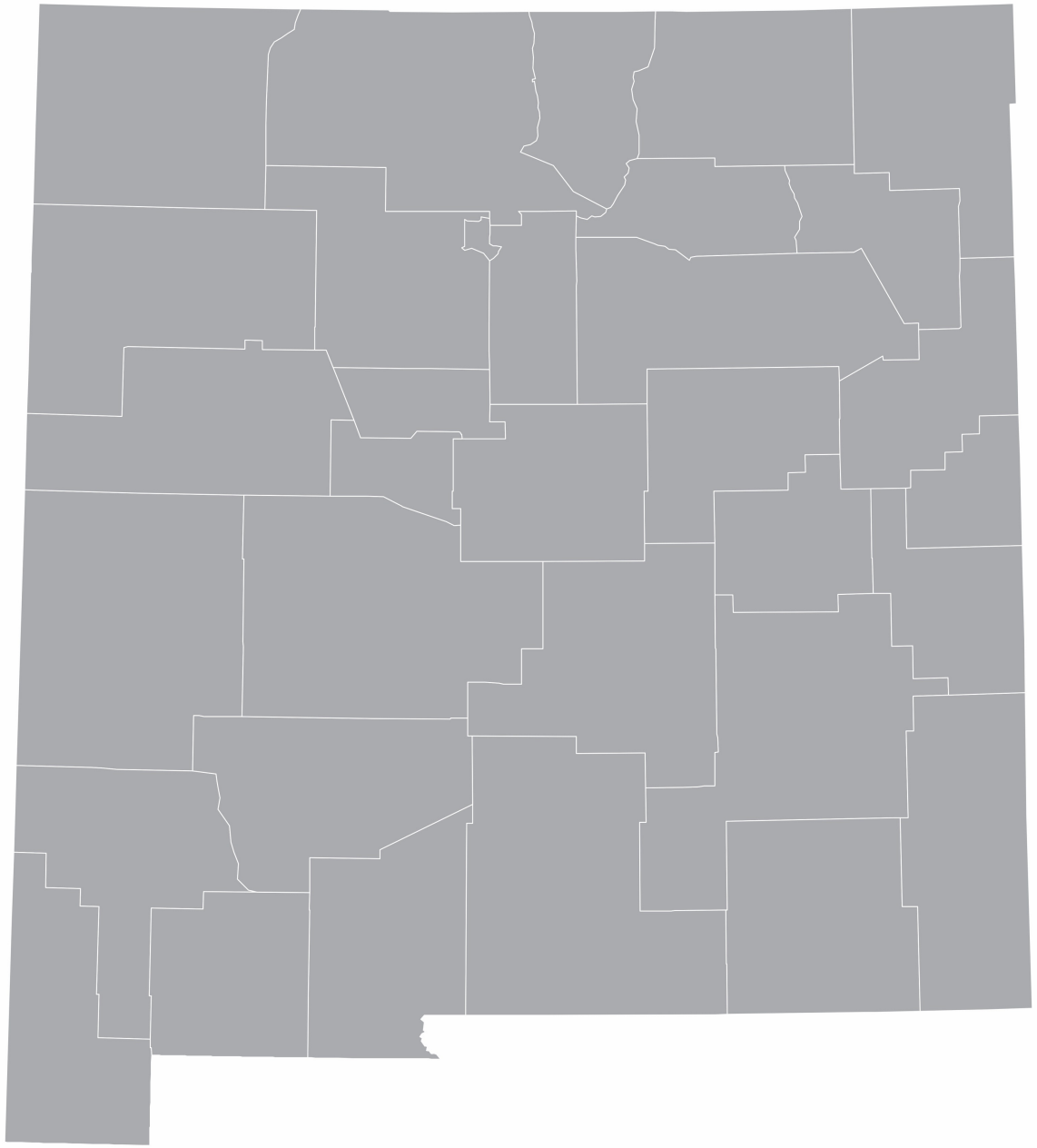
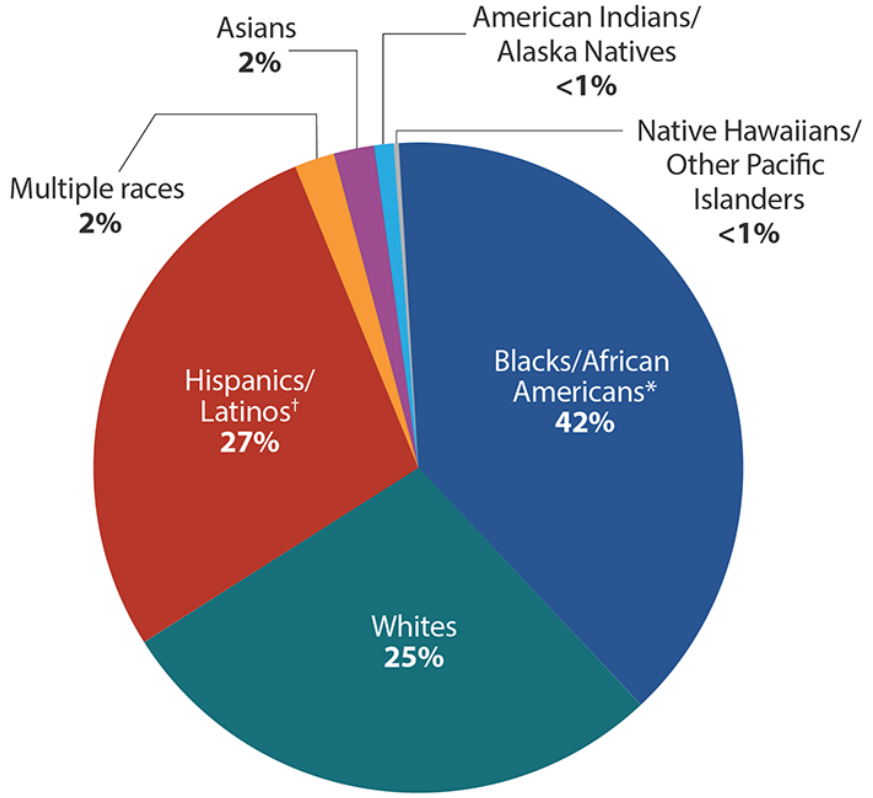


Stock image.

