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2020 National Immunization Survey Childhood Report

The National Immunization Surveys (NIS) compiles data collected via phone surveys used to monitor vaccination coverage among children 19-35 months, teens 13-17 years, adults 18 years and older; school (kindergarteners) recommendations/requirements; and flu, RSV, and COVID-19 vaccinations. 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, some larger U.S. metropolitan areas, Guam and Puerto Rico. 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 was first launched in 1994. The target population for the NIS is children who are or will be 19-35 months 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 2-year-old children for the following recommended vaccinations:

- Diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP/DT/DTP)
- Poliovirus vaccine (Polio)
- Measles or Measles-Mumps-Rubella vaccine (MMR)
- Haemophilus influenza type b vaccine (Hib)
- Hepatitis B vaccine (Hep B)
- Varicella zoster (chickenpox) vaccine (VAR)
- Pneumococcal conjugate vaccine (PCV)
- Hepatitis A vaccine (Hep A)
- Vaccine Series – 4DTap:3Polio:1MMR:3Hib:3HepB:1VAR:4PCV (4:3:1:3:3:1:4)

For 2019-2020, national vaccination coverage estimates were based on a sample of 27,733 children (378 Maine children) with completed household interviews and adequate provider data. The NIS is best suited for estimating immunization coverage at a national level. However, the NIS also provides coverage estimates on a sub-national basis, including individual states, cities and U.S. territories.

When state-level estimates are published, three potential errors can arise. A state's newest point estimate is often compared with last year's estimate. 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. It is impossible to compare a state like Maine to a more populated state such as Texas. 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 children 24-35 months of age for the 4:3:1:3:3:1:4 antigen series using data directly from our immunization registry, ImmPact. Not only does the data give us a larger sample size with over 13,400 Maine children of this age included (the NIS surveyed 378 Maine children), but the data are 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.

Maine Quarterly Immunization Rate Report Cards can be found here:
http://www.maine.gov/dhhs/mecdc/infectious-disease/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 vaccination data reported were analyzed and graphical representations for each vaccine surveyed show immunization rates for the past 4 years for trending comparisons (Figures 1-10). Summary tables were generated (Tables 1 & 2) to show Maine's coverage ranking both nationally and in HHS Region 1 (the New England states). Additionally, a graphical representation has been generated to show the difference between NIS rates and Maine's IIS rates (Figure 11). A list of talking points is also included to highlight any areas of change from the previous year.

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

National Immunization Survey Childhood Talking Points

- Maine is either approximately at or above the national average for every childhood vaccine, except for hepatitis B.

- Maine saw an increase of approximately 6.4% for the completed 4:3:1:3:3:1:4 vaccine series between 2019 and 2020.

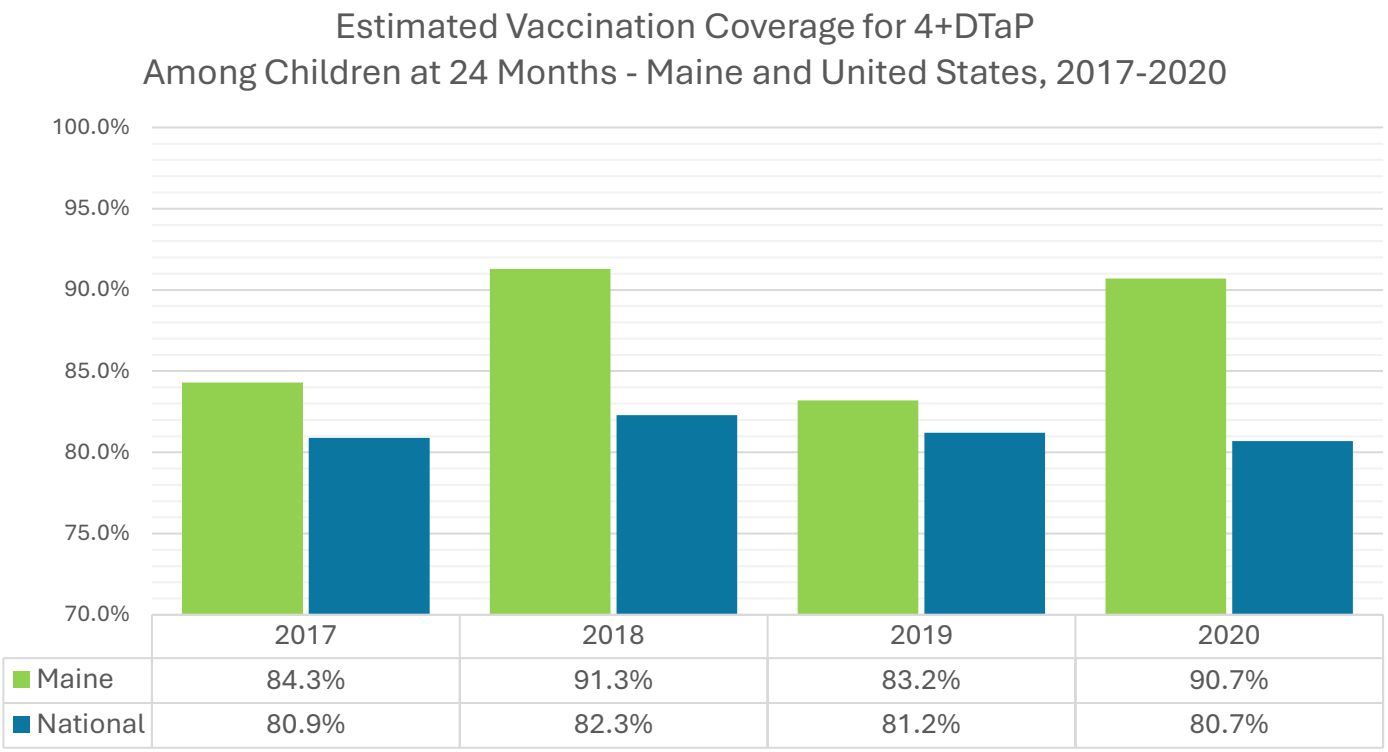
- Maine saw an increase in every individual vaccination between 2019 and 2020.

