Estimated HIV Incidence and Prevalence in the United States, 2010–2016

Estimates of HIV Incidence and Prevalence

- Based on National HIV Surveillance System (NHSS) data reported through June 2018
  - Data from the 50 states and the District of Columbia
  - Data for adults and adolescents aged ≥13 years
- Calculated using the first CD4 test after HIV diagnosis and a CD4 depletion model indicating disease progression*
- Provides the following estimates:
  - HIV incidence
  - HIV prevalence (persons living with diagnosed or undiagnosed infection)
  - Percentage of diagnosed HIV infection

Estimates of HIV Incidence

- Incidence measures the number of HIV infections that occurred during a specified time (e.g., year).

    – Diagnoses during a specified time refer to infections among persons who may have been infected for a number of years.

- Incidence estimates can be used to assess changes in characteristics of persons most at risk for acquiring HIV infection.

Estimates of HIV Prevalence

- Prevalence refers to the number of persons living with HIV at a given time regardless of the time of infection or whether the person has received a diagnosis.

- Prevalence and the percentage of diagnosed infections reflect the number of persons in need of care and treatment services for HIV infection.

- Calculation of percentage of diagnosed HIV

  – Numerator: Persons aged ≥13 years living with diagnosed HIV infection year-end 2016

  – Denominator: Estimated number of persons aged ≥13 years living with diagnosed or undiagnosed HIV infection year-end 2016

Reliability Standards

- Relative standard errors (RSEs) were calculated for the incidence and prevalence estimates and used to determine reliability.

- All highlights are based on reliable estimates (RSE <30%).

- Estimates with RSEs of 30%–50% are displayed with a footnote that they should be used with caution because they do not meet the standard of reliability.

- Estimates with RSEs of >50% are considered statistically unreliable; they are not displayed because they do not meet the minimum standard of reliability.
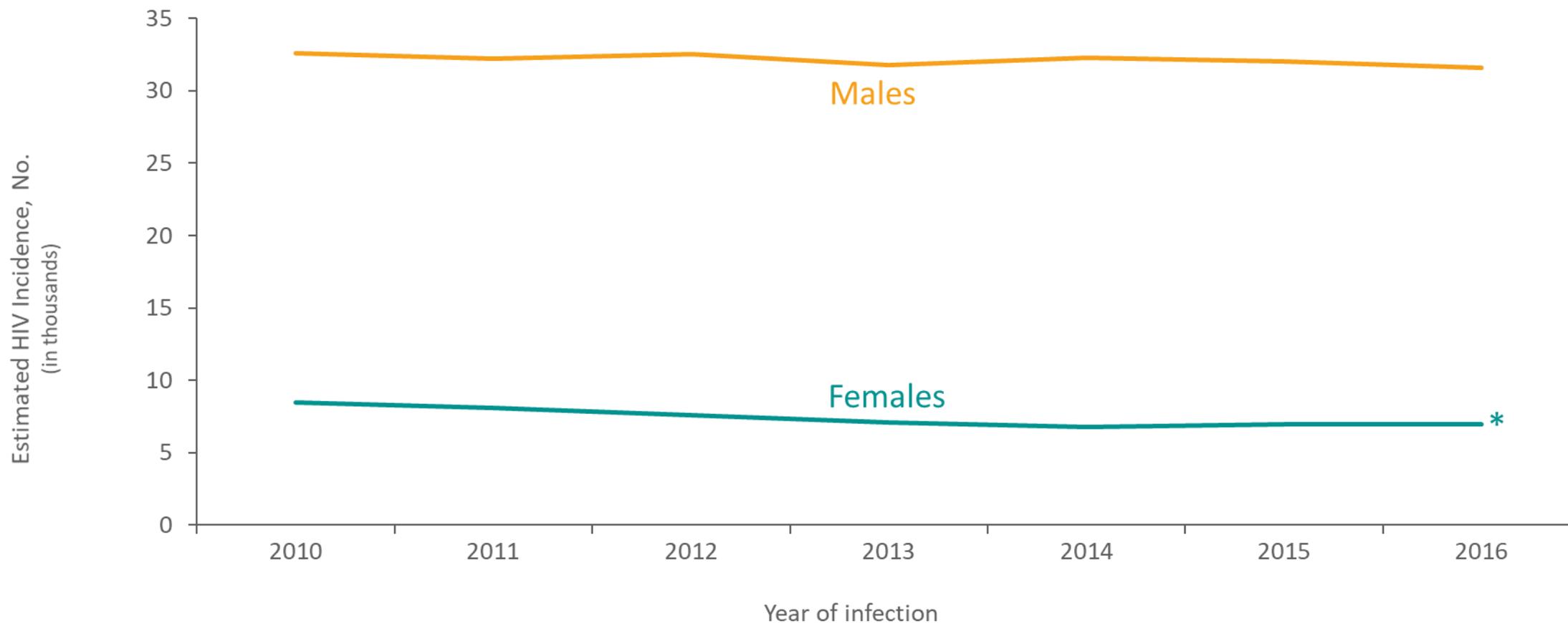
Estimated HIV Incidence among Persons Aged ≥13 Years 2010–2016—United States
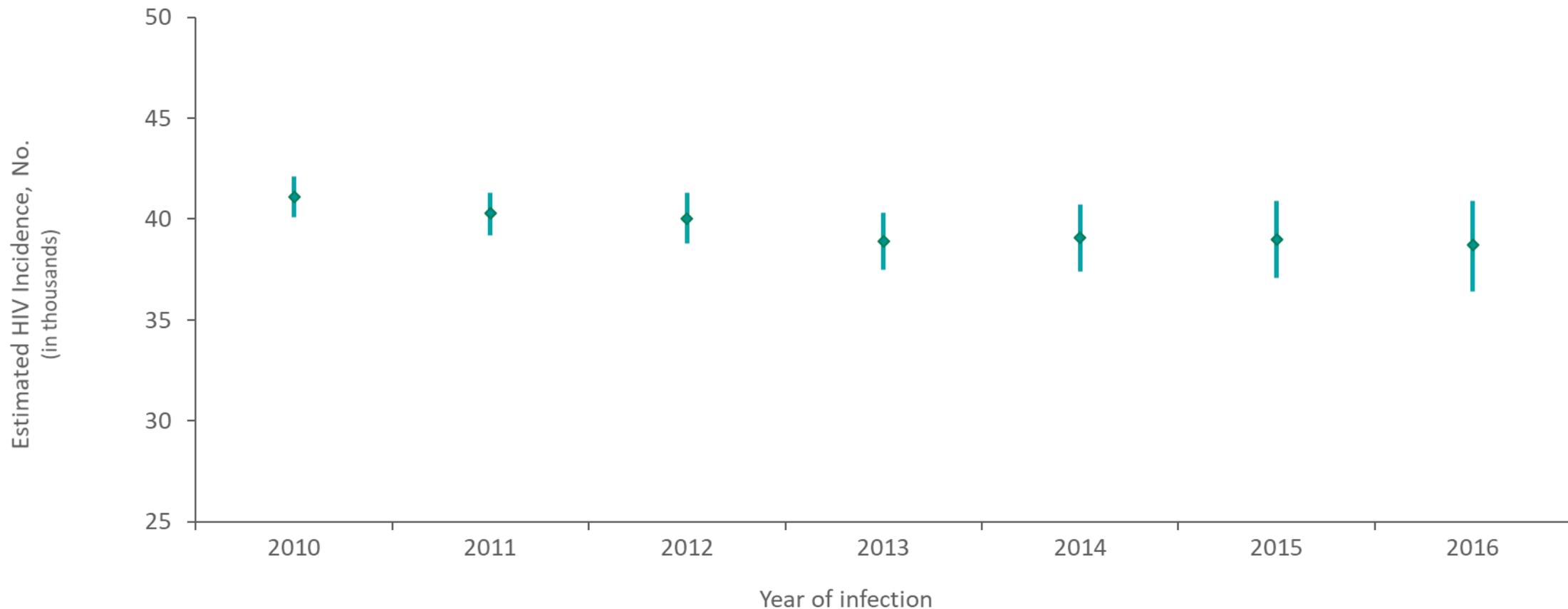
Note. Estimates were derived from a CD4 depletion model using HIV surveillance data. Bars indicate the range of the lower and upper bounds of the 95% confidence intervals for the point estimate.

Estimated HIV Incidence among Persons Aged ≥13 Years, by Sex 2010–2016—United States
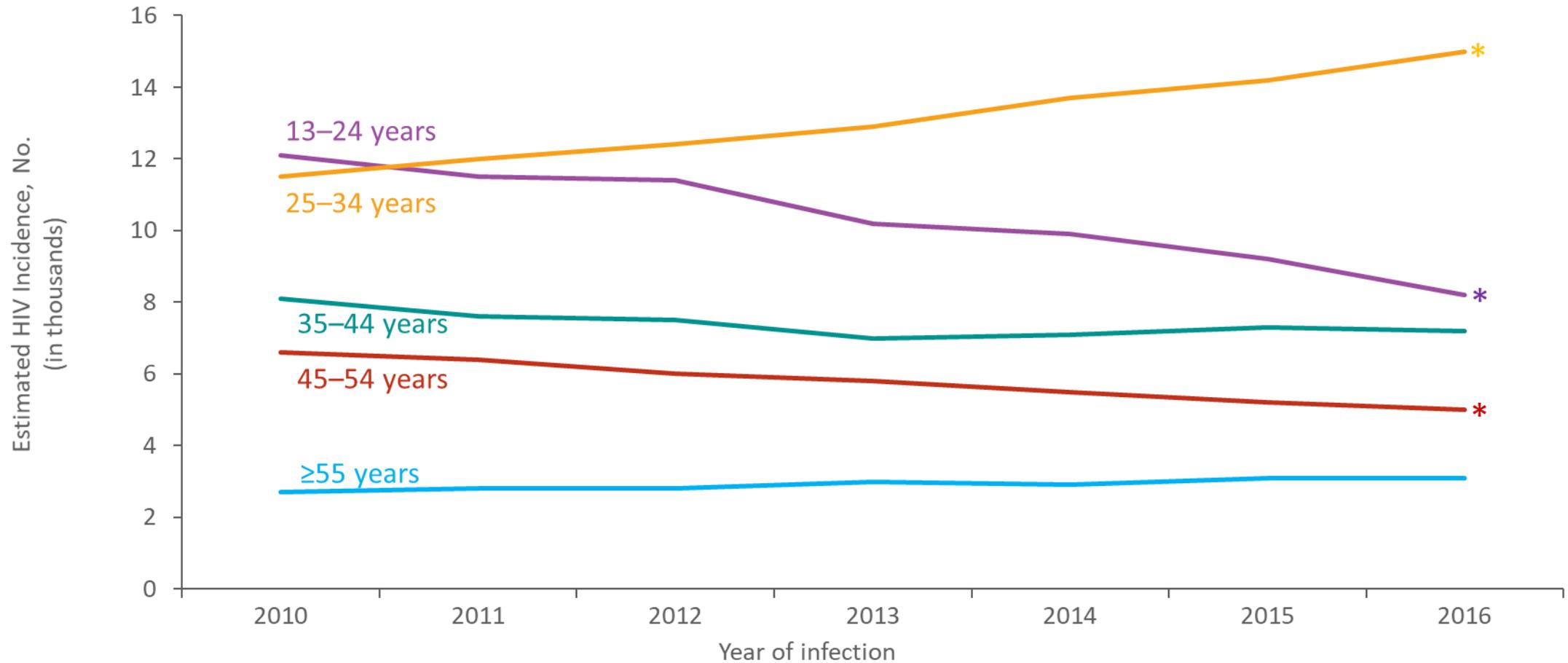

Note. Estimates were derived from a CD4 depletion model using HIV surveillance data.
* Difference from the 2010 estimate was deemed statistically significant (P < .05).

