HIV, Women, & Pregnancy

Facts, Myths, and Management

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Presented on November 11, 2010 at
MCRH's Parallel Paths Lunch and Learn for HIV/AIDS Providers
Supported through a generous grant from the MAC AIDS Fund

Parallel Paths Project

- A series of training sessions on topics of reproductive health for HIV/AIDS social and medical service providers
- Find more and updated information at: http://mcrh-tn.org/outreach_parallel_paths.asp
- Funding for this project provided by the MAC AIDS Fund.

- Disclosures
- Definitions
- Statistics (HIV Epidemiology)
- HIV Testing Guidelines
- MTCT Statistics
- OBSC
- Infant Follow-up
- Acknowledgements/References

- Questions? Anytime!

Definitions

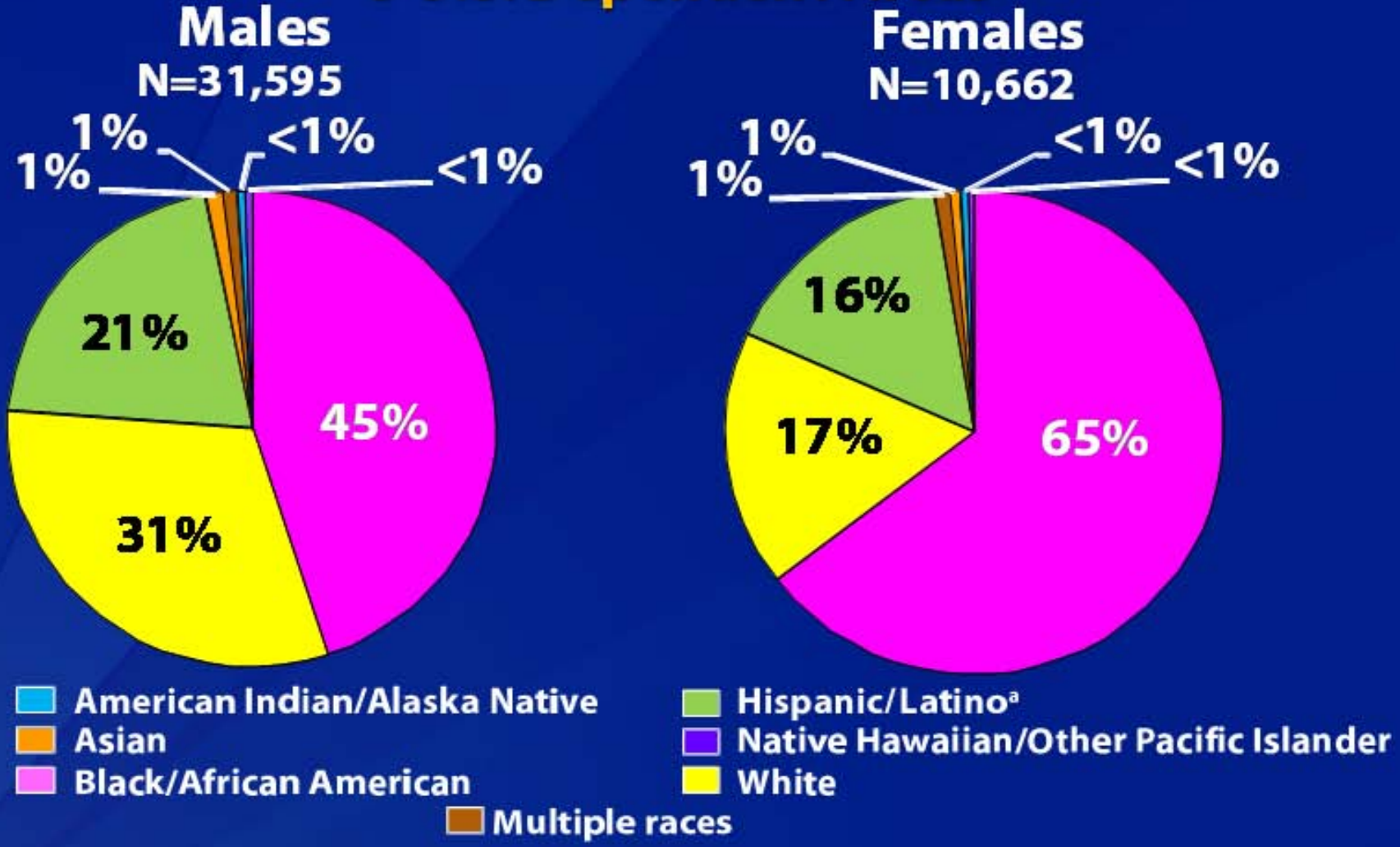
- HIV
  - Human Immunodeficiency Virus
- AIDS
  - Acquired Immunodeficiency Syndrome
- MTCT
  - Mother to Child Transmission
- HAART
  - Highly Active Antiretroviral Therapy

Incidence & Prevalence

- Incidence: the number of new cases of a specific disorder occurring within a given population during a certain period of time

- Prevalence: The total numbers of cases of a specific disorder that exist at any given time