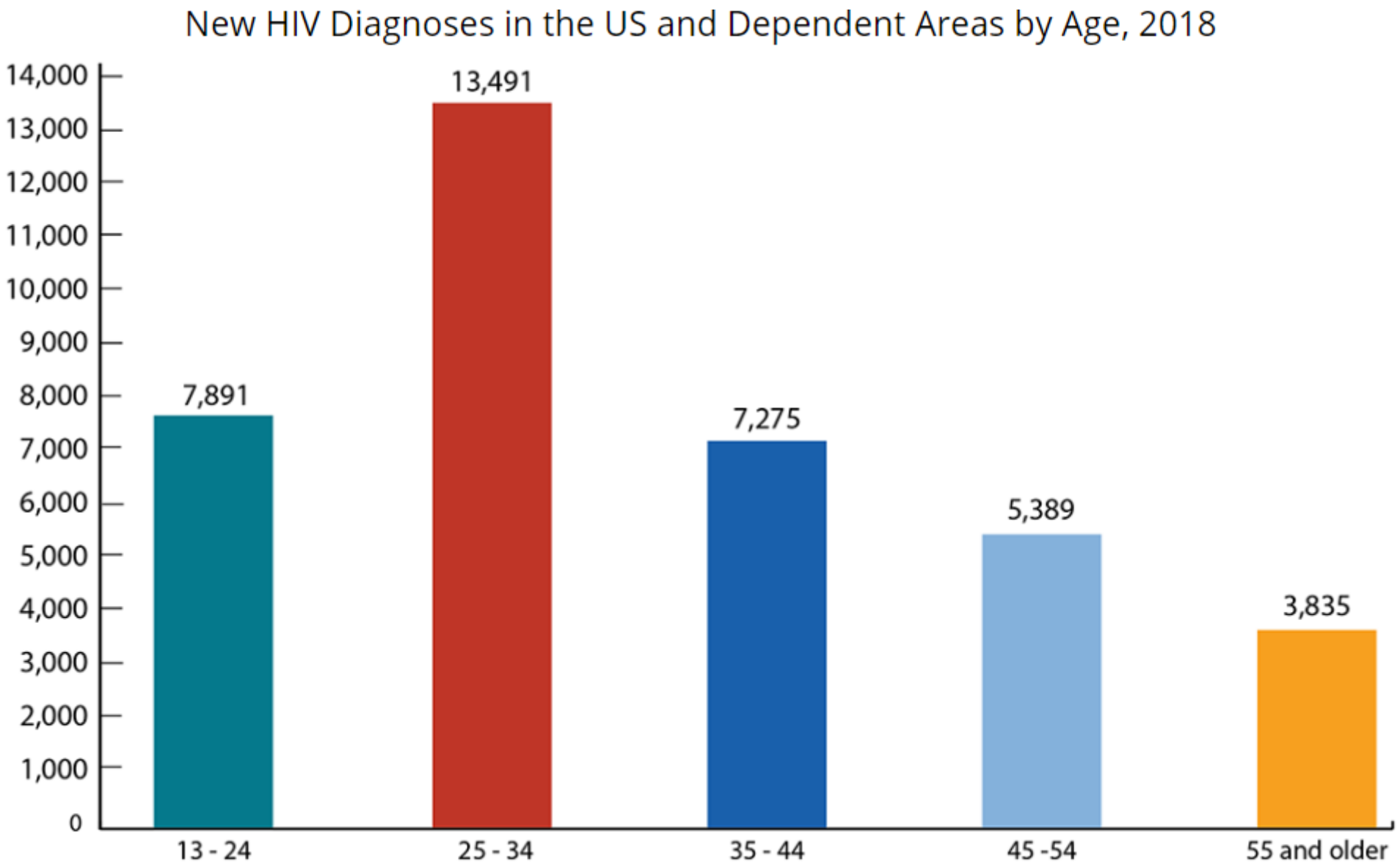
HIV Infections Continue Across the Country

- Nearly two million new HIV infections yearly across the globe
- Nearly 1.2 million adolescents and adults in US living with HIV
- No effective vaccine to prevent transmission, and ART only provides suppression, not cure
- In 2018, more than 38,000 people received an HIV diagnosis in the US

