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2022 National Immunization Survey Adolescent Report

The National Immunization Surveys (NIS) are a group of phone surveys used to monitor vaccination coverage among children 19-35 months, teens 13-17 years, and flu vaccinations for children 6 months-17 years. The surveys are sponsored and conducted by the National Center for Immunization and Respiratory Diseases (NCIRD) of the Centers for Disease Control and Prevention (CDC). The National Immunization Surveys provide household, population-based, state and local area estimates of vaccination coverage among children and teens using a standard survey methodology. The surveys collect data through telephone interviews with parents or guardians in all 50 states, the District of Columbia, and some U.S. territories. With permission, a questionnaire is mailed to each child's vaccination provider(s) to collect the information on the types of vaccinations, number of doses and dates of administration. Estimates of vaccination coverage are determined for child and teen vaccinations recommended by the Advisory Committee on Immunization Practices (ACIP), and children and teens are classified as being up-to-date based on the ACIP recommended numbers of doses for each vaccine.

The NIS-Teen was first launched in 1994. The target population for NIS-Teen is adolescents who are or will be 13 to 17 years of age within a few weeks of being selected to participate in the survey and living in the United States. Data are used to monitor vaccination coverage among 13- to 17-year-old adolescents for the following recommended vaccinations:

- Tetanus and diphtheria and acellular pertussis vaccine (Tdap)
- Meningococcal conjugate (MenACWY)
- Measles, mumps, rubella (MMR)
- Human Papilloma Virus (HPV)
- Hepatitis A
- Hepatitis B
- Varicella

For 2022, national vaccination coverage estimates were based on a sample of 16,043 adolescents (268 Maine residents) with completed household interviews and adequate provider data. The NIS-Teen is best suited for estimating immunization coverage at a national level, where the standard for error ranges from .04% to 1.0% for Tdap, MenACWY and HPV estimates. However, the NIS also provides coverage estimates on a sub-national basis, including individual states, at a much higher margin for error.

When state-level estimates are published, three potential errors can arise. A state's newest point estimate is often compared with last year's. Such comparisons must be made with awareness of sampling uncertainty. Additionally, NIS results are often used to compare coverage levels between states. In the NIS, coverage differences between states are often smaller than the survey's margin of error for these states. Finally, the third potential problem arises when lists of point estimates are translated into ranks. Ranking states from point estimates coverage introduces even more uncertainty than tracking a state's performance over time or comparing states' coverage.

While the NIS continues to provide valuable national and state level data, the Maine Immunization Program (MIP) recognizes that the sampling size used for the survey is too small to accurately depict Maine's true vaccination coverage levels. MIP calculates immunization rates for adolescents 13-17 years of age using data directly from our immunization registry, ImmPact. Not only does the data give us a larger sample size with over 28,000 Maine children of this age included (NIS-Teen surveyed a little over 16,000 teens nationwide and only 268 Maine adolescents), but the data is also up-to-date. It allows us to view what is happening in real time as opposed to relying on data from the previous year. MIP publishes the Maine Immunization Rate Assessment Reports on our website quarterly and these reports include both state and county level rates. The assessment reports can be found here:

