

HIV Screening, Diagnosis, and Rapid Antiretroviral Therapy Start

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Sunday, April 3, 2022



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Disclosure Information

- ◆ Kento Sonoda, MD, AAHIVS
 - ◆ No Disclosures
- ◆ Amy J. Kennedy, MD, MS, AAHIVS
 - ◆ No Disclosures
- ◆ Julie Childers, MD, FASAM
 - ◆ No Disclosures

Learning Objectives

1. Apply HIV screening tests into clinical practice
2. Interpret HIV diagnostic test results
3. Identify resources for starting ART immediately after the diagnosis of HIV

Target Audience

- ◆ Addiction medicine clinicians in the community setting
- ◆ Limited access to HIV specialists
- ◆ Introductory level

Level Assessment

- ◆ Please rate your comfort level to interpret HIV screening testing? 1 (very uncomfortable) – 5 (very comfortable)



Level Assessment

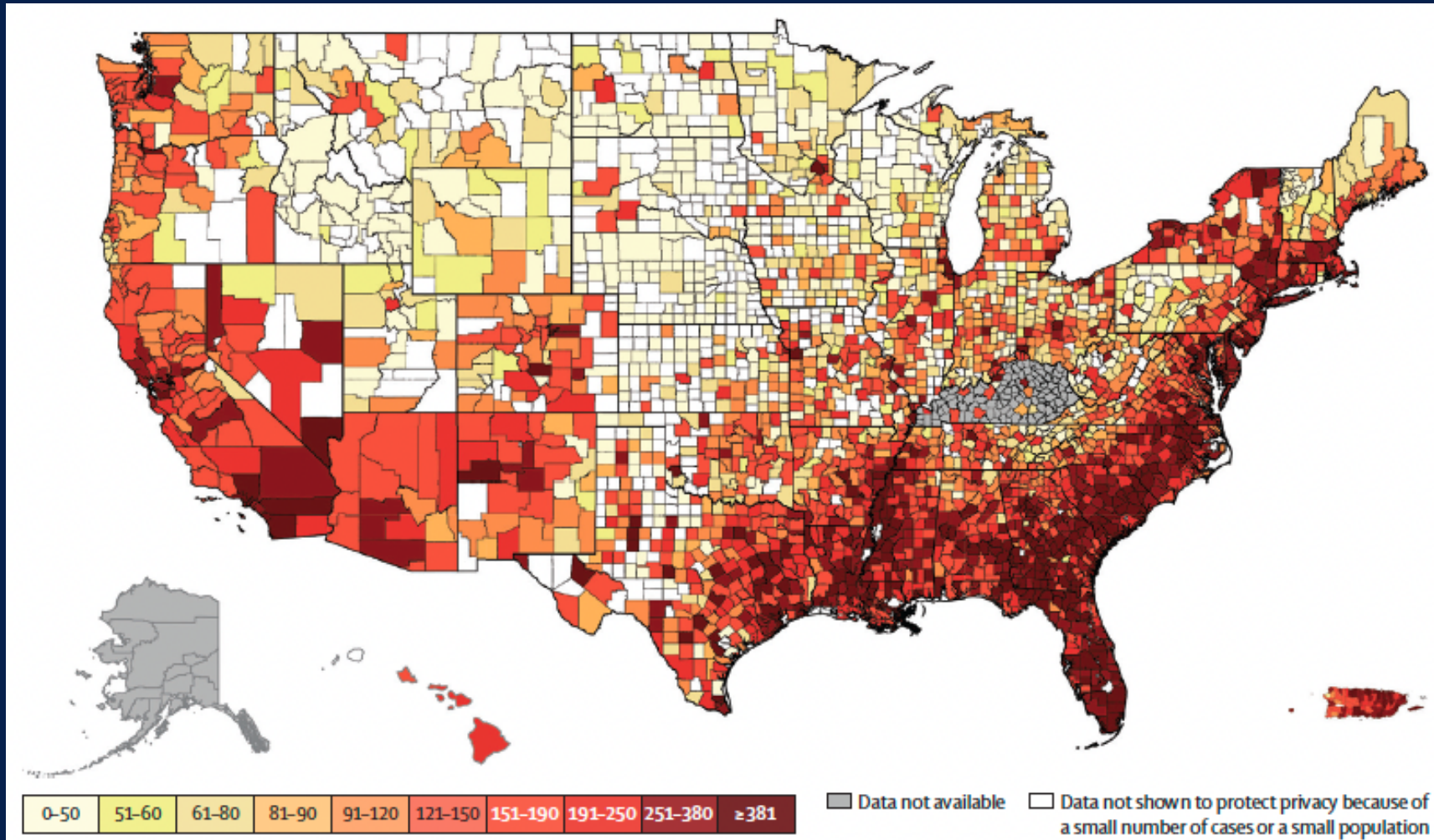
- ◆ Please rate your comfort level to start rapid ART?
1 (very uncomfortable) – 5 (very comfortable)



