



HIV Incidence Surveillance

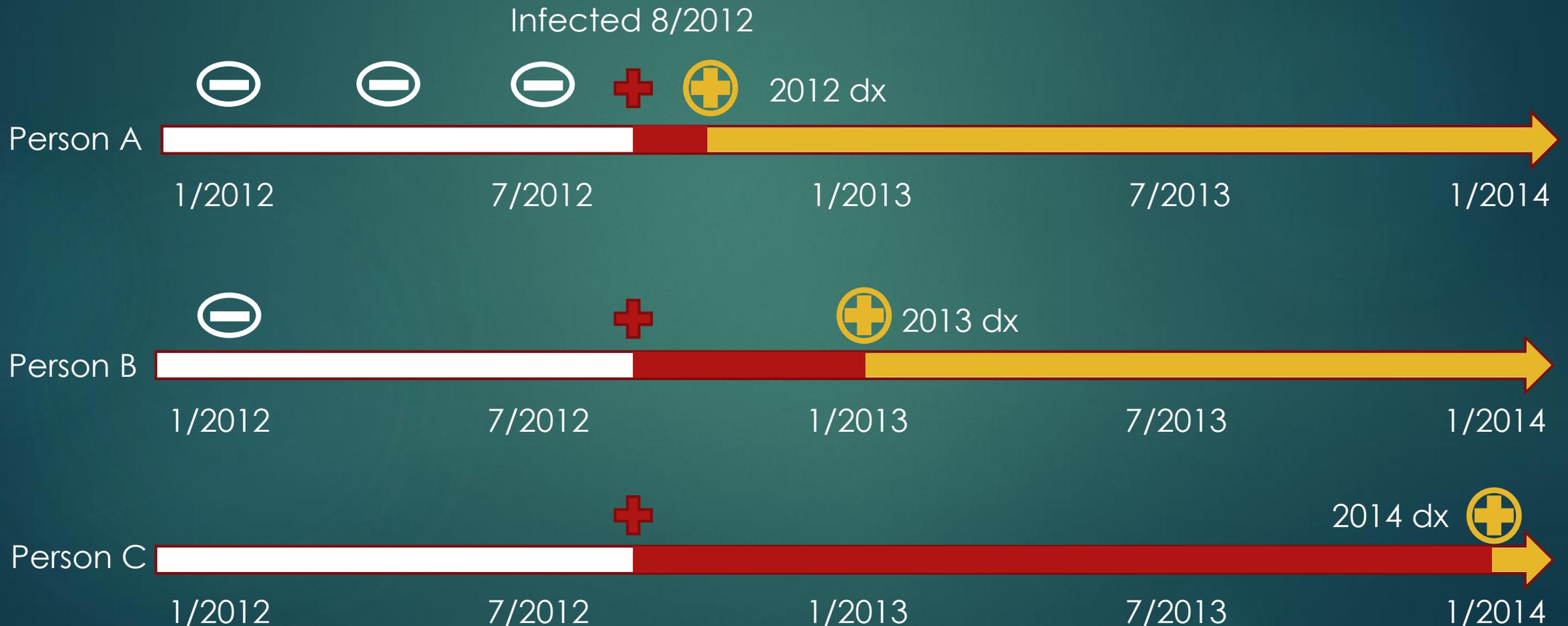
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Infectious Disease Surveillance and HIV

- ▶ Incidence: occurrence of an infection
- ▶ Most infectious diseases have short time between infection and detection
- ▶ HIV may have large delay between infection and detection
 - ▶ Reliant on patient seeking out or receiving testing services
 - ▶ Infection cannot be missed due to resolution

New Infections Versus New Diagnoses



New Infections Versus New Diagnoses

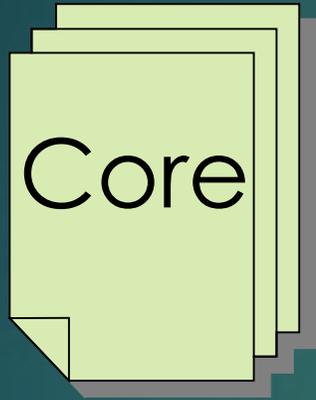
New Diagnoses

- ▶ Date patient is determined to be HIV-positive
- ▶ Requires patient to be seen for testing
- ▶ Measured as part of reporting responsibilities for local surveillance units
- ▶ Can report exact day of diagnosis
- ▶ Can report exact number for a given year