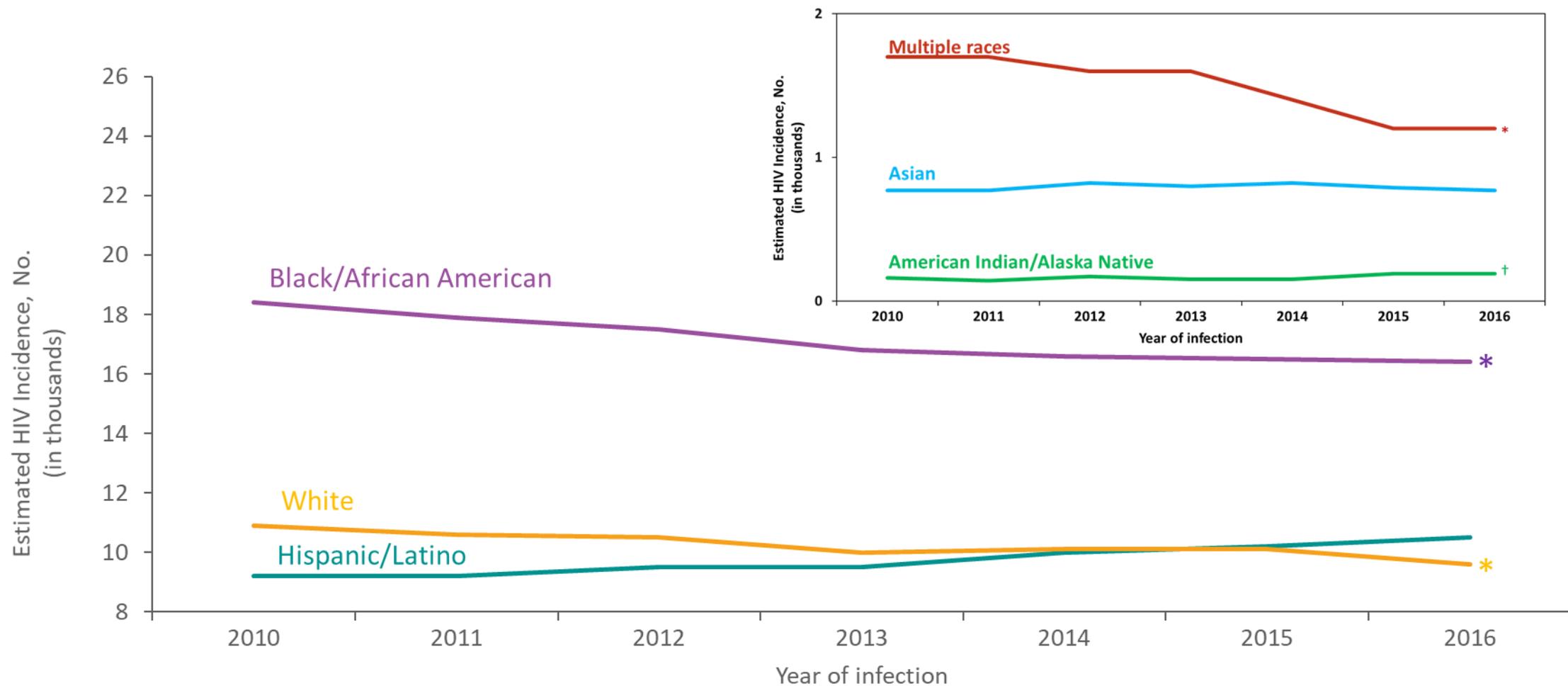**Estimated HIV Incidence among Persons Aged ≥13 Years, by Age 2010–2016—United States**

Note. Estimates were derived from a CD4 depletion model using HIV surveillance data.
* Difference from the 2010 estimate was deemed statistically significant (P < .05).

Estimated HIV Incidence among Persons Aged ≥13 Years, by Race/Ethnicity 2010–2016—United States

Estimated HIV Incidence among Persons Aged ≥13 Years, by Transmission Category 2010–2016—United States

Note. Estimates were derived from a CD4 depletion model using HIV surveillance data. Data have been statistically adjusted to account for missing transmission category. Heterosexual contact is with a person known to have, or to be at high risk for, HIV infection.
* Difference from the 2010 estimate was deemed statistically significant (P < .05).

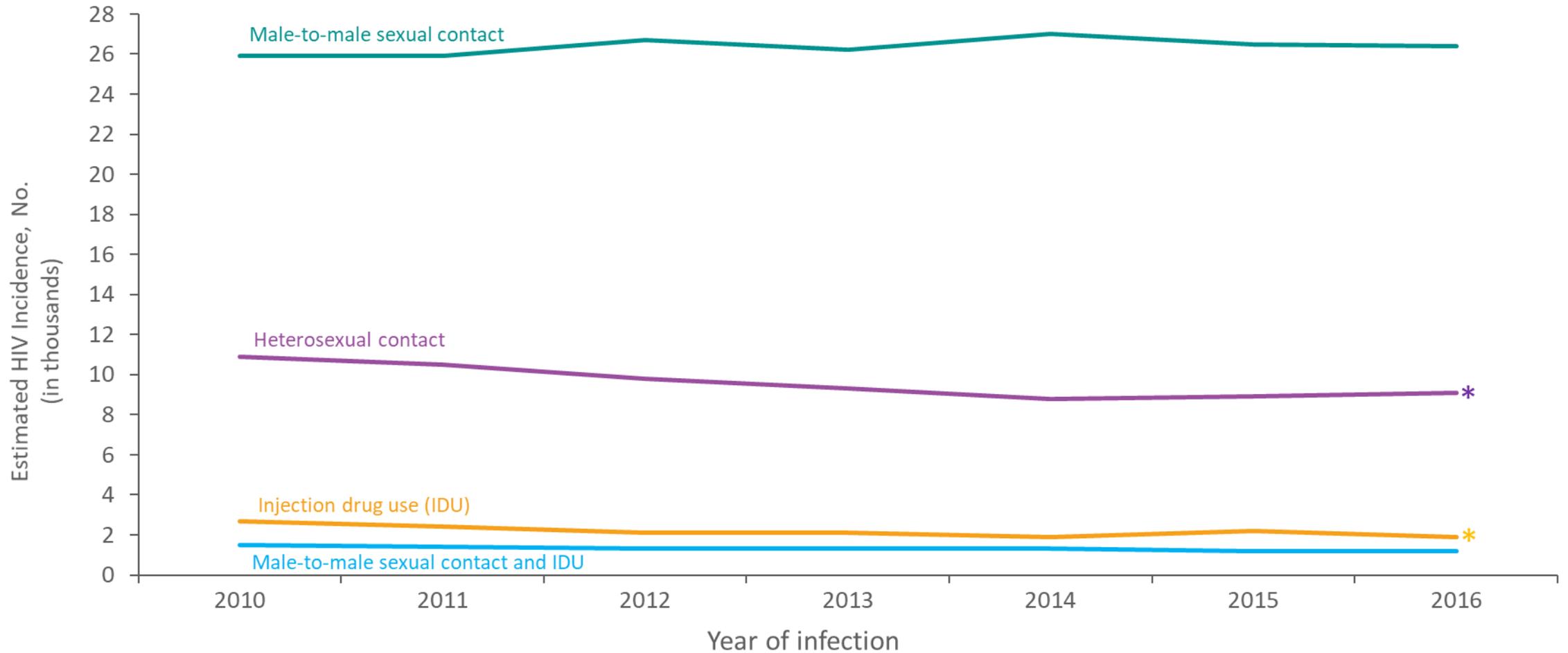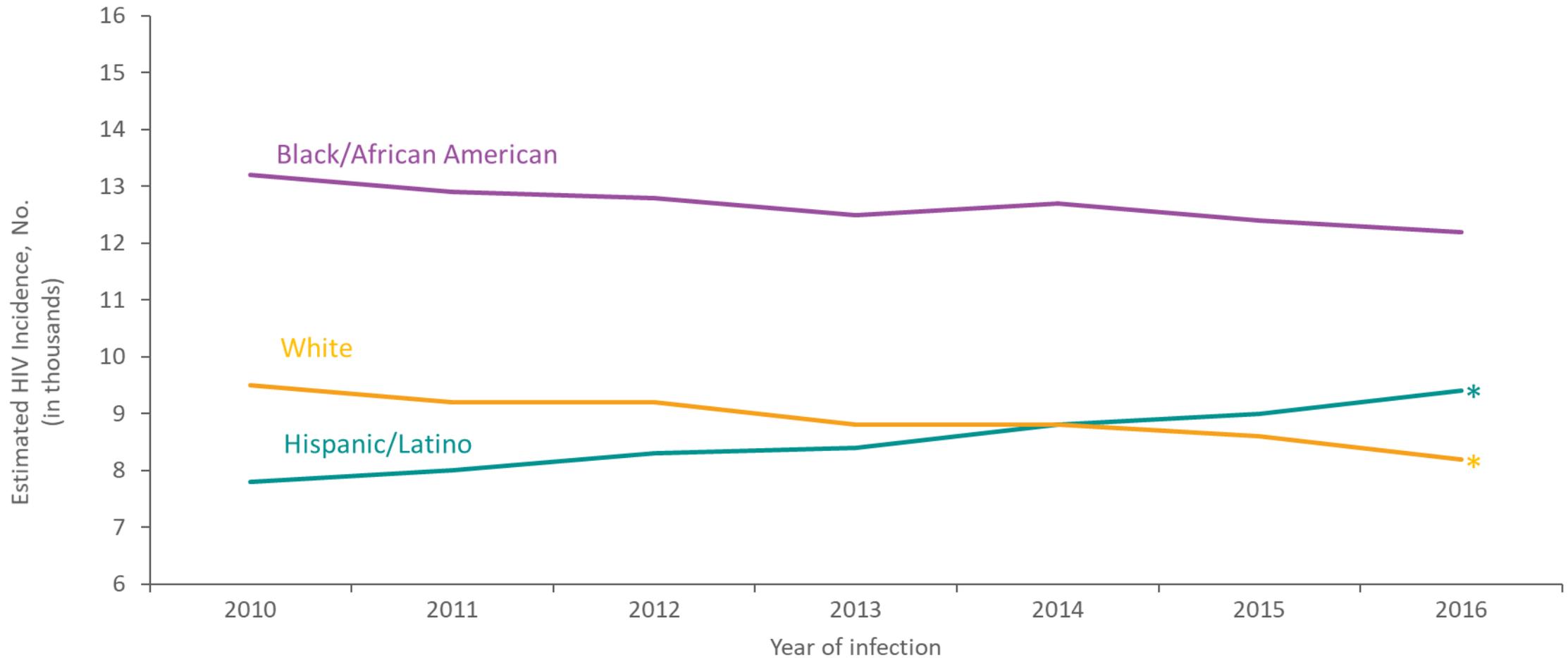# Estimated HIV Incidence among Males Aged ≥13 Years by Race/Ethnicity, 2010–2016—United States

Note. Estimates were derived from a CD4 depletion model using HIV surveillance data. Hispanics/Latinos can be of any race.
* Difference from the 2010 estimate was deemed statistically significant (P < .05).