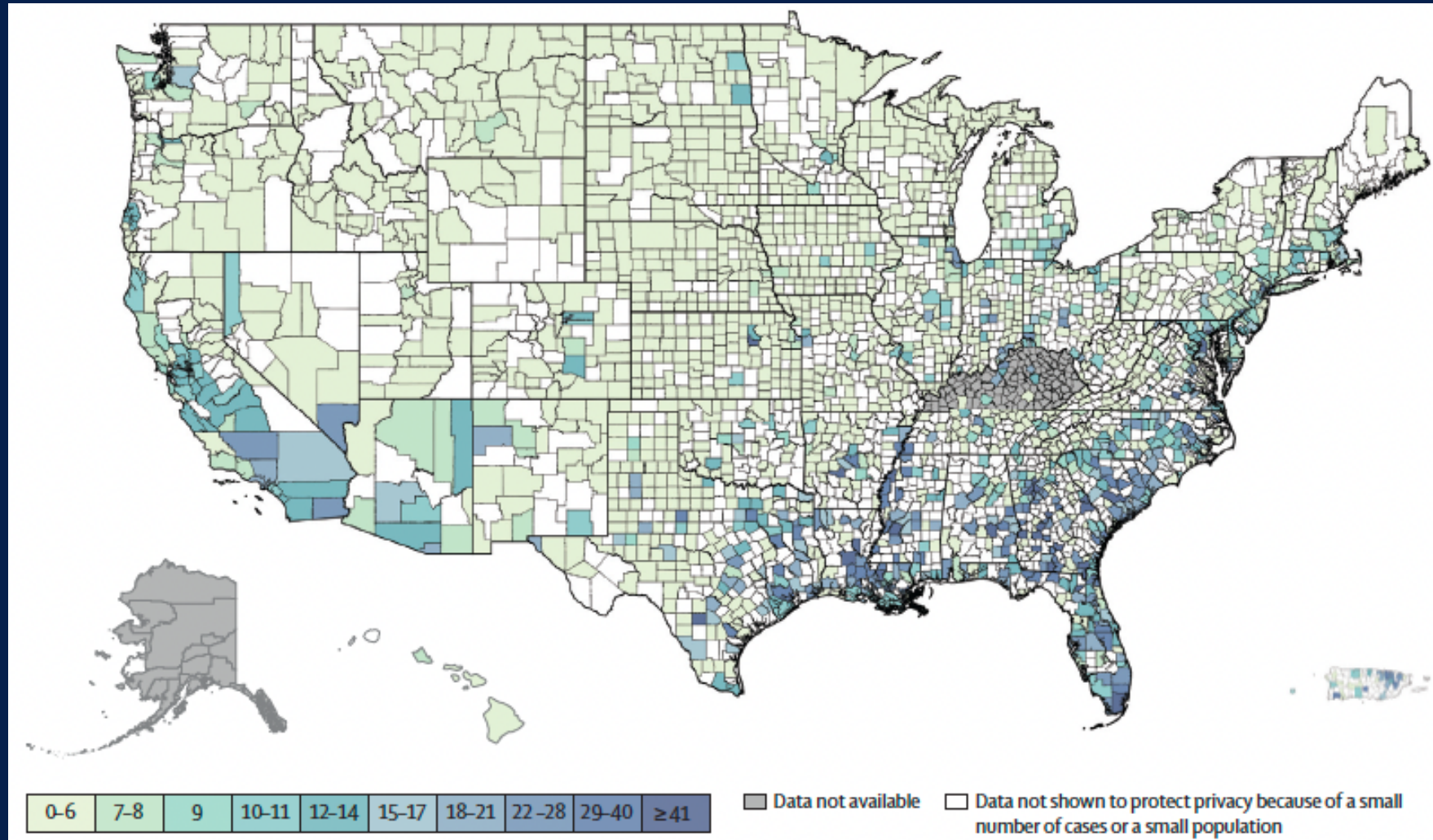
Epidemiology

- ◆ More than 1.2 M people living with HIV in the U.S.
 - ◆ 159 K (13%) unaware of HIV infection
- ◆ New HIV infections (2019): 37 K
 - ◆ Age group – highest among people aged 25 to 34 (36%)
 - ◆ PWID: 7% of the new HIV diagnoses
- ◆ Estimated prevalence of HIV infection among PWID: 1.9%