- When compared to the 50 United States, Maine ranks in the top 10 states for all vaccines, except hepatitis B where Maine is ranked 30th.

- Among the New England states, Maine ranks 1st in vaccination coverage for hepatitis A series completed by 24 months, and a birth dose of hepatitis B (given between ages 0-3 days).
    - However, Maine ranks last (6th) in a complete hepatitis B series and 5th for the completed 4:3:1:3:3:1:4 vaccine series by age 24 months.

- NIS stressed that when available, states should utilize their IIS (ImmPact) for immunization rates as these are up to date and more accurate than a small, random sampling.
    - NIS surveyed only 378 Maine children for the years of 2019 and 2020 (134 children and 244 children, respectively).
    - ImmPact includes data for 12,403 total Maine children in 2020.

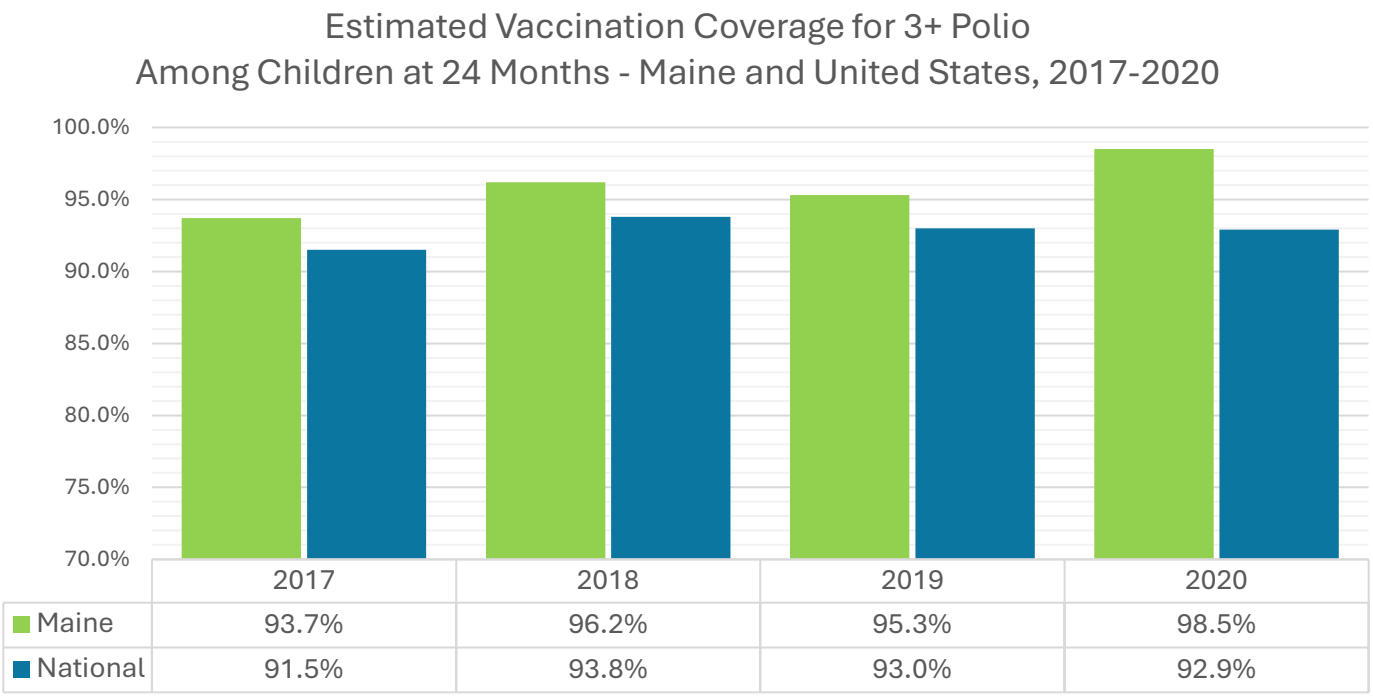
Figure 1: Children at 24 Months 4+DTaP Vaccine Coverage Estimate, Maine and U.S., 2017-2020



