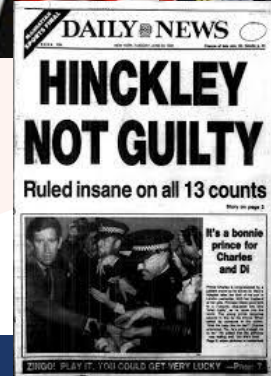
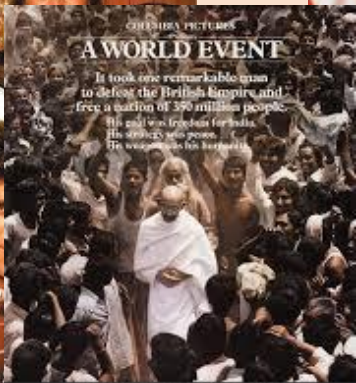
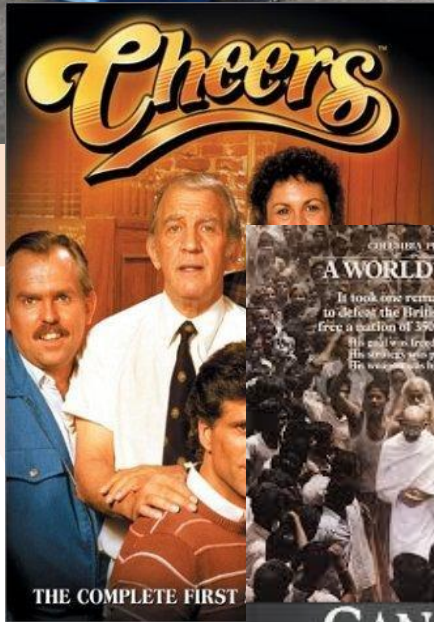
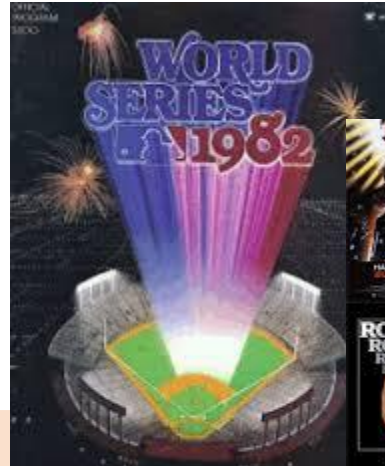


The Transformation of HIV Care: From Specialty to Primary Care

Stephen Raffanti, M.D., M.P.H.
Professor of Medicine
Vanderbilt University
Medical Director, VCCC

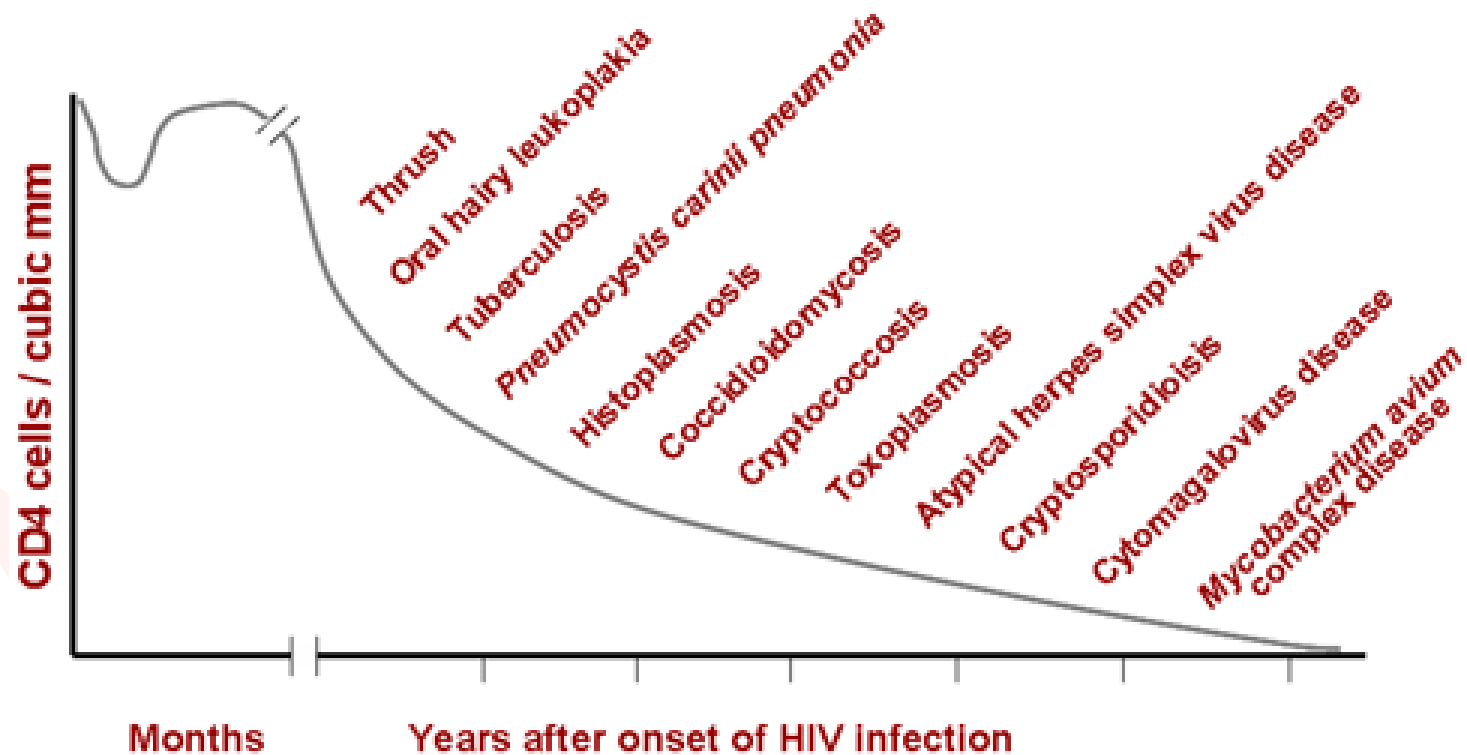
AIDS: Not Just Another Disease



Three Decades of Treatment Issues

- **1980's**: AIDS described, PCP kills 90% of pts., clinicians develop skills in diagnosing, treating and preventing complications.
- **1990's**: First effective treatments, patients respond, death rates drop.
- **2000's**: New toxicities arise, resistance is critical, adherence issues emerge, limitations of therapy become apparent.
- **2007**: Second round of effective antiretroviral agents-integrase and CCR5 inhibitors.
- **2013**: Serious talk of “cure”.
- **2015**: PREP

