ACTHIV 2010

- Welcome to Denver*!
- Schedule:
  - Friday : HIV Treatment and Comorbidities
    - Poster s 12:30 – 2:00, Reception 5:00 – 7:00
  - Saturday: Special Challenges and Populations
    - Closing Plenary: HIV and Aging
  - Sunday: Breakfast with the Experts
    - Submit cases!
- Additional details

* get rest, stay hydrated

Who Are We?
N = 234

- Nurses - 24%
- Pharmacists - 9%
- Physicians - 31%
- Social Workers - 4%
- Physicians Assistants - 3%

Epidemiology of HIV Disease in the United States

CDC Update - U.S. 2010

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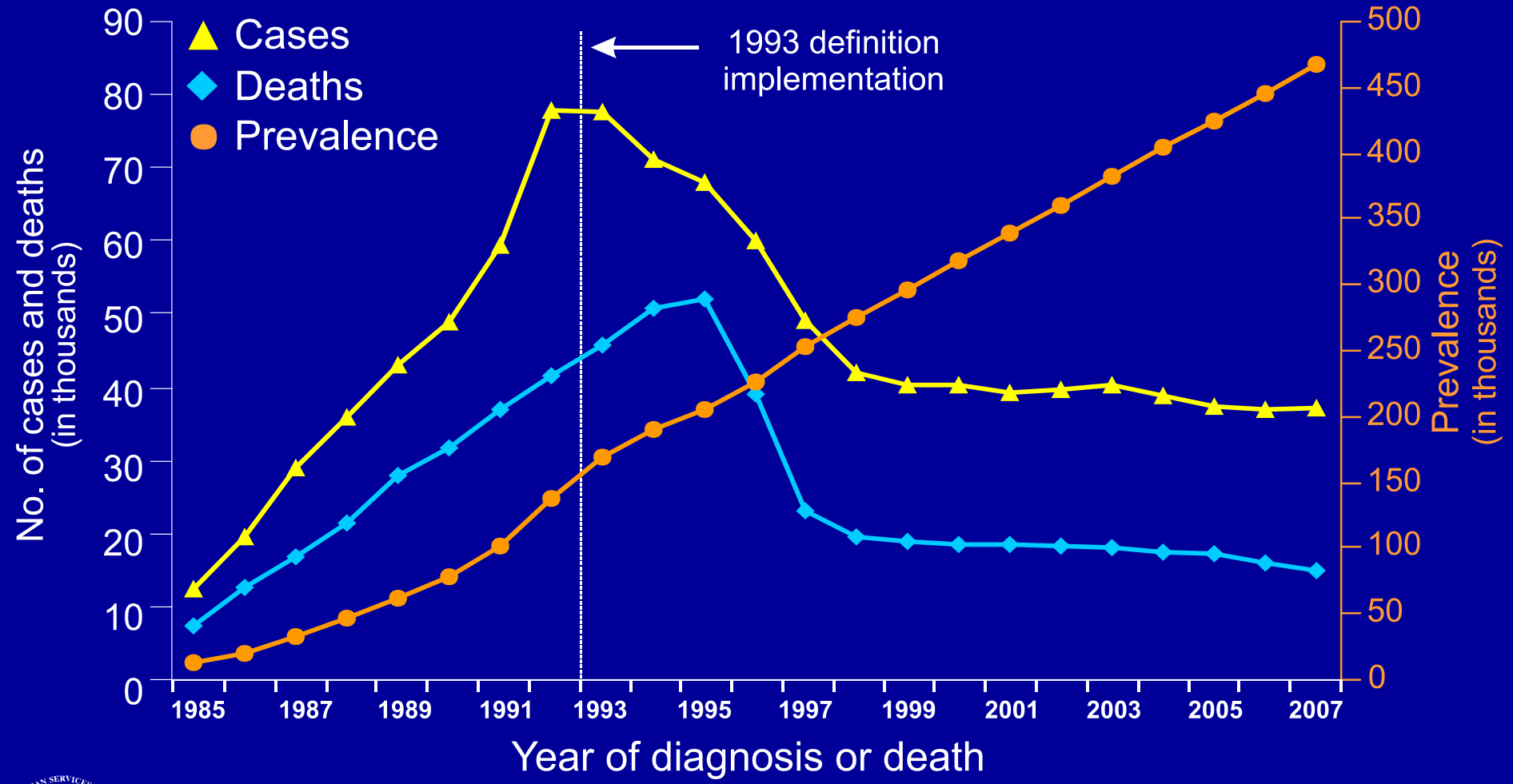
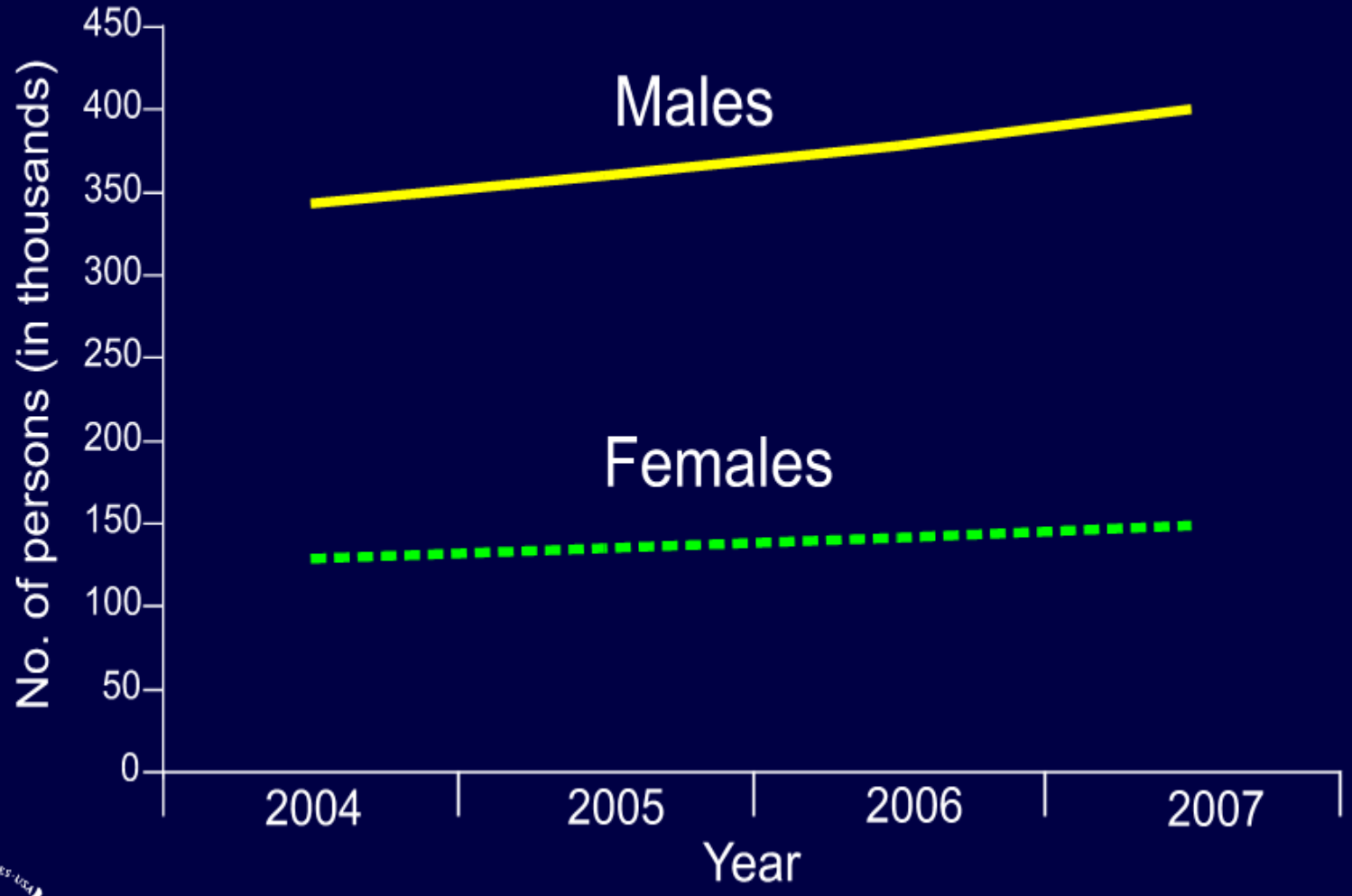
The findings and conclusions in this presentation are those of the author and do not necessarily represent the official position of the Centers for Disease Control or the National Institutes of Health.

