**Supplementary Table 1. Average percentage yearly change in the prevalence of injection drug use (IDU), homelessness, and both among invasive GAS patients, overall and by ABCs surveillance site, 2010-2017**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **IDU only** |  | **Homelessness only** |  | **Both IDU and homelessness** |
|  | **% Yearly change** | **Point estimate (95% CI)** |  | **% Yearly** **change** | **Point estimate (95% CI)** |  | **% Yearly** **change** | **Point estimate****(95% CI)** |
| **Overall** | 17.5% increase | 1.2 (1.1–1.2) |  | 20.0% increase | 1.2 (1.2–1.2) |  | 35.3% increase | 1.4 (1.3–1.4) |
| **California** | 10.5% decrease | 0.9 (0.8 – 1.0) |  | 10.0% increase | 1.1 (1.0–1.2) |  | 3.1% increase | 1.0 (1.0–1.1) |
| **Colorado** | 50.2% increase | 1.5 (1.2–1.9) |  | 24.7% increase | 1.32(1.1–1.4) |  | 109.6% increase | 2.1 (1.6–2.8) |
| **Connecticut** | 26.6% increase | 1.3 (1.1–1.5) |  | 56.7% increase | 1.6 (0.9–2.5) |  | 36.2% increase | 1.4 (1.1–1.8) |
| **Georgia** | 7.6% increase | 1.1 (0.9–1.3) |  | 8.9% increase | 1.1 (0.9–1.4) |  | 50.7% increase | 1.5 (0.9–2.4) |
| **Maryland** | 17.7% increase | 1.2 (1.1–1.3) |  | 11.1% increase | 1.1 (0.9–1.4) |  | 85.2% increase | 1.9 (1.5–2.2) |
| **Minnesota** | 29.0% increase | 1.3 (1.1–1.5) |  | 26.1% increase | 1.3 (1.0–1.5) |  | 13.1% increase | 1.1 (0.7–1.9) |
| **New Mexico** | 18.4% increase | 1.2 (1.1–1.3) |  | 11.1% increase | 1.1 (1.0–1.3) |  | 47.4% increase | 1.5 (1.2–1.8) |
| **New York** | 25.8% increase | 1.3 (1.1–1.5) |  | N/A | N/A |  | 49.5% increase | 1.5 (0.9–2.5) |
| **Oregon** | 10.9% increase | 1.1 (1.0–1.2) |  | 18.0% increase | 1.2 (1.0–1.3) |  | 26.1% increase | 1.3 (1.1–1.4) |
| **Tennessee** | 46.5% increase | 1.5 (1.3–1.7) |  | 25.8% increase | 1.3 (1.0–1.5) |  | 69.3% increase | 1.7 (1.2–2.4) |

Abbreviations: ABCs = Active Bacterial Core surveillance; CI = confidence interval; GAS = group A *Streptococcus* infection; IDU = injection drug use.

**Supplementary Table 2. Comparisons of the distribution of most common *emm* types among invasive GAS patients with documented injection drug use (IDU), homelessness, both, or neither — ABCs surveillance, 2010–2017**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | **Neither risk factor****(N = 8973)** | **IDU only (N = 586)** | **Homelessness only****(N = 456)** | **Both IDU and homelessness****(N = 323)** |
| ***emm* type** | ***emm* clustera** |  | **No. (%)** | **No. (%)** | **No. (%)** | **No. (%)** |
| 1 | A-C3 |  | 1914 (21.3%) | 32 (5.5%) | 15 (3.3%) | 8 (2.5%) |
| 89 | E4 |  | 1087 (12.1%) | 57 (9.7%) | 21 (4.6%) | 12 (3.7%) |
| 12 | A-C4 |  | 824 (9.2%) | 8 (1.4%) | 6 (1.3%) | 3 (0.9%) |
| 28 | E4 |  | 598 (6.7%) | 6 (1.0%) | 7 (1.5%) | 2 (0.6%) |
| 3 | A-C5 |  | 506 (5.6%) | 5 (0.9%) | 3 (0.7%) | 0 (0.0%) |
| 4 | E1 |  | 450 (5.0%) | 13 (2.2%) | 3 (0.7%) | 7 (2.2%) |
| 82 | E3 |  | 307 (3.4%) | 54 (9.2%) | 78 (17.1%) | 52 (16.1%) |
| 11 | E6 |  | 304 (3.4%) | 28 (4.8%) | 9 (2.0%) | 8 (2.5%) |
| 77 | E4 |  | 294 (3.3%) |  29 (5.0%) | 11 (2.4%) | 22 (6.8%) |
| 92 | E2 |  | 215 (2.4%) | 83 (14.2%) | 61 (13.4%) | 43 (13.3%) |
| 59 | E6 |  | 215 (2.4%) | 28 (4.8%) | 28 (6.1%) | 17 (5.3%) |
| 49 | E3 |  | 191 (2.1%) | 33 (5.6%) | 93 (20.4%) | 57 (17.7%) |
| 87 | E3 |  | 171 (1.9%) | 16 (2.7%) | 10 (2.2%) | 7 (2.2%) |
| 75 | E6 |  | 161 (1.8%) | 25 (4.3%) | 13 (2.9%) | 8 (2.5%) |
| 81 | E6 |  | 98 (1.1%) | 21 (3.6%) | 5 (1.1%) | 6 (1.9%) |
| 76 | E2 |  | 69 (0.8%) | 18 (3.1%) | 18 (4.0%) | 12 (3.7%) |
| 63 | E6 |  |  6 (0.1%) | 14 (2.4%) | 0 (0.0%) | 2 (0.6%) |
| other | N/A |  | 1563 (17.4%) | 116 (19.8%) | 75 (16.5%) | 57 (17.7%) |

Abbreviations: ABCs = Active Bacterial Core surveillance; GAS = group A *Streptococcus* infection

a References: (1) Sanderson-Smith M, De Oliveira DM, Guglielmini J, et al. A systematic and functional classification of *Streptococcus pyogenes* that serves as a new tool for molecular typing and vaccine development. J Infect Dis. 2014 Oct 15;210(8):1325-38.

(2) CDC Streptococcus Laboratory. Distribution of *emmtypes* per *emm*-cluster. Available at: <https://www.cdc.gov/streplab/downloads/distribution-emm-types.pdf>

**Supplementary Table 3. Estimated national incidence rates of invasive GAS infections among people who inject drugs, people experiencing homelessness, and those who do not inject drugs or experience homelessness, for select years**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Year** | **Incidencea among people who inject drugs** | **Incidence among people who do not inject drugs** | **Incidence among people experiencing homelessness** | **Incidence among people not experiencing homelessness** |
| **2010** |  |  | 54.6 | 3.17 |
| **2011** | 52.2 | 3.80 | 46.8 | 3.52 |
| **2012** |  |  | 59.8 | 2.81 |
| **2013** |  |  | 75.4 | 3.05 |
| **2014** |  |  | 134.4 | 3.97 |
| **2015** |  |  | 186.5 | 3.92 |
| **2016** |  |  | 335.6 | 4.50 |
| **2017** |  |  | 513.6 | 6.39 |

Abbreviation: GAS = group A *Streptococcu*s infection

aAll incidence calculations: cases of invasive GAS among 100,000 population