Opportunistic Infections in HIV Disease



The Face Of HIV care: 1981 through 1996

- Endless procession of dying young people with no hope of treatment:
 - Minimal lab technology;
 - AIDS defining illnesses dominated;
 - Wasting, dementia, KS, lymphoma, CMV;
 - Limited number of toxic inefficient medications:
 - Antiretrovirals: AZT, ddC and ddI
 - OI treatments: antifungals, antivirals, anti-mycobacterials
 - Heavy imprint of stigma;
 - Hospice expertise.

The Social Political Fabric of AIDS: 1982-1984

On July 25, 1983, San Francisco General Hospital opens the first dedicated AIDS ward in the U.S. It is fully occupied within days

Civil Rights
Movement
1954

In January 1982, first American AIDS clinic is established in S.F.

On December 10, 1982, CDC reports a case of AIDS in an infant who received blood transfusions. The following week, the *MMWR* reports 22 cases of unexplained immunodeficiency and opportunistic infections in infants.

In October, 1984 San Francisco officials order bathhouses closed due to high-risk sexual activity occurring in these venues.

On January 7, 1983 CDC reports cases of AIDS in female sexual partners of males with AIDS.



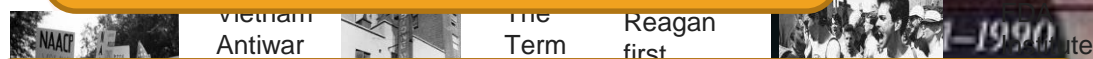
The Social Political Fabric of AIDS: 1985-1987

Ryan White, an Indiana teenager who contracted AIDS through contaminated blood products used to treat his *hemophilia*, is refused entry to his middle school. He goes on to speak publicly against AIDS stigma and discrimination

AIDS activist Cleve Jones creates the first panel of the [AIDS Memorial Quilt](#)

The Ray Brothers' home is burned down by angry neighbors

In January 1982, first American AIDS clinic is established in S.F.



In October, 1984 San Francisco officials order bathhouses closed due to high-risk sexual activity occurring in these venues. suit within year

On January 7, 1983 CDC reports cases of AIDS in female sexual partners of males with AIDS.

The Social Political Fabric of AIDS: 1987-1988

Ci

1987
Larry Kramer founds
the AIDS Coalition
To Unleash Power
(ACT UP)



On October 11, 1988, ACT UP protests at FDA headquarters about the drug-approval process. Eight days later, FDA announces new regulations to speed up drug approvals.



President Reagan
1985
1982

The Social Political Fabric of AIDS:

1994

1994 AIDS becomes the leading cause of death for all Americans ages 25 to 44.

First AIDS planning grants to 11 states and 10 cities 1988

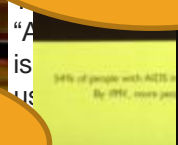
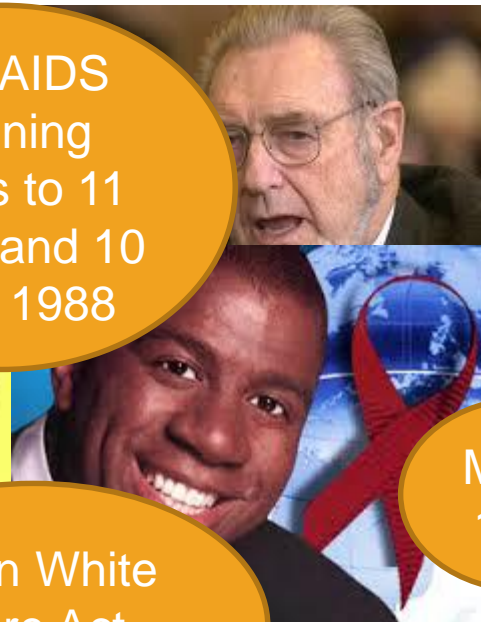
Visual AIDS artists caucus launches red ribbon 1991