Estimated Numbers of AIDS Cases, Deaths, and Persons Living with AIDS,1985–2007—United States and Dependent Areas



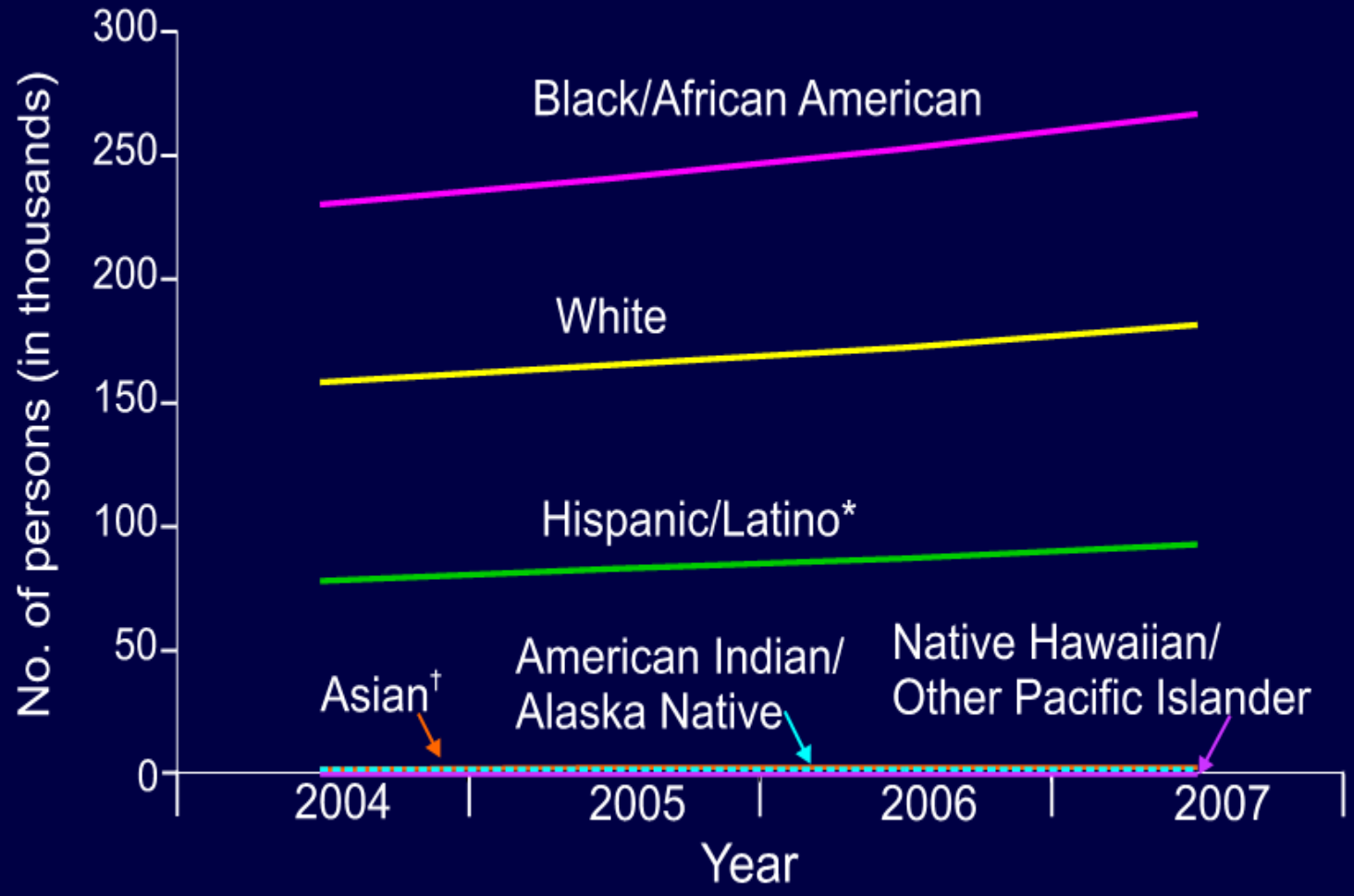
Note. Data have been adjusted for reporting delays.

Estimated Numbers of Adults and Adolescents Living with HIV/AIDS, by Sex, 2004–2007—34 States



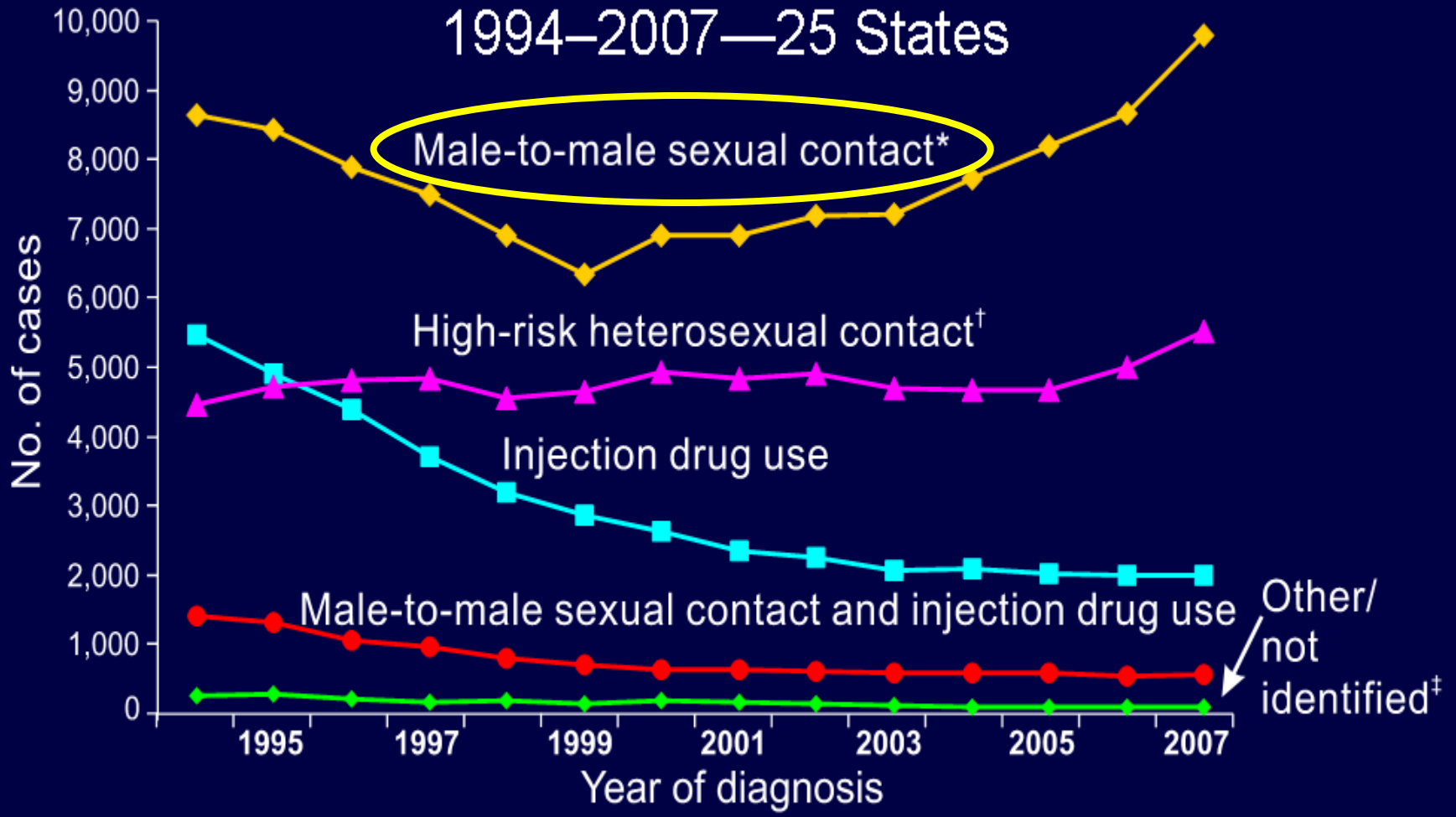
Note. Data include persons with a diagnosis of HIV infection regardless of their AIDS status at diagnosis.
Data from 34 states with confidential name-based HIV infection reporting since at least 2003.
Data have been adjusted for reporting delays. Age as of end of year.