New Infections

- ▶ Date patient is infected with HIV
- ▶ Patient has not necessarily been tested
- ▶ No action to signal surveillance work required
- ▶ Can only estimate year of infection
- ▶ Cannot report exact number for a given year

Components of HIV Incidence Surveillance



Core HIV surveillance data



Testing and treatment history form



Recency assay on diagnostic specimen



Estimates of New HIV Infections in Texas

Core Surveillance and Incidence Eligibility

- ▶ For a specimen to be eligible for submission by Texas for recency testing, the patient must:
 - ▶ Have a positive Western Blot or IFA, detectable viral load, **OR** Multispot result of “HIV-1 only” on file
 - ▶ Have had specimen taken no more than 3 months after initial diagnosis
 - ▶ Be at least 13 years old at time of diagnosis
 - ▶ Be a resident of Texas at diagnosis
 - ▶ Not diagnosed with AIDS within 6 months of HIV diagnosis

Testing and Treatment History Form

- ▶ Allow for collection of data from many different sources:
 - ▶ Medical record abstraction
 - ▶ Medical provider report
 - ▶ Patient interview
- ▶ Recency results alone can overestimate true incidence
 - ▶ 2-3% of cases misclassified as “long-term”
- ▶ Provides information about previous HIV testing history, frequency of HIV testing, and antiretroviral use history
 - ▶ Helps adjust incidence estimates against overestimation

Remnant Specimen Collection

- ▶ Texas HIS collaborates with both public and private laboratories to obtain remnant specimens from positive diagnostic tests
 - ▶ IFA
 - ▶ Western Blot
 - ▶ Multispot
- ▶ Staff work directly with 9 local labs to receive and process remnant specimens
 - ▶ **Dallas County, Tarrant County, JPS, Parkland, DSHS, UTMB, University, San Antonio Metro, CDD**
- ▶ Indirectly work with 5 national laboratories to receive remnant specimens
 - ▶ **LabCorp** (40% of all specimens), **Quest**, ARUP, Mayo, Warde

