**Supplementary Table S1.** Magnitude of summer peaks in adolescent vaccination by state (source: National Immunization Survey-Teen, administered 2008 to 2012; *n*=70,144 adolescents).

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | HPV1 | | | Tdap | | | Meng | | |
|  | *N* | *T* | magnitude (RHL[var]) | | *T* | magnitude (RHL[var]) | | *T* | magnitude (RHL[var]) | |
| Alabama | 1252 | 3,031\* | 4.2 | (0.01) | 6,998\* | 4.4 | (0.01) | 8,216\* | 6.8 | (0.01) |
| Alaska | 1058 | 695\* | 6.3 | (0.01) | 1,413\* | 7.2 | (0.01) | 1,792\* | 17.9 | (0.01) |
| Arizona | 1391 | 6,685\* | 5.2 | (0.01) | 9,413\* | 3.6 | (0.01) | 16,821\* | 4.9 | (0.01) |
| Arkansas | 833 | 3,046\* | 37.7 | (0.01) | 4,033\* | 7.8 | (0.01) | 3,657\* | 15.0 | (0.01) |
| California | 1582 | 29,461\* | 4.5 | (0.01) | 48,407\* | 4.0 | (0.01) | 90,966\* | 7.4 | (0.01) |
| Colorado | 1408 | 3,239\* | 4.3 | (0.01) | 11,533\* | 5.9 | (0.01) | 11,910\* | 12.1 | (0.01) |
| Connecticut | 1588 | 2,183\* | 3.4 | (0.01) | 5,352\* | 4.1 | (0.01) | 10,525\* | 8.8 | (0.01) |
| Delaware | 1409 | 499\* | 3.2 | (0.01) | 935\* | 3.5 | (0.01) | 1,712\* | 5.0 | (0.01) |
| District of Columbia | 1517 | 469\* | 7.0 | (0.01) | 308\* | 3.0 | (0.01) | 1,347\* | 7.9 | (0.01) |
| Florida | 1374 | 10,910\* | 4.4 | (0.01) | 30,650\* | 6.2 | (0.01) | 36,766\* | 8.8 | (0.01) |
| Georgia | 1258 | 6,479\* | 5.6 | (0.01) | 12,250\* | 3.9 | (0.01) | 21,645\* | 7.5 | (0.01) |
| Hawaii | 1143 | 1,025\* | 4.6 | (0.01) | 1,718\* | 5.2 | (0.01) | 2,059\* | 5.9 | (0.01) |
| Idaho | 903 | 2,054\* | 56.9 | (0.01) | 2,640\* | 7.7 | (0.01) | 3,316\* | 15.4 | (0.01) |
| Illinois | 2748 | 6,925\* | 4.8 | (0.01) | 21,718\* | 5.2 | (0.01) | 34,551\* | 16.4 | (0.01) |
| Indiana | 1584 | 3,611\* | 5.0 | (0.01) | 8,551\* | 3.7 | (0.01) | 16,902\* | 7.3 | (0.01) |
| Iowa | 1074 | 2,439\* | 5.7 | (0.01) | 4,544\* | 5.7 | (0.01) | 5,005\* | 7.9 | (0.01) |
| Kansas | 1248 | 2,820\* | 12.3 | (0.01) | 6,174\* | 6.2 | (0.01) | 5,521\* | 13.1 | (0.01) |
| Kentucky | 1020 | 1,670\* | 3.4 | (0.01) | 6,264\* | 6.5 | (0.01) | 6,779\* | 8.0 | (0.01) |
| Louisiana | 1387 | 3,653\* | 4.3 | (0.01) | 8,867\* | 6.6 | (0.01) | 16,836\* | 15.6 | (0.01) |
| Maine | 1309 | 670\* | 3.5 | (0.01) | 1,168\* | 3.1 | (0.01) | 2,294\* | 5.4 | (0.01) |
| Maryland | 1384 | 3,139\* | 3.9 | (0.01) | 9,519\* | 6.3 | (0.01) | 13,793\* | 6.8 | (0.01) |
| Massachusetts | 1479 | 5,903\* | 4.5 | (0.01) | 5,877\* | 3.1 | (0.01) | 20,215\* | 8.2 | (0.01) |
| Michigan | 1334 | 6,099\* | 4.4 | (0.01) | 14,617\* | 5.1 | (0.01) | 19,849\* | 6.1 | (0.01) |
| Minnesota | 1156 | 5,061\* | 8.5 | (0.01) | 8,162\* | 5.3 | (0.01) | 12,251\* | 13.3 | (0.01) |
| Mississippi | 686 | 965\* | 4.1 | (0.01) | 1,926\* | 4.0 | (0.01) | 2,822\* | 8.1 | (0.01) |
