SUPPLEMENTARY DATA

SUPPLEMENTARY TABLE 1: Prevalence of any HPV or quadrivalent vaccine-type HPV in anal specimens, by characteristics of participating transgender women and gay, bisexual, and other men who have sex with men

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Characteristic | Total | Any HPV type | | ≥1 4vHPV type | |
| N | n (%) | p | n (%) | P\* |
| Total | 1767 | 1236 (100) | - | 465 (100) | - |
| City  Chicago  Los Angeles  Seattle | 617  446  704 | 398 (64.5)  314 (70.4)  524 (74.4) | **<0.001** | 146 (23.7)  119 (26.7)  200 (28.4) | 0.14 |
| Age, years  18–21  22–26 | 628  1139 | 386 (61.5)  850 (74.6) | **<0.001** | 110 (17.5)  355 (31.2) | **<0.001** |
| Gender identity  Male  Female/transgender female  Other/unknown | 1671  53  43 | 1166 (69.8)  43 (81.1)  27 (62.8) | 0.11 | 439 (26.3)  14 (26.4)  12 (27.9) | 0.98 |
| Race/ethnicity  Non-Hispanic White  Non-Hispanic Black  Asian/Pacific Islander  Hispanic  Other/unknown | 545  261  136  557  268 | 361 (66.2)  186 (71.3)  102 (75.0)  393 (70.6)  194 (72.4) | 0.18 | 142 (26.1)  75 (28.7)  34 (25.0)  149 (26.8)  65 (24.0) | 0.81 |
| Sexual orientation  Gay/homosexual  Straight/heterosexual  Other/unknown | 1295  29  443 | 933 (72.1)  19 (65.5)  284 (64.1) | **0.006** | 350 (27.0)  6 (20.7)  109 (24.7) | 0.51 |
| Lifetime number of sex partners of any sex  ≤5  6–10  11–20  >20  Other/unknown | 247  276  388  801  55 | 115 (46.6)  176 (63.8)  254 (65.5)  649 (81.0)  42 (76.4) | **<0.001** | 28 (11.3)  54 (19.6)  83 (21.4)  276 (34.5)  24 (43.7) | **<0.001** |
| Most recent HIV test result  Positive  Negative or unknown | 139  1628 | 124 (89.2)  1112 (68.3) | **<0.0001** | 69 (49.6)  396 (24.3) | **<0.001** |
| Ever received any HPV vaccine  No, none  Yes, any  Other/unknown\* | 687  704  376 | 465 (67.7)  506 (71.9)  265 (70.5) | 0.23 | 215 (31.3)  160 (22.7)  97 (25.8) | **0.001** |

HIV, human immunodeficiency virus; HPV, human papillomavirus; 4vHPV, quadrivalent HPV vaccine.

NOTE: Bold font indicates significance of χ 2 analysis at *P* < .05.

\* Includes participants who were unsure of their HPV vaccination history or did not respond.

SUPPLEMENTARY TABLE 2: Prevalence of any HPV and vaccine-type HPV in anal specimens, by HPV vaccination history among participating transgender women and gay, bisexual, and other men who have sex with men

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Total | Any HPV type | | | ≥1 4vHPV type | | |
| HPV vaccination history | N | n (%) | PR (95% CI) | aPR\* (95% CI) | n (%) | PR (95% CI) | aPR\* (95% CI) |
| No HPV vaccine doses  ≥1 HPV vaccine dose  First dose at age ≤18 years  First dose at age >18 years | 687  704  289  366 | 465 (67.7)  506 (71.9)  167 (57.8)  304 (83.1) | Ref  1.06 (0.86, 1.25)  **0.85 (0.76, 0.95)**  **1.23 (1.14, 1.31)** | Ref  1.00 (0.82, 1.18)  0.90 (0.79, 1.01)  1.12 (1.00, 1.24) | 211 (30.7)  158 (22.4)  32 (11.1)  115 (31.4) | Ref  **0.72 (0.34, 1.1)**  **0.35 (0.23, 0.48)**  1.02 (0.83, 1.21) | Ref  0.69 (0.33, 1.05)  **0.40 (0.24, 0.56)**  **0.82 (0.66, 0.98)** |

aPR, adjusted prevalence ratio; CI, confidence interval; HPV, human papillomavirus; PR, prevalence ratio; 4vHPV, quadrivalent HPV vaccine.

NOTE: Bold font indicates significance of χ 2 analysis at *P* < .05.

\* Adjusted for age, race/ethnicity, city, number of sex partners, and HIV status.