HIV prevalence by county

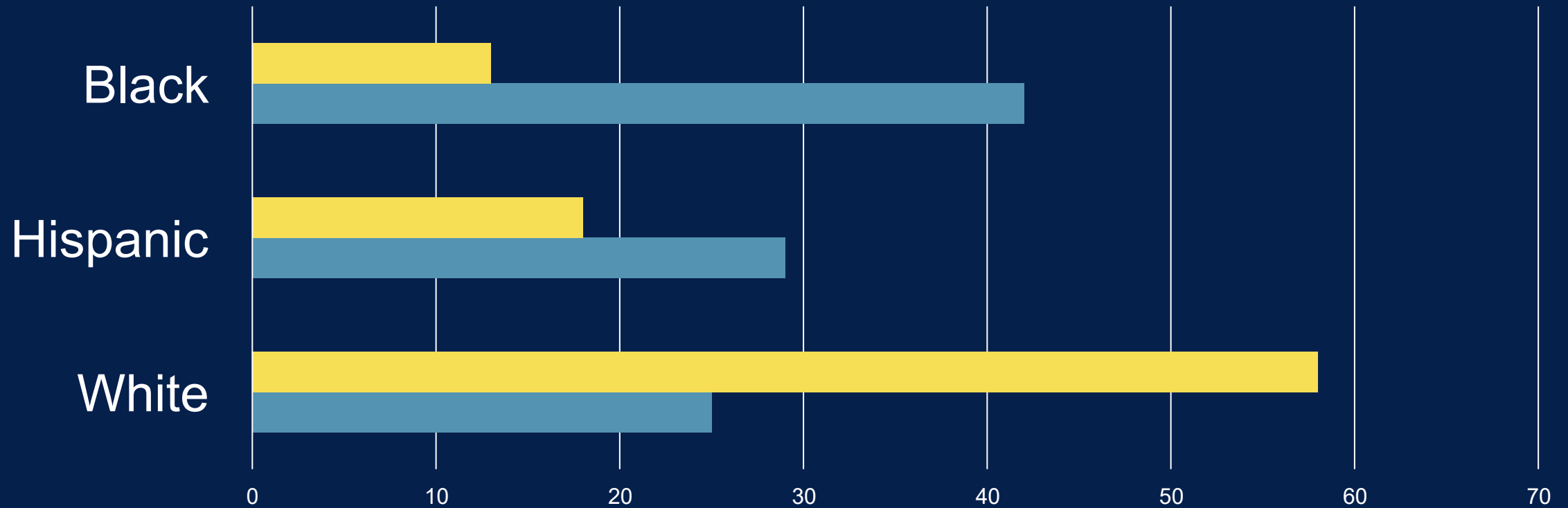


New HIV diagnoses by county



New HIV Diagnoses (2019)

- Population (%)
- HIV Diagnoses (%)