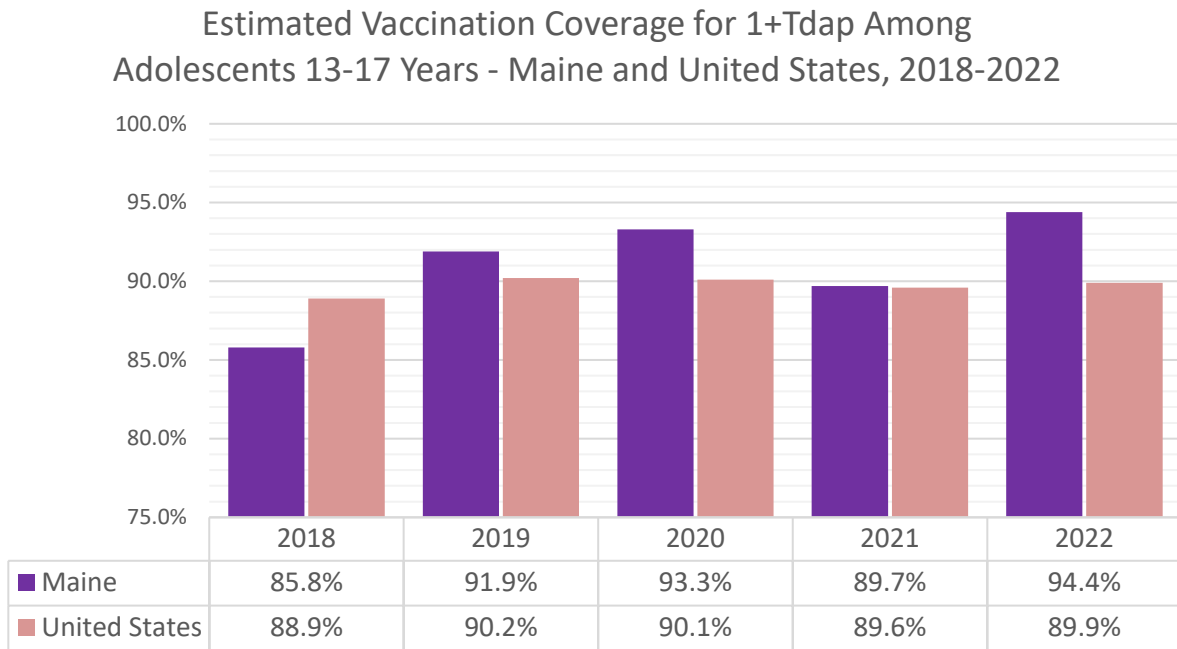
<http://www.maine.gov/dhhs/mecdc/infectiousdisease/immunization/publications/index.shtml>

Vaccination is the most effective and efficient way to ensure these children, their family members and the community, particularly those who are immunocompromised, are protected against these vaccine preventable diseases. This is perhaps one of the most important reasons why MIP will continue to encourage parents and physicians to vaccinate their children and to help reach the goal of the Maine Immunization Program to bring the State vaccine coverage rate for each of these vaccines to 100%.

The NIS-Teen vaccination data reported was analyzed and graphical representations for each vaccine surveyed show immunization rates for the past 5 year for trending comparisons (Figures 1-9). Additionally, summary tables were generated (Tables 1 & 2) to show Maine's coverage ranking both nationally and in HHS Region 1 (the New England states).

As always, thank you for your commitment to keeping Maine's children free of vaccine preventable disease.

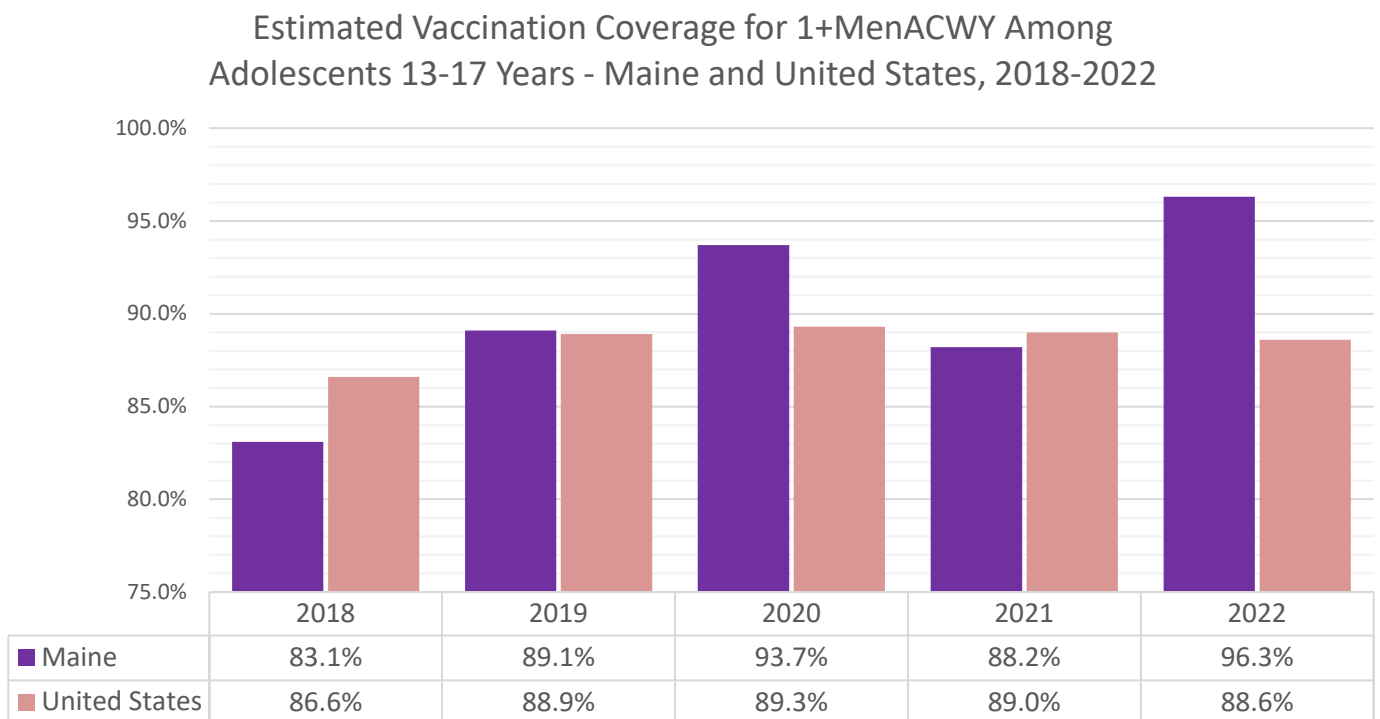
Figure 1: Adolescents 13-17 Years 1+Tdap Vaccine Coverage Estimate, Maine and U.S., 2018-2022