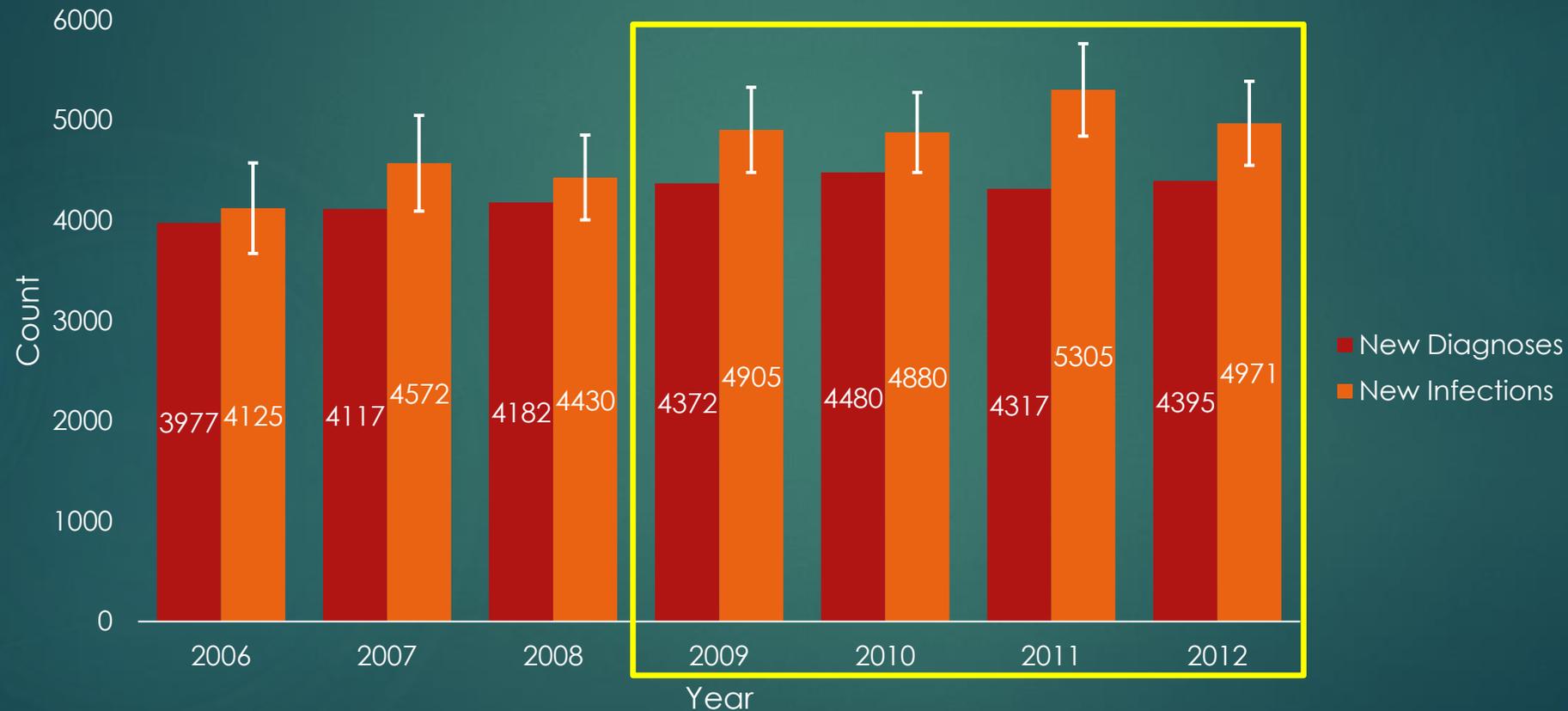
Interpreting Estimates

- ▶ Estimation programs produce **point estimates** and **95% confidence intervals**
 - ▶ Point estimates represent best “guess” of true count of new infections based on sample of data available
 - ▶ 95% confidence intervals gives the range of values with 95% probability to contain the true number of infections occurring in a community
- ▶ Rates may appear to be different, but difference is not statistically significant