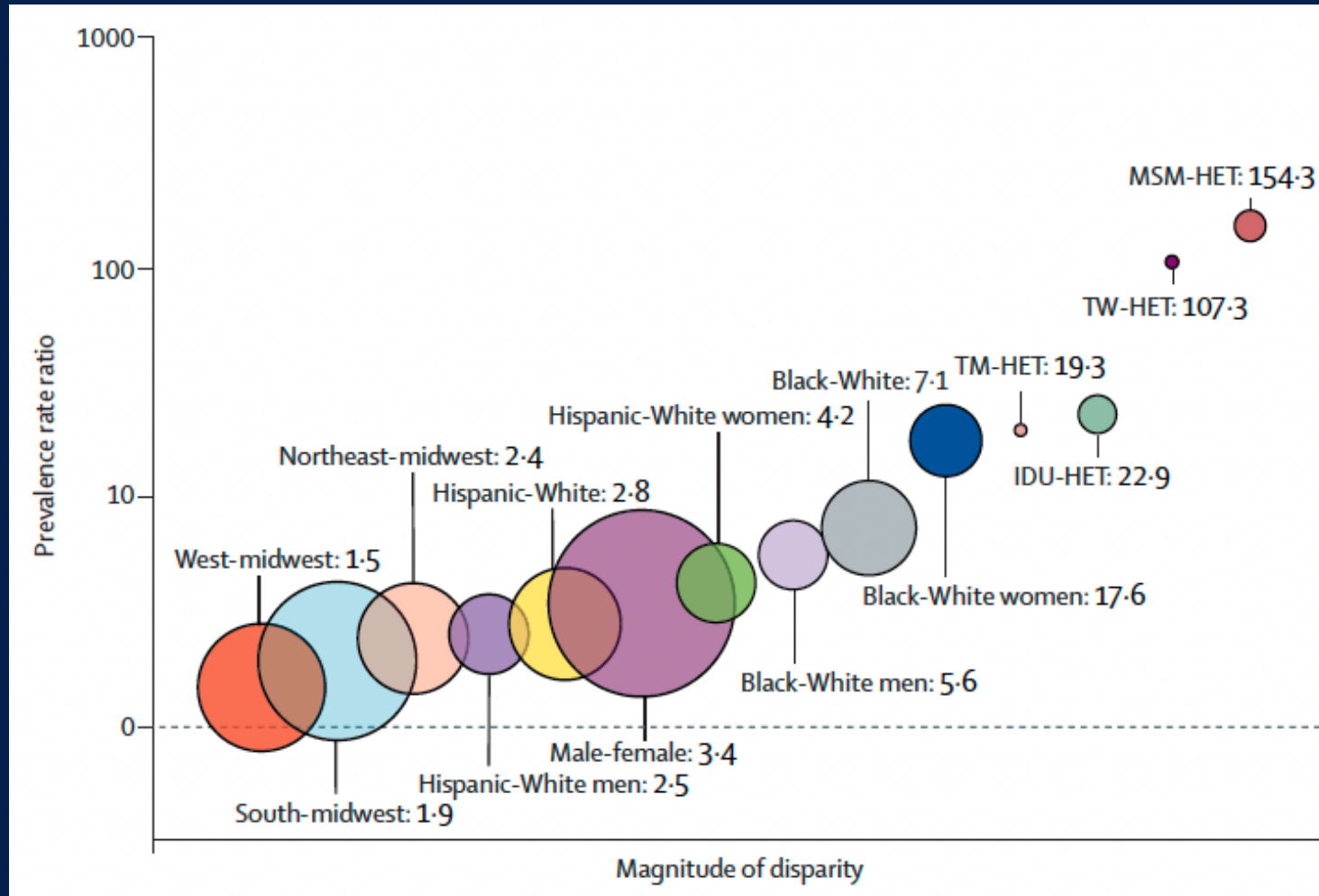


CDC. HIV Surveillance Report 2019; vol.32. Published May 2021.

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Disparities in HIV prevalence

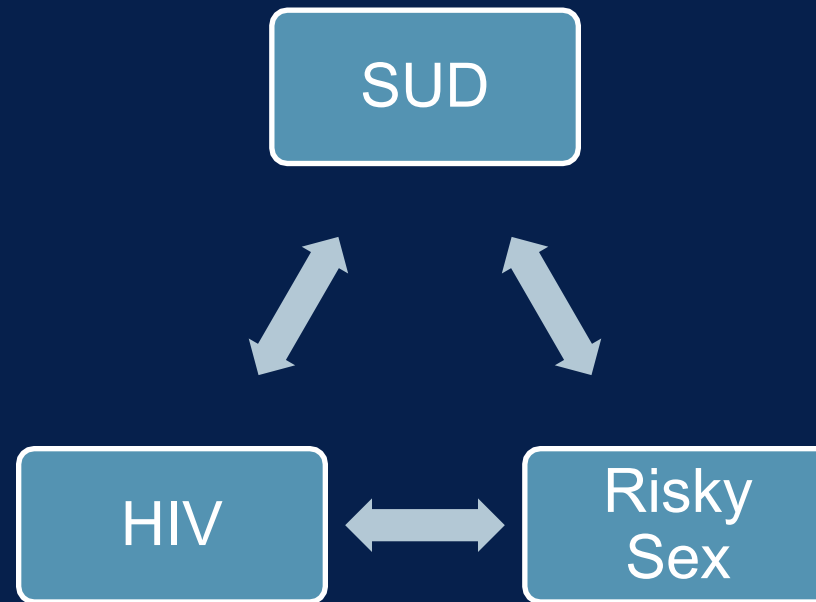


HET: heterosexual
 IDU: injection drug user
 TM: transgender men
 TW: transgender women



Epidemiology

- ◆ Estimated prevalence of HIV infection among PWID: 1.9%
- ◆ Unprotected sex: more common in PWID



Care Continuum

HIV CARE CONTINUUM:

The steps that people with HIV take from diagnosis to achieving and maintaining viral suppression.



HIV Screening (Recommendation)

USPSTF:

- ◆ Routine, voluntary HIV screening
- ◆ All people aged 15 to 65 years (including all pregnant persons)
- ◆ Insufficient evidence to determine optional intervals

CDC:

- ◆ Persons at increased risk: at least annually
 - PWID, Persons who exchange sex for money or drugs
 - MSM, heterosexual persons with multiple sexual partners



Consider Repeat HIV Screening

- ◆ Anyone who has been sexually active or is sharing needles
- ◆ Anyone with sexually transmitted infections
- ◆ Anyone with certain medical conditions
 - ◆ Pneumococcal pneumonia, tuberculosis
 - ◆ Abnormal PAP smear, thrush, recent vaginal candidiasis
 - ◆ New onset of psoriasis and seborrheic dermatitis
 - ◆ Immune thrombocytopenia, pancytopenia, lymphoma
 - ◆ HBcAb+, HCAb+

Rational for HIV Screening

- ◆ 75% of pts newly diagnosed w/ AIDS: 4 visits in prior 5 years
 - ◆ Time from HIV infection to AIDS: > 5 years
- ◆ 60% of pts diagnosed with HIV: no identified risk/encouterDx
 - ◆ By risk (MSM, IVDU) only 34% could have been identified