Estimated Numbers of Persons Living with HIV/AIDS, by Race/Ethnicity, 2004–2007—34 States



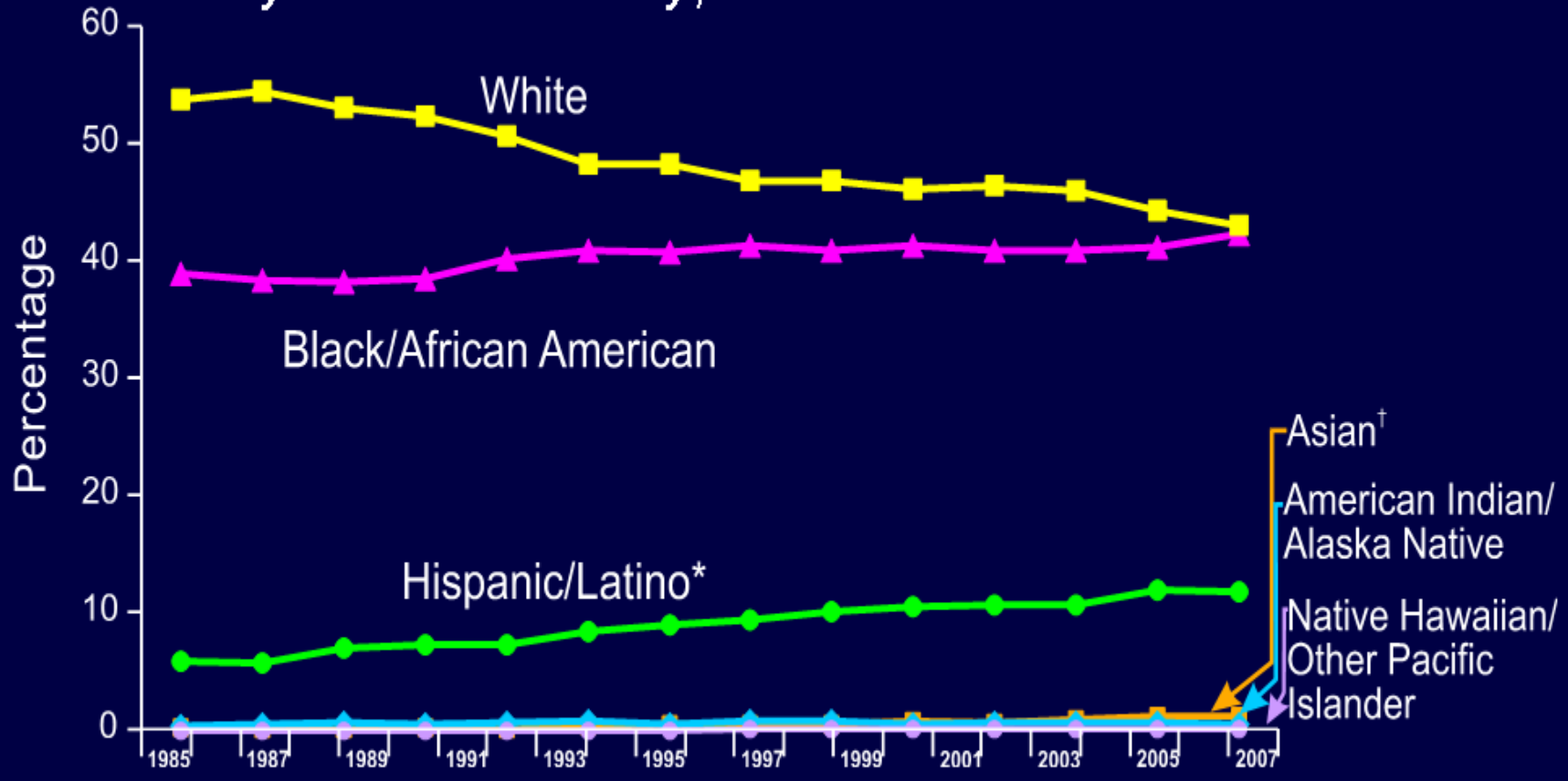
Note. Data include persons with a diagnosis of HIV infection regardless of their AIDS status at diagnosis.
Data from 34 states with confidential name-based HIV infection reporting since at least 2003.
Data have been adjusted for reporting delays.
*Hispanics/Latinos can be of any race.
†Includes Asian and Pacific Islander legacy cases.

Estimated Numbers of HIV/AIDS Cases among Adults and Adolescents, by Transmission Category 1994–2007—25 States



Note. Data include persons with a diagnosis of HV infection regardless of their AIDS status at diagnosis. Data from 25 states with confidential name-based HIV infection reporting since at least 1994. Data have been adjusted for reporting delays and missing risk-factor information.
*Data on male-to male sexual contact exclude cases among men who reported sexual contact with other men and injection drug use.
†Heterosexual contact with a person known to have, or to be at high risk for, HIV infection.
‡Includes hemophilia, blood transfusion, perinatal exposure, and risk factor not reported or not identified.

Percentages of Estimated HIV/AIDS Cases among Adult and Adolescent Men Who Have Sex with Men by Race/Ethnicity, 1985–2007—25 States