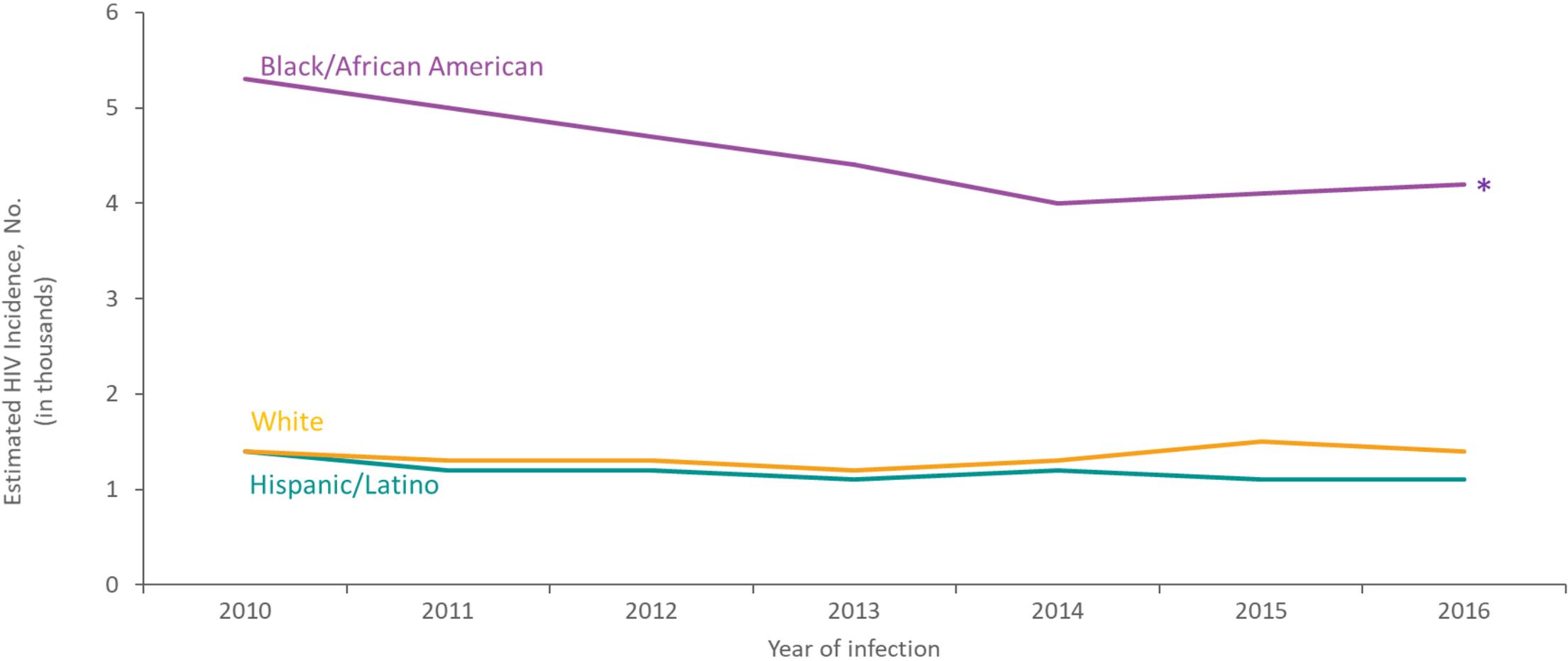**Estimated HIV Incidence among Females Aged ≥13 Years by Race/Ethnicity, 2010–2016—United States**

Note. Estimates were derived from a CD4 depletion model using HIV surveillance data. Hispanics/Latinos can be of any race.
* Difference from the 2010 estimate was deemed statistically significant (P < .05).

Estimated HIV Incidence among Black/African American Males Aged ≥13 Years, by Age, 2010–2016—United States

Note. Estimates were derived from a CD4 depletion model using HIV surveillance data.
* Difference from the 2010 estimate was deemed statistically significant (P < .05).

Estimated HIV Incidence among Black/African American Females Aged ≥13 Years, by Age, 2010–2016—United States

Note. Estimates were derived from a CD4 depletion model using HIV surveillance data.
*Difference from the 2010 estimate was deemed statistically significant (P < .05).

Estimated HIV Incidence among Hispanic/Latino Males Aged ≥13 Years by Age, 2010–2016—United States

Note. Estimates were derived from a CD4 depletion model using HIV surveillance data. Hispanics/Latinos can be of any race.
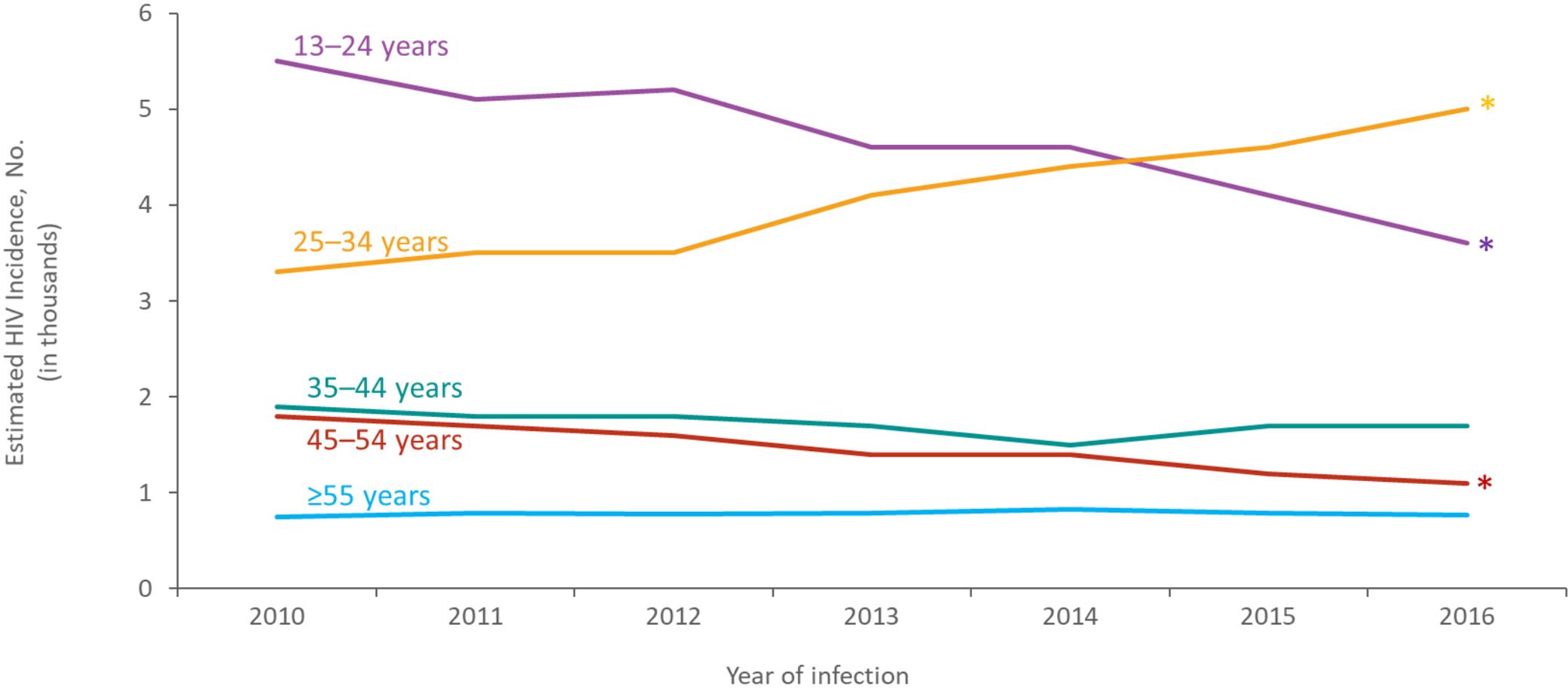*Difference from the 2010 estimate was deemed statistically significant (P < .05).
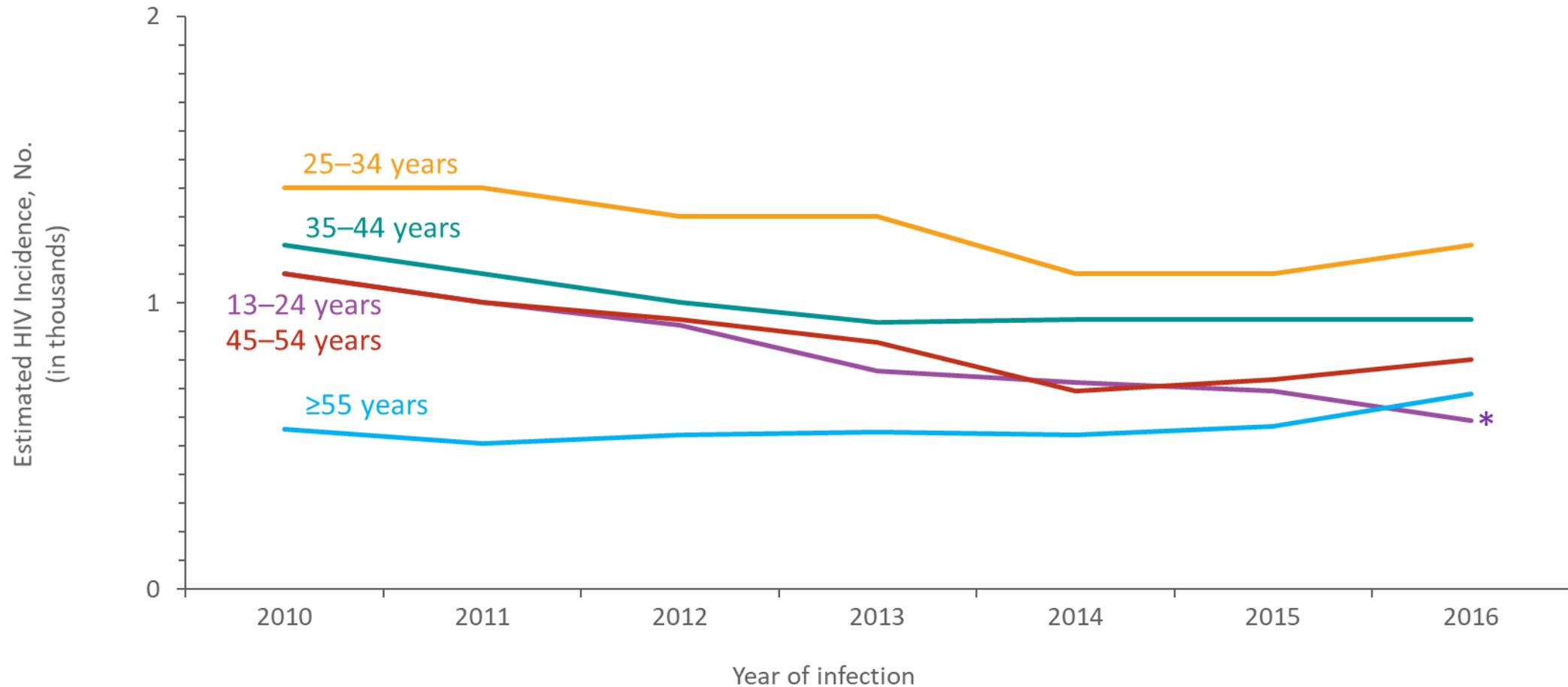†Estimates should be used with caution because they do not meet the standard of reliability.

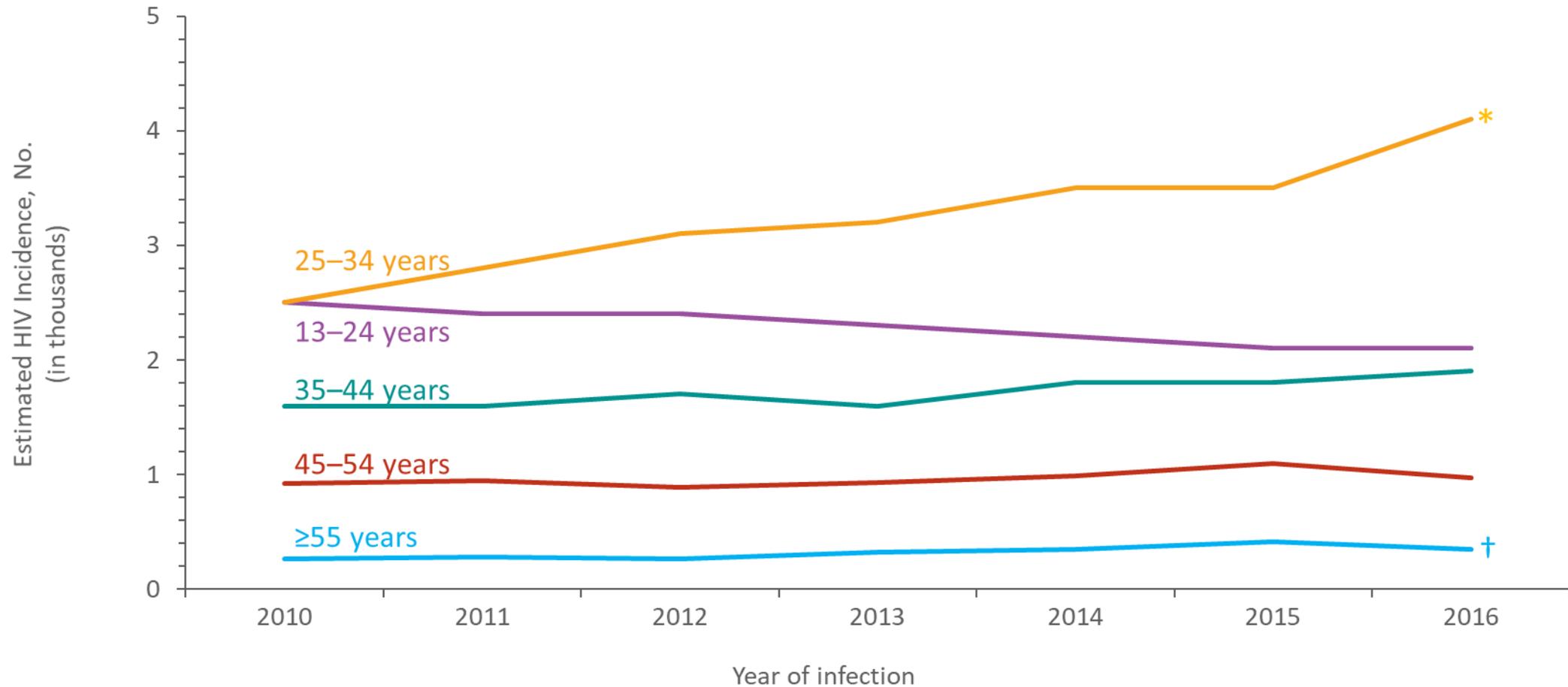**Estimated HIV Incidence among White Males Aged ≥13 Years by Age, 2010–2016—United States**

Note. Estimates were derived from a CD4 depletion model using HIV surveillance data.
*Difference from the 2010 estimate was deemed statistically significant (P < .05).