***1+Tdap:** 1 or more doses of tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) or tetanus-unknown type vaccine.

Trend: Overall, Tdap vaccine coverage in Maine has increased in 2022 in comparison to 2018. The highest coverage was in 2022 and lowest in 2018. Tdap vaccine coverage in Maine is now significantly above the national average.

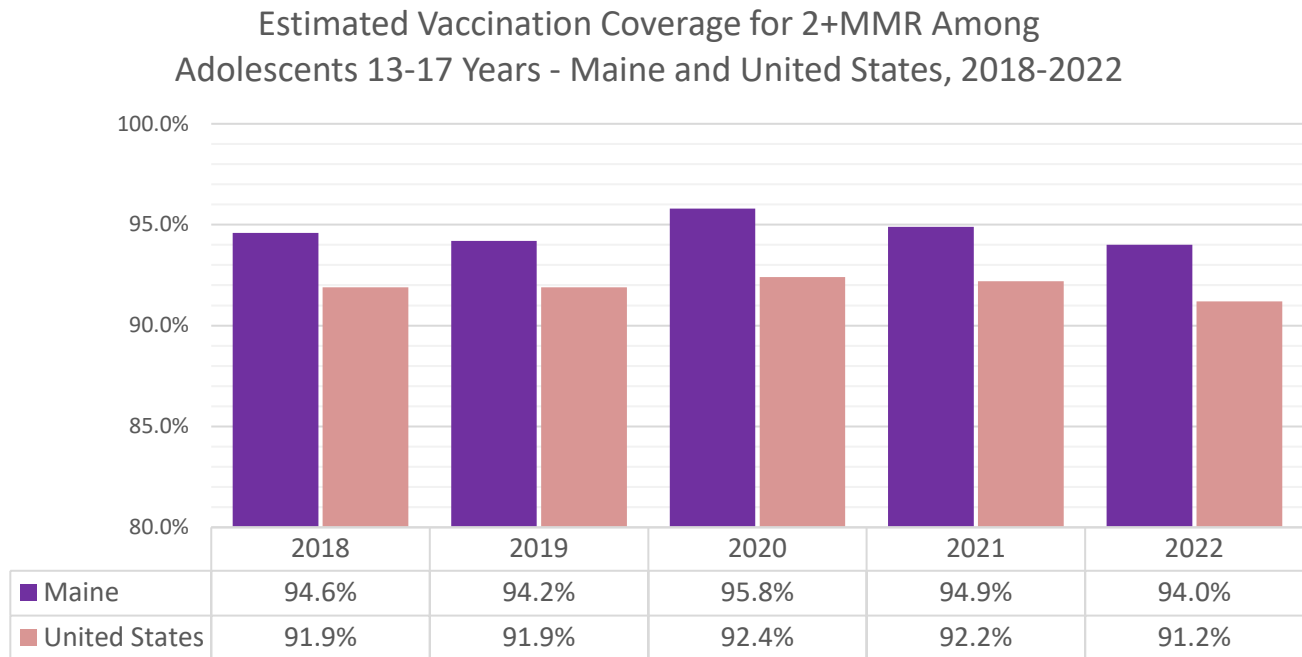
Figure 2: Adolescents 13-17 Years 1+MenACWY Vaccine Coverage Estimate, Maine and U.S., 2018-2022



***1+MenACWY:** 1 or more dose of quadrivalent meningococcal conjugate vaccine or meningococcal-unknown type vaccine.

Trend: Overall, MenACWY vaccine coverage in Maine has increased in 2022 in comparison to 2018. The highest coverage rate was in 2022 and lowest in 2018. MenACWY vaccine coverage in Maine is now significantly above national coverage.