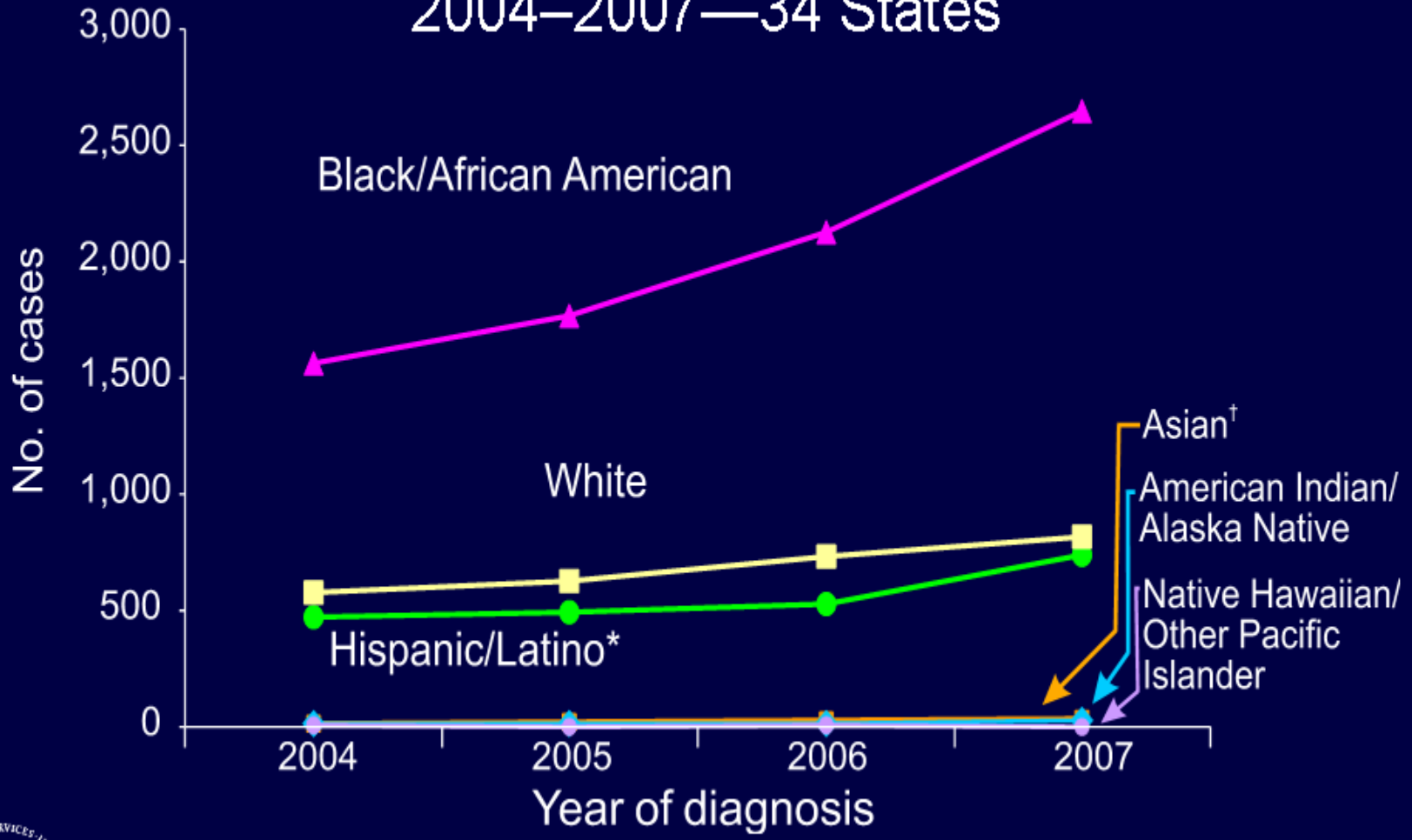


Note. Data include persons with a diagnosis of HV infection regardless of their AIDS status at diagnosis. Data from 25 states with confidential name-based HIV infection reporting since at least 1994. Data have been adjusted for reporting delays and missing risk-factor information. Data exclude cases among men who had sex with other men and injected drugs.

*Hispanics/Latinos can be of any race.

†Includes Asian and Pacific Islander legacy cases.

Estimated Numbers of HIV/AIDS Cases among Men Who Have Sex with Men, Aged 13–24 Years, by Race/Ethnicity 2004–2007—34 States

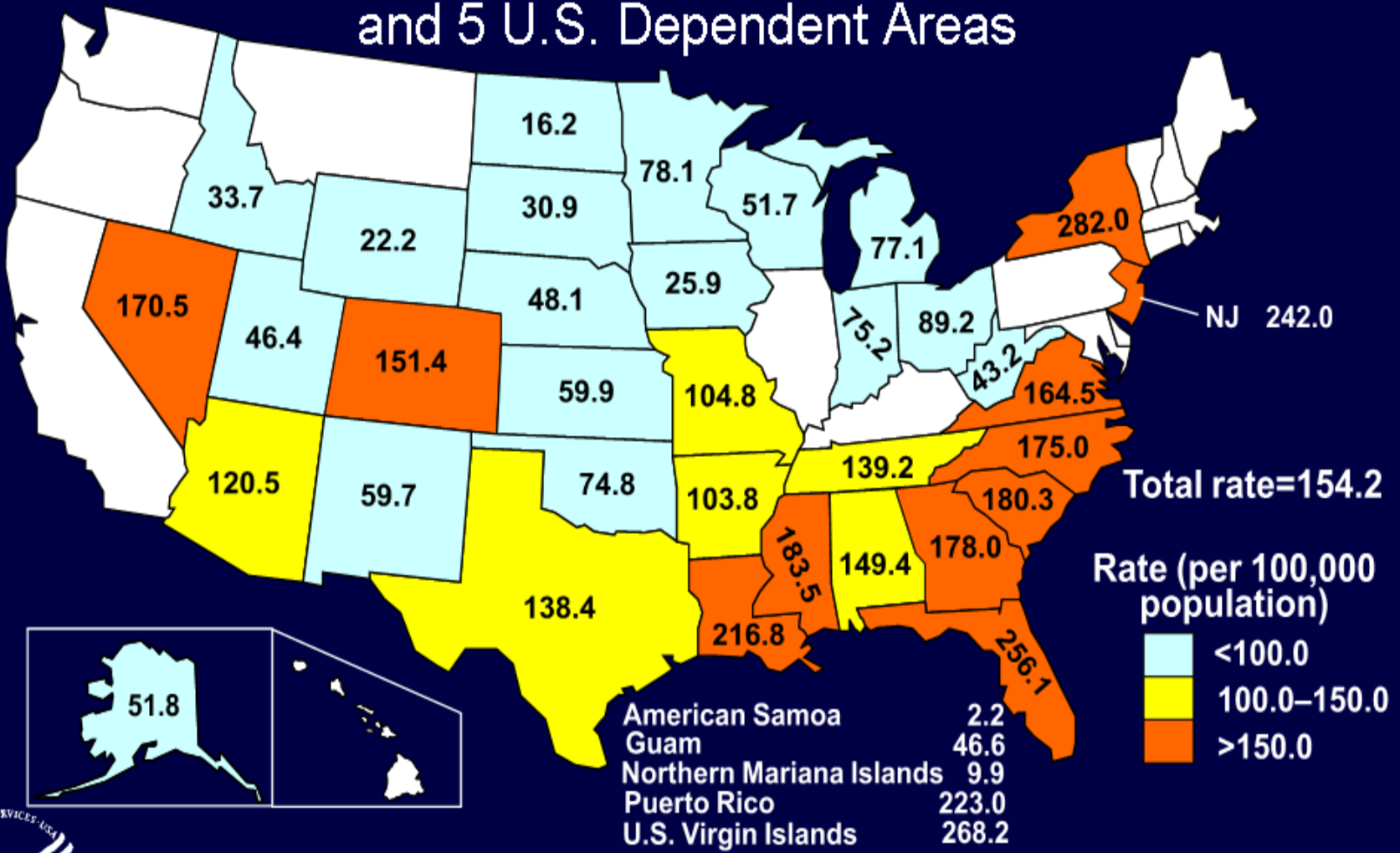


Note. Data include persons with a diagnosis of HV infection regardless of their AIDS status at diagnosis. Data from 34 states with confidential name-based HIV infection reporting since at least 2003. Data have been adjusted for reporting delays and missing risk-factor information. Data exclude cases among men who had sex with other men and injected drugs.

†Includes Asian and Pacific Islander legacy cases.

*Hispanics/Latinos can be of any race.

Estimated Prevalence Rates for Adults and Adolescents Living with HIV Infection (not AIDS), 2007—34 States and 5 U.S. Dependent Areas