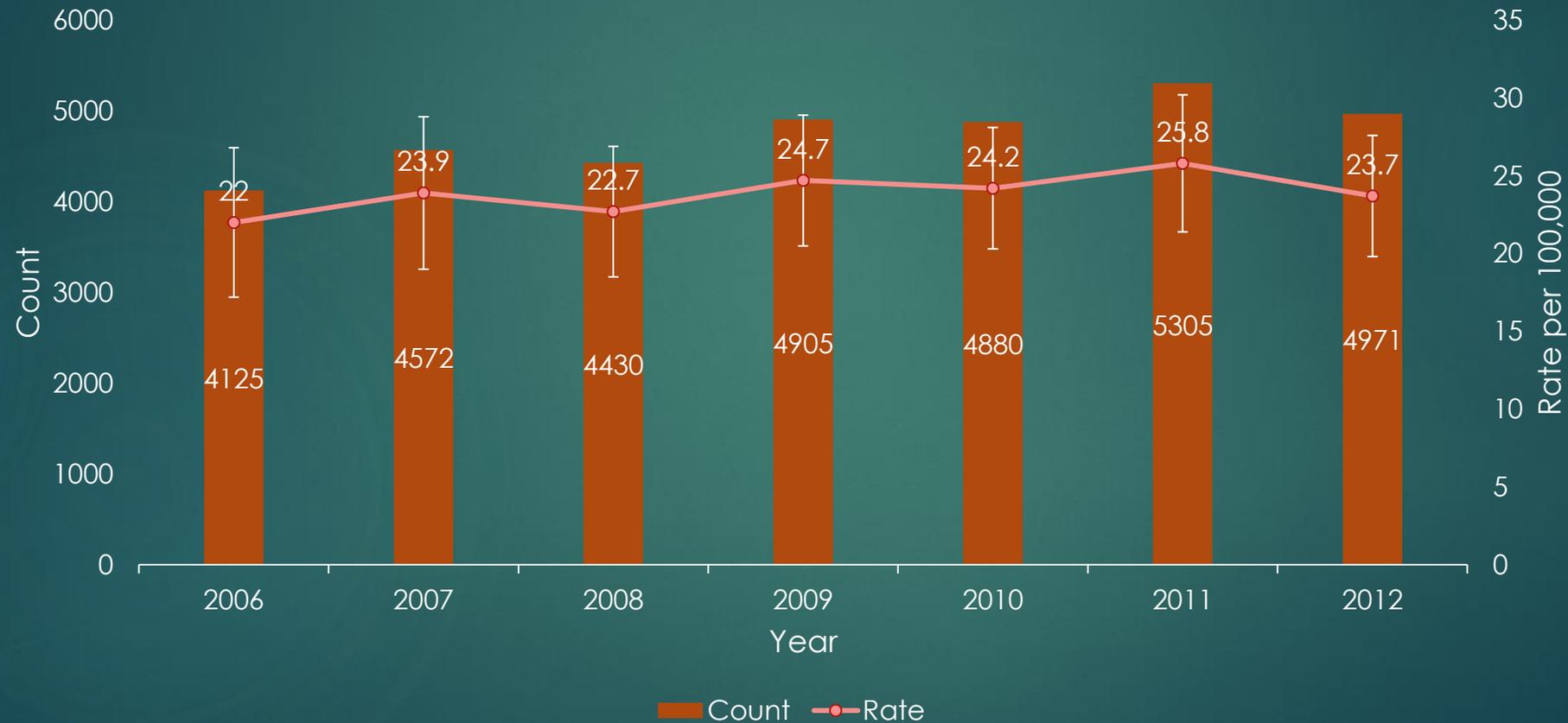


Texas HIV Incidence Estimates, 2006-2012

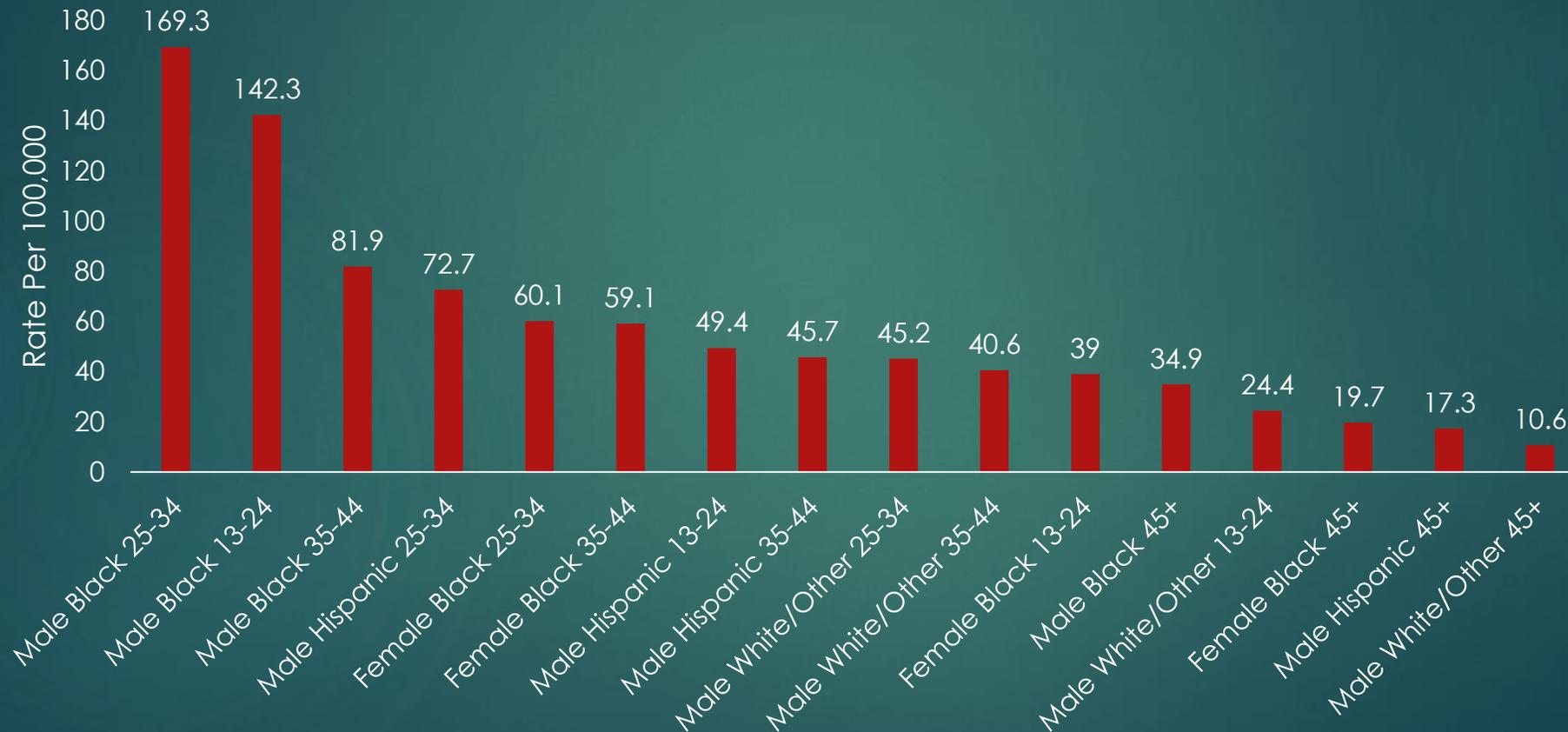
Comparison of New HIV Diagnoses and New HIV Infections, Texas, 2006-2012