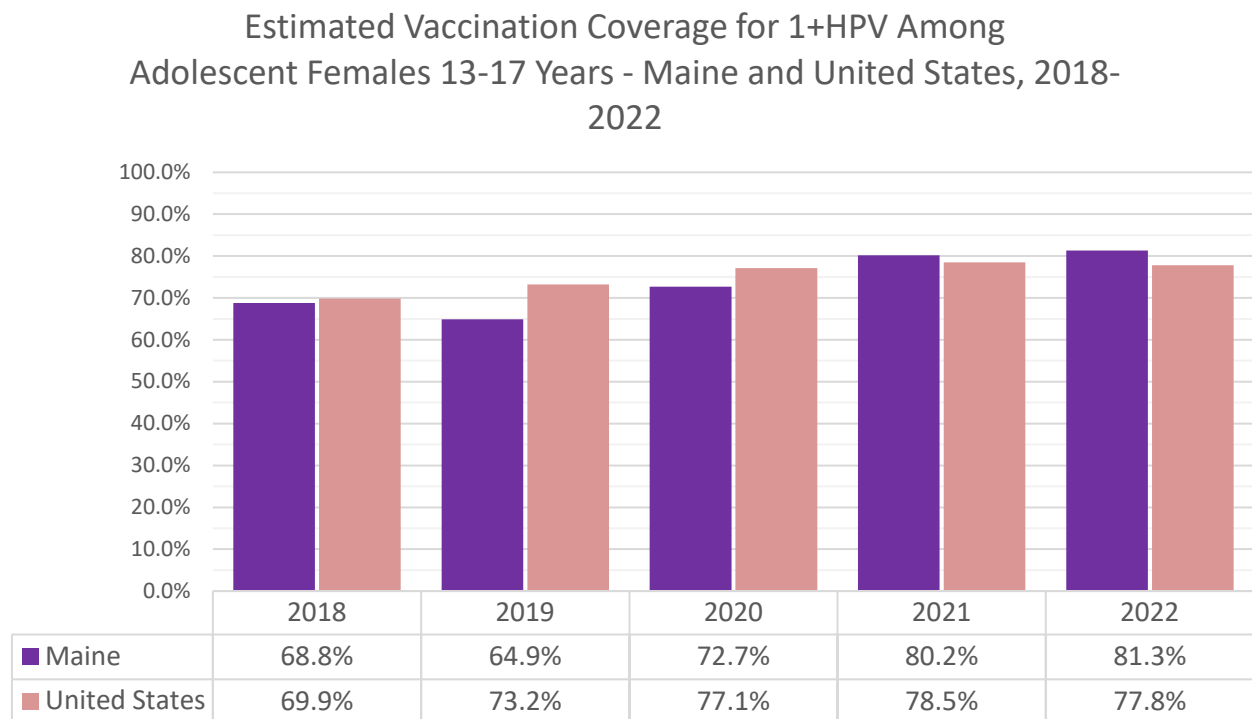
Figure 3: Adolescents 13-17 Years 2+MMR Vaccine Coverage Estimate, Maine and U.S., 2018-2022



***2+MMR:** 2 or more doses of mumps, measles, rubella vaccine or mumps, measles, rubella-unknown type vaccine.

Trend: Overall, MenACWY vaccine coverage in Maine has very slightly decreased in 2022 in comparison to 2018. The highest coverage rate was in 2020 and lowest in 2022. MenACWY vaccine coverage in Maine is above national coverage.