Ryan White Care Act funded 1990

Magic 1991

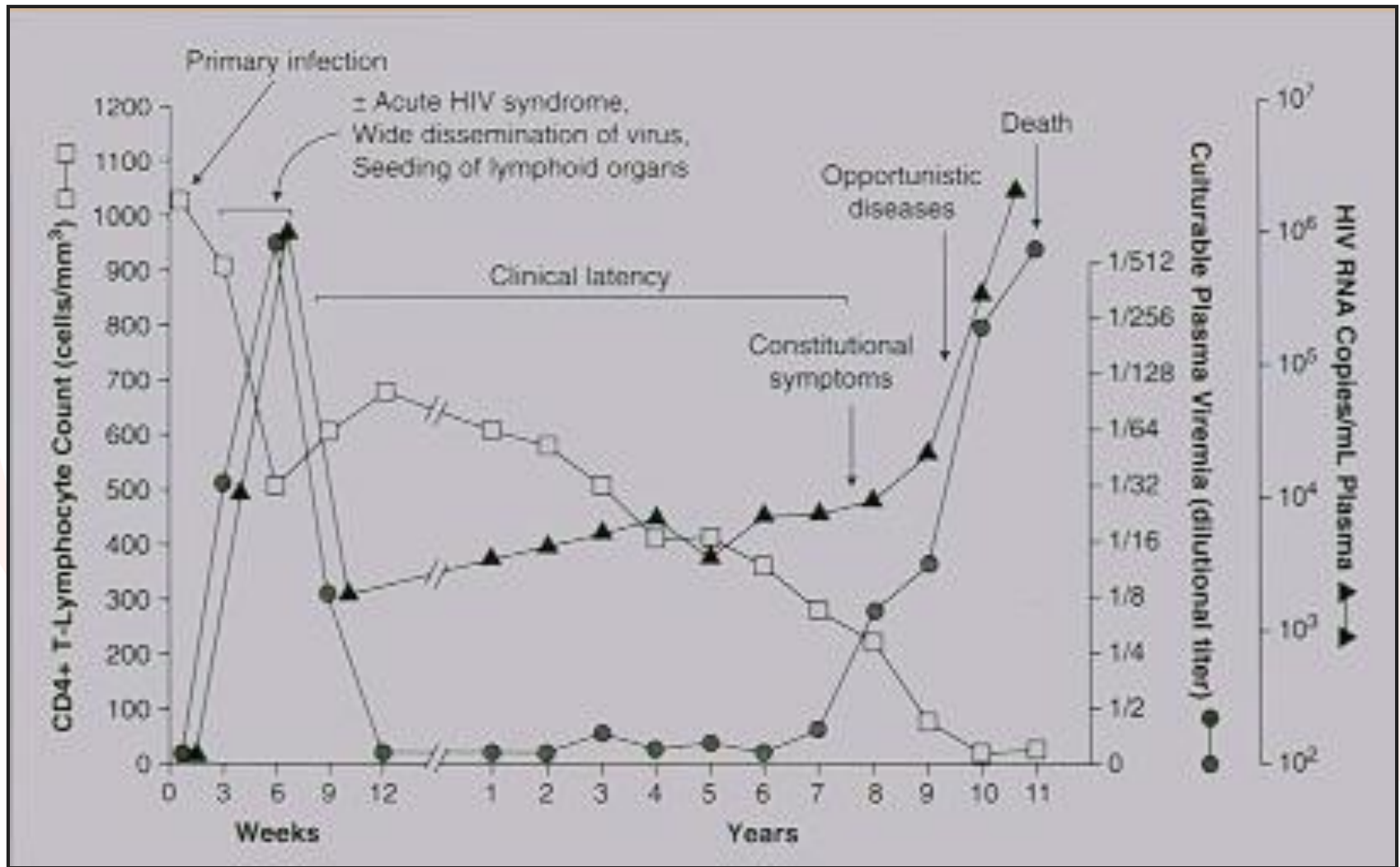
Nureye v 1993

Pediatric AIDS Foundation 1988



The Face Of HIV care: 1996 through 2006

- New technology available;
- Multiple new antiretrovirals developed;
- First sign of response to therapy;
- Dramatic drop in mortality;
- First experience with polypharmacy:
 - Drug-drug interactions
 - Adherence
 - Development of resistance
- Importance of co-morbidities