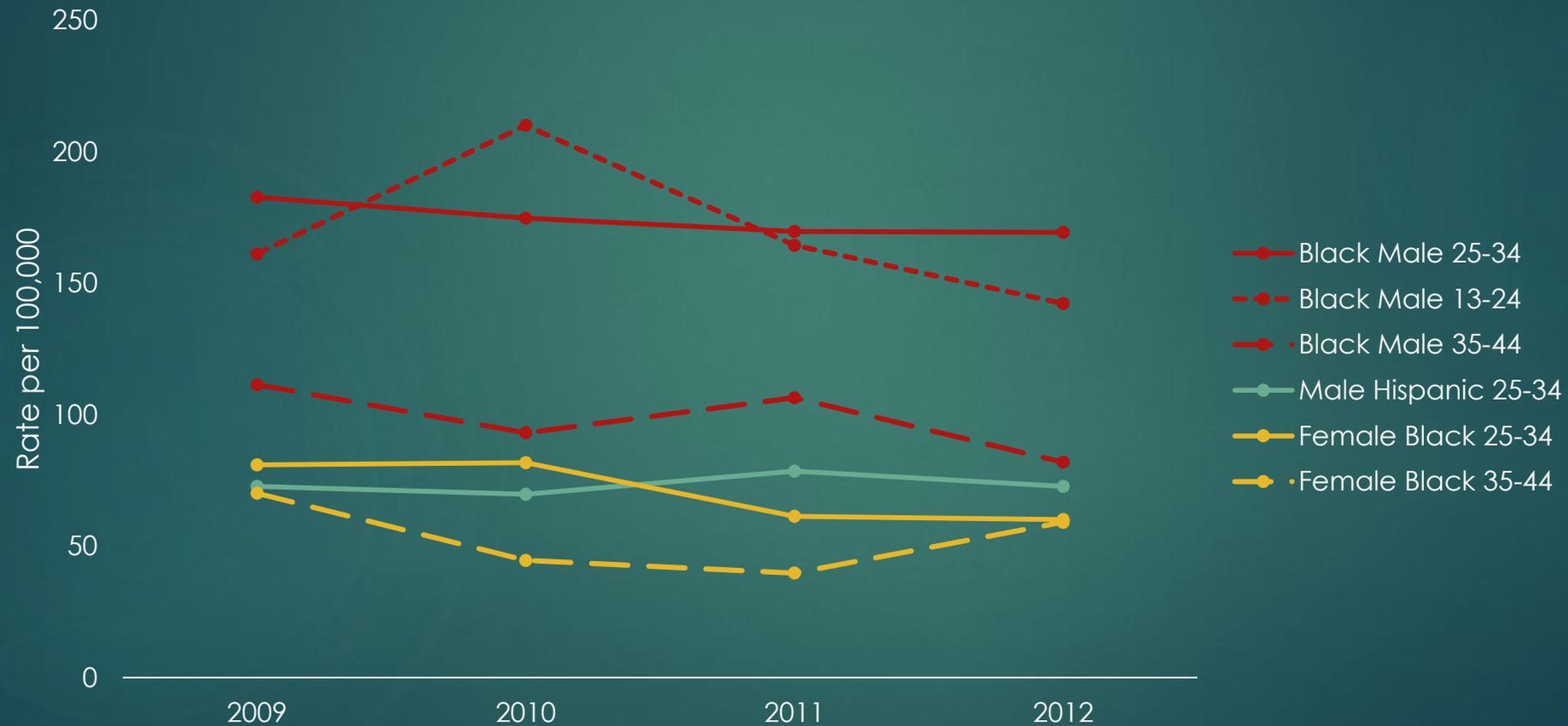
HIV Incidence Count and Rate, Texas, 2006-2012