Figure 4: Adolescent Females 13-17 Years 1+HPV Vaccine Coverage Estimate, Maine and U.S., 2018-2022

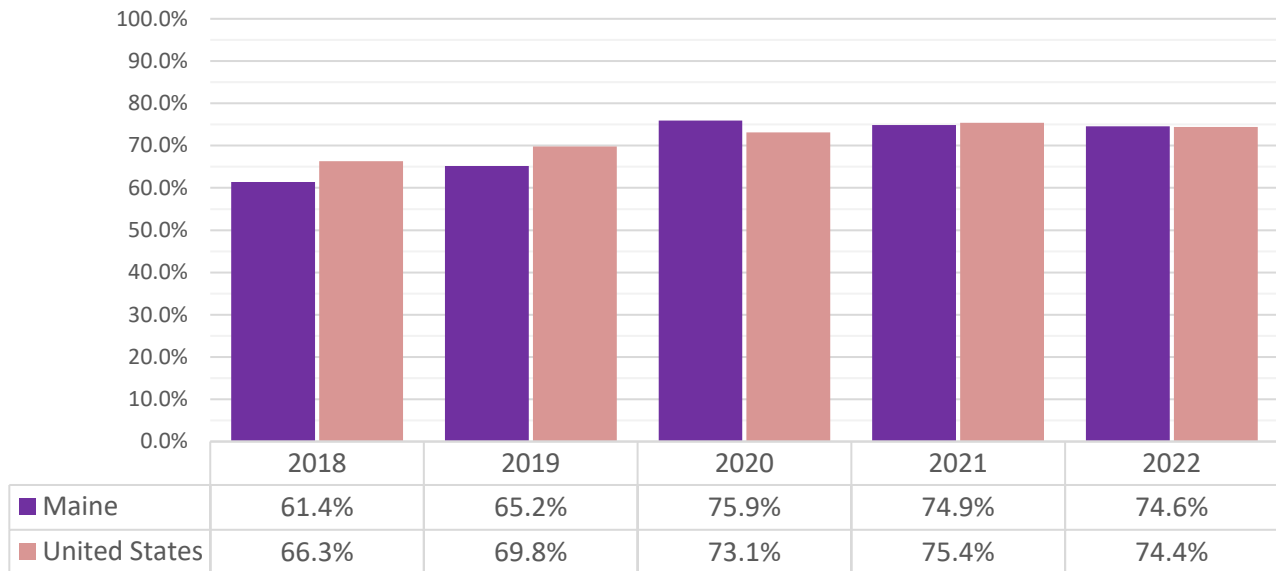


***1+HPV:** 1 or more doses of human papillomavirus nine-valent, quadrivalent or bivalent.

Trend: Overall, HPV vaccine coverage in Maine has increased in 2022 in comparison to 2018. The highest coverage rate was in 2022 and lowest in 2019. HPV vaccine coverage in Maine is now above national coverage for female adolescents.

Figure 5: Adolescent Males 13-17 Years 1+HPV Vaccine Coverage Estimate, Maine and U.S., 2018-2022

Estimated Vaccination Coverage for 1+HPV Among Adolescent Males 13-17 Years - Maine and United States, 2018-2022