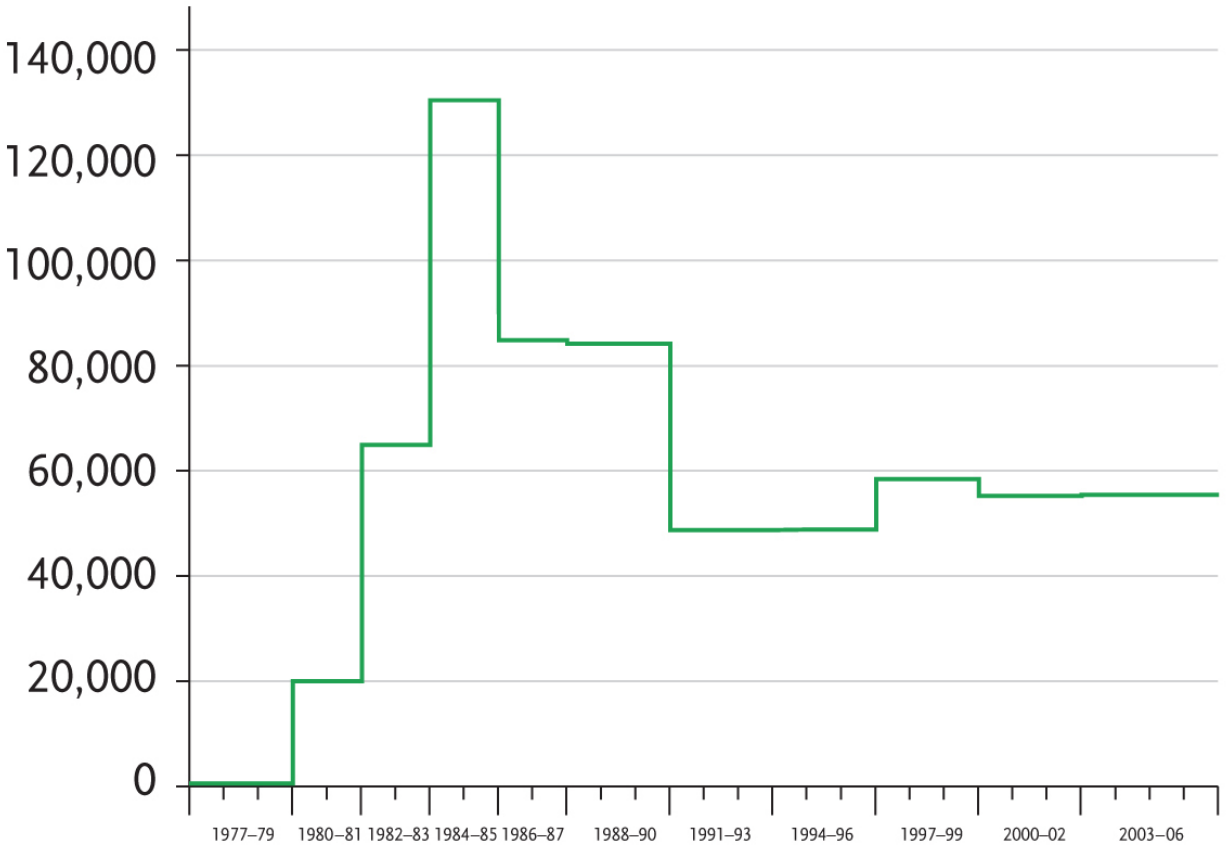


Note. Data from 34 states and 5 U.S. dependent areas with confidential name-based HIV infection reporting since at least 2003. Data have been adjusted for reporting delays.

HIV Incidence

- Incidence = “holy grail” → front of the wave
  - Who is being infected **now**?
- Informs targeted prevention to high-risk groups
- New laboratory and statistical methods have afforded improved estimations
- Published August 2008

Estimated New HIV Infections, Extended Back-Calculation Model, 1977–2006, Overall

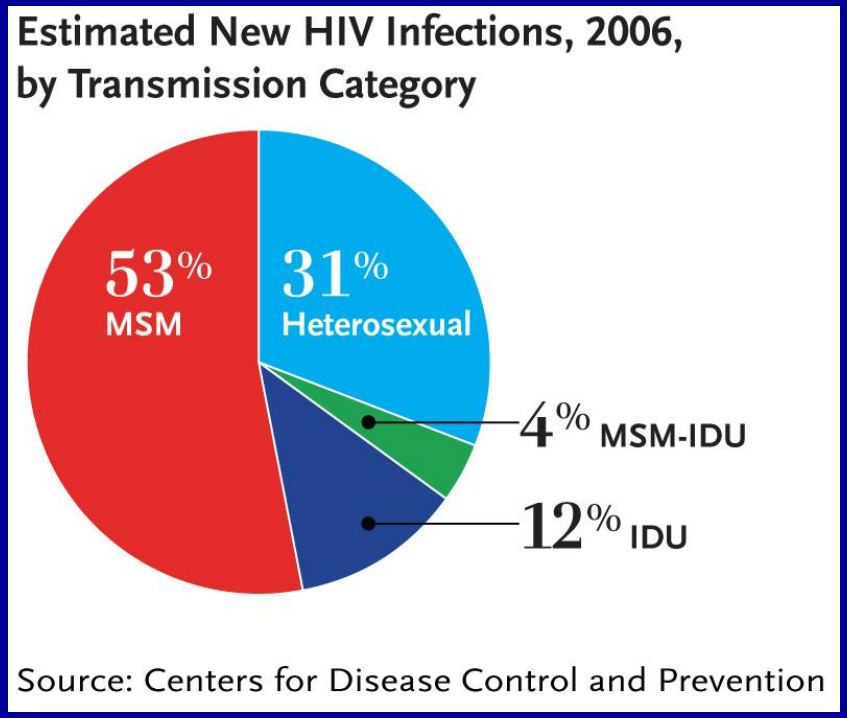


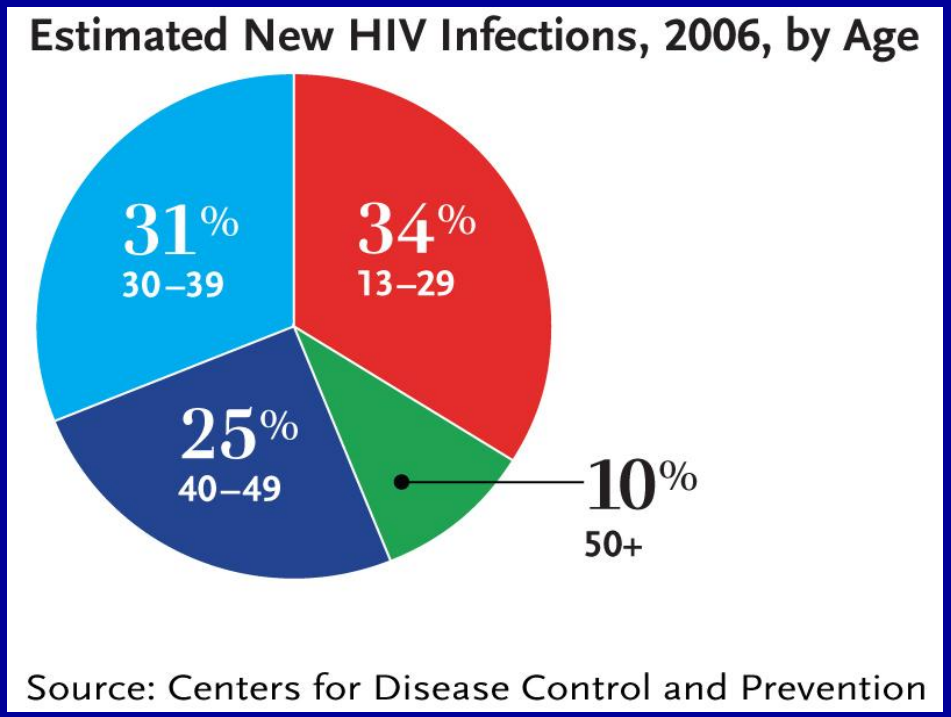
Note: Estimates are for 2-year intervals during 1980–1987, 3-year intervals during 1977–1979 and 1988–2002, and a 4-year interval for 2003–2006.