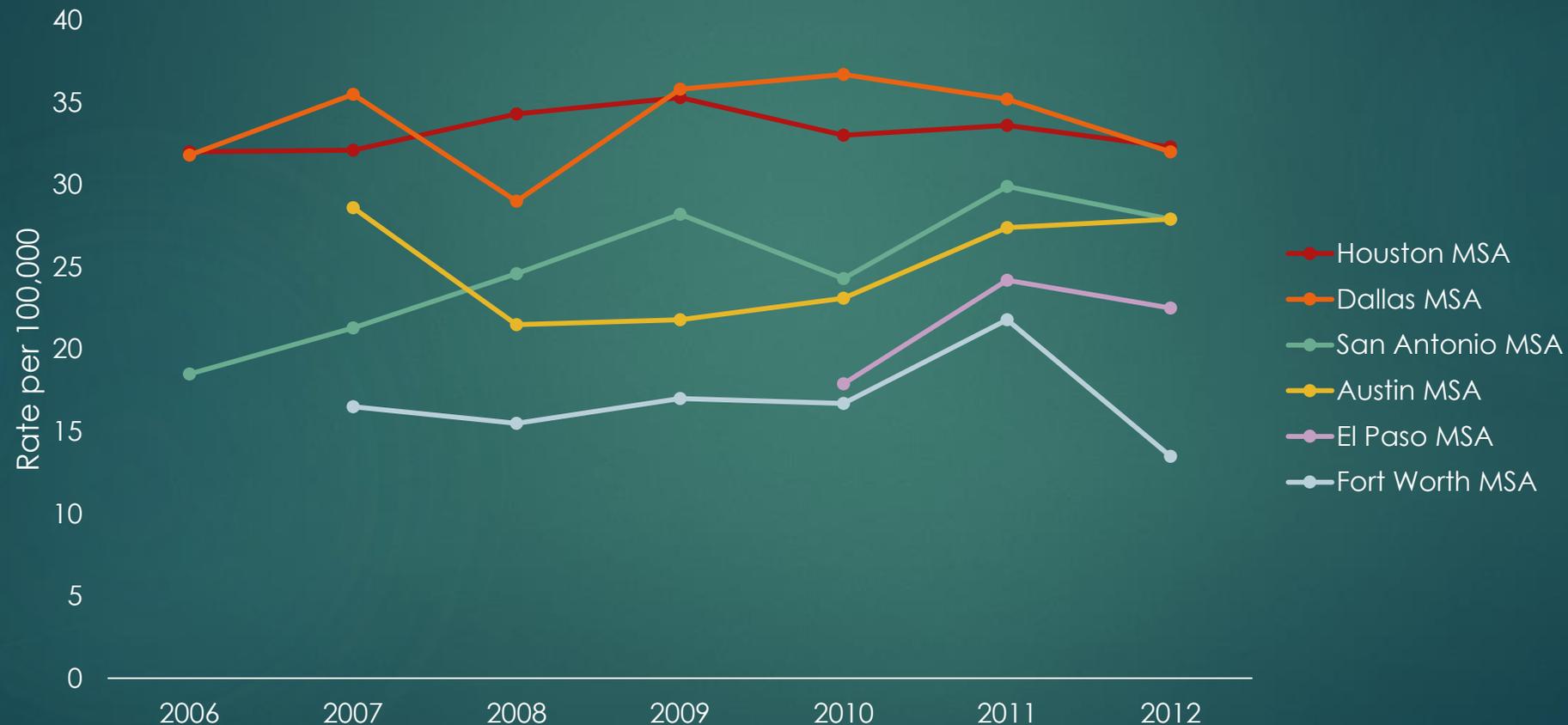
HIV Incidence Rate By Race, Sex, and Age at Infection, Texas, 2012



HIV Incidence Rate Among Selected Race, Sex, and Age at Infection Groups, 2009-2012



HIV Incidence by Metropolitan Areas (MSA), Texas, 2009-2012





Dallas and Fort Worth MSA Incidence Estimates, 2006-2012

HIV Incidence Rate by MSA, 2006-2012



HIV Incidence Rate by Sex, Dallas and Fort Worth MSA, 2006-2012



HIV Incidence Rate by Race, Dallas MSA*, 2006-2012



*Insufficient data on Fort Worth Black, Hispanic, and White/Other

HIV Incidence Rate by Age at Infection, Dallas and Fort Worth MSA, 2006-2012



HIV Incidence by Mode of Transmission, 2006-2012





Questions?