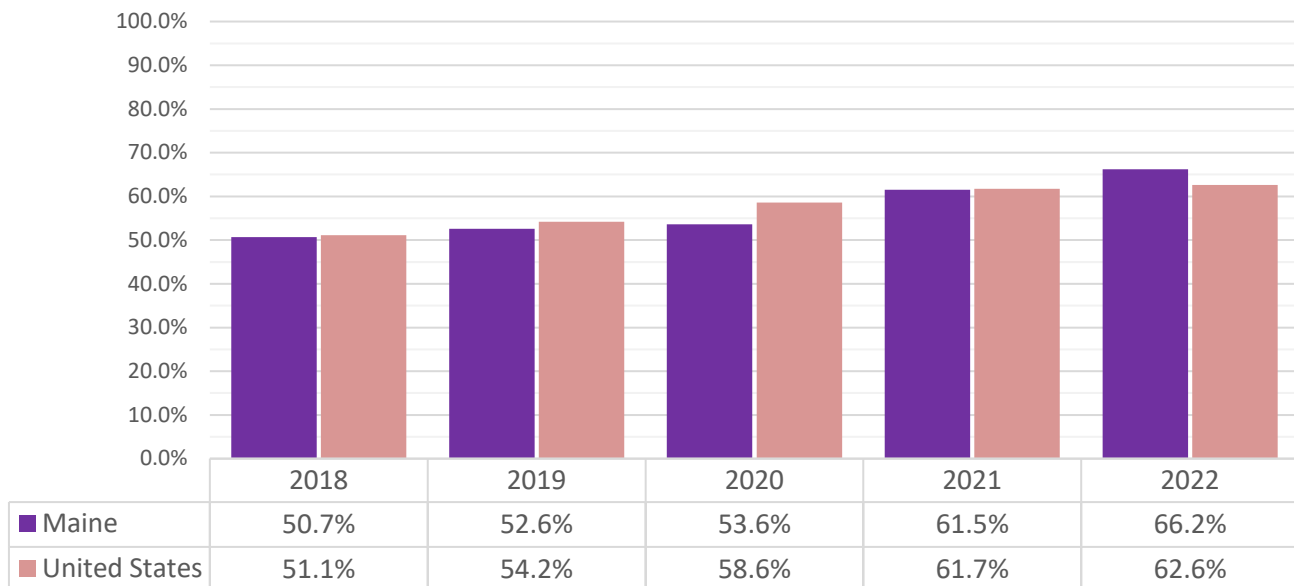


***1+HPV:** 1 or more doses of human papillomavirus nine-valent, quadrivalent or bivalent.

Trend: Overall, HPV vaccine coverage in Maine has increased in 2022 in comparison to 2018. The highest coverage rate was in 2020 and lowest in 2018. HPV vaccine coverage in Maine has been on par with the national coverage for male adolescents.

Figure 6: Adolescents 13-17 Years Up to Date HPV Vaccine Coverage Estimate, Maine and U.S., 2018-2022

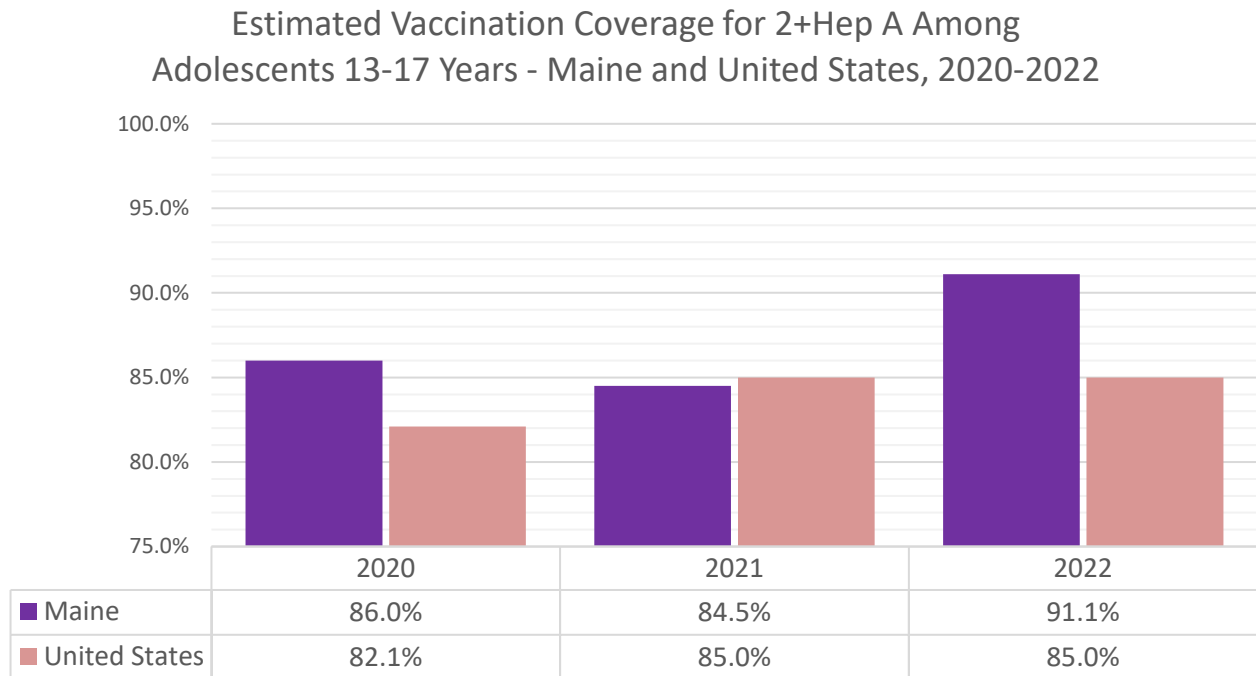
Estimated Vaccination Coverage for being Up to Date for HPV Among Adolescents 13-17 Years - Maine and United States, 2018-2022



***HPV Up to Date:** ≥ 3 doses, or ≥ 2 doses when the first HPV vaccine dose was initiated at age < 15 years and there was ≥ 5 months minus 4 days between the first and second dose.

Trend: Overall, HPV vaccine coverage in Maine has increased in 2022 in comparison to 2018. The highest coverage rate was in 2022 and lowest in 2018. HPV vaccine coverage in Maine is now above national coverage for female adolescents.