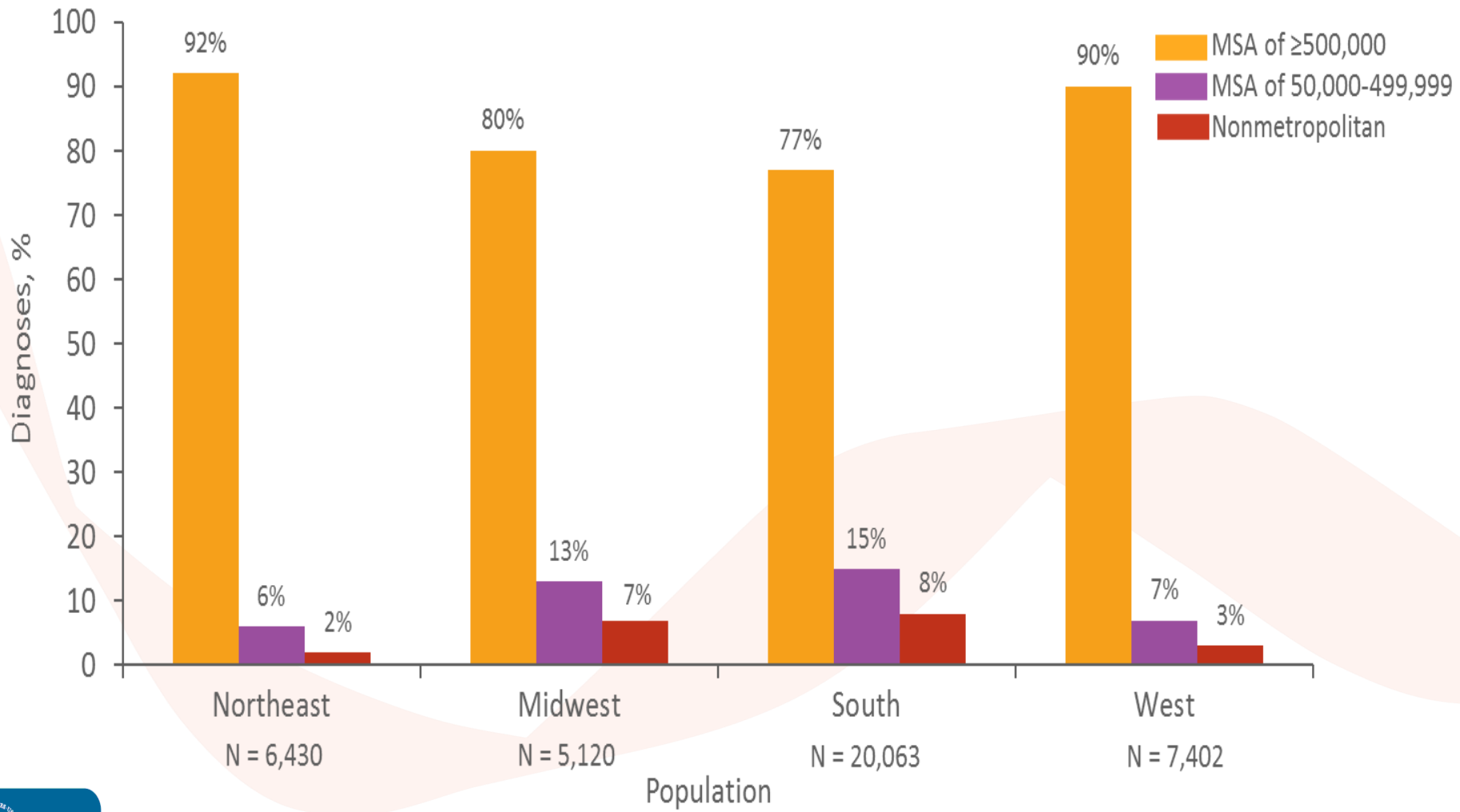
Inflammatory Disease in HIV

- HIV infected individuals have higher levels of inflammatory markers c/w matched HIV- individuals.
- Successful treatment of HIV may lower these markers.
- Some antiretrovirals are associated with a higher risk of cardiovascular events.
- Classic cardiovascular risk factors are more common in HIV infected patients and may have an even greater impact on outcomes.

The Face Of HIV care: 2007 to present

- New, extremely well tolerated potent agents;
- New understanding of inflammatory state;
- Less concern about resistance;
- Less stigma;
- Aging population;
- Aging workforce;
- Health maintenance is essential;
- New epidemic.

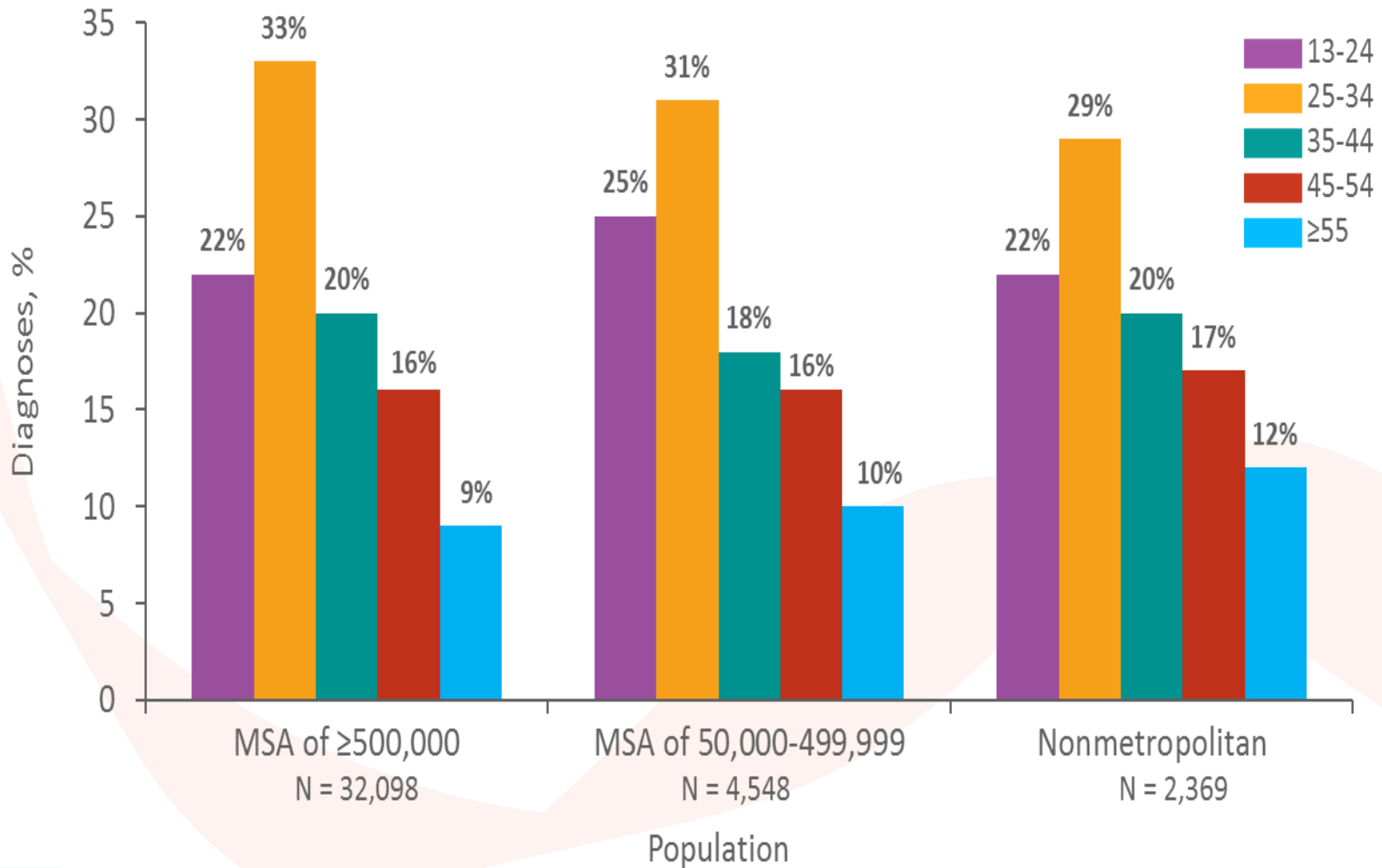
Percentages of Diagnoses of HIV Infection among Adults and Adolescents, by Region and Population of Area of Residence, 2015—United States



Note. Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. Data for the year 2015 are preliminary and based on 6 months reporting delay. Data exclude persons whose county of residence is unknown.