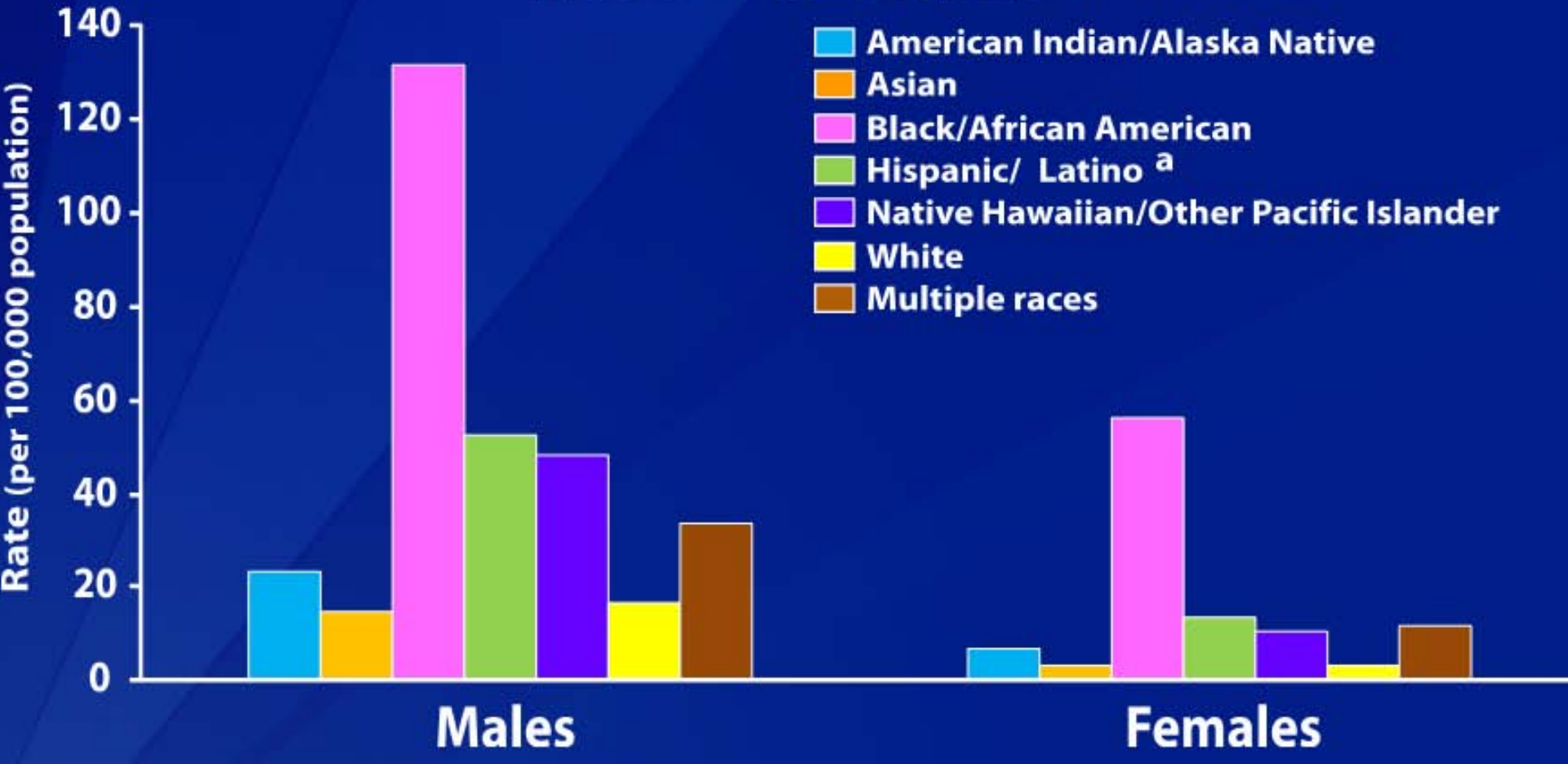
Diagnoses of HIV Infection among Adults and Adolescents, by Sex and Race/Ethnicity, 2008—37 States and 5 U.S. Dependent Areas



Note. Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis.
Data from 37 states and 5 U.S. dependent areas with confidential name-based HIV infection reporting since at least January 2005.
All displayed data have been estimated. Estimated numbers resulted from statistical adjustment that accounted for reporting delays, but not for incomplete reporting.

[a] Hispanics/Latinos can be of any race.

Rates of Diagnoses of HIV Infection among Adults and Adolescents, by Sex and Race/Ethnicity, 2008—37 States