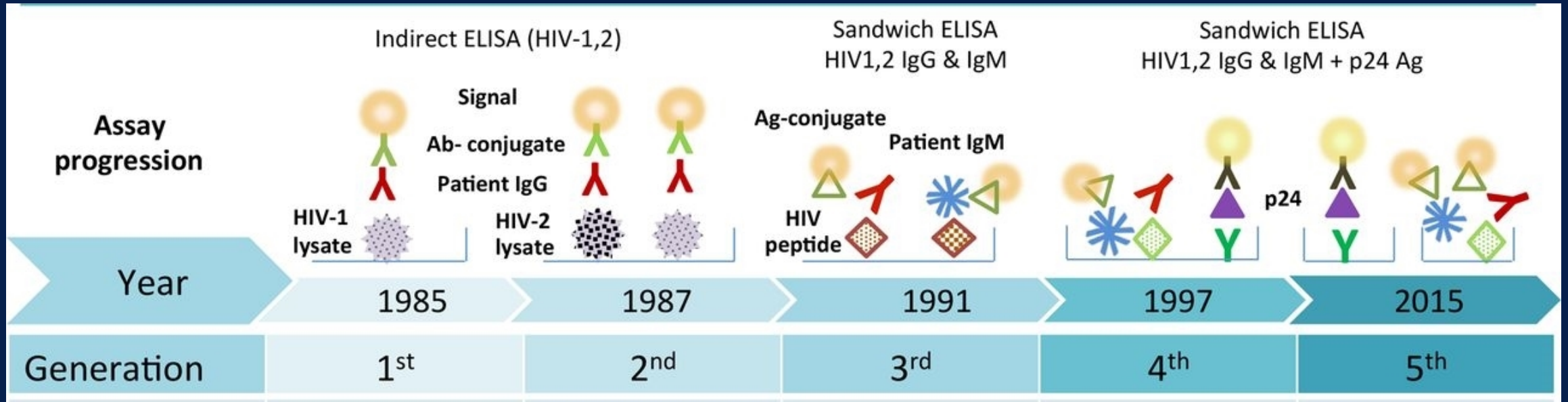


Case 1

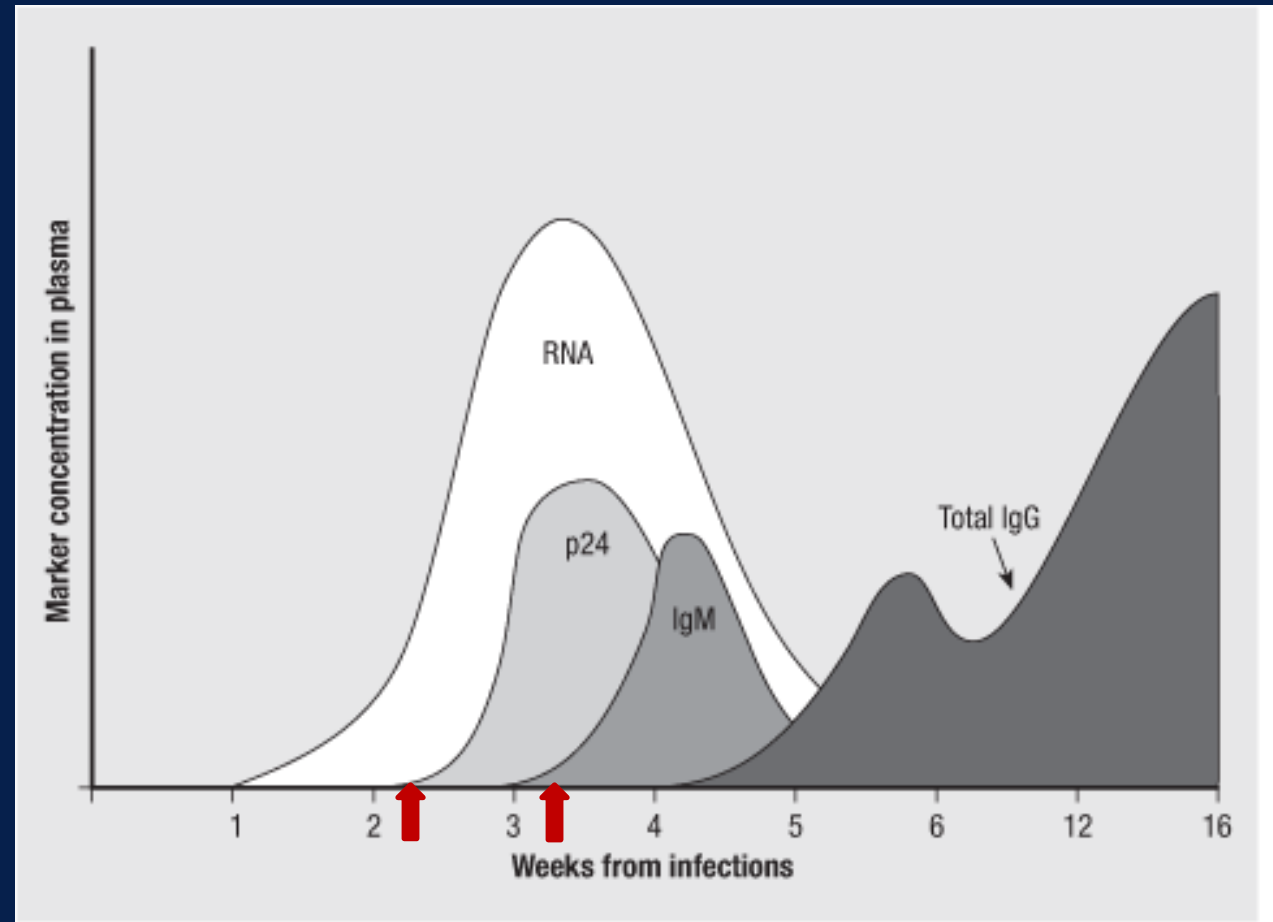
A 30-year-old male is here for follow-up. He was evaluated for mild fever, sore throat, myalgia, and fatigue a week ago. HIV 5th generation test: p24 (+) and HIV 1/2 Ab (-).