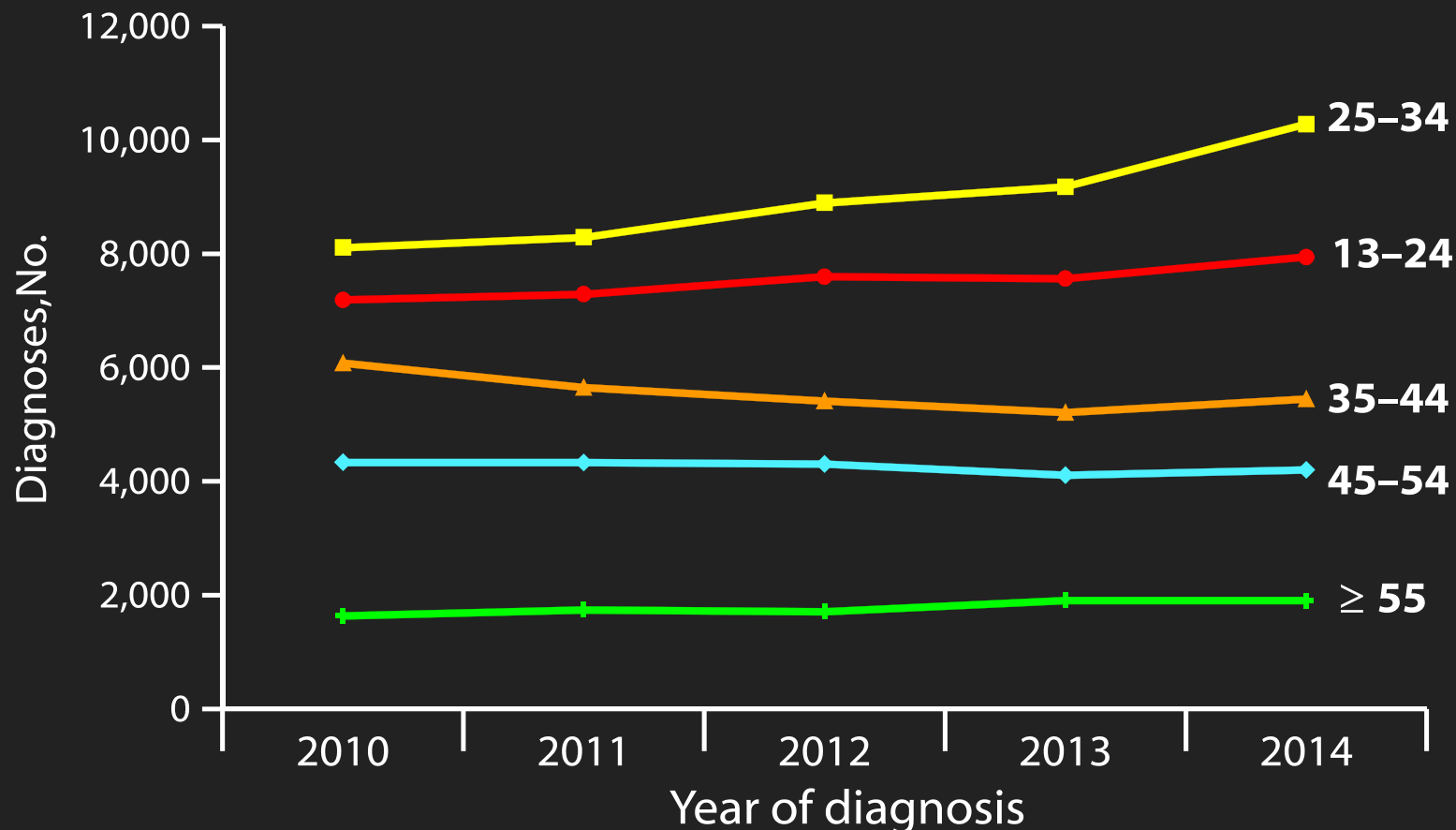
Percentages of Diagnoses of HIV Infection among Adults and Adolescents, by Population of Area of Residence and Age at Diagnosis, 2015—United States



Note. Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. Data for the year 2015 are preliminary and based on 6 months reporting delay. Data exclude persons whose county of residence is unknown.