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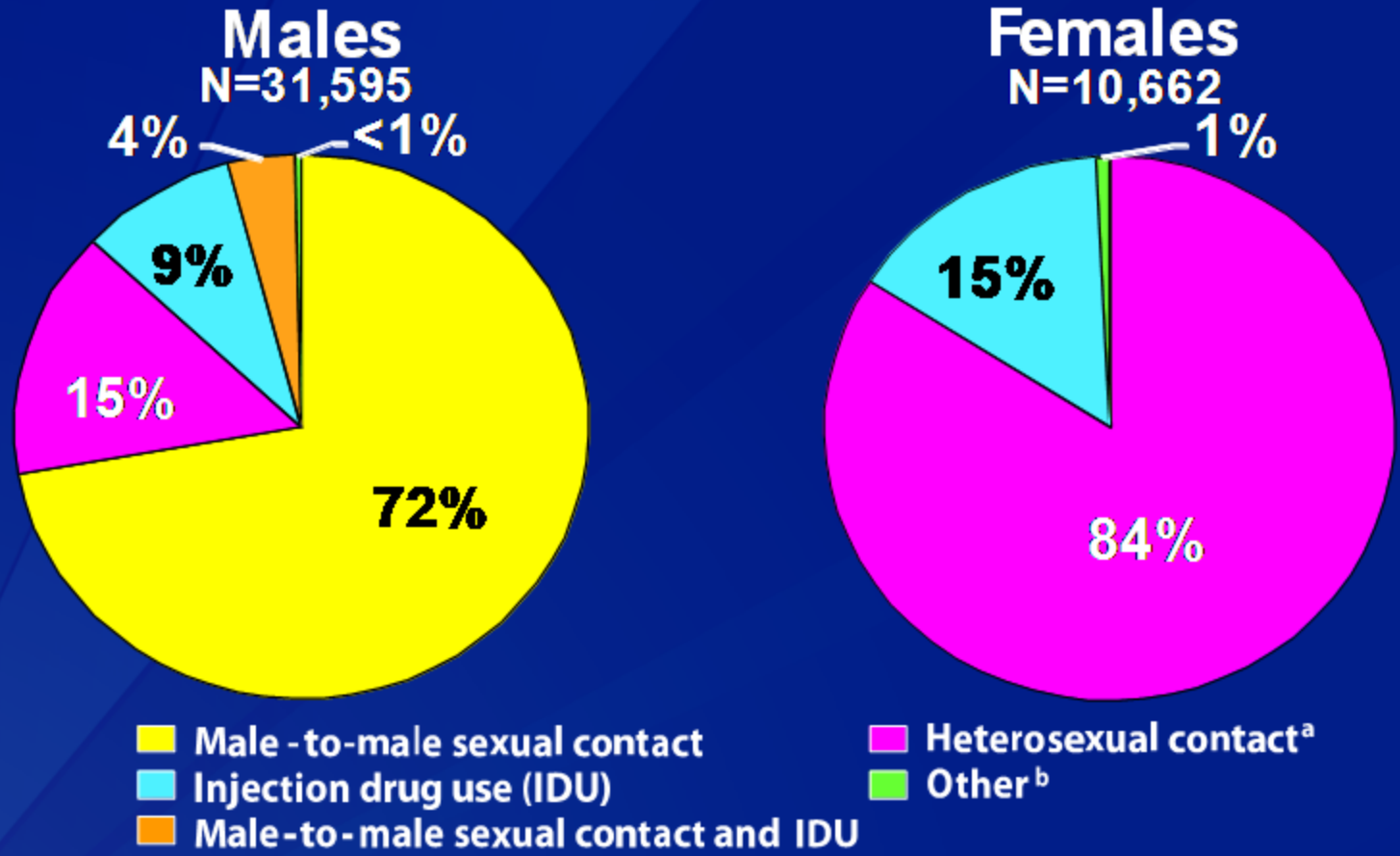
Diagnoses of HIV Infection among Adults and Adolescents, by Sex and Transmission Category, 2008—37 States and 5 U.S. Dependent Areas



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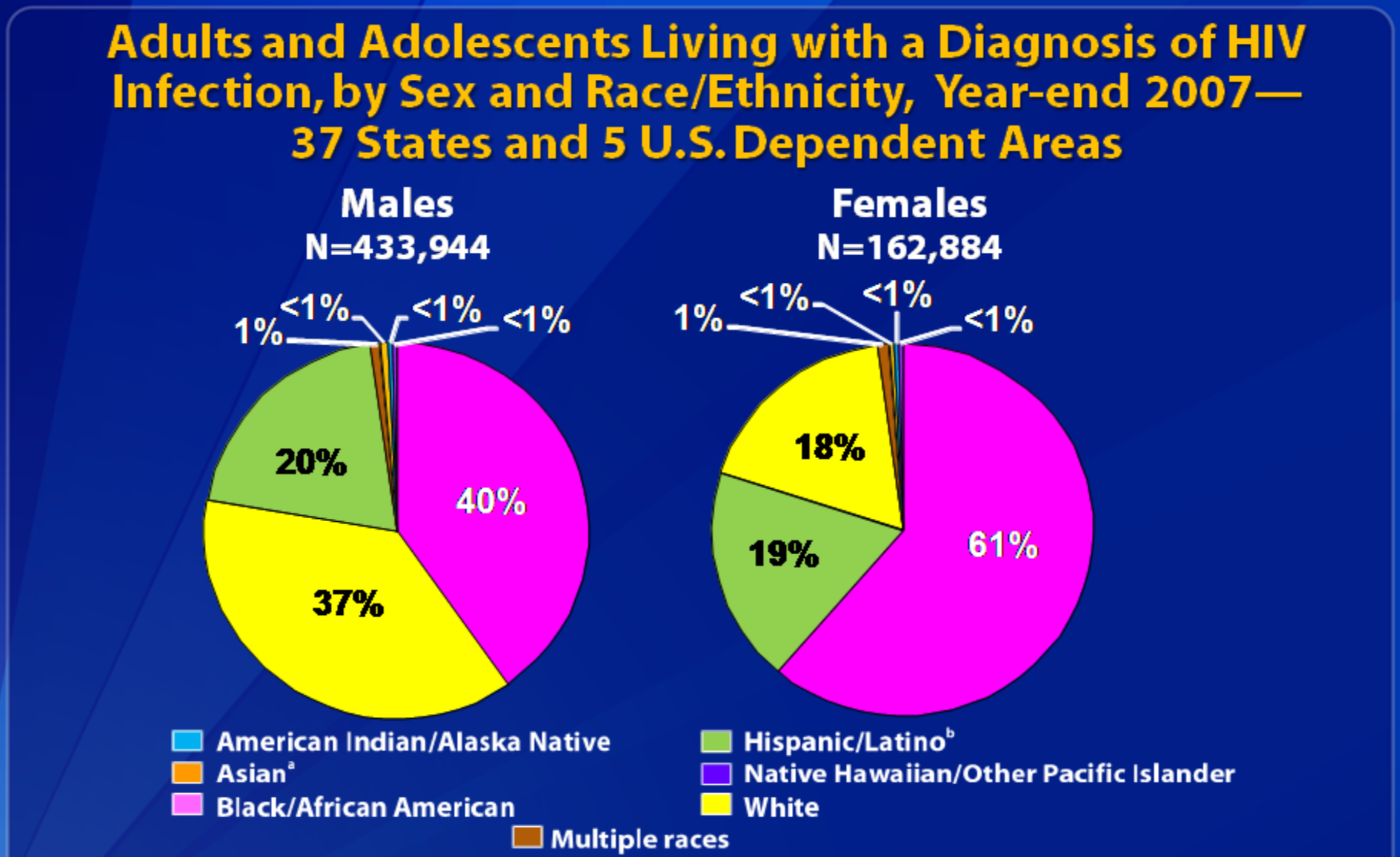
[a] Heterosexual contact with a person known to have, or to be at high risk for, HIV infection.