New HIV Diagnoses in the US and Dependent Areas by Race/Ethnicity, 2018

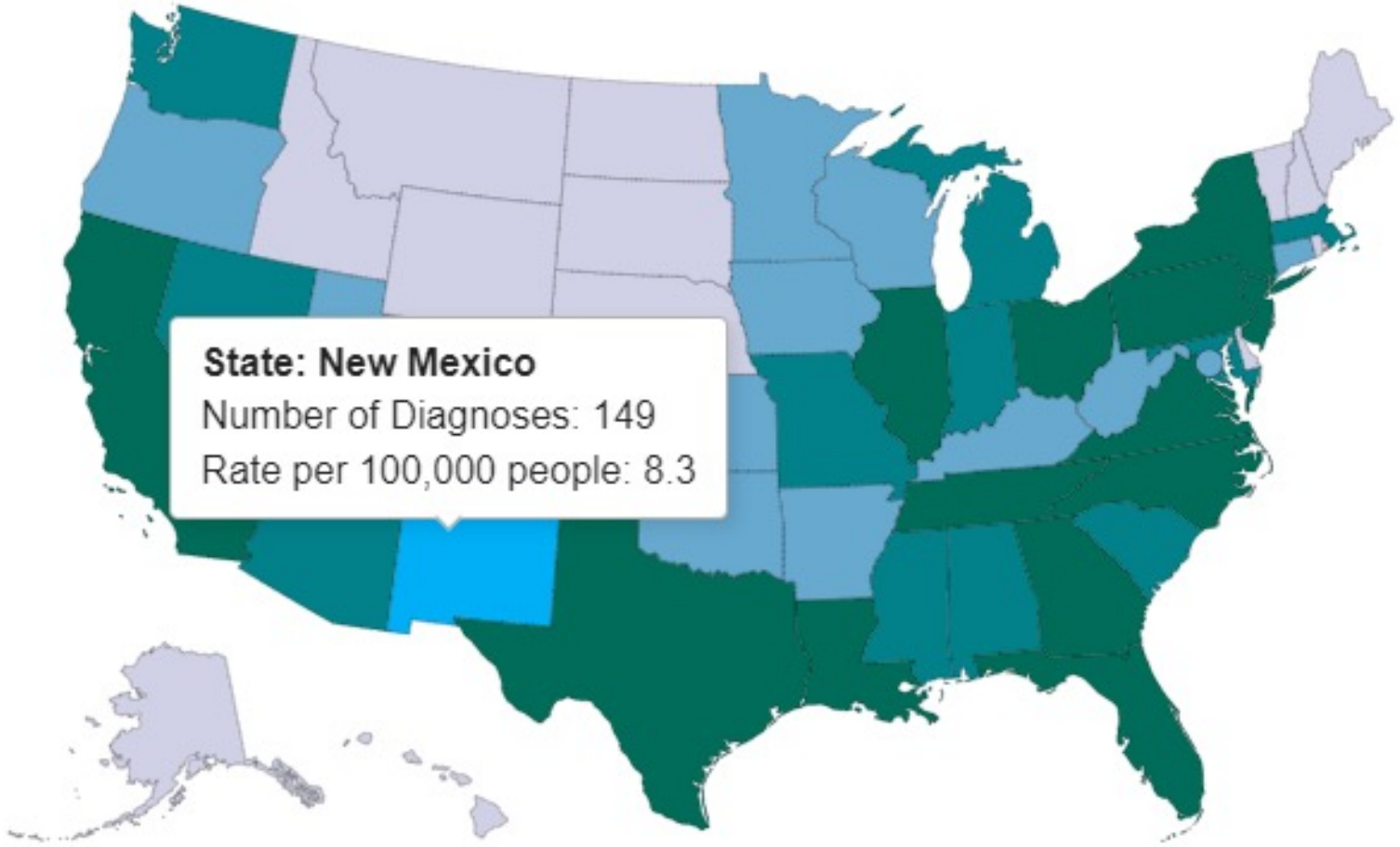


CDC. Diagnoses of HIV infection in the United States and dependent areas, 2018 (updated). *HIV Surveillance Report* 2020;31.



CDC. Diagnoses of HIV infection in the United States and dependent areas, 2018 (updated). *HIV Surveillance Report* 2020;31.

New HIV Diagnoses and People with Diagnosed HIV in the US and Dependent Areas by Area of Residence, 2021*



Legend

New HIV Diagnoses and People with Diagnosed HIV in the US and Dependent Areas by Area of Residence, 2021*

- 0
- 7 - 105
- 124 - 390
- 406 - 781
- 792 - 4,399

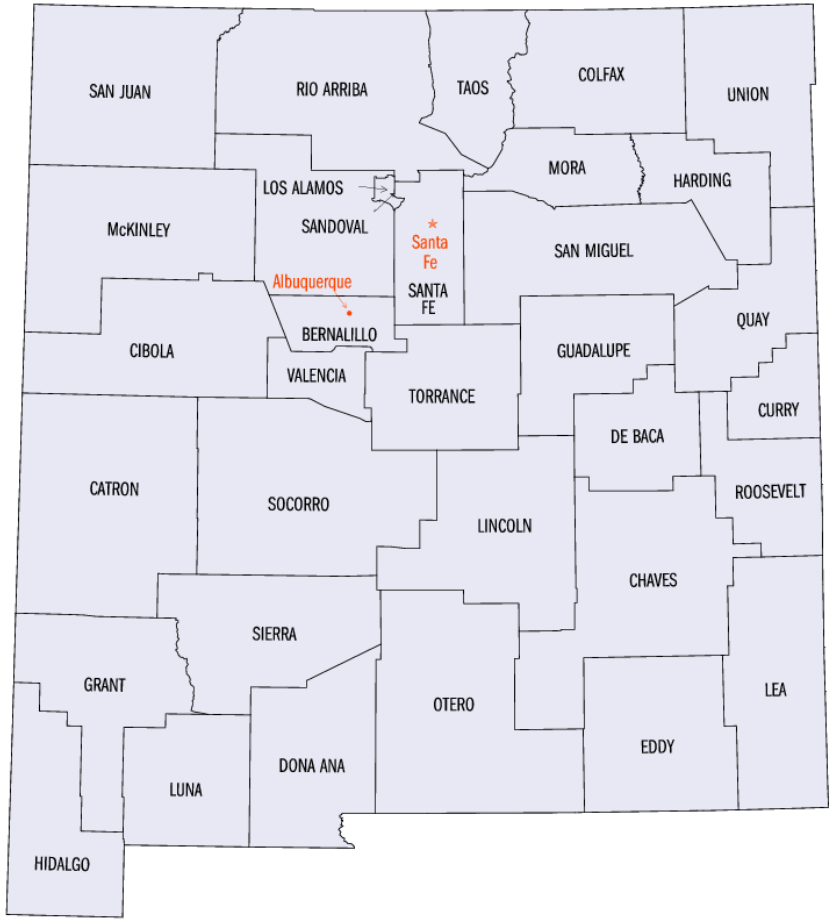
US Dependent Areas: AS | GU | PR | VI | MP | PW

https://www.cdc.gov/hiv/basics/statistics.html

New Mexico Epidemiology

New HIV Diagnoses – New Mexico

- 148 adult and adolescents – 2019
  - 58% of those were adolescents and young adults (13-34 yo)



NMDOH HIV Surveillance & Epidemiology Program. https://www.nmhealth.org/about/erd/ideb/haep/
https://upload.wikimedia.org/wikipedia/commons/3/3d/New-mexico-counties-map.gif

How to reduce the risk of HIV acquisition?