| Missouri | 1266 | 3,977\* | 5.4 | (0.01) | 10,394\* | 6.3 | (0.01) | 10,037\* | 7.4 | (0.01) |
| Montana | 1086 | 910\* | 12.3 | (0.01) | 1,615\* | 6.2 | (0.01) | 1,183\* | 8.4 | (0.01) |
| Nebraska | 1153 | 814\* | 3.2 | (0.01) | 2,588\* | 4.7 | (0.01) | 4,398\* | 10.6 | (0.01) |
| Nevada | 1183 | 4,328\* | 98.2 | (0.01) | 5,973\* | 6.5 | (0.01) | 9,005\* | 40.3 | (0.01) |
| New Hampshire | 1359 | 1,282\* | 4.9 | (0.01) | 1,435\* | 3.0 | (0.01) | 3,618\* | 7.4 | (0.01) |
| New Jersey | 1614 | 7,210\* | 6.9 | (0.01) | 19,648\* | 5.7 | (0.01) | 36,139\* | 9.6 | (0.01) |
| New Mexico | 1441 | 777\* | 2.5 | (0.01) | 4,531\* | 5.1 | (0.01) | 4,798\* | 9.5 | (0.01) |
| New York | 2715 | 22,260\* | 7.6 | (0.01) | 39,260\* | 4.5 | (0.01) | 43,429\* | 6.1 | (0.01) |
| North Carolina | 1260 | 9,634\* | 8.9 | (0.01) | 15,837\* | 4.3 | (0.01) | 18,101\* | 7.2 | (0.01) |
| North Dakota | 1242 | 455\* | 6.1 | (0.01) | 1,335\* | 5.7 | (0.01) | 2,235\* | 11.8 | (0.01) |
| Ohio | 1137 | 9,375\* | 6.5 | (0.01) | 12,420\* | 4.1 | (0.01) | 20,629\* | 5.8 | (0.01) |
| Oklahoma | 981 | 2,987\* | 5.8 | (0.01) | 5,379\* | 6.3 | (0.01) | 6,440\* | 11.0 | (0.01) |
| Oregon | 1226 | 2,976\* | 5.0 | (0.01) | 5,783\* | 5.0 | (0.01) | 6,341\* | 9.6 | (0.01) |
| Pennsylvania | 2907 | 11,219\* | 4.8 | (0.01) | 20,082\* | 5.1 | (0.01) | 38,034\* | 9.0 | (0.01) |
| Rhode Island | 1438 | 708\* | 2.9 | (0.01) | 1,153\* | 4.0 | (0.01) | 1,963\* | 6.1 | (0.01) |
| South Carolina | 909 | 1,011\* | 2.5 | (0.01) | 3,834\* | 3.6 | (0.01) | 6,941\* | 7.3 | (0.01) |
| South Dakota | 954 | 2,735\* | 50.0 | (0.01) | 1,626\* | 11.7 | (0.01) | 1,690\* | 19.3 | (0.01) |
| Tennessee | 1181 | 3,980\* | 5.3 | (0.01) | 7,965\* | 5.1 | (0.01) | 15,161\* | 15.8 | (0.01) |
| Texas | 6236 | 20,190\* | 6.4 | (0.01) | 53,091\* | 6.0 | (0.01) | 74,826\* | 13.7 | (0.01) |
| Utah | 1085 | 2,457\* | 10.3 | (0.01) | 8,000\* | 13.3 | (0.01) | 7,343\* | 24.6 | (0.01) |
| Vermont | 1441 | 527\* | 4.6 | (0.01) | 947\* | 3.7 | (0.01) | 1,205\* | 7.4 | (0.01) |
| Virginia | 1219 | 7,166\* | 6.6 | (0.01) | 13,168\* | 5.4 | (0.01) | 15,761\* | 7.7 | (0.01) |
| Washington | 1291 | 7,312\* | 4.9 | (0.01) | 15,848\* | 6.1 | (0.01) | 16,774\* | 7.6 | (0.01) |
| West Virginia | 940 | 1,648\* | 8.8 | (0.01) | 1,708\* | 4.3 | (0.01) | 2,729\* | 9.2 | (0.01) |
| Wisconsin | 1321 | 5,338\* | 5.7 | (0.01) | 14,340\* | 5.9 | (0.01) | 17,355\* | 12.6 | (0.01) |
| Wyoming | 1221 | 512\* | 6.2 | (0.01) | 627\* | 3.8 | (0.01) | 1,217\* | 12.0 | (0.01) |

*Note.* HPV=human papillomavirus vaccine; Tdap=tetanus, diphtheria, and pertussis booster; Meng=meningococcal vaccine; *T*=Edwards T statistic; RHL=ratio of highest to lowest vaccination; var=variance. \**p*<.001.

1Uptake of first dose among female adolescents only.