- ◆ Which of the following is the most appropriate next step?
 1. HIV Viral Load and Treat
 2. No further testing
 3. T-cell subset testing
 4. Western Blot HIV-1 Ab testing
 5. POC HIV testing

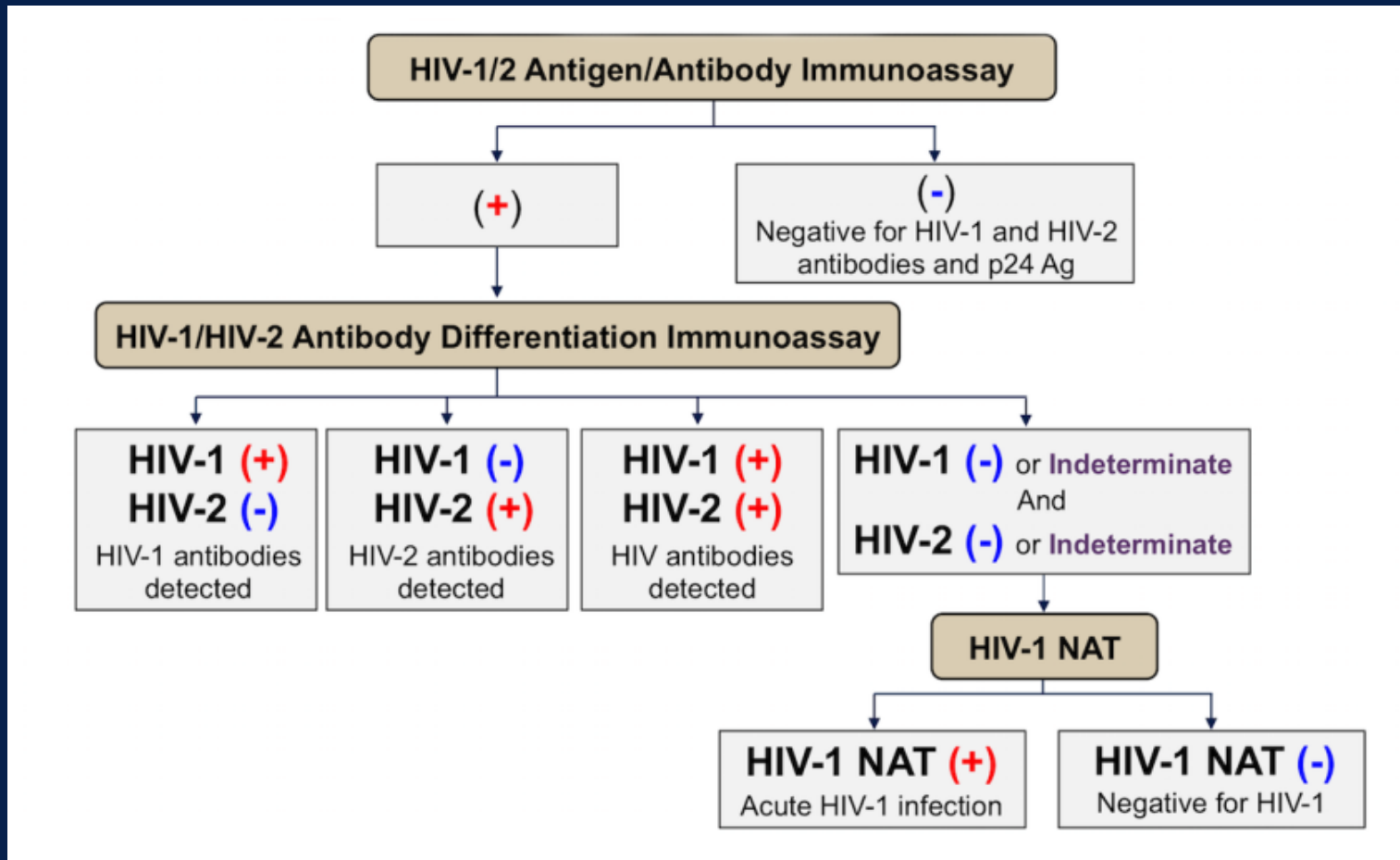
HIV Serologic Tests



Markers in Acute HIV Infection



CDC Algorithm (4th Generation)



Interpretation and Plan (5th Generation)

- ◆ Acute infection (window 2 weeks) and chronic infection

Result	Interpretation	Plan
p24(-) HIV1/2 Ab(-)	HIV(-)	No further testing
p24(+) HIV1/2 Ab(-)	Acute infection	Viral load, Tx
p24(-) HIV1 Ab(+)	Chronic infection	Viral load, CD4, Tx
p24(-) HIV2 Ab(+)	Chronic infection	Refer to ID

Discussion

- ◆ You saw a 28-year-old male through telemedicine 2 days ago. You ordered HIV 5th generation screening test, which showed HIV-1 infection.
- ◆ How do you deliver the news of HIV diagnosis?