Estimated HIV Incidence and Population among Persons Aged ≥13 Years by Race/Ethnicity, 2016—United States

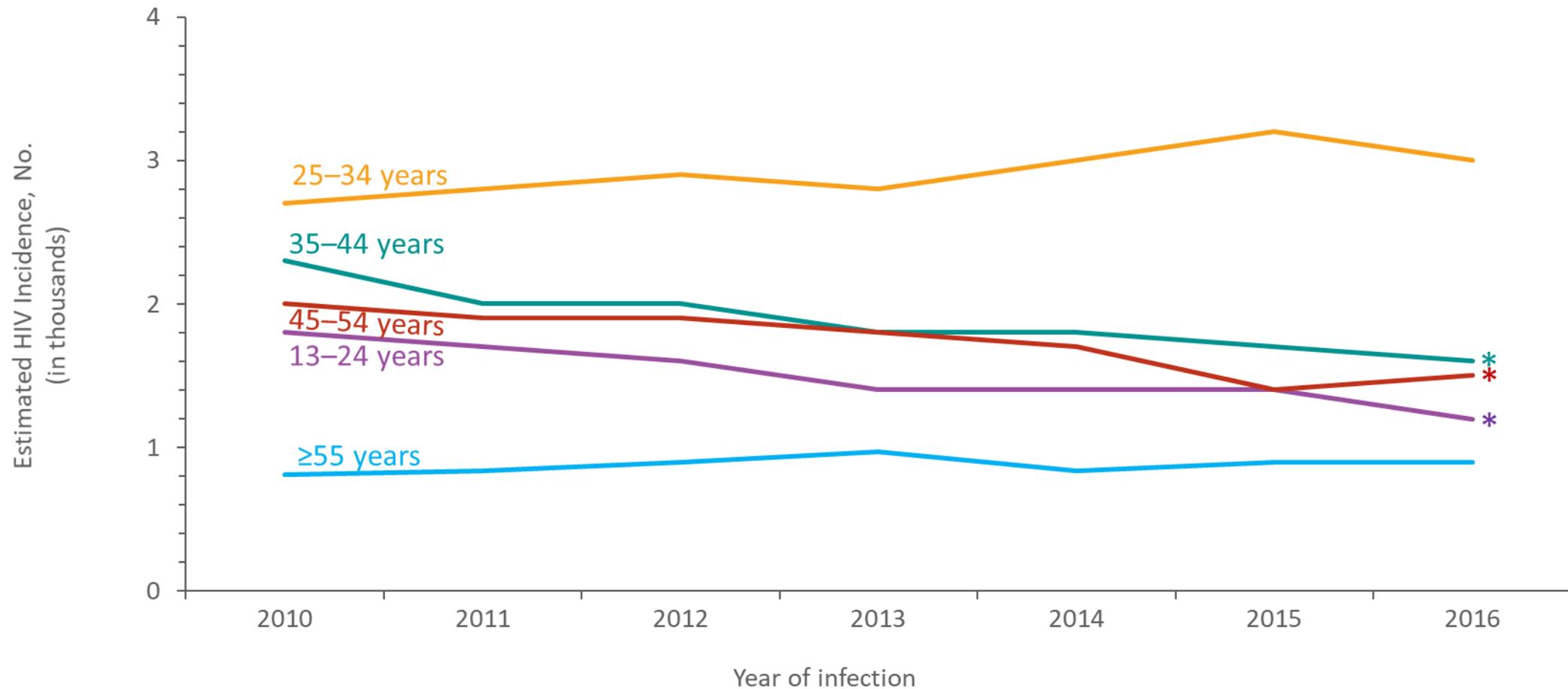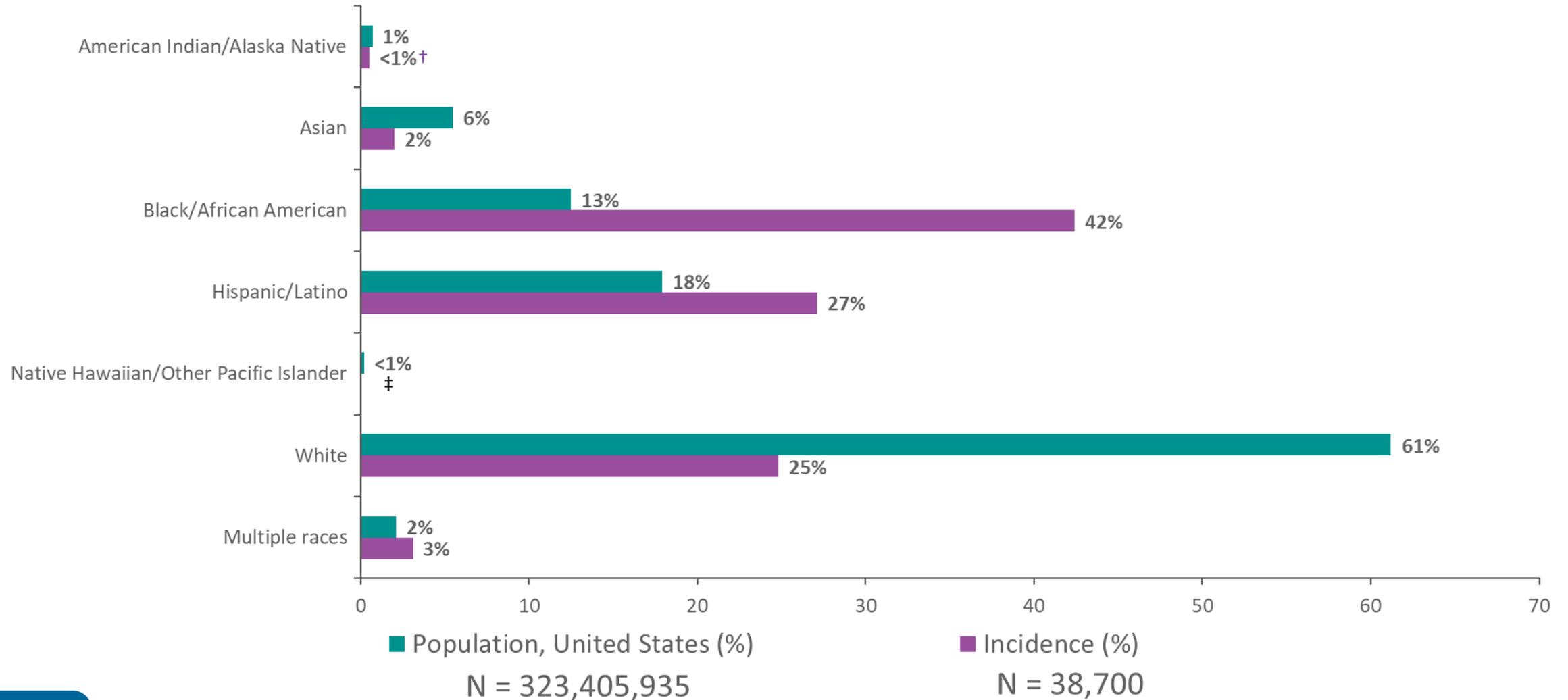

Population, United States (%)   N = 323,405,935

Incidence (%)   N = 38,700

Note. Estimates were derived from a CD4 depletion model using HIV surveillance data. Hispanics/Latinos can be of any race.
† Estimate should be used with caution because it does not meet the standard of reliability.
‡ Incidence estimate is not provided for Native Hawaiians/other Pacific Islanders because it does not meet the minimum standard of reliability.

Estimated HIV Incidence among Females Aged ≥13 Years by Transmission Category, 2010–2016—United States

Estimated HIV Incidence among Males Aged ≥13 Years by Transmission Category, 2010–2016—United States

Note. Estimates were derived from a CD4 depletion model using HIV surveillance data. Data have been statistically adjusted to account for missing transmission category. Heterosexual contact is with a person known to have, or to be at high risk for, HIV infection.
* Difference from the 2010 estimate was deemed statistically significant (P < .05).

Estimated HIV Incidence among Men Who Have Sex with Men Aged ≥13 Years by Race/Ethnicity, 2010–2016—United States

Note. Estimates were derived from a CD4 depletion model using HIV surveillance data. Data have been statistically adjusted to account for missing transmission category. 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. Hispanics/Latinos can be of any race.

*Difference from the 2010 estimate was deemed statistically significant (P < .05).

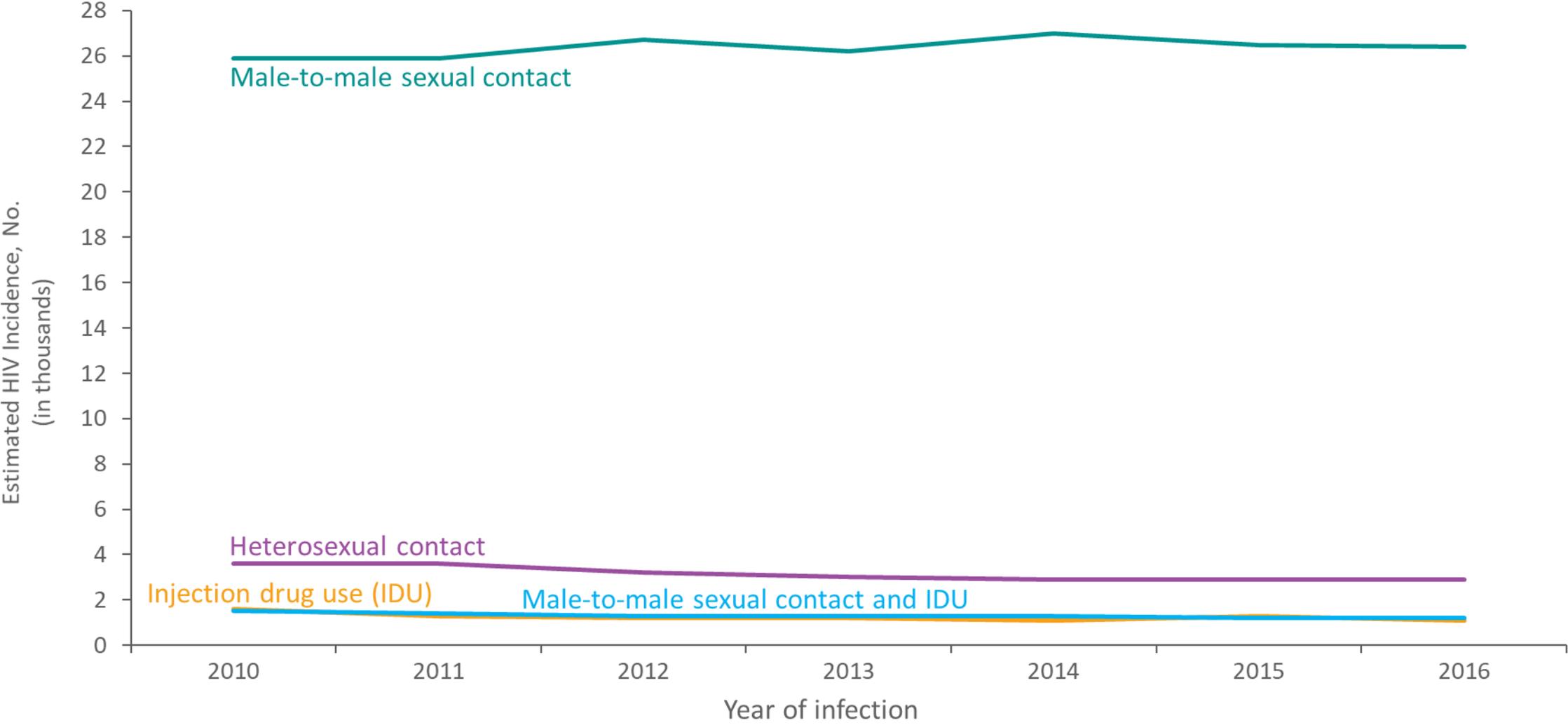# Estimated HIV Incidence among Men who Have Sex with Men Aged ≥13 Years by Age, 2010–2016—United States

Note. Estimates were derived from a CD4 depletion model using HIV surveillance data. Data have been statistically adjusted to account for missing transmission category. 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.
*Difference from the 2010 estimate was deemed statistically significant (P < .05).