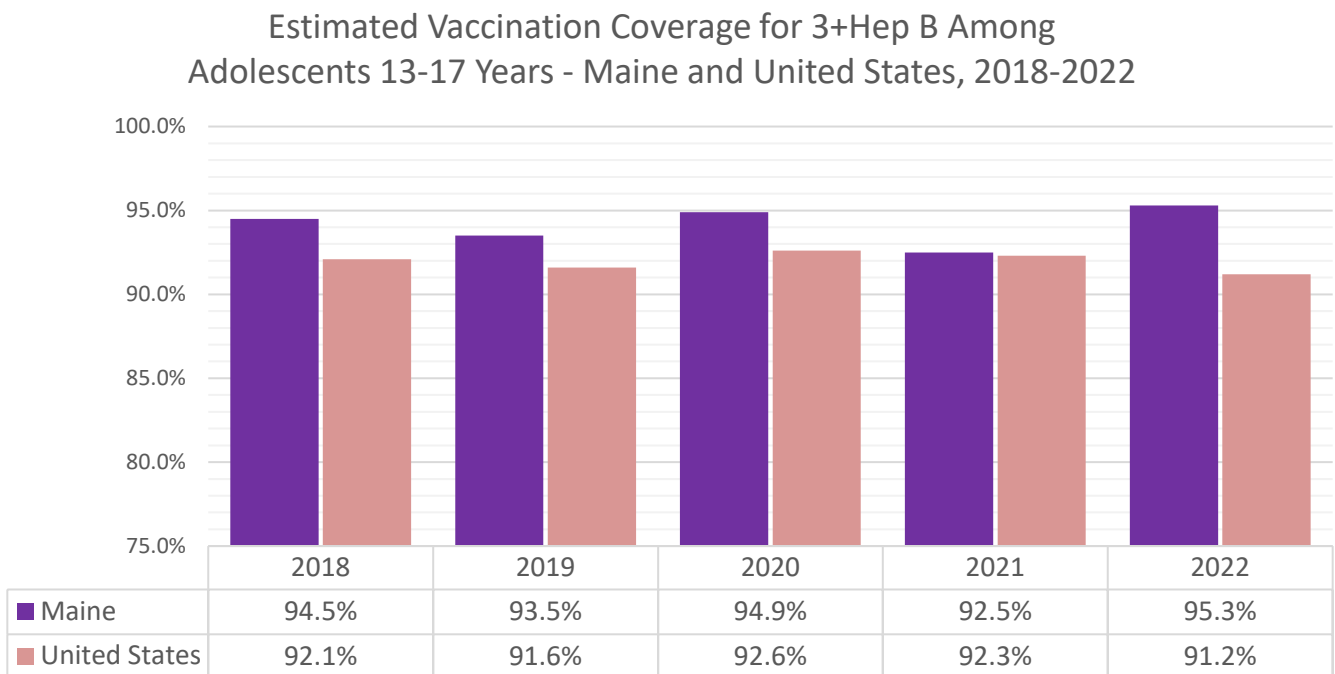
Figure 7: Adolescents 13-17 Years 2+Hep A Vaccine Coverage Estimate, Maine and U.S., 2018-2022



***2+Hep A:** 2 or more doses of hepatitis A vaccine or hepatitis A-unknown type vaccine.

Trend: Overall, hepatitis A vaccine coverage in Maine has increased in 2022 in comparison to 2020. The highest coverage rate was in 2022 and lowest in 2021. Hepatitis A vaccine coverage in Maine is now above national coverage.

Figure 8: Adolescents 13-17 Years 3+ Hep B Vaccine Coverage Estimate, Maine and U.S., 2018-2022