[b] Includes hemophilia, blood transfusion, perinatal exposure, and risk factor not reported or not identified.

Prevalence: Total numbers



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Data from 37 states and 5 U.S. dependent areas with confidential name-based HIV infection reporting since at least January 2005.
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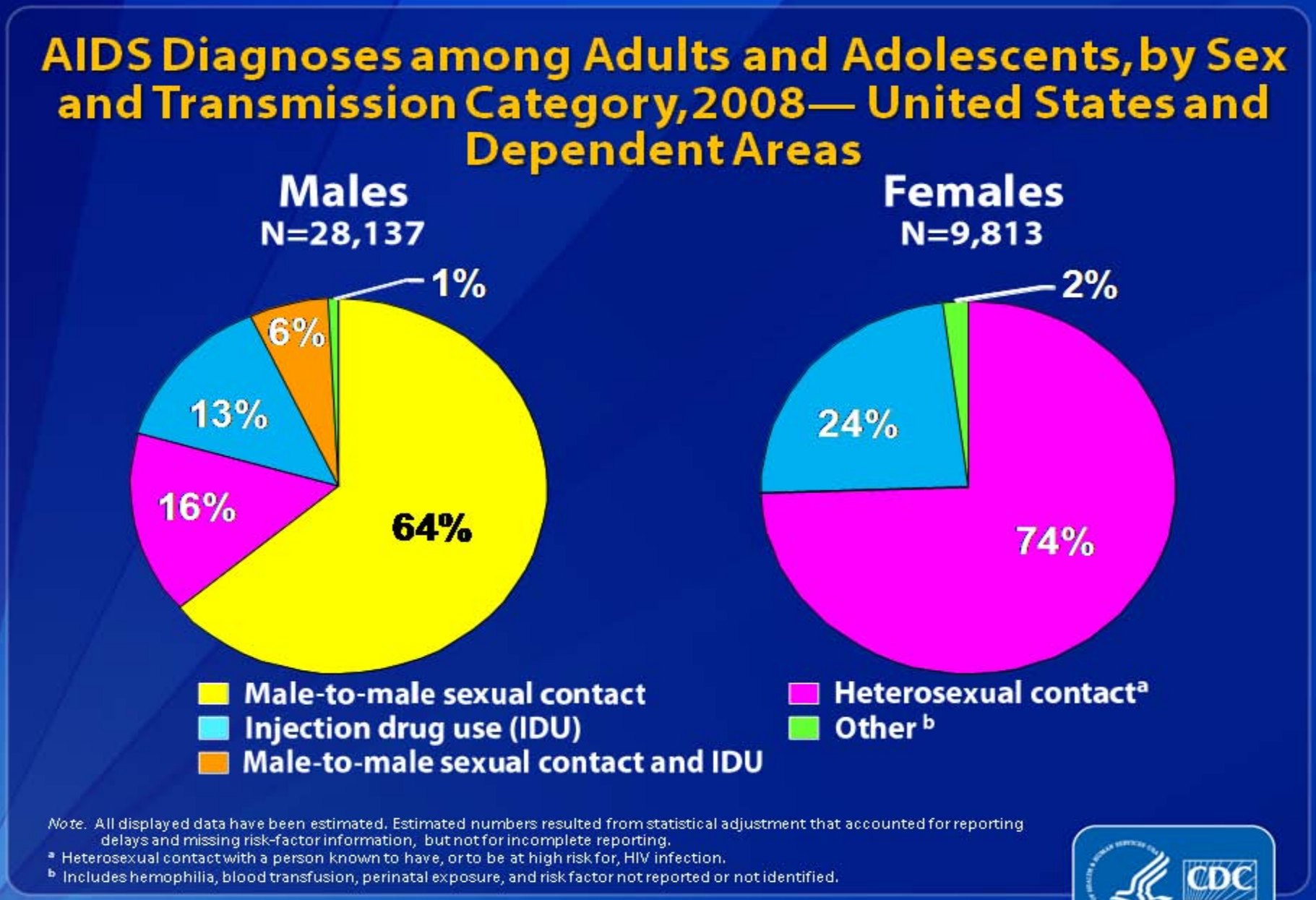
[a] Includes Asian/Pacific Islander legacy cases

[b] Hispanics/Latinos can be of any race.