- Increased testing, linkage to care
- Delayed or fewer partners
- Activities with less risk
- Increased condom use
- Empowerment, negotiation skills
- Reduce alcohol and drug use
- Reduce psychosocial barriers
- Circumcision
- Sexually transmitted infection (STI) treatment
- HIV PEP and PrEP

PrEP versus PEP

HIV PrEP

- Pre-exposure prophylaxis
- Given BEFORE exposure
- Start at least 7 days prior to exposure
- Daily 2-drug oral regimen or long-acting injection every 2 months

HIV PEP

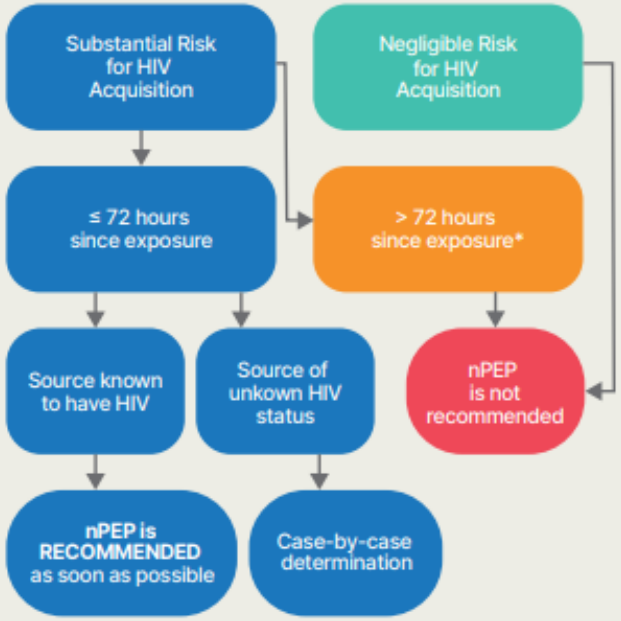
- Post-exposure prophylaxis
- Given AFTER high-risk exposure
- Start within 72 hours of exposure
- Limited (28-day) course of oral daily 3-drug regimen

nPEP

Non-Occupational Post-Exposure HIV Prevention

Assessment, treatment, and follow-up recommendations for people with known or potential exposures to HIV and other infections. Health care providers should evaluate persons rapidly for nPEP when care is sought ≤72 hours after an exposure that presents a substantial risk for HIV acquisition.

Risk Assessment



*Some clinicians would offer nPEP on a case-by-case basis.

Substantial Risk for HIV Acquisition

Exposure of: vagina, penis, rectum, eye, mouth or other mucous membrane, non-intact skin, or percutaneous contact

With: blood, semen, vaginal secretions, rectal secretions, breast milk, any body fluid that is visibly contaminated with blood

When: the source is known to have HIV

Negligible Risk for HIV Acquisition

Exposure of: vagina, penis, rectum, eye, mouth or other mucous membrane, non-intact skin, or percutaneous contact

With: urine, nasal secretions, saliva, sweat, tears (if visible blood, see "Substantial Risk for HIV Acquisition")

When: regardless of the known or suspected HIV status of the source

nPEP Quick Guide for Providers. AETC National Coordinating Resource Center. 2021.

Who Should Get PrEP?

Sexually active adults/adolescents*

- Anal or vaginal sex in last six months and any of the following:
  - Sexual partner with HIV
  - Bacterial STI in last six months
  - History of inconsistent / no condom use

People Who Inject Drugs (PWID)

- Injecting partner with HIV
- Sharing injection equipment
- *Sex acts associated with injection drug use***

Centers for Disease Control and Prevention: Preexposure prophylaxis for the prevention of HIV infection in the United States 2021 Update.

Oral Medications

Stock Image.

Oral Medications

TDF/FTC (Truvada® or generic)

- MSM, transwomen, heterosexuals, PWID
- Approved for CrCl ≥60 ml/min
- Side effects
  - Decreased bone mineral density
  - Decreased GFR

TAF/FTC (Descovy®)

- MSM and transwomen ONLY
- Approved for CrCl ≥ 30 ml/min
- Side effects
  - Weight gain
  - Increase in LDL cholesterol

Centers for Disease Control and Prevention: Preexposure prophylaxis for the prevention of HIV infection in the United States 2021 Update.

Table 1a: Summary of Clinician Guidance for Daily Oral PrEP Use

	Sexually-Active Adults and Adolescents[1]	Persons Who Inject Drug[2]
Identifying substantial risk of acquiring HIV infection	Anal or vaginal sex in past 6 months AND any of the following: • HIV-positive sexual partner (especially if partner has an unknown or detectable viral load) • Bacterial STI in past 6 months[3] • History of inconsistent or no condom use with sexual partner(s)	HIV-positive injecting partner OR Sharing injection equipment
Clinically eligible	**ALL OF THE FOLLOWING CONDITIONS ARE MET:** • Documented negative HIV Ag/Ab test result within 1 week before initially prescribing PrEP • No signs/symptoms of acute HIV infection • Estimated creatinine clearance ≥30 ml/min[4] • No contraindicated medications	
Dosage	• Daily, continuing, oral doses of F/TDF (Truvada®), ≤90-day supply OR • For men and transgender women at risk for sexual acquisition of HIV; daily, continuing, oral doses of F/TAF (Descovy®), ≤90-day supply	
Follow-up care	**Follow-up visits at least every 3 months to provide the following:** • HIV Ag/Ab test and HIV-1 RNA assay, medication adherence and behavioral risk reduction support • Bacterial STI screening for MSM and transgender women who have sex with men[3] – oral, rectal, urine, blood • Access to clean needles/syringes and drug treatment services for PWID **Follow-up visits every 6 months to provide the following:** • Assess renal function for patients aged ≥50 years or who have an eCrCl <90 ml/min at PrEP initiation • Bacterial STI screening for all sexually-active patients[3] – [vaginal, oral, rectal, urine- as indicated], blood **Follow-up visits every 12 months to provide the following:** • Assess renal function for all patients • Chlamydia screening for heterosexually active women and men – vaginal, urine • For patients on F/TAF, assess weight, triglyceride and cholesterol levels	

[1] adolescents weighing at least 35 kg (77 lb)

[2] Because most PWID are also sexually active, they should be assessed for sexual risk and provided the option of CAB for PrEP when indicated

[3] Sexually transmitted infection (STI): Gonorrhea, chlamydia, and syphilis for MSM and transgender women who have sex with men including those who inject drugs; Gonorrhea and syphilis for heterosexual women and men including persons who inject drugs

[4] estimated creatine clearance (eCrCl) by Cockcroft Gault formula ≥60 ml/min for F/TDF use, ≥30 ml/min for F/TAF use

Centers for Disease Control and Prevention: Preexposure prophylaxis for the prevention of HIV infection in the United States 2021 Update.

Long-Acting Injectable Medication

Stock Image.