Estimated HIV Incidence among Black/African American Men who Have Sex with Men Aged ≥13 Years, by Age, 2010–2016—United States
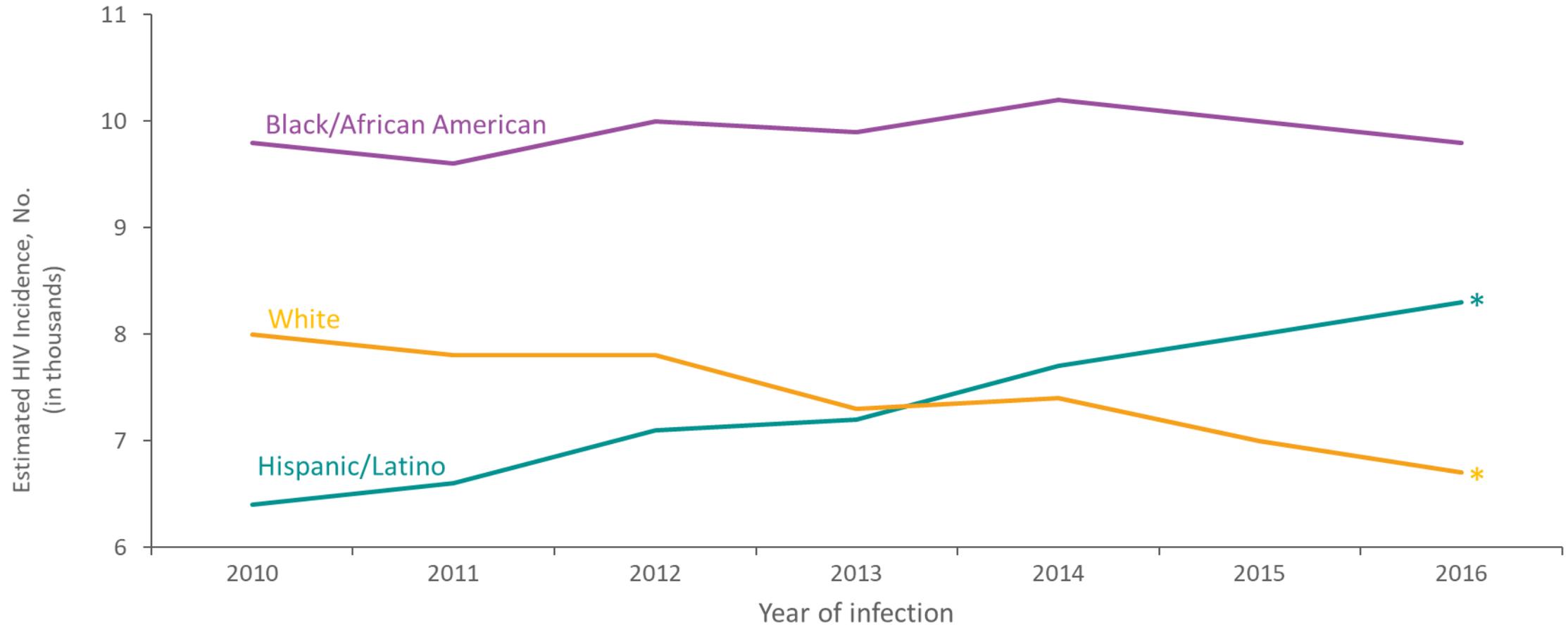

Note. Estimates were derived from a CD4 depletion model using HIV surveillance data. Data have been statistically adjusted to account for missing transmission category. Data on men who have sex with men do not include men with HIV infection attributed to male-to-male sexual contact and injection drug use.
* Difference from the 2010 estimate was deemed statistically significant (P < .05).
†Estimates should be used with caution because they do not meet the standard of reliability.

Estimated HIV Incidence among Hispanic/Latino Men who Have Sex with Men Aged ≥13 Years, by Age, 2010–2016—United States
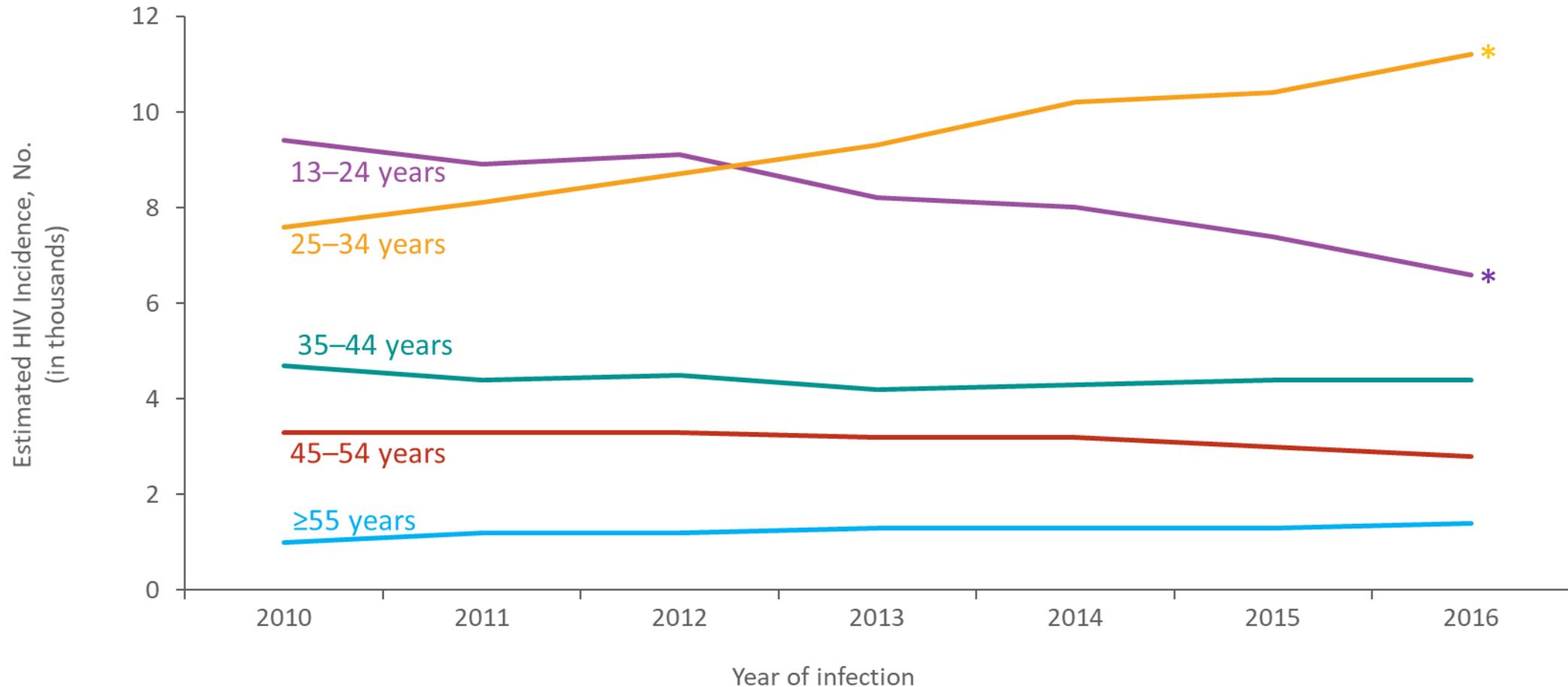

Note. Estimates were derived from a CD4 depletion model using HIV surveillance data. Data have been statistically adjusted to account for missing transmission category. Data on men who have sex with men do not include men with HIV infection attributed to male-to-male sexual contact and injection drug use. Hispanics/Latinos can be of any race.
* Difference from the 2010 estimate was deemed statistically significant (P < .05).
† Estimates should be used with caution because they do not meet the standard of reliability.