AIDS Diagnosis

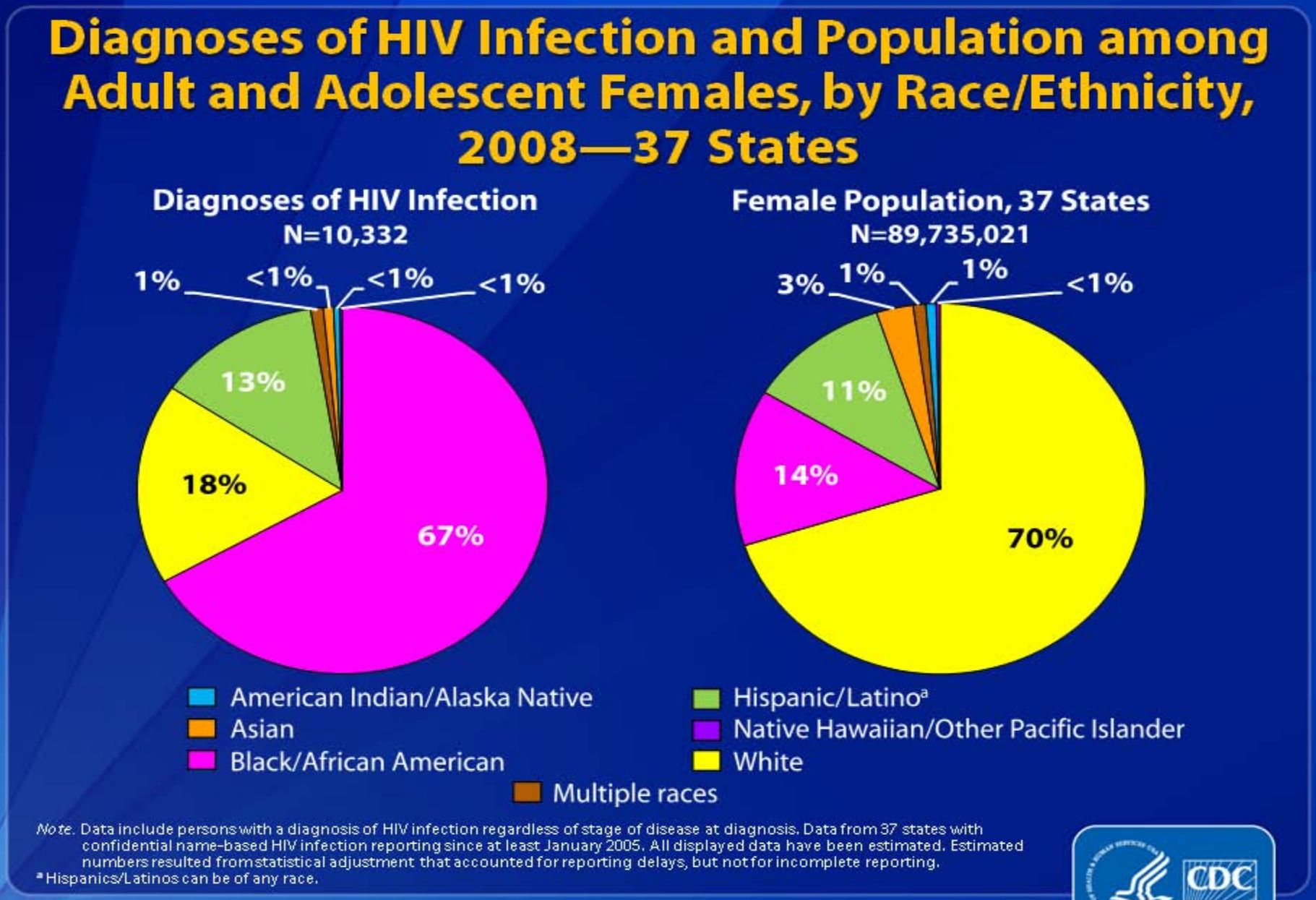


HIV and Race

- HIV disproportionately affects minorities in US
- African Americans: 12% of the population, yet make up over 50% of the new infections in US
- Hispanics: 13% of the population, yet make up 19% of AIDS cases

CDC, 2006

HIV and Race: Women



Cause of Death US 2000-2007

- AIDS is the leading cause of death among AA females aged 25-34
- AIDS is the 3rd leading cause of death among AA women 35-44
- AIDS is the 4th leading cause of death for AA women aged 45–54

CDC: Cause of Death 2000-2007

Cause of Death
TN: 2007

- AIDS was the #1 cause of death among AA females in TN aged **25-34**

- AIDS is the 4th leading cause of death among AA women in TN aged **35-44**

- CDC: Cause of Death by state 2007

Race for the Cure 2010

Commercial Appeal

HIV and Women

- Biologic Vulnerability: A woman is approximately twice as likely as a man to contract HIV infection during vaginal intercourse

- European Study Group on Heterosexual Transmission of HIV. Comparison of female to male and male to female transmission of HIV in 563 stable couples. *British Medical Journal* 1992;304:809–813.