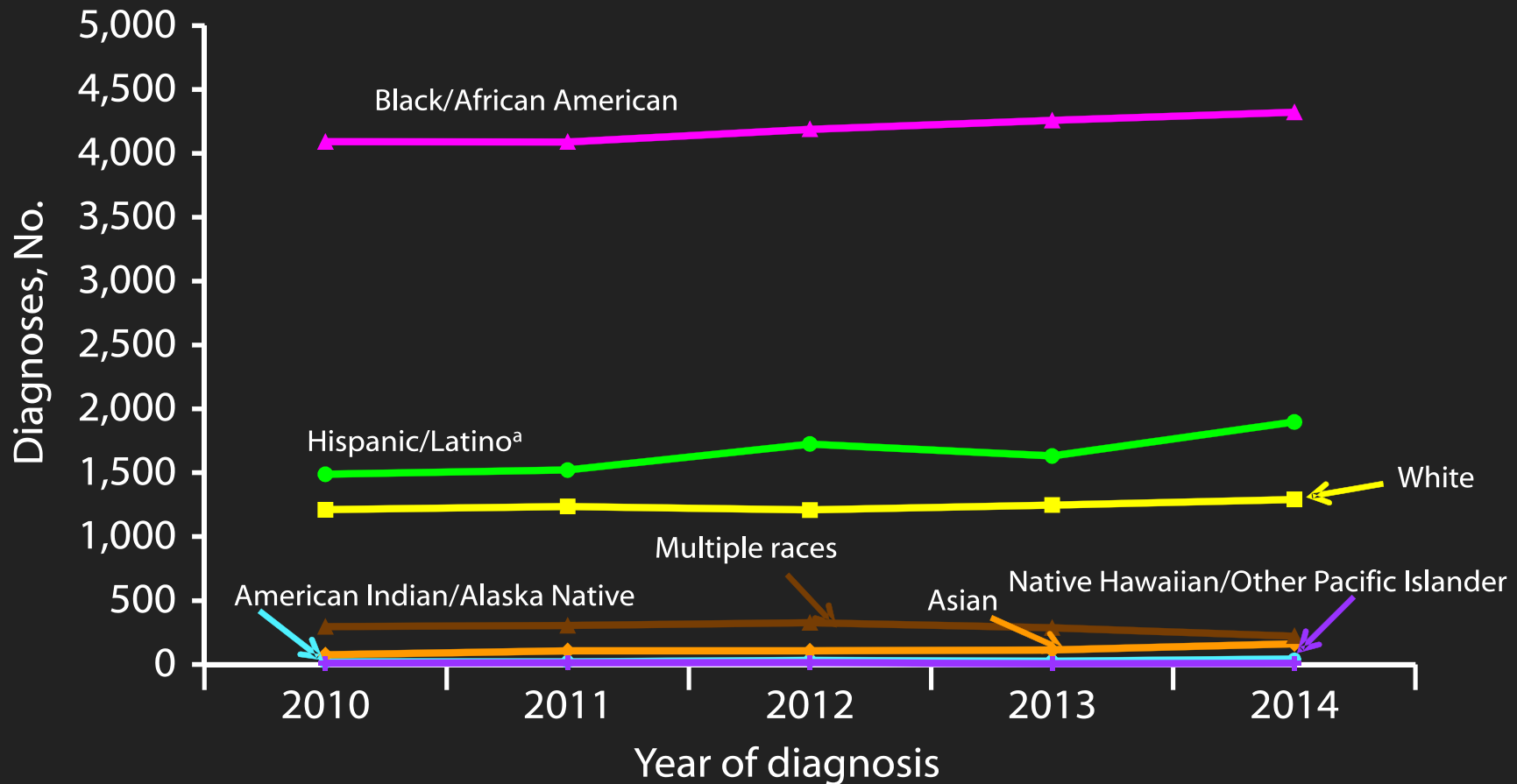


Diagnoses of HIV Infection among Men Who Have Sex with Men, by Age Group, 2010–2014—United States and 6 Dependent Areas



Note. Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. All displayed data have been statistically adjusted to account for reporting delays and missing transmission category, but not for incomplete reporting. Data on men who have sex with men do not include men with HIV infection attributed to male-to-male sexual contact and injection drug use.

Diagnoses of HIV Infection among Men Who Have Sex with Men Aged 13–24 Years, by Race/Ethnicity, 2010–2014 United States and 6 Dependent Areas



Note. Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. All displayed data have been statistically adjusted to account for reporting delays and missing transmission category, but not for incomplete reporting. Data on men who have sex with men do not include men with HIV infection attributed to male-to-male sexual contact *and* injection drug use.

^a Hispanics/Latinos can be of any race.

Intersection of Primary and HIV care

- **Primary Care Expertise:**
 - Management of Chronic Disease
 - Diverse areas of expertise
 - Stable population of patients
 - Durable rapport with patients
- **HIV Specialty Changes**
 - Simplification of treatment
 - Workforce issues

HIV Focus in Primary Care

- Testing and Screening
- STI testing and Screening
- Acute HIV infection
- Uncomplicated HIV infection
- PREP
- PEP
- Triage of HIV related problems

Jason

- Twenty-two year old college student who comes in (at the urging of his parents) to establish care with you.
- He is a International Studies major at a upper echelon university and a member of a fraternity.
- He has no complaints and is interested in having his own doctor.

Jason

- What screening interventions would be appropriate?

Screening Guidelines

- CDC:
 - HIV screening is recommended for patients in all health-care settings after the patient is notified that testing will be performed unless the patient declines (opt-out screening).
 - Persons at high risk for HIV infection should be screened for HIV at least annually.
 - Separate written consent for HIV testing should not be required; general consent for medical care should be considered sufficient to encompass consent for HIV testing.
 - Prevention counseling should not be required with HIV diagnostic testing or as part of HIV screening programs in health-care settings.
- The USPSTF recommends that clinicians screen for HIV infection in adolescents and adults aged 15 to 65 years. Younger adolescents and older adults who are at increased risk should also be screened.

Practical Reasons for Screening

- Excellent educational opportunity
 - Students talk to each other.
- Sexual health talk.
- Studies have shown that patients appreciate the effort to talk about sexual risk.
- May be an appropriate lead in to PREP.

Jason

- Patient is screened for HIV, HCV, GC and Chlamydia.
 - His oral swab is positive for chlamydia, which is treated.
 - Other tests are negative.
- He is appreciative of the screening and wants to know how often he should be screened.

Jason

- Patient
 - His
 - Other
 - He is ap
how ofte
- Chlamydia.
s treated.
nts to know

Persons at high risk for HIV infection should be screened for HIV at least annually.

New Epidemic

- 18 year old male in the ED for fever, chills, joint pain and malaise.
 - Labs unimpressive except for elevated LFT's.
 - Sent home with symptomatic care.
 - Returns 2 weeks later with ongoing fatigue, some n/v weight loss.
 - Now with pancytopenia, HIV RNA 2.4 million,
- There is a new, rapidly growing epidemic among african-american MSM of college age.
 - Many are seen in ED's and ambulatory care centers during the acute phase, when they are most infectious

Acute Primary HIV Infection (PHI)

Acute HIV Infection:

- 30,000-60,000 new infections per year;
- Most do not see a medical provider;
- Few of those who see a medical provider are diagnosed:
 - HIV serology (rapid or classic) delayed 12-21 days;
 - HIV-1 RNA levels should be very high ($>10,000$);
 - Risk factors and clinical picture should prompt the consideration.

Clinical manifestations of acute HIV infection

Features (percent)	Overall (n = 378)	Male (n = 355)	Female (n = 23)	Sexual* (n = 324)	IVDU [¶] (n = 34)
Fever	75	74	83	77	50
Fatigue	68	67	78	71	50
Myalgia	49	50	26	52	29
Skin rash	48	48	48	51	21
Headache	45	45	44	47	30
Pharyngitis	40	40	48	43	18
Cervical adenopathy	39	39	39	41	27
Arthralgia	30	30	26	28	26
Night sweats	28	28	22	30	27
Diarrhea	27	27	21	28	23

This table lists the most frequent clinical findings reported among patients with acute HIV infection from five prospective cohorts.