Long-Acting Injectable Medication

Cabotegravir / CAB (Apretude®)

- MSM, transwomen, heterosexuals, PWID ≥35 kg
- No limitations on Creatinine Clearance (CrCl)
- Initial injection 600 mg at months one and two, followed by every two months thereafter
- Drug labeling includes warning on hepatotoxicity
  - No dosage adjustments in package insert for liver disease

Centers for Disease Control and Prevention: Preexposure prophylaxis for the prevention of HIV infection in the United States 2021 Update.

Question #4

Tamra, a 35 yo cis-gender female with hypertension, presents with fevers, chills, arthralgias, and diffuse macular rash for the last three days. She reports a recent condomless sexual encounter.

What test is indicated if you are worried about acute HIV infection?

- HIV Antibody (Ab)
- HIV Antigen-Antibody (Ag-Ab)
- Qualitative HIV DNA NAAT
- Quantitative HIV RNA NAAT

What test is indicated if you are worried about acute HIV infection?

HIV Antibody (Ab)

HIV Antigen-Antibody (Ag-Ab)

Qualitative HIV DNA NAAT

Quantitative HIV RNA NAAT

What test is indicated if you are worried about acute HIV infection?

HIV Antibody (Ab)

HIV Antigen-Antibody (Ag-Ab)

Qualitative HIV DNA NAAT

Quantitative HIV RNA NAAT

Question #5

The HIV test returns reactive, confirming the diagnosis. After obtaining more labs, what is your next step?

After obtaining labs, what do you plan to do next?

- Ensure CD4 count is less than 500 cells/L before starting antiretroviral therapy (ART)
- Await genotype testing before starting ART
- Start ART while awaiting the rest of the labs to result
- Refer to nearest infectious disease or HIV specialist

After obtaining labs, what do you plan to do next?

Ensure CD4 count is less than 500 cells/L before starting antiretroviral therapy (ART)

Await genotype testing before starting ART

Start ART while awaiting the rest of the labs to result

Refer to nearest infectious disease or HIV specialist

After obtaining labs, what do you plan to do next?

Ensure CD4 count is less than 500 cells/L before starting antiretroviral therapy (ART)

Await genotype testing before starting ART

Start ART while awaiting the rest of the labs to result

Refer to nearest infectious disease or HIV specialist

Question #6

A 38-year-old man with HIV infection seeks advice regarding HIV transmission risk. He is in a committed, monogamous relationship, and his husband is HIV negative (confirmed by HIV Ag/Ab testing two days ago). His HIV infection has been well-controlled for 10 years.

Laboratory studies 1 week ago showed an undetectable HIV-1 quantitative RNA, which remains the same from 6 months and 1 year ago. The last CD4 count was 575/uL.

Which of the following is most appropriate management to prevent HIV transmission?

- Consistent condom use with each episode of sex
- Daily HIV pre-exposure prophylaxis for the partner
- On-demand HIV pre-exposure prophylaxis for the partner
- No additional preventive strategy needed

Which of the following is most appropriate management to prevent HIV transmission?

Consistent condom use with each episode of sex

Daily HIV pre-exposure prophylaxis for the partner

On-demand HIV pre-exposure prophylaxis for the partner

No additional preventive strategy needed

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Consistent condom use with each episode of sex

Daily HIV pre-exposure prophylaxis for the partner

On-demand HIV pre-exposure prophylaxis for the partner

No additional preventive strategy needed

HIV Screening Guidelines: Screening as Prevention

CDC 2006

- Test ***all*** pts 13-64 yo
- Test ***all*** pregnant women
- Test all pts with TB or STI
- Test high risk patients at least annually

USPSTF 2013

- Test ***all*** 15-65 yo
- Test ***all*** pregnant women
- Test <15 & >65 yo if at risk
- Grade A recommendation

Branson, Bernard, et al. MMWR 2006;55(RR14):1-17.
Moyer, Virginia et al. Annals of Internal Medicine. 2013

Which test should I use?

Stock image.

IC Hx: None | GI: Male | Preferred Language:English

Diagnoses & Problems

Diagnosis (Problem) being Addressed this Visit

Add | Convert | Display: All

IMO

	Annotated Display	Code	Clinical Dx	Condition Name
	HIV exposure	Z20.6	Contact with and (suspec...	HIV exposure