Estimated HIV Incidence among White Men who Have Sex with Men Aged ≥13 Years, by Age, 2010–2016—United States
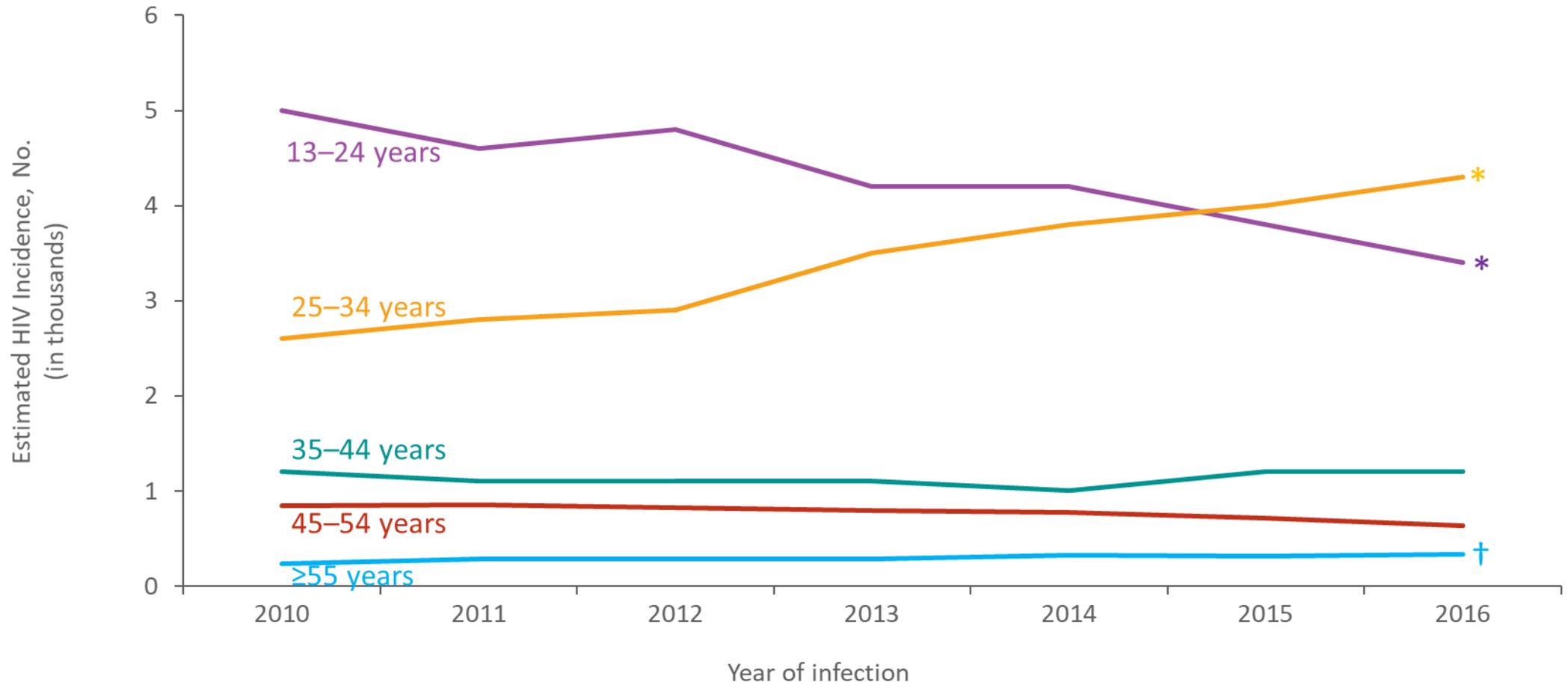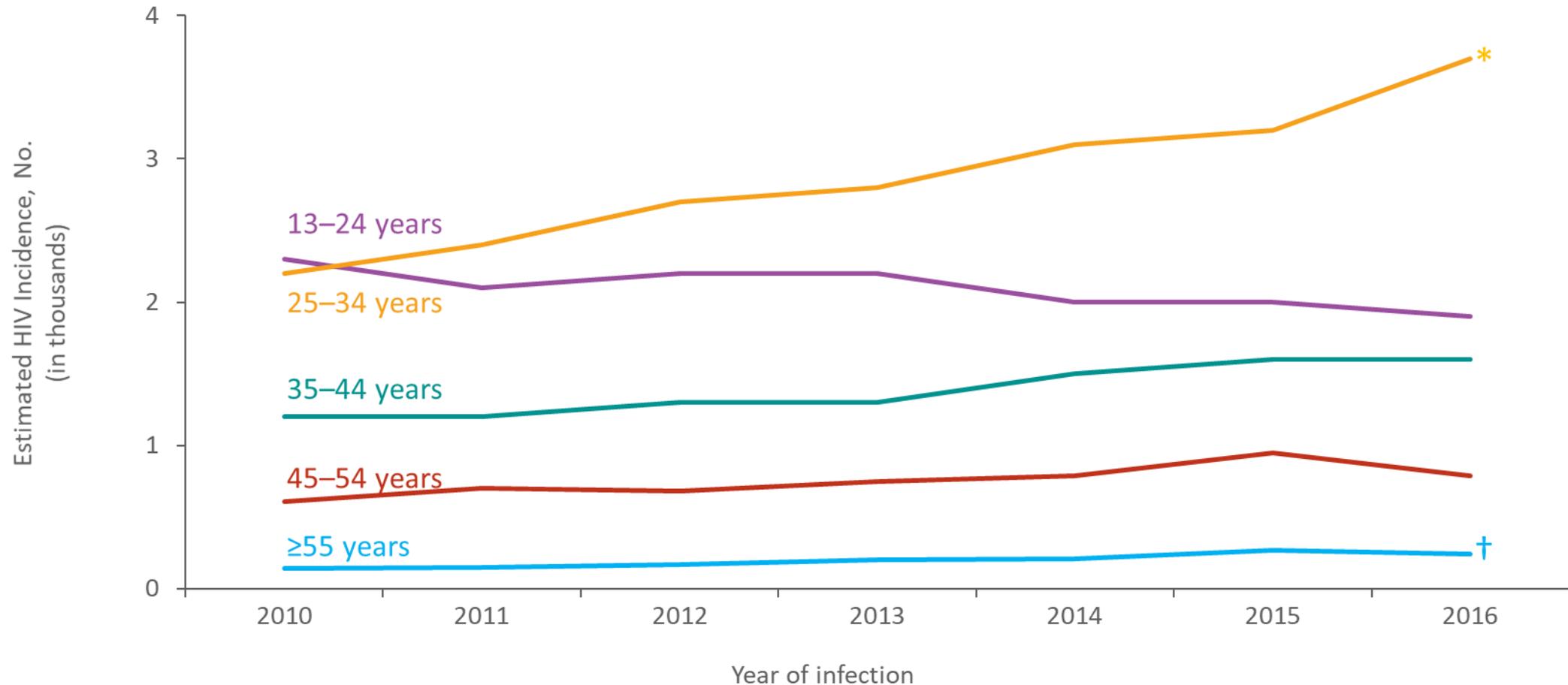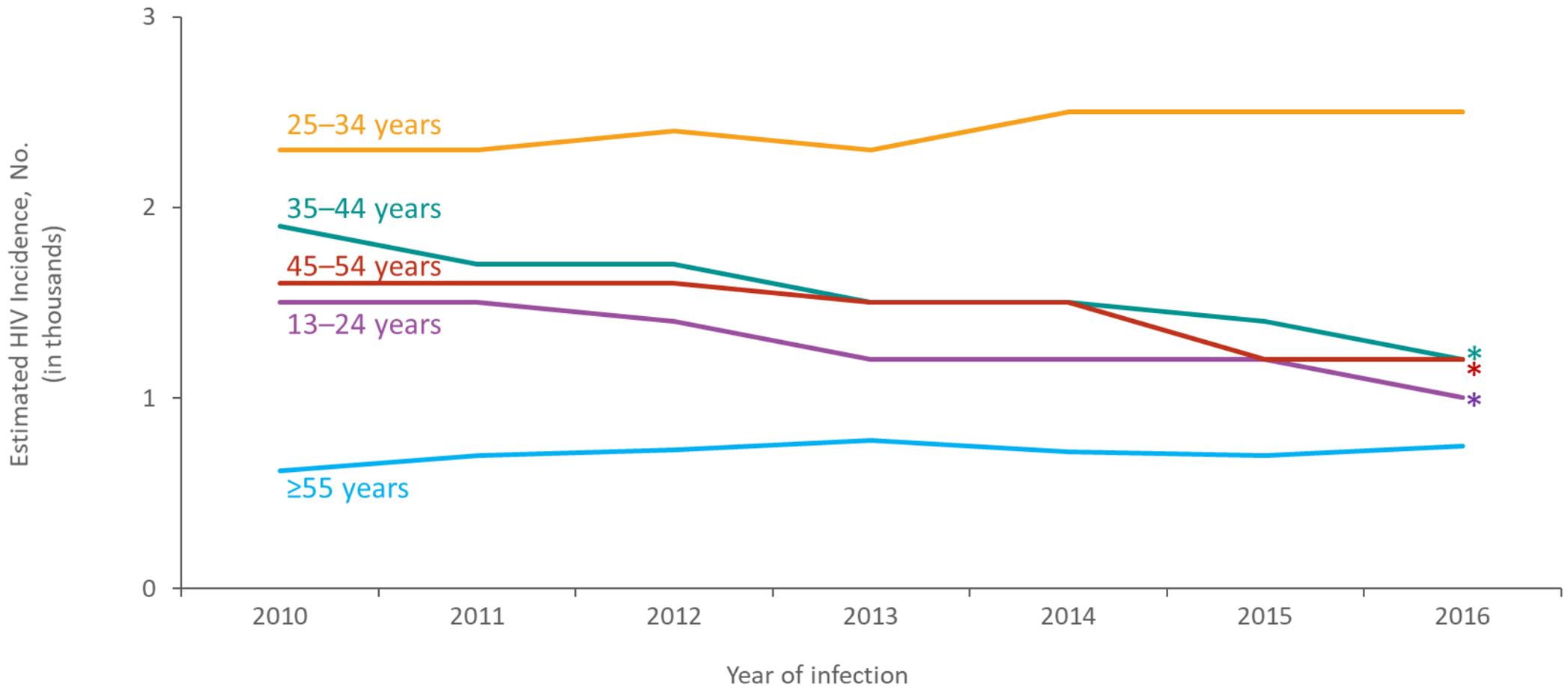

Note. Estimates were derived from a CD4 depletion model using HIV surveillance data. Data have been statistically adjusted to account for missing transmission category. Data on men who have sex with men do not include men with HIV infection attributed to male-to-male sexual contact and injection drug use.
* Difference from the 2010 estimate was deemed statistically significant (P < .05).

Estimated HIV Incidence among Persons Aged ≥13 Years, by Area of Residence 2016—United States

Total = 38,700
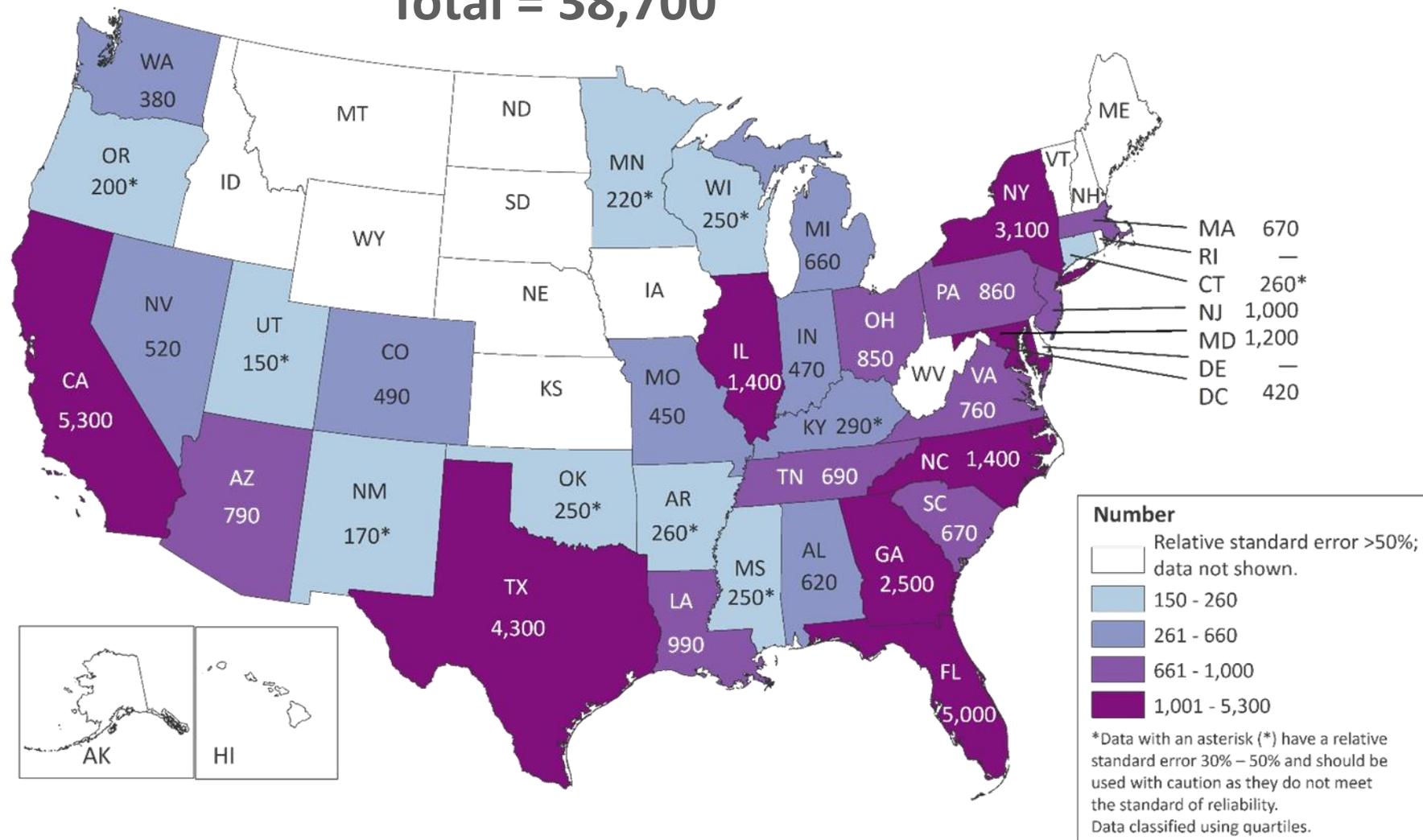
WA 380
OR 200*
MT
ND
MN 220*
WI 250*
MI 660
ME
VT
NY 3,100
NH
MA 670
RI —
CT 260*
NJ 1,000
MD 1,200
DE —
DC 420

ID
SD
WY
NE
IA

NV 520
UT 150*
CO 490
KS
MO 450
IL 1,400
IN 470
OH 850
PA 860
WV
VA 760
KY 290*

CA 5,300
AZ 790
NM 170*
OK 250*
AR 260*
TN 690
NC 1,400
SC 670

TX 4,300
LA 990
MS 250*
AL 620
GA 2,500
FL 5,000

AK
HI

Number

Relative standard error >50%; data not shown.

150 - 260

261 - 660

661 - 1,000

1,001 - 5,300

*Data with an asterisk (*) have a relative standard error 30% – 50% and should be used with caution as they do not meet the standard of reliability.
Data classified using quartiles.

Note. Estimates were derived from a CD4 depletion model using HIV surveillance data. Estimates rounded to the nearest 100 for estimates >1,000 and to the nearest 10 for estimates ≤1,000 to reflect model uncertainty.