	2017	2018	2019	2020
Maine	84.3%	91.3%	83.2%	90.7%
National	80.9%	82.3%	81.2%	80.7%

4+ DTaP: *≥4 doses of diphtheria and tetanus toxoids and acellular pertussis (DTaP) vaccine.*

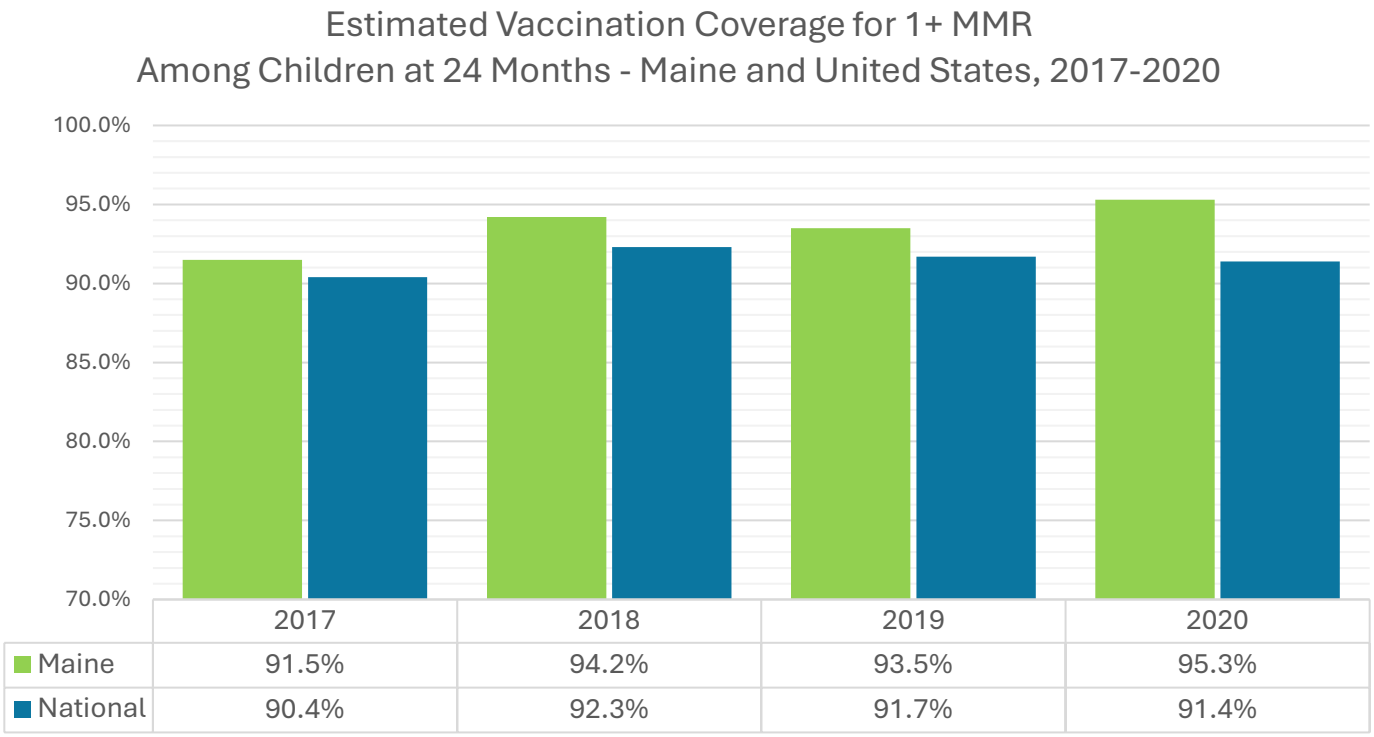
Figure 2: Children at 24 Months 3+Polio Vaccine Coverage Estimate, Maine and U.S., 2017-2020