Source: Centers for Disease Control and Prevention

***Sources*: I. Hall et al., JAMA 2008 300(5): 520 and http://www.cdc.gov/hiv/topics/surveillance/incidence.htm**

Trends in HIV Incidence, 2006

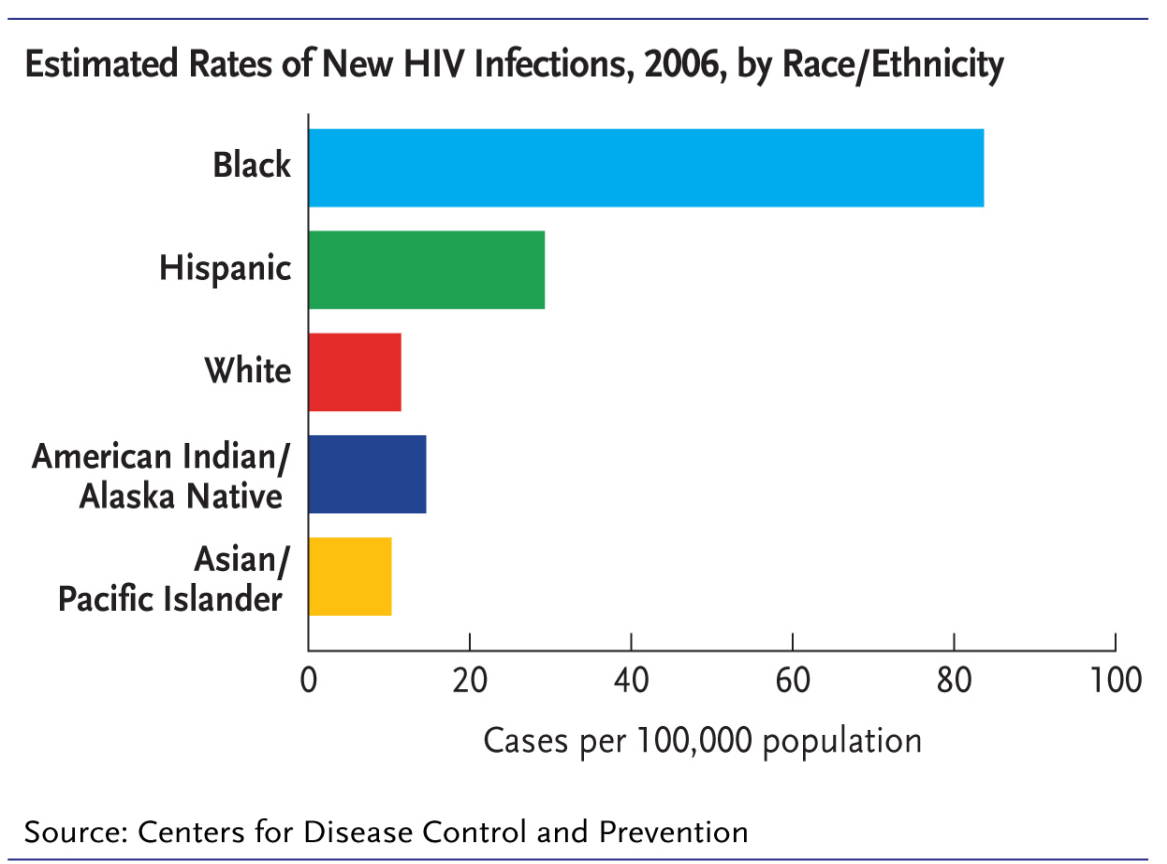




Predominately MSM

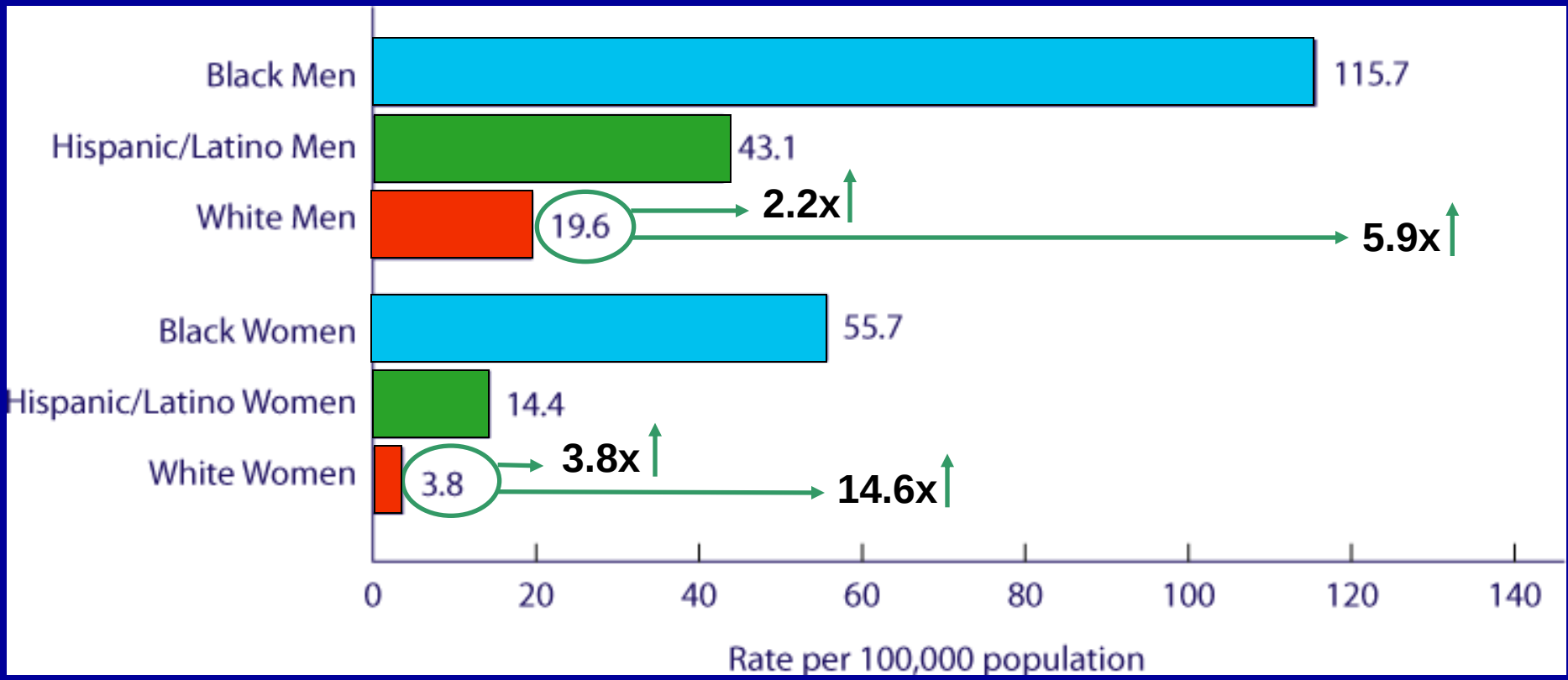
> 30% under age 30 years
> 60% under age 40 years

Trends in HIV Incidence, 2006



Rate among blacks (88.3):
~ 3.0 x Hispanics (29.3)
~ 7.5 x whites (11.5)