Problems

Add | Convert | No Chronic Problems

Display: All

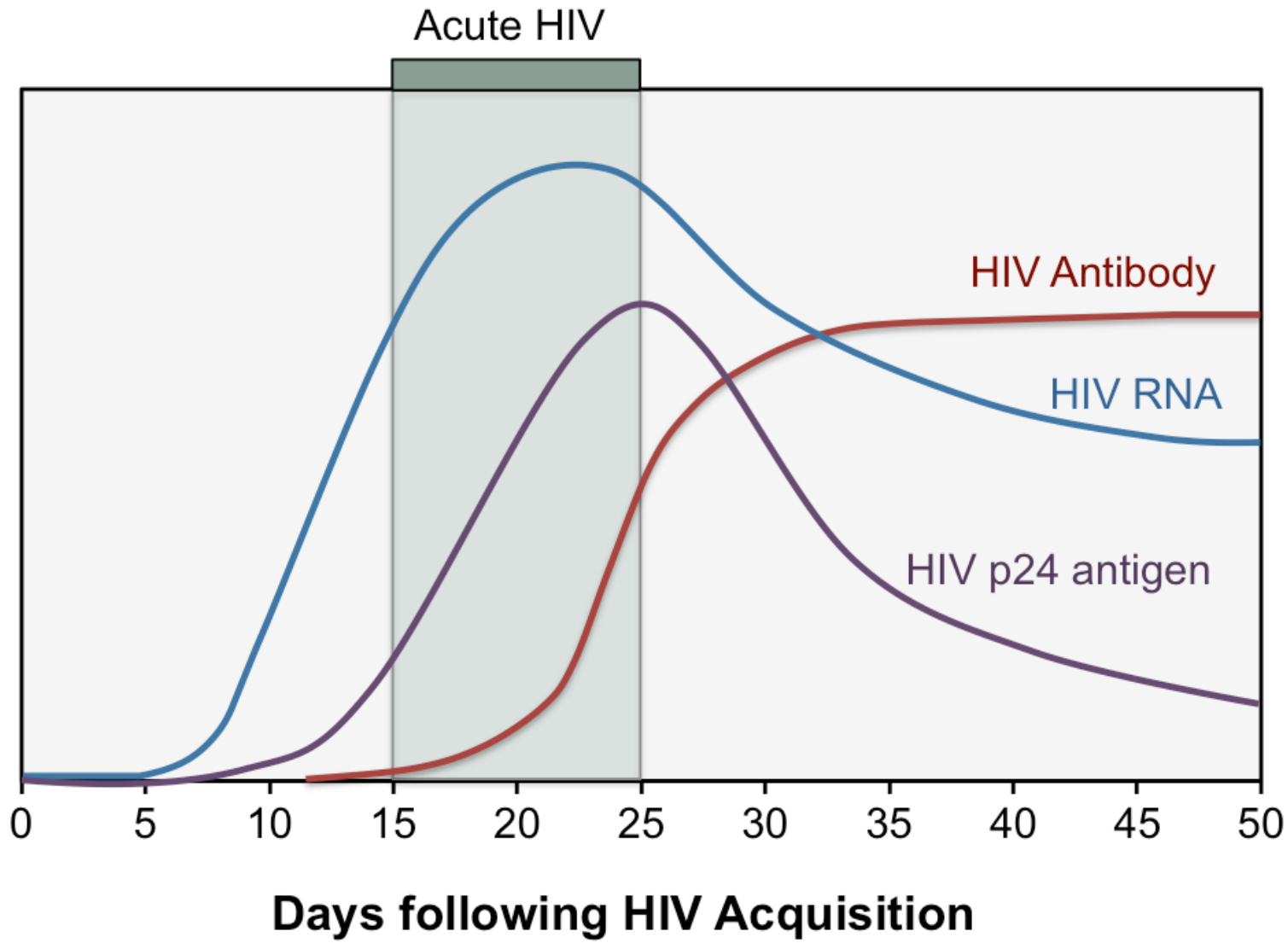
IMO

Annotated Display	Name of Problem	Code	Condition Name

Search: HIV | Contains | Advanced Options | Type: Prescriptions & Orders

Folder: | Search within: All

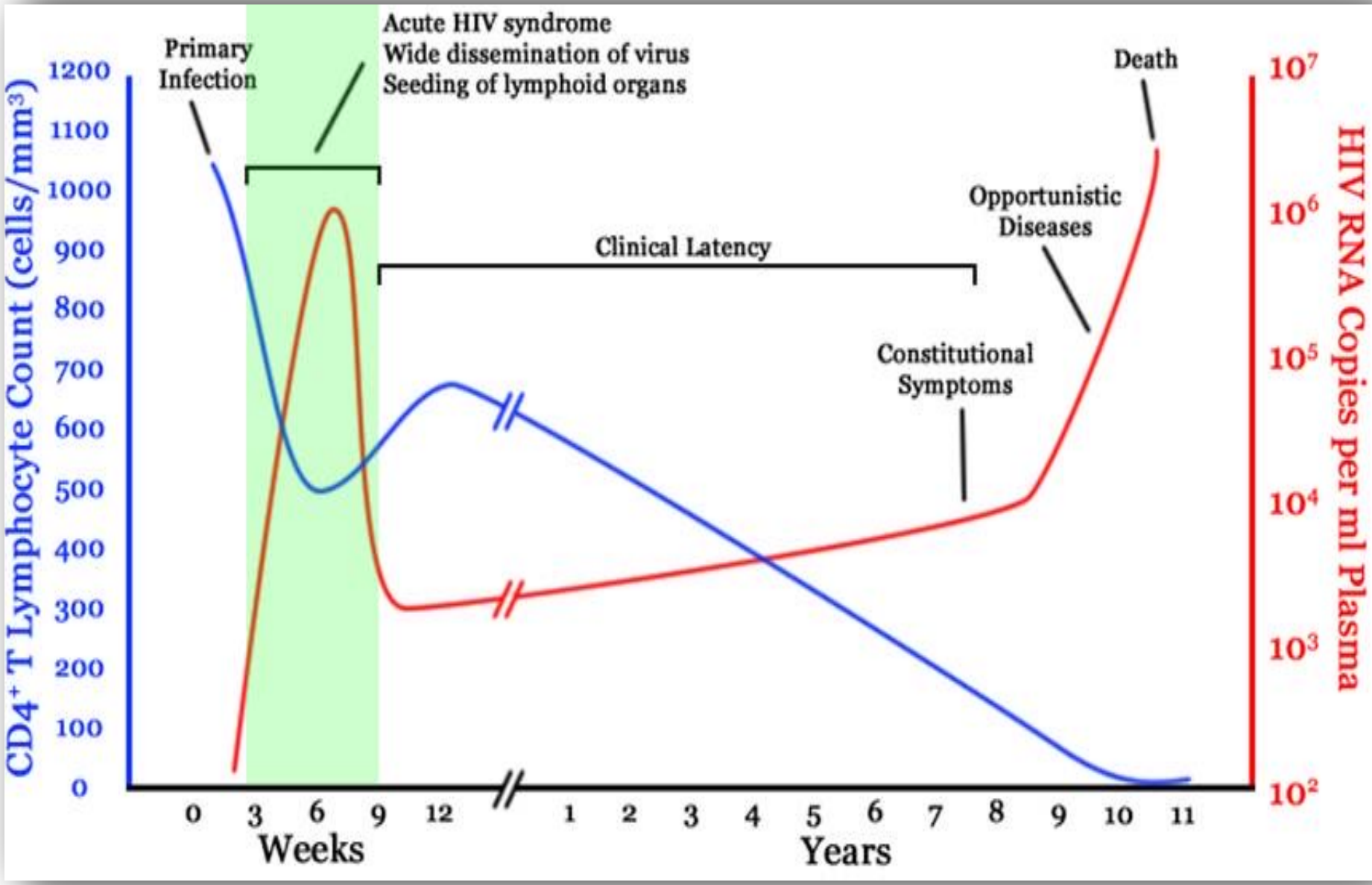
- NF AccessPak for HIV PEP Expanded with Kaletra oral kit
- NF AccessPak for HIV PEP Expanded with Viracept oral kit
- Adult HIV Inpatient Initiation of care labs
- Adult HIV Perinatal Prophylaxis
- Adult ICU Shivering
- Pref1 Claritin Hives Relief 10 mg oral tablet
- HIV-1 Integrase Inhibitor Resistance (SO)
- HIV-1 Qualitative, NAAT (SO)
- HIV 1/HCV/HBV NAT (Ultrio) (SO)
- HIV Drug Resistance Mutation
- HIV Gart
- HIV Pheno (SO)
- HIV Phenosense (SO)
- HIV Screen
- HIV Trofile Co-Receptor Tropism (SO)
- HIV Viral Load RT PCR
- HIV West Blot (SO)
- HIV1 NGS DNA Sequencing (SO)
- HIVARC (SO)
- HIVGen
- HIVINT (SO)
- HIVNAT (SO)
- HIVPHN (SO)
- HIVRNA (HIVTAQ)
- HIVRUS (HIVTAQ)
- HIVScr
- HIVTAQ
- HIVTro (SO)
- HIVWB (SO)
- Neonatal HIV Perinatal Prophylaxis
- Ref Link for Nurse - Shivering
- US HIV RNA (HIVTAQ)
- Western Blot (HIV Confirm) (SO)
- Pref1 ZyrTEC Hives 1 mg/mL oral syrup