Estimated HIV Prevalence among Persons Aged ≥13 years, by Area of Residence 2016—United States

Total = 1,140,400

WA 14,700
MT 690*
ND 470*
MN 9,300
VT 690
ME 1,800
OR 7,700
ID 1,100
SD 570*
WI 7,100
NY 141,300
MI 18,500
NH 1,300
MA 23,000
RI 2,800
CT 11,400
NJ 38,700
MD 37,200
DE 3,600
DC 16,700
WY 360*
NE 2,400
IA 3,000
PA 38,500
NV 11,100
UT 3,200
CO 13,900
KS 3,400
MO 13,900
IL 41,200
IN 13,100
OH 24,500
WV 2,000
VA 24,800
CA 145,900
KY 8,000
NC 35,100
AZ 18,500
NM 3,900
OK 7,000
AR 6,500
TN 18,900
SC 19,600
TX 102,600
LA 24,400
MS 10,700
AL 14,900
GA 61,000
FL 125,900
AK 830*
HI 3,000

Number
- 360 - 3,000
- 3,001 - 11,400
- 11,401 - 24,400
- 24,401 - 145,900

*Data with an asterisk (*) have a relative standard error 30% – 50% and should be used with caution as they do not meet the standard of reliability.
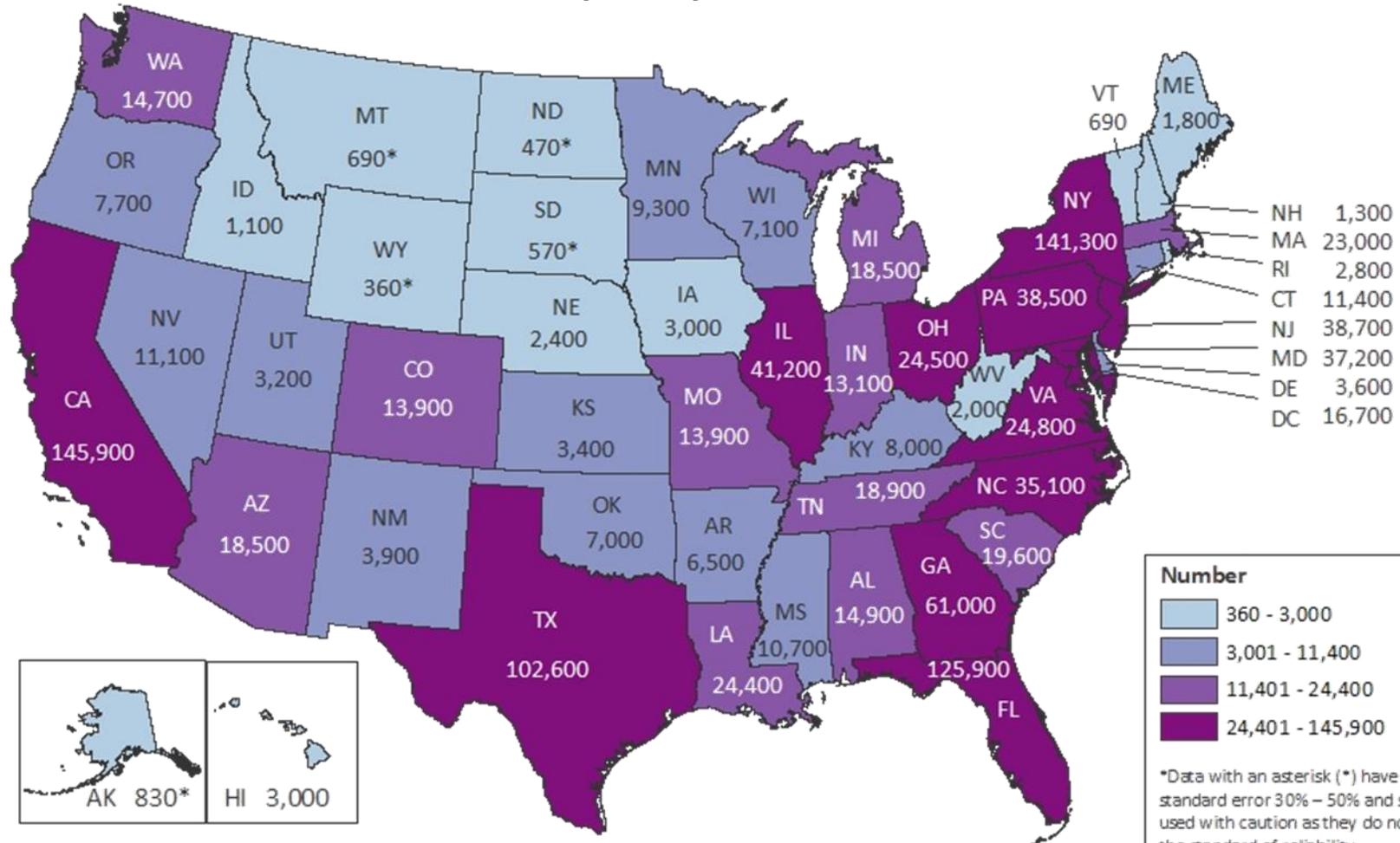Data classified using quartiles.

Note. Estimates were derived from a CD4 depletion model using HIV surveillance data. Estimates rounded to the nearest 100 for estimates >1,000 and to the nearest 10 for estimates ≤1,000 to reflect model uncertainty.

Diagnosed Infection among Persons Aged ≥13 Years Living with Diagnosed or Undiagnosed HIV Infection, by Sex, 2016—United States
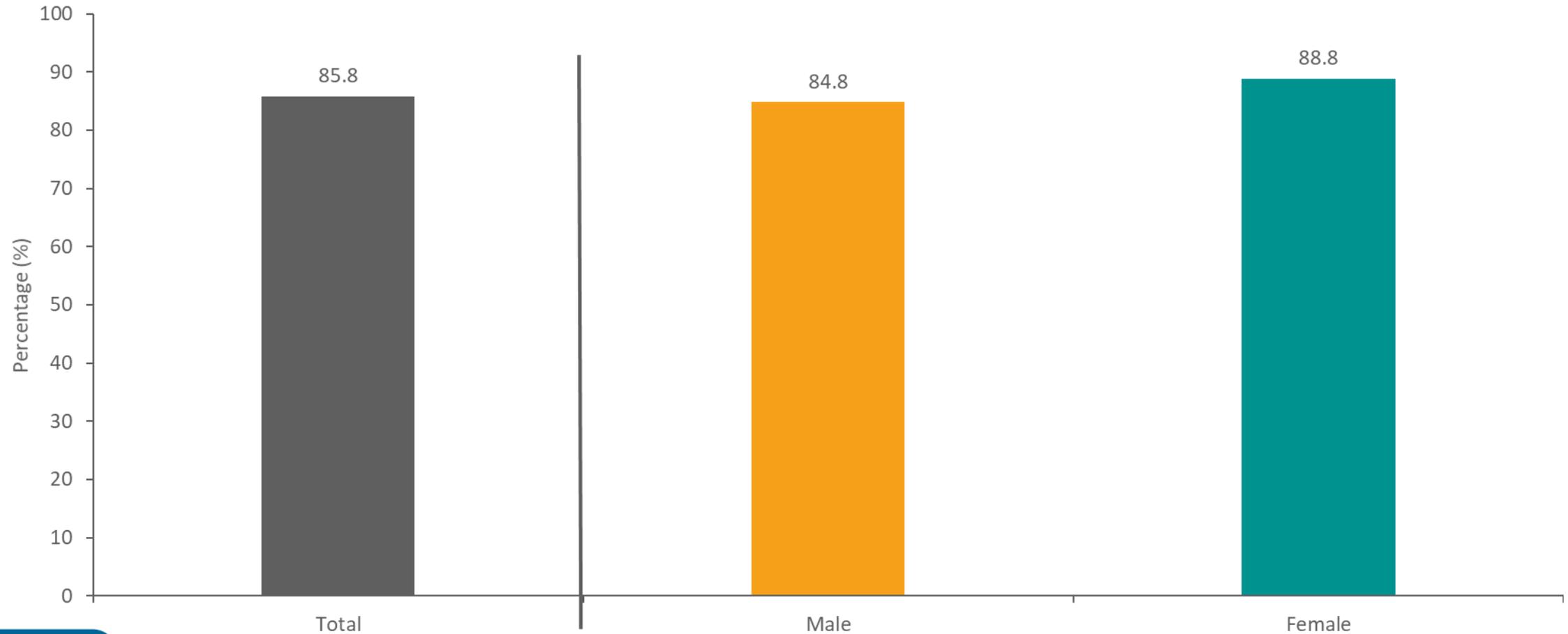
Note. Estimates were derived from a CD4 depletion model using HIV surveillance data.

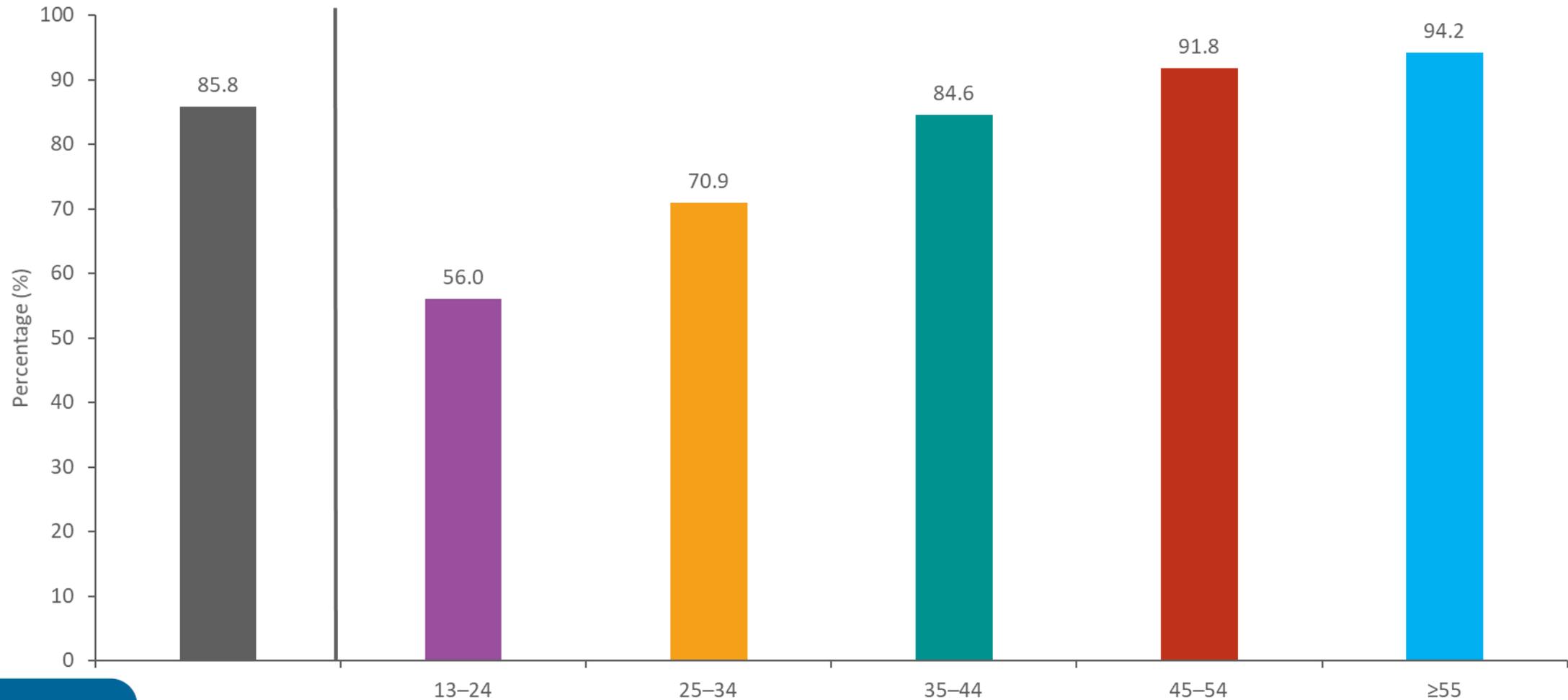# Diagnosed Infection among Persons Aged ≥13 Years Living with Diagnosed or Undiagnosed HIV Infection, by Age, 2016—United States

Note. Estimates were derived from a CD4 depletion model using HIV surveillance data.

Diagnosed Infection among Persons Aged ≥13 Years Living with Diagnosed or Undiagnosed HIV Infection, by Race/Ethnicity, 2016—United States

Note. Estimates were derived from a CD4 depletion model using HIV surveillance data. Asian includes Asian/Pacific Islander legacy cases. Hispanics/Latinos can be of any race.