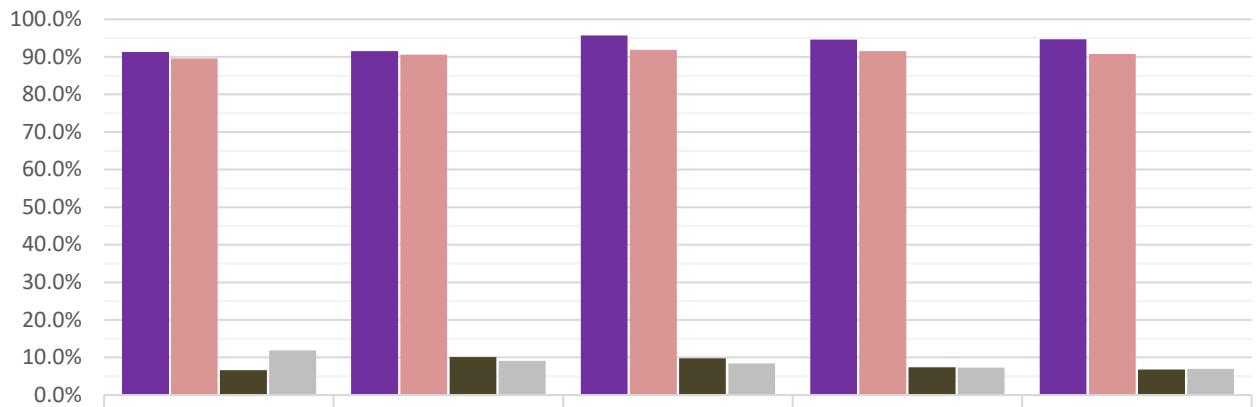


***3+Hep B:** 2 or more doses of hepatitis B vaccine or hepatitis B-unknown type vaccine.

Trend: Overall, hepatitis B vaccine coverage in Maine has slightly increased in 2022 in comparison to 2018. The highest coverage rate was in 2022 and lowest in 2021. hepatitis B vaccine coverage in Maine has been above national coverage.

Figure 9: Adolescents 13-17 Years Varicella Immunity Among Vaccination Versus History of Disease (Chickenpox), Maine and United States, 2018-2022

Estimated Varicella Immunity Among Adolescents 13-17 Years -
2+ Varicella Vaccination or History of Disease, Maine and United States, 2018-2022



| | 2018 | 2019 | 2020 | 2021 | 2022 |
|-----------------------------|-------|-------|-------|-------|-------|
| ■ Vaccinations, Maine | 91.3% | 91.5% | 95.7% | 94.6% | 94.7% |
| ■ Vaccinations, US | 89.6% | 90.6% | 91.9% | 91.5% | 90.8% |
| ■ History of Disease, Maine | 6.6% | 10.1% | 9.8% | 7.4% | 6.8% |
| ■ History of Disease, US | 11.9% | 9.1% | 8.4% | 7.3% | 7.0% |

***2+Varicella:** 2 or more doses of varicella vaccine or varicella-unknown type vaccine, without history of varicella (chickenpox) infection.

***History of disease:** History of contracting varicella (chickenpox) per parent/guardian report or provider records, no varicella vaccine received.

Trend: Overall, MenACWY vaccine coverage in Maine has increased in 2022 in comparison to 2018. The highest coverage rate was in 2022 and lowest in 2018. MenACWY vaccine coverage in Maine is above the national coverage.

Table 1: Adolescents 13-17 Years National Vaccine Coverage Estimate Ranking, Maine 2018-2022

| National Vaccine Coverage Ranking for Maine Among Children at 24 Months, 2018-2022 | |
|--|-------|
| Vaccine | Maine |
| 1+ Tdap | 5th |
| 1+ Men ACWY | 3rd |
| 2+ MMR | 20th |
| 1+ HPV | 19th |
| 2+ Hep A | 10th |
| 3+ Hep B | 11th |
| 1+ Varicella | 6th |

*Only 39 states reported the percentage of their population that have a history of varicella infection – Maine ranked 28th.

Table 2: Adolescents 13-17 Years New England Vaccine Coverage Estimate Ranking, Maine, 2022

| New England Vaccine Coverage Ranking for Maine Among Children at 24 Months, 2018-2022 | | | | | | |
|---|-------------|-------|---------------|---------------|--------------|---------|
| Vaccine | Connecticut | Maine | Massachusetts | New Hampshire | Rhode Island | Vermont |
| 1+ Tdap | 5th | 2nd | 3rd | 4th | 1st | 6th |
| 1+ Men ACWY | 4th | 1st | 3rd | 6th | 2nd | 5th |
| 2+ MMR | 2nd | 5th | 6th | 1st | 3rd | 4th |
| 1+ HPV | 5th | 6th | 2nd | 3rd | 1st | 4th |
| 2+ Hep A | 3rd | 2nd | 5th | 4th | 1st | 6th |
| 3+ Hep B | 1st | 3rd | 5th | 4th | 2nd | 6th |
| 1+ Varicella | 5th | 3rd | 4th | 2nd | 1st | 6th |

*Only 4 New England states reported the percentage of their population that have a history of varicella infection – Maine ranked 4th.