HIV National Curriculum: https://www.hiv.uw.edu/custom/screening-diagnosis/3/2

Untreated HIV

Steady decline in the number of CD4 cells & increased risk of opportunistic infections



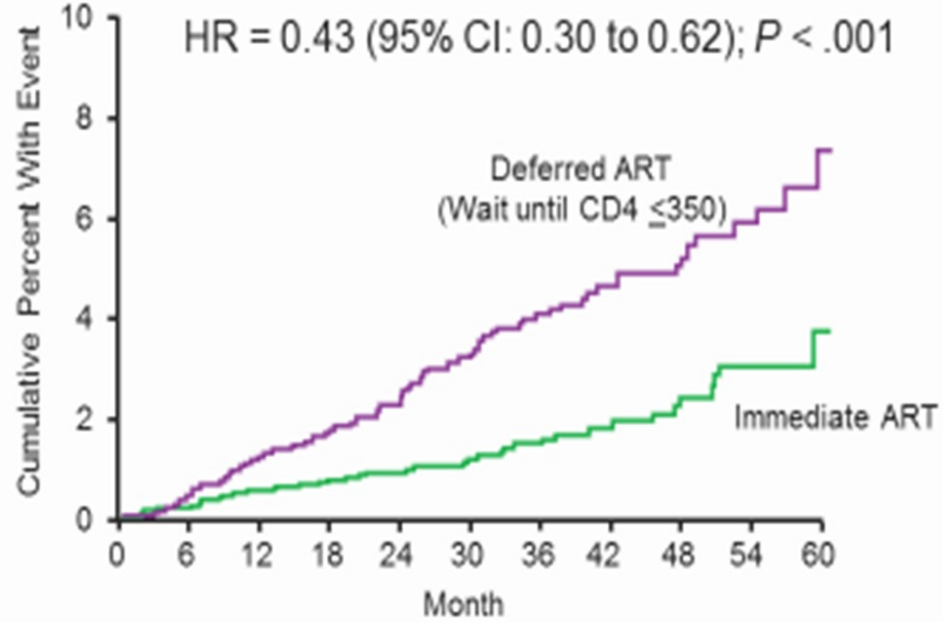
https://www.researchgate.net/figure/A-generalized-graph-of-the-relationship-between-HIV-copies-viral-load-and-CD4-counts_fig1_242611621

HIV Replication Increases Mortality

Total cumulative exposure to replicating virus over time is independently associated with mortality

SMART study:
immediate vs deferred treatment for asymptomatic, ART-naïve patients

- **57% Reduced Risk of Serious Events or Death With Immediate ART**



Mugavero, et al. CID 2011;53(9):927-935. INSIGHT START Group. NEJM. 2015;373:795-807.

When to Start Antiretroviral Treatment (ART)

DHHS & IAS-USA Guidelines

ASAP in ***all HIV-infected adults*** if patient is ready (A1 recommendation)

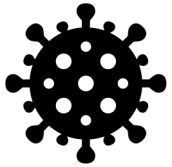
Must start conditions

Opportunistic infection, Tuberculosis	HIV-AN, Co-infection with HBV or HCV	Pregnant women

https://aidsinfo.nih.gov/news/1592/statement-from-adult-arv-guideline-panel---start-and-temprano-trials

Rapid Start

- Refers to starting ART as soon as possible after diagnosis
- May bring earlier benefits in personal health
- Earlier reductions in the risk of transmission of HIV
- In acute infection, immediate ART may limit the HIV viral reservoir
- Prior studies in the United States and in trials in resource-limited settings:
  - Reduced time to linkage to care
  - Reduced time to viral load suppression



https://aidsetc.org/blog/immediate-art

ART Guidelines: Initial Regimen

Current guidelines: 2 NRTI + INSTI

Alternates:

2 NRTIs + 3rd Class (INSTI, boosted-PI, or NNRTI)

1 NRTI + INSTI (Only 1 FDA-approved regimen)

https://www.iasusa.org/2018/07/24/antiretroviral-drugs-treatment-prevention-hiv-infection-adults-2018-recommendations-of-the-international-antiviral-society-usa-panel/

https://aidsinfo.nih.gov/guidelines/html/1/adult-and-adolescent-arv/0

Current Antiretroviral Medications

NRTI

- ***Abacavir***
- Didanosine
- **Emtricitabine**
- **Lamivudine**
- Stavudine
- **Tenofovir** AF or DF
- Zidovudine

NNRTI

- **Doravirine**
- Efavirenz
- Etravirine
- Nevirapine
- **Rilpivirine**

PI (include booster)

- **Darunavir**
- ***Atazanavir***
- Fosamprenavir
- Indinavir
- Lopinavir
- Nelfinavir
- Saquinavir
- Tipranavir

Pharmacokinetic Booster

- Cobicistat
- Ritonavir

Integrase Inhibitor

- **Cabotegravir**
- **Bictegravir**
- **Dolutegravir**
- Elvitegravir (with cobicistat)
- Raltegravir