SUPPLEMENTARY TABLE 3: Prevalence of any HPV or quadrivalent vaccine-type HPV in oral specimens, by characteristics of participating transgender women and gay, bisexual, and other men who have sex with men

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Characteristic | Total | Any HPV type | | ≥1 4vHPV type | |
| N | n (%) | p | n (%) | P\* |
| Total | 1767 | 133 (100) | - | 33 (100) | - |
| City  Chicago  Los Angeles  Seattle | 617  446  704 | 55 (8.9)  42 (9.4)  36 (5.1) | **0.005** | 17 (2.8)  8 (1.8)  8 (1.1) | 0.1 |
| Age, years  18–21  22–26 | 628  1139 | 37 (5.9)  96 (8.4) | 0.06 | 9 (2.4)  24 (2.1) | 0.36 |
| Gender identity  Male  Female/Transgender female  Other/unknown | 1671  53  43 | 125 (7.5)  5 (9.4)  3 (7.0) | 0.74+ | 21 (1.9)  0 (0)  1 (2.3) | 0.54+ |
| Race  Non-Hispanic White  Non-Hispanic Black  Asian/Pacific Islander  Hispanic  Other/unknown | 545  261  136  557  268 | 30 (5.5)  29 (11.1)  6 (4.4)  45 (8.1)  23 (8.6) | **0.03** | 10 (1.8)  8 (3.1)  1 (0.74)  11 (2.0)  3 (1.1) | 0.5+ |
| Sexual orientation  Gay/homosexual  Straight/heterosexual  Other/unknown | 1295  29  443 | 92 (7.1)  4 (13.8)  37 (8.6) | 0.23+ | 23 (1.8)  0 (0.0)  10 (2.3) | 0.74+ |
| Lifetime number of sex partners of any sex  ≤5  6–10  11–20  >20  Other/unknown | 247  276  388  801  55 | 11 (4.5)  13 (4.7)  27 (7.0)  76 (9.5)  6 (10.9) | **0.01** | 2 (0.8)  3 (1.1)  6 (1.6)  21 (2.6)  1 (1.8) | 0.3+ |
| Most recent HIV test result  Positive  Negative or unknown | 139  1628 | 24 (17.3)  109 (6.7) | **<0.001** | 6 (4.3)  27 (1.7) | **<0.04** |
| Ever received any HPV vaccine  No, none  Yes, any  Other/unknown\* | 687  704  376 | 61 (8.9)  46 (6.5)  26 (6.9) | 0.23 | 23 (3.4)  8 (1.1)  2 (0.5) | **0.001+** |

HIV, human immunodeficiency virus; HPV, human papillomavirus; 4vHPV, quadrivalent HPV vaccine.

NOTE: Bold font indicates significance of χ 2 analysis at *P* < .05.

\* Includes participants who were unsure of their HPV vaccination history or did not respond.

+ Not enough data for statistical validity.

SUPPLEMENTARY TABLE 4: Prevalence of any HPV and vaccine-type HPV in oral specimens, by HPV vaccination history among participating transgender women and gay, bisexual, and other men who have sex with men

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Total | Any HPV type\* | | | ≥1 4vHPV type\*\* | | |
| HPV vaccination history | N | n (%) | PR (95% CI) | aPR\* (95% CI) | n (%) | PR (95% CI) | aPR\* (95% CI) |
| No HPV vaccine doses  ≥1 HPV vaccine dose  First dose at age ≤18 years  First dose at age >18 years | 687  704  289  366 | 61 (8.9)  46 (0.1)  9 (3.1)  34 (9.3) | Ref  0.69 (-0.84, 1.46)  **0.35 (0.11, 0.59)**  1.05 (0.63, 1.46) | Ref  1.04 (-0.16, 2.24)  **0.32 (0.09, 0.55)**  1.07 (0.60, 1.54) | 23 (3.4)  8 (0.01)  1 (0.35)  7 (1.9) | Ref  0.35 (-0.34, 1.04)  0.12 (-0.05, 0.29)  0.89 (0.41, 1.36) | Ref  0.57 (-0.56, 1.70)  0.13 (-0.06, 0.31)  0.87 (0.37, 1.39) |

4vHPV, quadrivalent HPV vaccine; PR, prevalence ratio; aPR, adjusted prevalence ratio.

NOTE: Bold font indicates significance at *P* < .05.

\*\*\* Adjusted for age, race/ethnicity, city, number of sex partners, and HIV status.