Delivering Test Results

- ◆ In a private area & In a direct, neutral tone
- ◆ If negative, provide HIV prevention counseling (ie PrEP)
- ◆ If positive,
 - Patient education
 - Linkage to Care HIV (scheduling a follow-up appointment)
 - Partner notification requirement: depends on states (sexual partner, needle sharing partner)



Case 2

- ◆ Jared is a 28 yo man with hx of opioid and methamphetamine use disorders. He uses via both injection and smoke/oral routes. He presents to clinic today to get started on buprenorphine-naloxone for his OUD.
- ◆ As part of your routine initial exam you order a CMP, HIV, HCV, and STI testing.
- ◆ 24 hours later you review his results and his HIV test is positive (5th generation test, p24 negative, HIV 1 antibody positive)

What is your next step?

- A) Repeat HIV screening test
- B) Check HIV viral load
- C) Refer to an HIV/infectious disease specialist
- D) Start patient on antiretroviral medication (ART) now

Case 2

- ◆ There are no infectious disease specialists in your area.
- ◆ You call Jared and ask him to come in to discuss lab results. You call the lab and add on a HIV viral load and CD4 count.
- ◆ Viral load comes back with 10,000 copies/ml
- ◆ CD4 comes back at 550 cells/dl

When do we start ART?

- 1) Acute HIV
- 2) CD4 < 200 cells/dl
- 3) CD4 < 500 cells/dl
- 4) CD4 > 500 cells/dl
- 5) All of the Above

ART “Rapid Start”

Day 1

New HIV Diagnosis



Days 1-7

Follow RIA protocol

Obtain Baseline Bloodwork

Focused Medical/Psychological Evaluation

Prescribe ART

First HIV Primary Care Visit

Current Recommendations for Same-Day ART Initiation

- Rapid start or initiating ART on same day as HIV is diagnosed is an emerging strategy to **reduce loss to follow-up and decrease time to viral suppression**
- Evidence base limited but growing, and outcomes favorable thus far

DHHS ^[1]	WHO ^[2]	IAS-USA ^[3]
<ul style="list-style-type: none">▪ Recommended at time of diagnosis (when possible) or soon afterward<ul style="list-style-type: none">– Resource intensive– US experience from observational trials	<ul style="list-style-type: none">▪ Recommended for all PWH, including same day, if patient is ready*	<ul style="list-style-type: none">▪ Start ART as soon as possible, including immediately after diagnosis, if patient is ready

*Rapid initiation defined as within 7 days of diagnosis. Priority should be given to patients with advanced disease.



Why do we start ART early?

1. ART substantially reduces HIV transmission (by >95%)



2. Survival benefit with initiation of ART, even at CD4 count >500

Why do we start ART early?

3. ART regimens are effective, safe, convenient (1 pill/day), and well tolerated

4. People with HIV have higher levels of inflammation and endothelial dysfunction which improves with ART

Initial Lab Work-Up

HIV Tests

- ◆ Repeat HIV screen (if first screen done outside system)
- ◆ HIV Viral Load
- ◆ CD4 Count
- ◆ HIV Genotype (integrase only if concern for resistance*)

Basic Labs

- ◆ CBC, CMP, UA
- ◆ A1c, Lipids

Co-occurring infections

- ◆ STI testing – gonorrhea, chlamydia, syphilis, trichomonas (in women)
- ◆ Hepatitis serologies (A, B, C)
- ◆ Toxoplasmosis IgG
- ◆ TB (ppd or IGRA)
- ◆ Cryptococcus antigen



DHHS ART Guidelines, 2019

DHHS Opportunistic Infections Guidelines, 2019

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Follow-Up or ART Modification

	2-8 Weeks After ART Initiation or Modification	Q 4 to 8 Weeks Until VL < 200	Q 3 to 4 months (First 2 years)	Q 6 months
Viral Load	X	X	X	
CD 4 count			X	
BMP	X			X
LFTs	X			X

Most common antiretroviral medications 2022

Nucleoside Reverse Transcriptase Inhibitors

★	Emtricitabine	FTC
	Lamivudine	3TC
	Abacavir	ABC
★	TenofovirAF	TAF
	TenofovirDF	TDF
	Zidovudine	ZDV/AZT