Trends in HIV Incidence, 2006

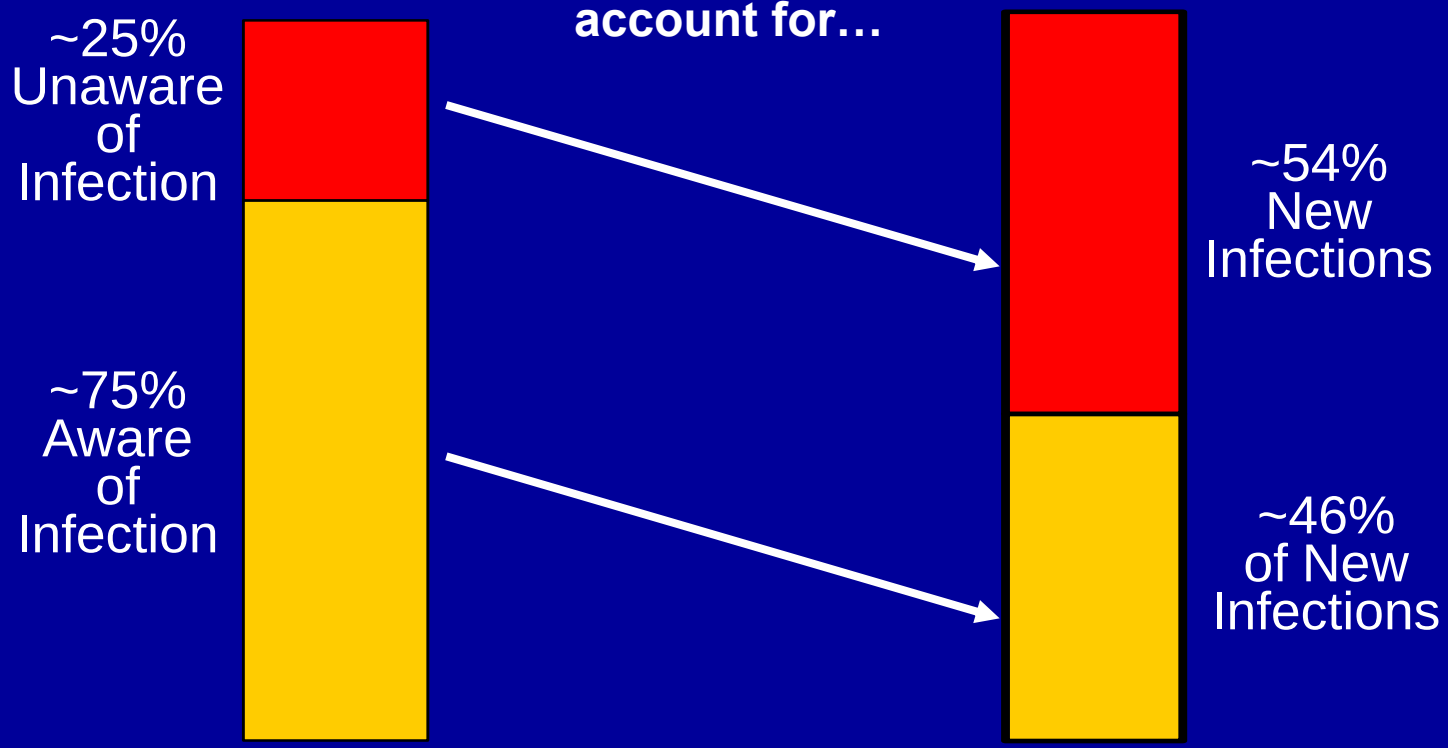


***Source*: http://www.cdc.gov/hiv/topics/surveillance/resources/factsheets/images/mmwr-incidence-2-large.gif**

Importance of HIV Testing

- Informs epidemiology
- Identification of infection at earlier stage
- Earlier treatment
  - Reduces mortality
  - Reduces risk for AIDS and non-AIDS conditions
- Knowing status reduces risk taking behavior

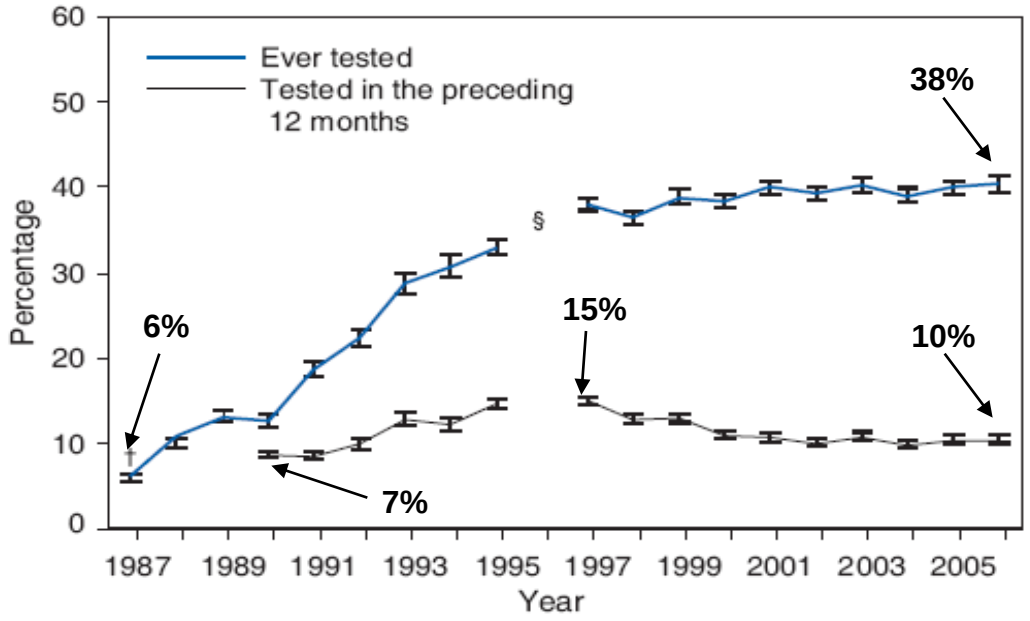
Most New Infections Transmitted by Persons who Do Not Know Their Status



Source: G. Marks et al. AIDS 2006

HIV Testing – United States 1987-2005
How well are we doing?

FIGURE. Percentage of persons aged 18–64 years who reported ever being tested for HIV* (excluding blood donations) and those persons who were tested for HIV in the preceding 12 months — National Heath Interview Survey, United States, 1987–2006



* Human immunodeficiency virus.
† Confidence interval.
§ Questions regarding HIV testing were not included in the 1996 National Health Interview Survey.

Characteristic, 2006	Tested in the past 12 months (%)
Age 18-24 years	15.7
Age 25-35 years	15.4
Black, non-Hispanic	21.7
Southern U.S.	12.1
Has HIV risk factors	23.0
Pregnant	60.7

Opt-out testing

Source: MMWR 57(31); 845-49, 2008

Table 3. Median results of the first CD4 test performed within 12 months after HIV diagnosis among adults and adolescents with HIV/AIDS, by year of diagnosis and selected characteristics, 2001–2003—33 states with confidential name-based HIV infection reporting

	2001			2002			2003		
	Median CD4 count[a]	25%–75%	Total No.	Median CD4 count[a]	25%–75%	Total No.	Median CD4 count[a]	25%–75%	Total No.
Race/ethnicity									
White, not Hispanic	217	74–468	6,695	218	78–478	6,939	199	72–444	7,042
Black, not Hispanic	164	40–362	10,937	156	41–348	10,514	154	38–347	10,665
Hispanic	158	48–324	3,812	151	44–339	3,791	151	48–313	3,802
Asian/Pacific Islander	167	46–337	142	170	48–360	162	179	69–389	223
American Indian/Alaska Native	198	72–434	114	299	90–467	127	186	48–385	109
Unknown	272	86–514	120	171	39–362	109	189	68–440	91
Total[d]	**175**	**50–389**	**21,820**	**170**	**50–393**	**21,642**	**167**	**50–374**	**21,932**

Note. These numbers do not represent actual cases in persons with a diagnosis of HIV infection or AIDS. Rather, these numbers are point estimates of case counts that have been adjusted for reporting delays and for redistribution of cases in persons initially reported without an identified risk factor. The estimates have not been adjusted for incomplete reporting.

Since 2000, the following states have had laws or regulations requiring confidential name-based HIV infection reporting: Alabama, Alaska, Arizona, Arkansas, Colorado, Florida, Idaho, Indiana, Iowa, Kansas, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, West Virginia, Wisconsin, and Wyoming. Since July 1997, Florida has had confidential name-based HIV infection reporting for new diagnoses only.

[a] When only CD4 percentage was available, a CD4 count was interpreted.

[b] With person at high risk or with a diagnosis of HIV infection or AIDS.