HIV and Women

- Women ~ 25% of new HIV infections (US)
- Women ~ 25% of new AIDS cases (US)
  - 1992: 13.8% of AIDS cases were women
  - 2001: 21%
  - 2004: 27%
  - 2008: 26%
- Sexual contact accounts for 80% of HIV infections in women

HIV Testing and Clinical Care

HIV Testing: Pregnant and Non-pregnant

Clinical Care: OBSC

- OBSC Prenatal Care
- Plan for Delivery
- Follow-up for Mom and Infant

CDC says “Test everybody!”

- **Call for Routine HIV Testing on 25th Anniversary of U.S. AIDS Epidemic**

- May 5, 2006 - The CDC recommended at least one HIV test for everyone aged 13 to 64 who visits a doctor, followed by annual testing (Implemented September 2006)*
- Routine HIV tests in doctors' offices and clinics will no longer require the pretest counseling now a part of all HIV testing.

* Varies according to exposure

CDC says, “Test everybody!”

- "Most HIV is transmitted by the 25% of infected people who do not even realize they are infected. We need to dramatically expand access to HIV testing by making it a routine aspect of clinical care.”
  - Kevin Fenton, MD, PhD, director of CDC's National Center for HIV, STD, and TB Prevention.

HIV Testing in Pregnancy

Laws regarding HIV testing in pregnancy varies from state to state.

In the state of Tennessee, HIV counseling and testing should be offered to all pregnant women. Women have the right to refuse testing. (Opt out approach)

National Recommendations HIV Testing in Pregnancy

- CDC (September 2006)
- **Prenatal:** Routine HIV screening for *all* pregnant women
- **REPEAT HIV TESTING** in 3rd trimester (certain regions, including Memphis/Shelby County)
- **Labor and delivery:** Routine rapid testing for women whose HIV status is unknown
  - **Postnatal:** Rapid testing for all infants whose mother's status unknown

Diagnosing HIV Testing Methods

- Serum testing: ELISA/Western Blot
  - ELISA (an antibody test, screening purposes)
    - Positive: Repeat, then confirmatory test (WB)
    - Negative: HIV-negative at the time of testing.
      - Needs no further testing unless they report an exposure
    - Indeterminate
      - 1) Pt in process of seroconversion
      - 2) Pregnancy
      - 3) Medications
  - Western Blot: an antibody test, confirmatory
- Saliva testing: (antibody testing)
  - Positive: Need confirmatory

Timing of Perinatal HIV Transmission

- Cases documented:
  - Antepartum 25%–40% of cases
  - Intrapartum 60%–75% of cases
  - Postpartum
    - Breastfeeding, premastication

Factors Influencing Perinatal Transmission

- Maternal Factors
  - HIV-1 RNA levels
  - Low CD4 lymphocyte count
  - Other infections (hep C, CMV, BV)
  - Maternal injection drug use
  - Lack of HAART during pregnancy
- Obstetrical Factors
  - Length of ruptured membranes/ chorioamnionitis
  - Vaginal delivery
  - Invasive procedures
- Infant Factors

  Prematurity

  Twins, 1st born

Post-Partum HIV Transmission
Breastfeeding & Premastication

- HIV transmission has occurred through breastfeeding.
  - Formula feeding encouraged for HIV+ women in US
- *All* women considering breastfeeding should know their HIV status
- Premastication education for HIV+ women

Perinatal HIV Transmission
MTCT (Mother to Child Transmission)

- Pre 1994: USA /Europe: ~ 25% (no Antiretrovirals)
- 1994: Results of 076 study changed practices (AZT) recommendation during pregnancy
- 1995: down to 11% after implementation
- Today, risk of MTCT can be <2% with
  - Effective multi-drug antiretroviral therapy (HAART)
  - Elective C/S when appropriate
  - Exclusive formula feeding
  - Elimination of premastication

Landmark Study: ACTG 076
AIDS Clinical Trials Group

A phase III randomized placebo-controlled trial of zidovudine (ZDV/AZT) for the PMTCT of HIV

(1992-1994)

Sponsor: NIH Branch: NIAID

ACTG sites nationwide (Adult & Pediatric)