* Homosexual or heterosexual route of transmission.

¶ IVDU, intravenous drug use as route of transmission.

Reproduced with permission from: Daar ES, Pilcher CD, Hecht FM. Clinical presentation and diagnosis of primary HIV-1 infection. Curr Opin HIV AIDS 2008; 3:10. Copyright © 2008 Lippincott Williams & Wilkins.

Less Common Clinical Presentations of Acute HIV Infection

- Systemic: Severe fatigue with fever and myalgias and diffuse adenopathy;
- GI: nausea, vomiting, diarrhea, mucocutaneous ulcerations;
- Rash: generally diffuse but can be vesicular or pustular;
- Neurologic: headache, meningitis, acute encephalopathy or psychosis, GB syndrome;
- Respiratory: acute cough, pneumonitis, abnormal radiologic findings;
- Acute OI's: rarely present in acute HIV setting but CMV, candidal disease, PCP, cryptococcal disease have all been reported.

Time to positivity of HIV diagnostic tests

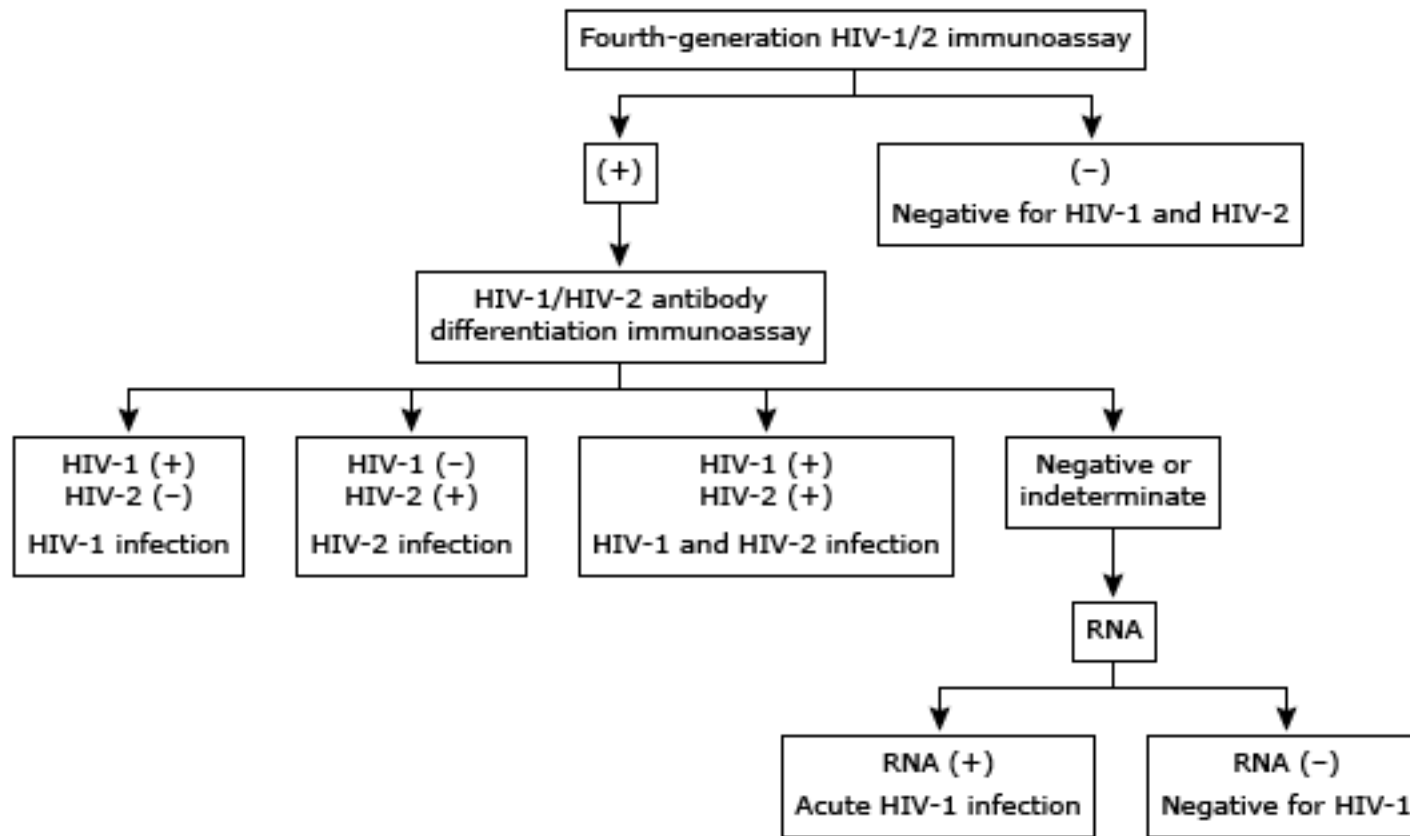
Test	Target of detection	Approximate time to positivity (days)
Enzyme-linked immunoassay		
First generation	IgG antibody	35 to 45
Second generation	IgG antibody	25 to 35
Third generation	IgM and IgG antibody	20 to 30
Fourth generation	IgM and IgG antibody and p24 antigen	15 to 20
Western blot		
	IgM and IgG antibody	35 to 50 (indeterminate)
		45 to 60 (positive)
HIV viral load test		
Sensitivity cut-off 50 copies/mL	RNA	10 to 15
Ultrasensitive cut-off 1 to 5 copies/mL	RNA	5

This table demonstrates the approximate time to positivity following infection for various diagnostic tests for HIV.

References:

1. Branson BM, Stekler JD. Detection of acute HIV infection: We can't close the window. *J Infect Dis* 2012; 205:521.
2. Owen SM. Testing for acute HIV infection: implications for treatment as prevention. *Curr Opin HIV AIDS* 2012; 7:125.
3. Cohen MS, Gay CL, Busch MP, et al. The detection of acute HIV infection. *J Infect Dis* 2010; 202:S270.