Protease Inhibitors

	Darunavir	DRV.cbc
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Integrase Inhibitors

★	Dolutegravir	DTG
	Bictegravir	BTG
	Elvitegravir	EVG.cbc
	Raltegravir	RAL
	Cabotegravir	CAB

Non-nucleoside Reverse Transcriptase Inhibitors

	Efavirenz	EFV
	Rilpivirine	Ril
	Doravirine	Dor

Recommended Regimens for Rapid ART

DHHS ^[1]
Recommended Regimens
★ BIC/FTC/TAF
DTG + (TAF or TDF) + (3TC or FTC)
(DRV/RTV or DRV/COBI) + (TAF or TDF) + (3TC or FTC)
Regimens Not Recommended
NNRTI-based regimens or DTG/3TC due higher rate of transmitted NNRTI and NTRI drug resistance
Regimens requiring ABC until HLA-B*5701 test results received

IAS-USA ^[2]
Recommended Regimens
DTG + (FTC or 3TC)/(TAF or TDF)
★ BIC/FTC/TAF
DRV/RTV + (FTC or 3TC)/(TAF or TDF)
Regimens Not Recommended
NNRTI-based regimens due to concerns over transmitted drug resistance (K103N)
Regimens requiring ABC until HLA-B*5701 test results received



Why integrase inhibitors?

High barrier to resistance
Well-tolerated, minimal side effects
Minimal drug-drug reactions



Where to go for help

- ◆ UCSF – national clinician conference center
 - ◆ [National Clinician Consultation Center \(ucsf.edu\)](https://www.ucsf.edu/national-clinician-consultation-center)
- ◆ AETC – AIDS Education and Training Center
- ◆ DHHS – Department of Health and Human Services
- ◆ CDC – Center for Disease Control

5-minute updates in HIV treatment/HIV Prevention



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Primary Prophylaxis Guidelines

Prophylaxis against disseminated mycobacterium avium complex (MAC)

- ◆ No longer recommended for adults/adolescents who immediately initiate ART (AII)
- ◆ Only recommended in patients with HIV not on ART/viremic with CD4 <50

Two RCT, placebo-controlled trials + observational data demonstrates people with HIV on ART have minimal risk of developing MAC

Clinical Decision Points

- CD4 \leq 200 Begin PJP prophylaxis -> (Bactrim DS QD or MWF)
Risk for Candida (no prophylaxis)
- CD4 \leq 100 Toxoplasmosis prophylaxis (if IgG+) -> (Bactrim DS QD)
- CD4 \leq 50 Risk for MAC (no prophylaxis)
Risk for CMV retinitis (no prophylaxis)

ART/PrEP updates

ART

- ◆ Long-acting injectable ART
Cabotegravir/rilpivirine (integrase/NNRTI)

PrEP

- ◆ TDF/FTC (Truvada) once daily
- ◆ NEW: TAF/FTC (Descovy) once daily
Not for women at risk through sex
- ◆ NEW: Long-acting injectable cabotegravir (integrase inhibitor)

Sexually Transmitted Infection Updates

- ◆ Uncomplicated gonococcal infection: ceftriaxone 500mg IM x1 (increased from 250mg)
- ◆ Chlamydia infection: doxycycline 100mg BID x 7 days (prior 1gm azithromycin x 1)
- ◆ Hepatitis C: Screening now include all adults 18-79 years of age

Final Takeaways

- ◆ Test everyone for HIV (opt-out)
 - ◆ Repeat HIV screening annually and consider PrEP for anyone at high risk

- ◆ All HIV+ patients should receive ART
 - ◆ Decreased transmission, increased survival with rapid start
 - ◆ **First line Rapid Start ART:** Integrase inhibitor or Darunavir/c with TAF/FTC

Any Questions?



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Acknowledgement

- ◆ Peter Veldkamp, MD, MSc
Professor of Medicine, Division of Infectious Diseases, University of Pittsburgh School of Medicine

Resources (Website)

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<https://www.hiv.uw.edu>
2. Clinical Info HIV gov. Clinical Guidelines.
<https://clinicalinfo.hiv.gov/en/guidelines>
3. National Clinician Consultation Center. HIV/AIDS Management. UCSF.
<https://nccc.ucsf.edu/clinician-consultation/hiv-aids-management/>
 - Submit your care online
 - Call for a Phone Consultation
4. HIV Drug Interactions. University of Liverpool.
<https://www.hiv-druginteractions.org>
5. HIV Basics. Centers for Disease Control and Prevention.
<https://www.cdc.gov/hiv/basics/index.html>

Resources (Article)

1. Primary Care Guidance for Persons with HIV: 2020 Update by the HIV Medicine Association of the Infectious Diseases Society of America.
<https://www.idsociety.org/practice-guideline/primary-care-management-of-people-with-hiv/>
2. HIV Infection in Adults: Initial Management. Am Fam Physician. 2021 Apr.
<https://www.aafp.org/afp/2021/0401/p407.html>



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