Memphis: Pediatric site SJCRH

The Med: Subsite of St Jude

ACTG 076

Antepartum : **PO AZT/placebo**

100 mg AZT/placebo po 5x day

started at 14-34 weeks gestation

Intrapartum: IV AZT/placebo

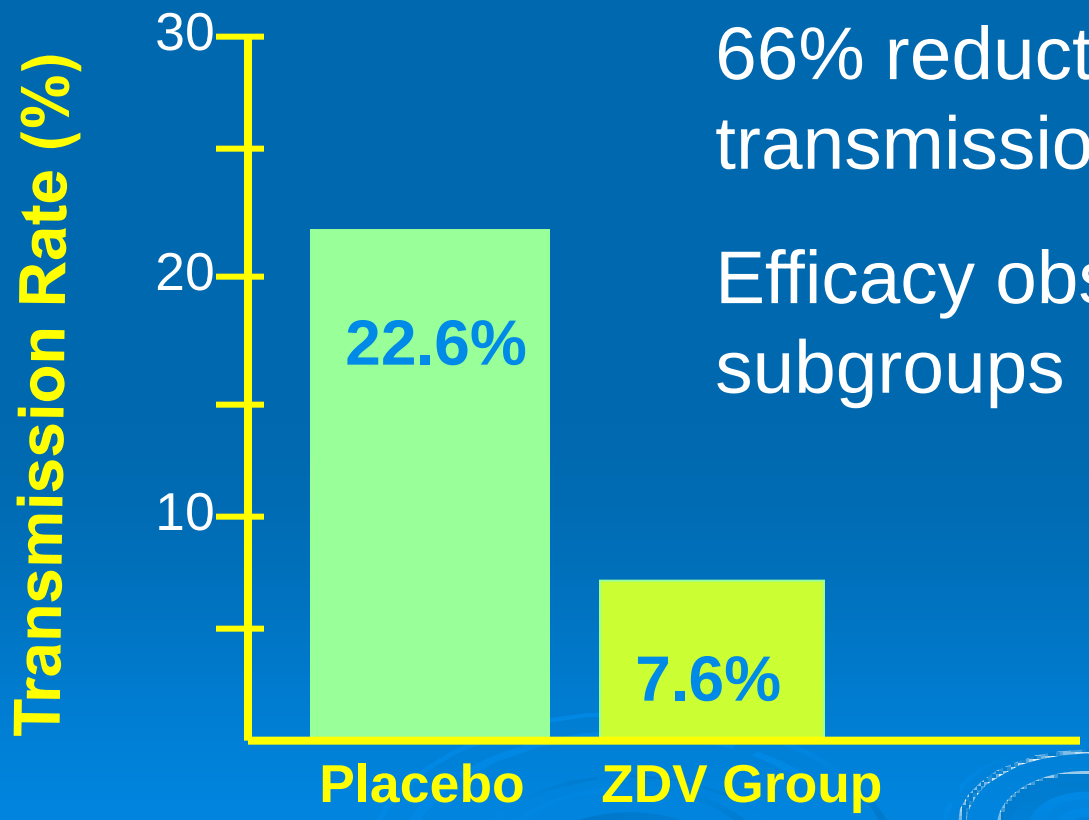
2 mg/kg IV bolus, followed by continuous infusion 1 mg/kg/hr until cord clamp

Infant regimen: PO AZT/placebo liquid

2 mg/kg po q 6 hr for 6 weeks, start 8-12 hours after birth

Results of ACTG 076

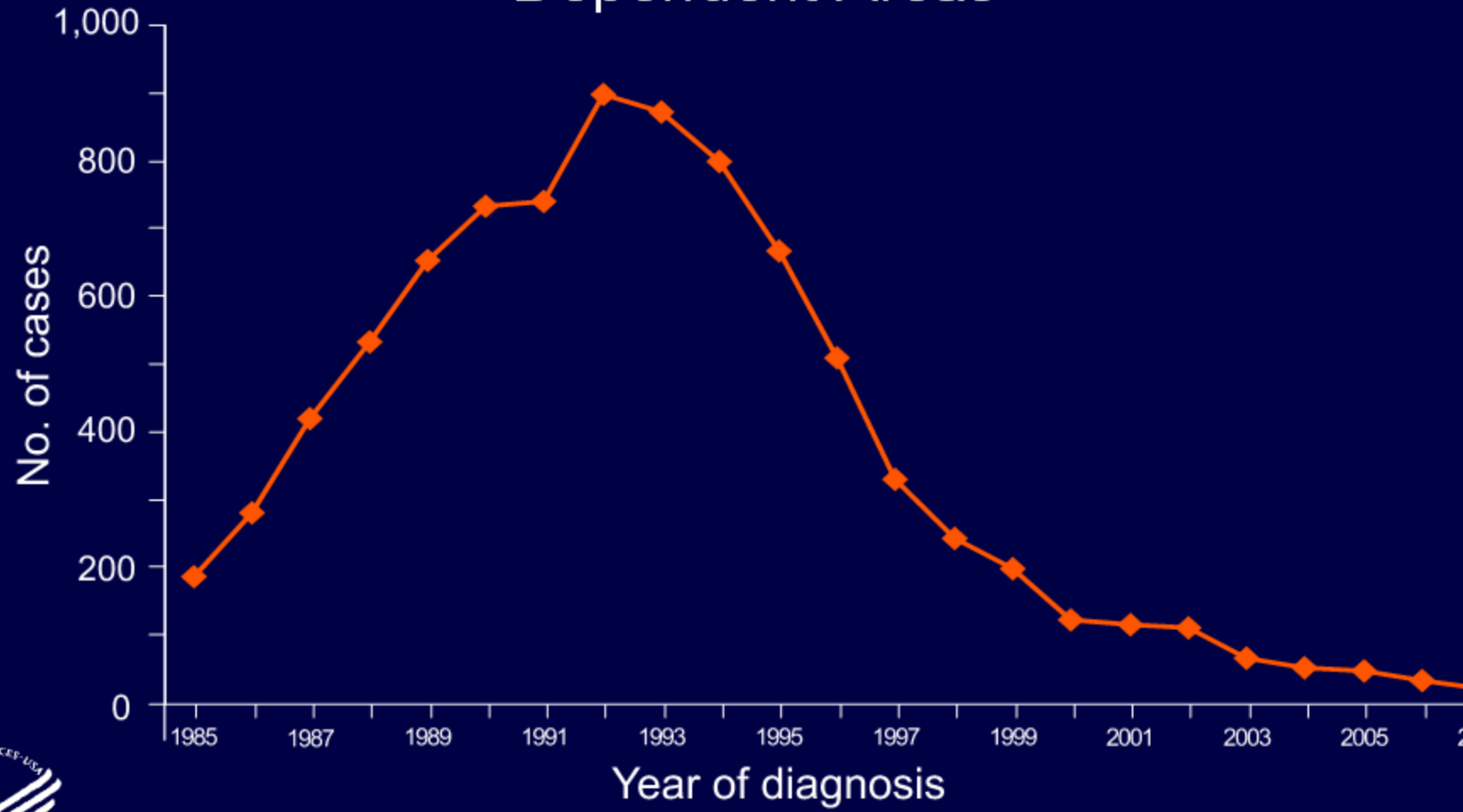
(Interim Analysis: Unblinded Early!)