† Estimate should be used with caution because does not meet the standard of reliability.

Diagnosed Infection among Persons Aged ≥13 Years Living with Diagnosed or Undiagnosed HIV Infection, by Transmission Category, 2016—United States
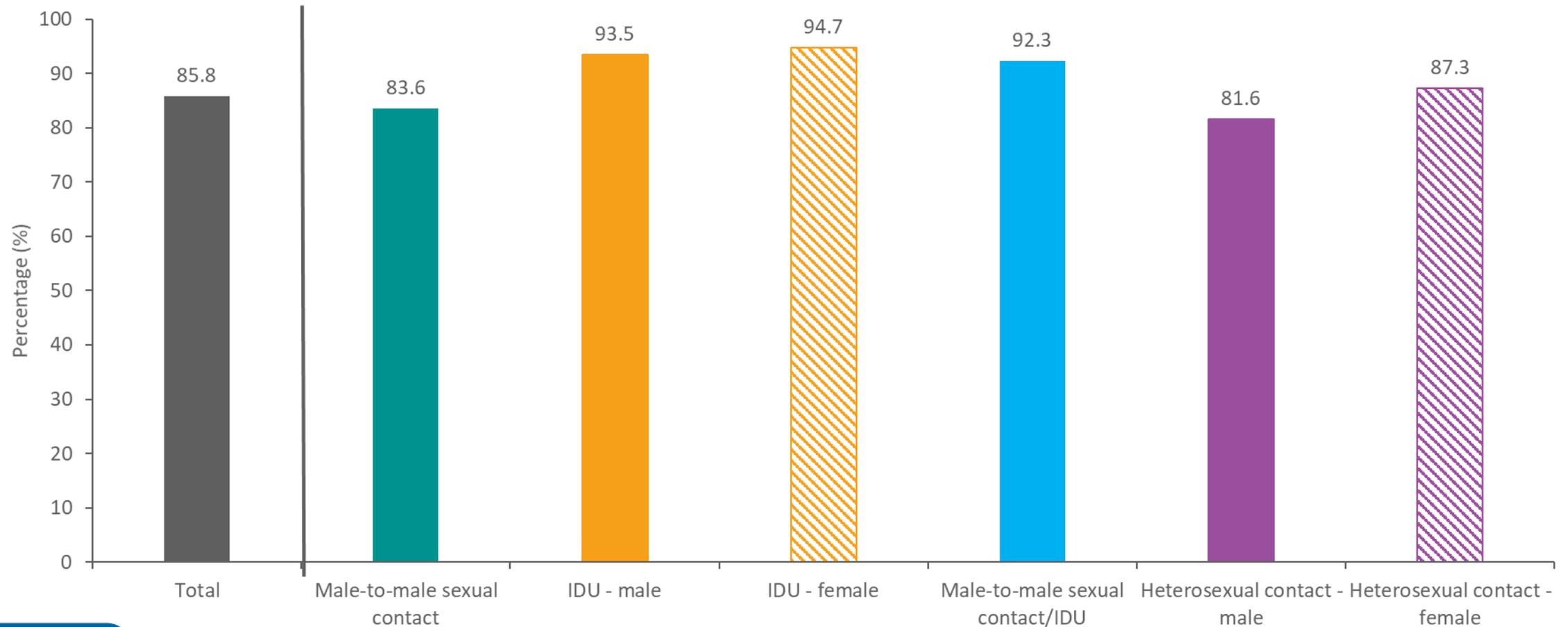
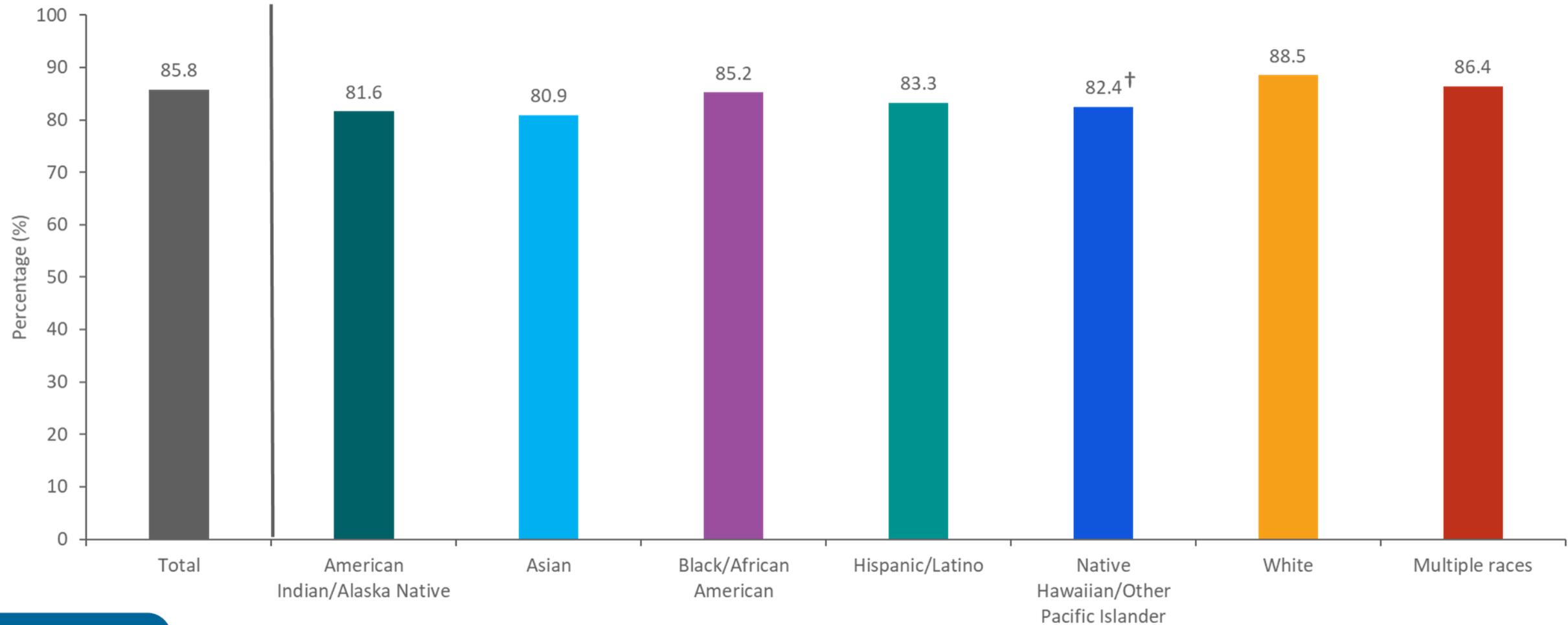Note. Estimates were derived from a CD4 depletion model using HIV surveillance data. Data have been statistically adjusted to account for missing transmission category. Heterosexual contact is with a person known to have, or be at high risk for, HIV infection. IDU, injection drug use

Diagnosed Infection among Persons Aged ≥13 Years Living with Diagnosed or Undiagnosed HIV Infection, 2016—United States

Total = 85.8%

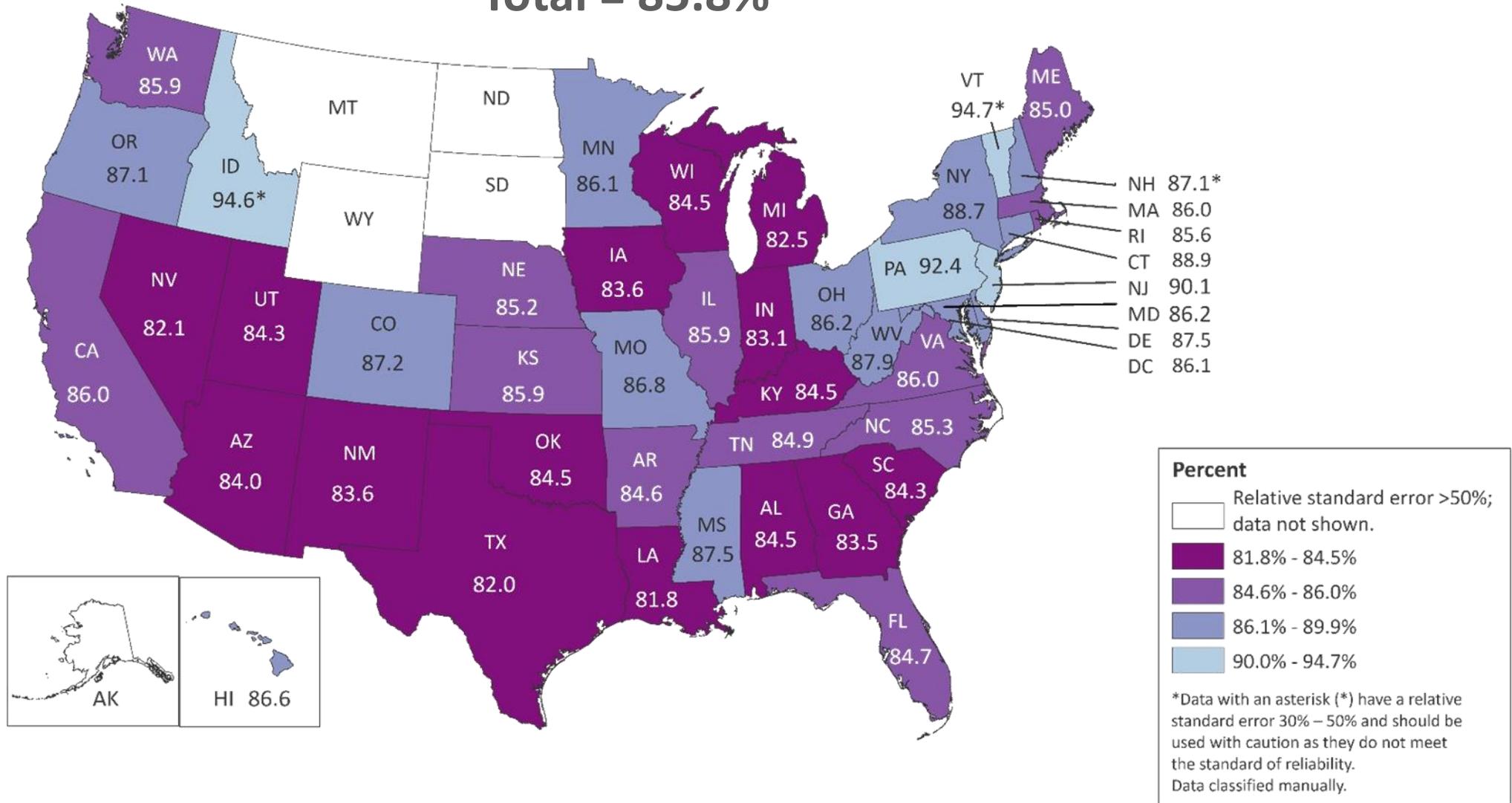Map of the United States showing diagnosed HIV infection percentages by state:

- WA 85.9
- OR 87.1
- ID 94.6*
- NV 82.1
- UT 84.3
- CA 86.0
- AZ 84.0
- NM 83.6
- CO 87.2
- NE 85.2
- KS 85.9
- OK 84.5
- TX 82.0
- MN 86.1
- IA 83.6
- MO 86.8
- AR 84.6
- LA 81.8
- WI 84.5
- MI 82.5
- IL 85.9
- IN 83.1
- KY 84.5
- TN 84.9
- MS 87.5
- AL 84.5
- GA 83.5
- FL 84.7
- OH 86.2
- WV 87.9
- VA 86.0
- NC 85.3
- SC 84.3
- NY 88.7
- PA 92.4
- VT 94.7*
- ME 85.0
- NH 87.1*
- MA 86.0
- RI 85.6
- CT 88.9
- NJ 90.1
- MD 86.2
- DE 87.5
- DC 86.1
- AK
- HI 86.6

Percent

Relative standard error >50%; data not shown.

- 81.8% - 84.5%
- 84.6% - 86.0%
- 86.1% - 89.9%
- 90.0% - 94.7%

*Data with an asterisk (*) have a relative standard error 30% − 50% and should be used with caution as they do not meet the standard of reliability. Data classified manually.

Note. Estimates were derived from a CD4 depletion model using HIV surveillance data.