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

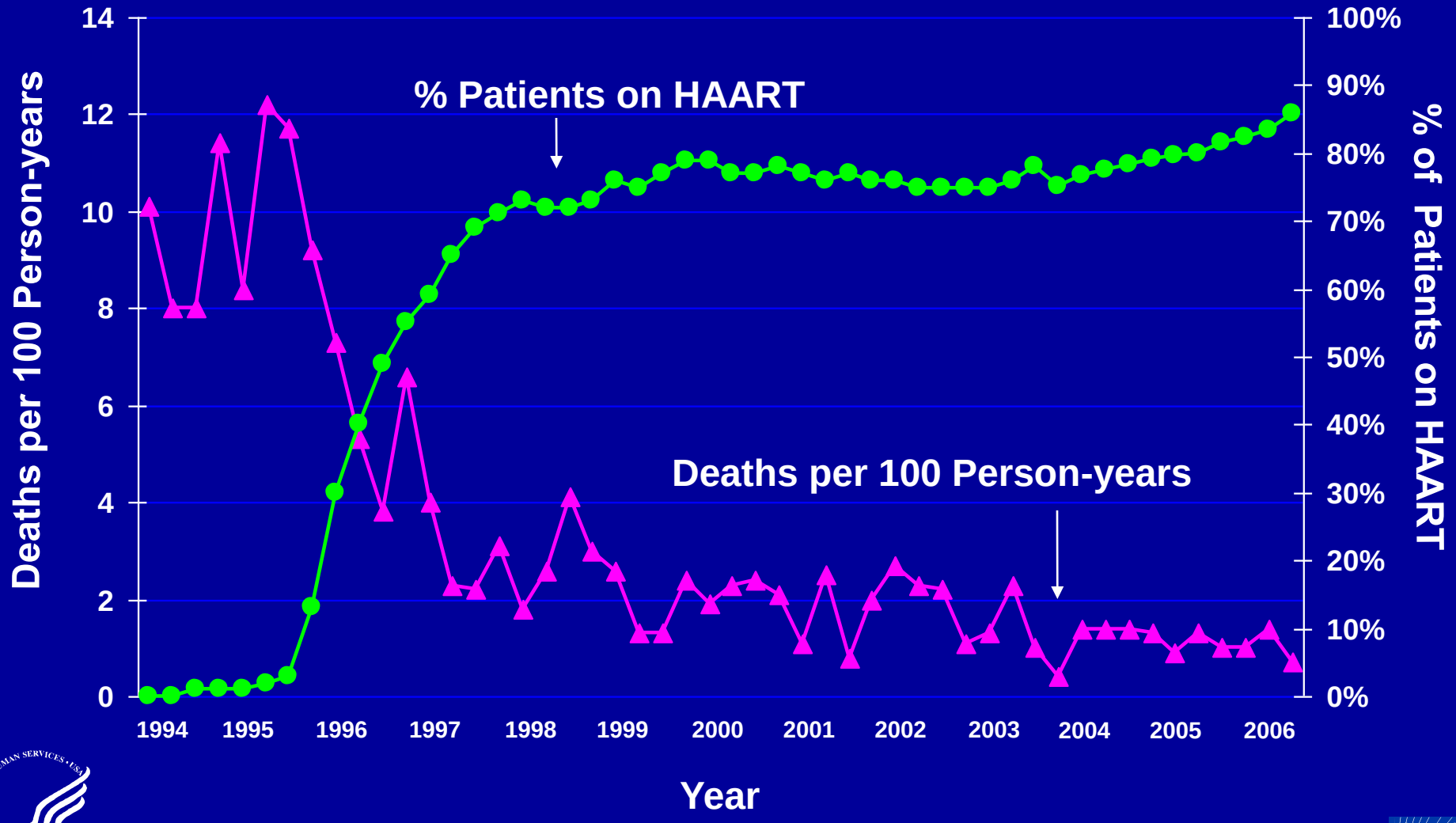
[d] Because column totals were calculated independently of the values for the subpopulations, the values in each column may not sum to the column total.

Source: Centers for Disease Control and Prevention. Reported CD4+ T-lymphocyte results for adults and adolescents with HIV/AIDS—33 states, 2005. *HIV/AIDS Surveillance Supplemental Report* 2005;11(No. 2). Available at: http://www.cdc.gov/hiv/stats/hasrlink.htm.

Treatment

Epidemiology of HIV Infection as a Chronic Disease

HAART Use Over Time, HOPS, 1994-2006



Changing Epidemiology of Chronic HIV Infection in the HAART Era

- Significantly prolonged survival, often disease-free:
  - 10.5 years (1996) → 22.5 years (2005) after diagnosis

    (Harrison et al., *J Acquir Immune Defic Syndr* 2010, using CDC HIV surveillance data)

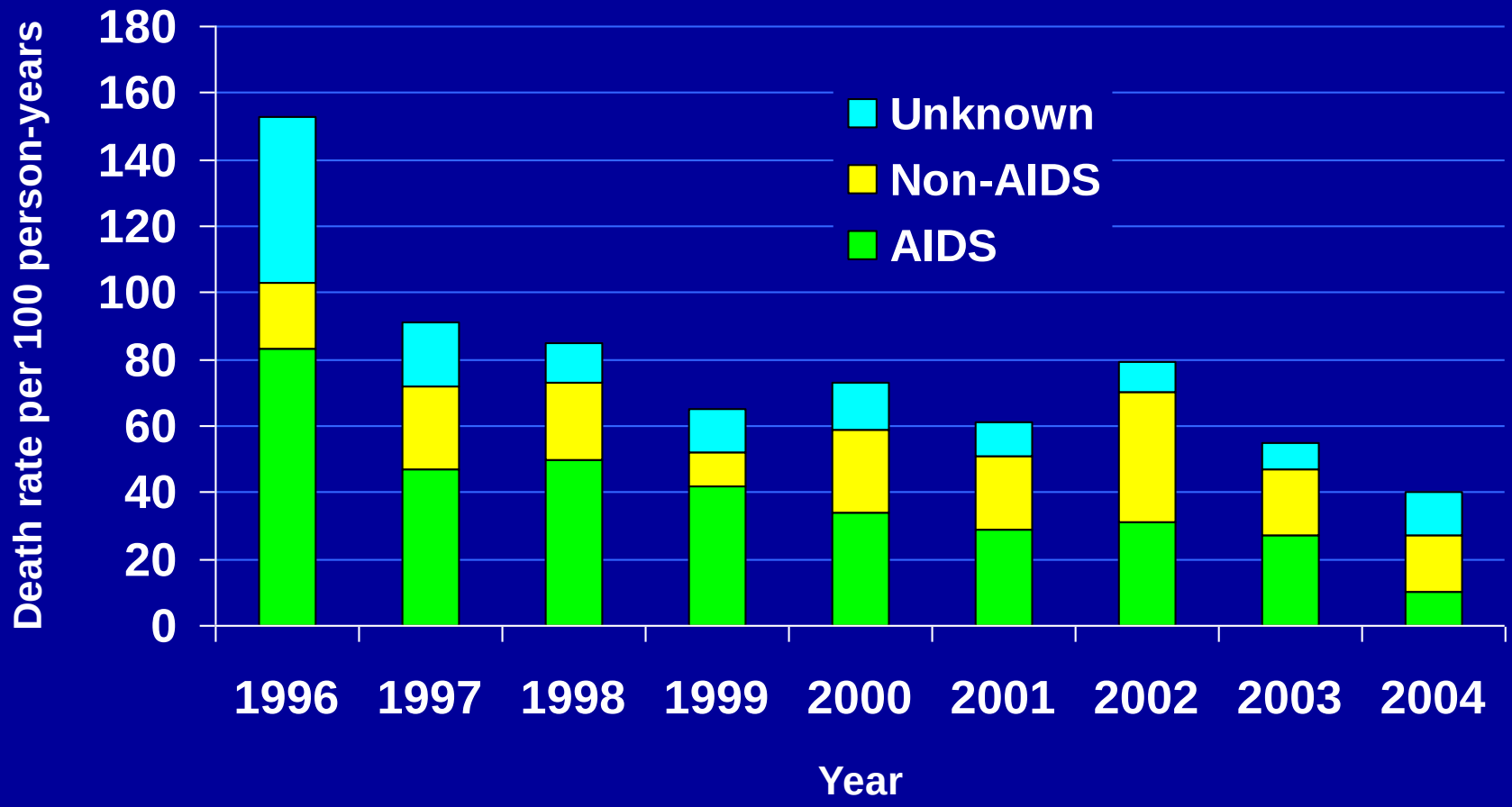
- "The life expectancy of asymptomatic HIV-infected patients who are still treatment-naive and have not experienced a CDC-B or C event at 24 weeks after diagnosis approaches that of non-infected individuals."

  van Sighem et al., *AIDS* 2010, ATHENA cohort)

Changing Epidemiology of Chronic HIV Infection in the HAART Era

- Increasing pool of persons living with and capable of transmitting HIV infection
  - On-going need for primary HIV prevention
- Increasing burden of non-AIDS-defining illness (from infectious disease back to internal medicine)
  - Metabolic disease (e.g., metabolic syndrome, osteopenia, lipodystrophy)
  - End-organ disease (e.g., cardiovascular, renal, hepatic)
  - Malignancy
  - Neurocognitive dysfunction

Causes of Mortality - HOPS



F Palella et al., *JAIDS* 2006;43: 27-34

Non-AIDS-Defining Morbidity and Mortality in Chronic HIV Infection

1) Host and Social Context

- Coinfections (HCV, HBV, HPV, HSV)
- Socioeconomic status and access to care
- Tobacco, alcohol and drug use
- "Return to health" → obesity, inactivity

2) Virus

- HIV damage to other target cells
- Chronic inflammation

3) Therapy

- Antiretroviral toxicity
- Chemotherapy
- Steroids
- Hormonal therapy (TSH, HGH)

See the blinking red light, stupid?
Your time is up.

Have Dr. Squires introduce
Dr. Horberg, already!