66% reduction in risk for transmission (p = <0.001)

Efficacy observed in all subgroups

Estimated Numbers of Perinatally Acquired AIDS Cas by Year of Diagnosis, 1985–2007—United States an Dependent Areas



Note. Data have been adjusted for reporting delays and missing risk-factor information.

Why Continued Perinatal Transmission in the United States?

- Women unaware of HIV status
  - Lack of universal screening
  - Up to 15% diagnosed in labor
- Lack of prenatal care
- Increasing rates of HIV infection among women of childbearing age

Why Continued Perinatal Transmission in the United States?

- Suboptimal management (need for expert care)
- Perinatal transmission despite optimal management

- Result: ~200 new pediatric cases each year in US
  - Dr. Lynne Mofenson, chief of pediatric, adolescent and maternal AIDS at the National Institute of Child Health and Human Development, said that despite H.I.V. babies' increased survival, their "mortality is still thirtyfold higher than similarly aged children." New York Times 11-8-2010

High-Risk Pregnancies

- HIV: High risk?
- Expert care needed
- Perinatally infected becoming pregnant

High Risk Pregnancies

- Hypertension
- Diabetes
- Multiples
- Previous C-Section
- Genetic Anomalies
- Maternal Age (very young/very old)
- Social, economic challenges, MSA
- Who gets to be the “decider”?

Is Pregnancy bad for HIV?

- Immunological changes in pregnancy
  - Even in HIV-negative women
- HIV+ men/women
  - Immunologic differences

Preconceptual Counseling

Ideal for *any* women contemplating pregnancy

- HIV+ Women:
  - Current health status (CD4, VL)
  - PNV, Iron (anemia R/T disease, diet, HAART)
  - Current HAART (contraindicated? Most damage done early)
  - Immunizations
  - Partner status
    - Discordant couple
    - + partner, his HAART? Resistance?

OBSC

- OB Special Care Clinic
- UTMG Obstetrics and Gynecology
- 880 Madison Suite 3E01 (Medplex)
- Multidisciplinary Team

OBSC Team

- Edwin M. Thorpe, Jr., MD
  - Medical Director, Ob-GYN
- Nina K. Sublette, PhD, FNP
  - HIV Research Practitioner
- Katrina Shields, LPN
  - OBSC Clinic Coordinator

OBSC TEAM
Multidisciplinary

- Social Workers
  - Dawn Herring
  - Tiombe Plair
- Consumer Advocates
  - Keshia Rainey
  - Theresa Williams

OBSC: Prenatal Visits

- Labs: CD4, VL (q month)
- HAART adherence
- Side effect assessment
- HIV/AIDS symptom assessment
- Fetal assessment
- Disclosure counseling, MSCHD
- Long range planning:
  - ID referral, Birth Control

HAART in Pregnancy

- Offer treatment based on lab values
- Treatment is voluntary
- Treatment cannot be mandated
- Honesty
- Problems with adherence
  - Swallowing pills
  - Don’t want people to see me taking pills
  - Side effects

Lab OBSC

- HIV-1 RNA VL (measures viral load or burden)
  - Goal is to keep this number low
  - Range: 0-millions
  - ACOG guidelines <1000 copies
- CD4: (measures amount of CD4 lymphocytes, damage to immune system)
  - Goal is to keep this number high
  - Range 600-1200
  - CD4 < 200 is an AIDS diagnosis

OBSC: Delivery Plan

- C-Section should not be done universally:
  - Transmission already very low with HAART, low viral loads – any added benefit?
  - Complications – increased risk with HIV, particularly with advanced disease
- C-Section is most effective – plan for 38 wks
  - Viral load > 1000
  - Present late in pregnancy
  - No maternal ART
- Honor mother's choice
  - Educate, risk/benefit

OBSC Post-Partum

- 2 week and 6 week visits
- Ob/GYN and family planning services
- Mental health screening and referral
- Coordination of care:
  - ID follow-up for mom and baby

Infant Follow-up

- AZT/ZDV prophylaxis for 6 weeks
- HIV diagnostic testing
- Referral to an HIV specialist
  - LeBonheur ID Clinic/St Jude ID
- Long-term follow-up of HIV and ARV-exposed infants
- Support services for the family

Is my baby HIV positive?

- Babies need serial testing with DNA-PCR
- Traditional HIV testing not useful
- Diagnose usually by 4 months, continue testing until 18 months
- Significance of *in utero* v. intrapartum acquisition

Acknowledgements

- Edwin M. Thorpe, MD
- Patricia M. Flynn, MD
- Katherine Knapp, MD
- Nehali Patel, MD
- AETC National Resource Center, UMDNJ, Newark, NJ

References

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