Capsid Inhibitors

- Lenacapavir

Entry Inhibitors

- Enfuvirtide
- Fostemsavir
- Ibalizumab
- Maraviroc

Considerations Before Initiation of ART

- Patient willingness to start
- Childbearing potential & Pregnancy test
- HBV co-infection
- Comorbidities Medical/Behavioral Health Conditions
- Other medications/Over-the-counters
- Food requirement
- Baseline HIV VL & CD4 count (if available)
- Access to medications (i.e. insurance, assistance programs)

HIV Assessment

CD4 count

Stage 1	• Asymptomatic, CD4>500
Stage 2	• CD4 200-500
Stage 3	• CD4<200, <14% • Opportunistic disease or malignancy

HIV viral load

Used to monitor ARV therapy

Well controlled: viral load undetectable

Suboptimal or Uncontrolled: Viral load detectable

Treatment IS Prevention

Studies from 2008-2016 show zero linked HIV transmissions after >100,000 condomless sex acts

PWH had a **durably undetectable viral load**

Cohen, et al. NEJM 2011; 365: 493-505. Skarbinski J, et al. JAMA Intern Med 2015;175:588-96.
Bavinton BR, et al. Lancet HIV. 2018. IAS 2018 http://programme.aids2018.org/Abstract/Abstract/13470

Long-Acting Injectable Medication

Stock Image.

Long-Acting Injectable Medication

Cabotegravir/Rilpivirine – CAB/RPV (Cabenuva®)

- Approved by FDA in January 2021 for HIV treatment of virally suppressed patients on stable antiretroviral regimen
- People without Hepatitis B and no known mutations to CAB or RPV
- Monthly or bimonthly gluteal injections
- Side effects
  - Treatment site reactions
  - Decreased GFR

Centers for Disease Control and Prevention: Preexposure prophylaxis for the prevention of HIV infection in the United States 2021 Update.


With rare exceptions, all of your most important achievements on this planet will come from working with others – or, in a word, partnership.
Paul Farmer


nmhivguide.org
Primary Care
HIV Resources
NM Resources
Med Ed
HSC Library
ACP
UNMMG Intranet
ID Resources
Conferences
POCUS
Paychex
Outlook
VPN | Technology S...
HSCID | UNM Healt...
UNM NetID | The U...
Help.HSC
Other bookmarks
NEW MEXICO
HIV | Hepatitis | STD Online Resource Guide
Search for a Provider
PReP
PEP
U = U
Syphilis
More Resources
FAQs
Contact
En Español
The online resource guide will help you find the services you need. Use as many of the form fields below as needed to search for a provider that will suit your needs.
City
County
Region
HIV Testing and Prevention
PrEP for HIV (pre-exposure prophylaxis)
HIV/AIDS care and treatment services
STD testing and services
Hepatitis services
Syringe services/harm reduction
Overdose prevention/Naloxone
Syringe dropbox
PEP (post-exposure prophylaxis)
go
MPOX:
Get the
FACTS
CLICK HERE FOR MORE INFO »

AETC AIDS Education & Training Center Program South Central

HIV ECHO Programs

https://hsc.unm.edu/scaetc/programs-services/echo.html

nccc.ucsf.edu/clinician-consultation/

Primary Care | HIV Resources | NM Resources | Med Ed | HSC Library | ACP | UNMMG Intranet | ID Resources | Conferences | POCUS | Paychex | Outlook | VPN | Technology S... | HSCID | UNM Healt... | UNM NetID | The U... | Help.HSC | Other bookmarks

Clinician Consultation

The National Clinician Consultation Center provides rapid expert consultation and advice on management of HIV/AIDS, perinatal HIV, pre-exposure prophylaxis, and post-exposure prophylaxis management for HIV and hepatitis B and C. Our clinical consultants are HIV-treatment experienced physicians, clinical pharmacists, nurses, and NPs from the University of California, San Francisco. The NCCC has provided more than 250,000 consultations on all aspects of HIV treatment, prevention, care, and exposure management.

HIV/AIDS Management

Call for a Phone Consultation
(800) 933-3413
9 a.m. – 8 p.m. ET
Monday – Friday
Learn more >

Perinatal HIV/AIDS

Call for a Phone Consultation
(888) 448-8765
24 hours
Seven days a week
Learn more >

Hepatitis C Management

Call for a Phone Consultation
(844) 437-4636 or (844) HEP-INFO
9 a.m. – 8 p.m. ET
Monday – Friday
Learn more >

Resources

- National Clinician Consultation Center http://nccc.ucsf.edu/
  - HIV Management
  - Perinatal HIV
  - HIV PrEP
  - HIV PEP line
  - HCV Management
  - Substance Use Management
- Present case on ECHO hivecho@salud.unm.edu https://hsc.unm.edu/scaetc/programs-services/echo.html
- Additional trainings scaetcecho@salud.unm.edu
  - www.scaetc.org

- NM HIV Guide http://nmhivguide.org
- AETC National HIV Curriculum https://aidsetc.org/nhc
- AETC National HIV/HCV Co-infection Curriculum https://aidsetc.org/hivhcv
- AETC National Coordinating Resource Center https://targethiv.org/library/aetc-national-coordinating-resource-center-0
- HIVMA Resource Directory https://www.hivma.org/globalassets/ektron-import/hivma/hivma-resource-directory.pdf

References

- American College of Physicians. MKSAP: Medical Knowledge Self-Assessment Program XIX. Philadelphia, PA: American College of Physicians, 19881989.
- CDC HIV Risk Reduction Tool. https://hivrisk.cdc.gov/risk-estimator-tool/#-~sb.
- Centers for Disease Control and Prevention: Preexposure prophylaxis for the prevention of HIV infection in the United States 2021 Update.
- nPEP Quick Guide for Providers. AETC National Coordinating Resource Center. 2021.
- "AIDS group wages lonely fight against pill to fight HIV." New York Times, 2014.

Summary

- HIV remains prevalent in our community.
- All practitioners should discuss HIV risk, routine testing, and offer prevention.
- For those with HIV, treatment is prevention.
- New delivery methods for medications offer greater chances for people to access and stay on treatment.
- Collaboration is always possible for practitioners across our state.

Jeremy W. Snyder

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Thank you