Recommended algorithm for HIV diagnosis

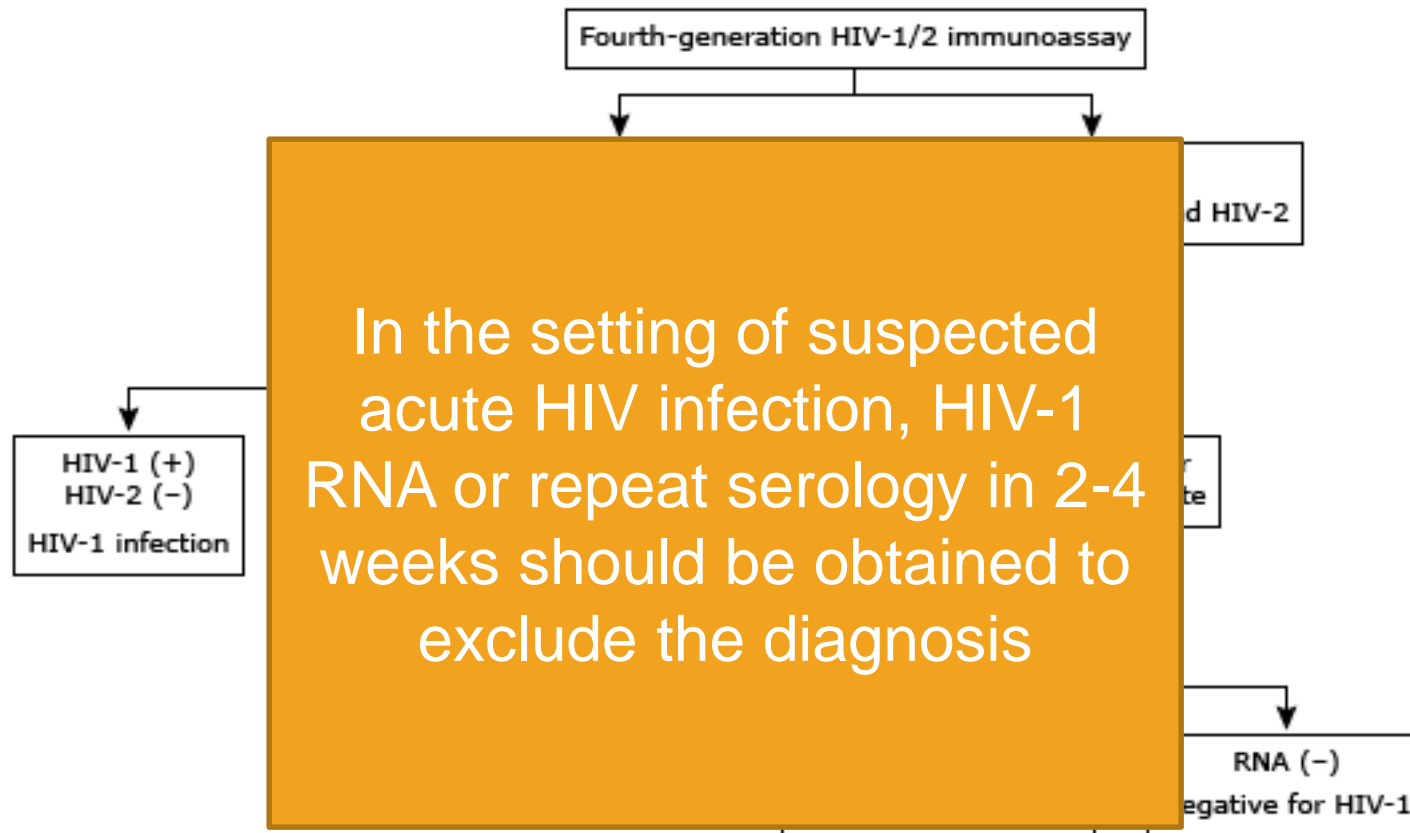


HIV: human immunodeficiency virus.

Modified from: CDC and Prevention and Association of Public Health Laboratories. Laboratory Testing for the Diagnosis of HIV Infection: Updated Recommendations. Available at <http://stacks.cdc.gov/view/cdc/23447>. Published June 27, 2014.

UpToDate®

Recommended algorithm for HIV diagnosis



HIV: human immunodeficiency virus.

Modified from: CDC and Prevention and Association of Public Health Laboratories. Laboratory Testing for the Diagnosis of HIV Infection: Updated Recommendations. Available at <http://stacks.cdc.gov/view/cdc/23447>. Published June 27, 2014.

UpToDate®

Acute HIV Infection

Consider any time you see a febrile patient with a mononucleosis type presentation who may be at risk:

- IVDU
- Sex industry worker
- College student
- Multiple partners

Considering Acute HIV

- Identification and treatment can have a major impact on the epidemic;
- Very early treatment may be related to a functional cure;
- Discussing HIV risk in this setting may have an enormous impact.

Why should HIV care be transitioned to the primary care setting?

- It is less complicated than many chronic medical conditions handled in the Primary Care setting.
- Uncomplicated patients require minimal follow up.
- Primary care providers may be more expert with non-HIV conditions.
- The healthcare environment is changing.
- HIV specialists are aging and there is a workforce shortage issue.
- Integration of HIV care into the Primary Care setting should promote more focused efforts on testing/screening, PrEP and identifying acute HIV infection.
- Patients should do better and welcome the option.

What are the HIV scenarios that fit into a Primary Care Setting?

- **Testing and screening:**
 - Sexual history taking, sexual health discussion, STI (including HIV) testing.
- **PREP:** highly effective and FDA approved.
- **PEP:** excellent environment for established patients.
- **Acute HIV infection:**
 - Allows early linkage to care and treatment;
 - Decrease likelihood of secondary transmission.
- **Uncomplicated HIV infection.**

Questions?