	2017	2018	2019	2020
Maine	93.7%	96.2%	95.3%	98.5%
National	91.5%	93.8%	93.0%	92.9%

3+ Polio: *≥3 doses of any poliovirus (Polio) vaccine.*

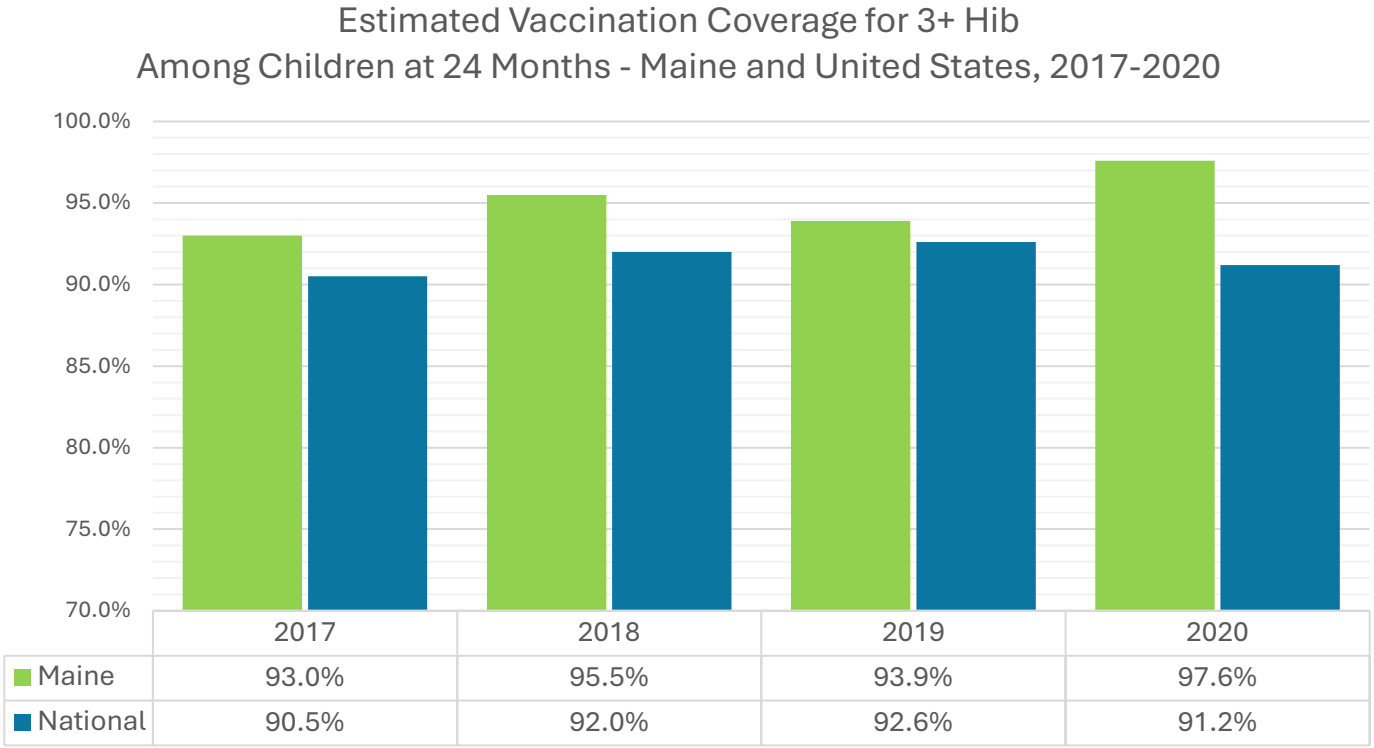
Figure 3: Children at 24 Months 1+MMR Vaccine Coverage Estimate, Maine and U.S., 2017-2020



	2017	2018	2019	2020
Maine	91.5%	94.2%	93.5%	95.3%
National	90.4%	92.3%	91.7%	91.4%

1+MMR: *≥1 dose of measles-mumps-rubella (MMR) vaccine.*

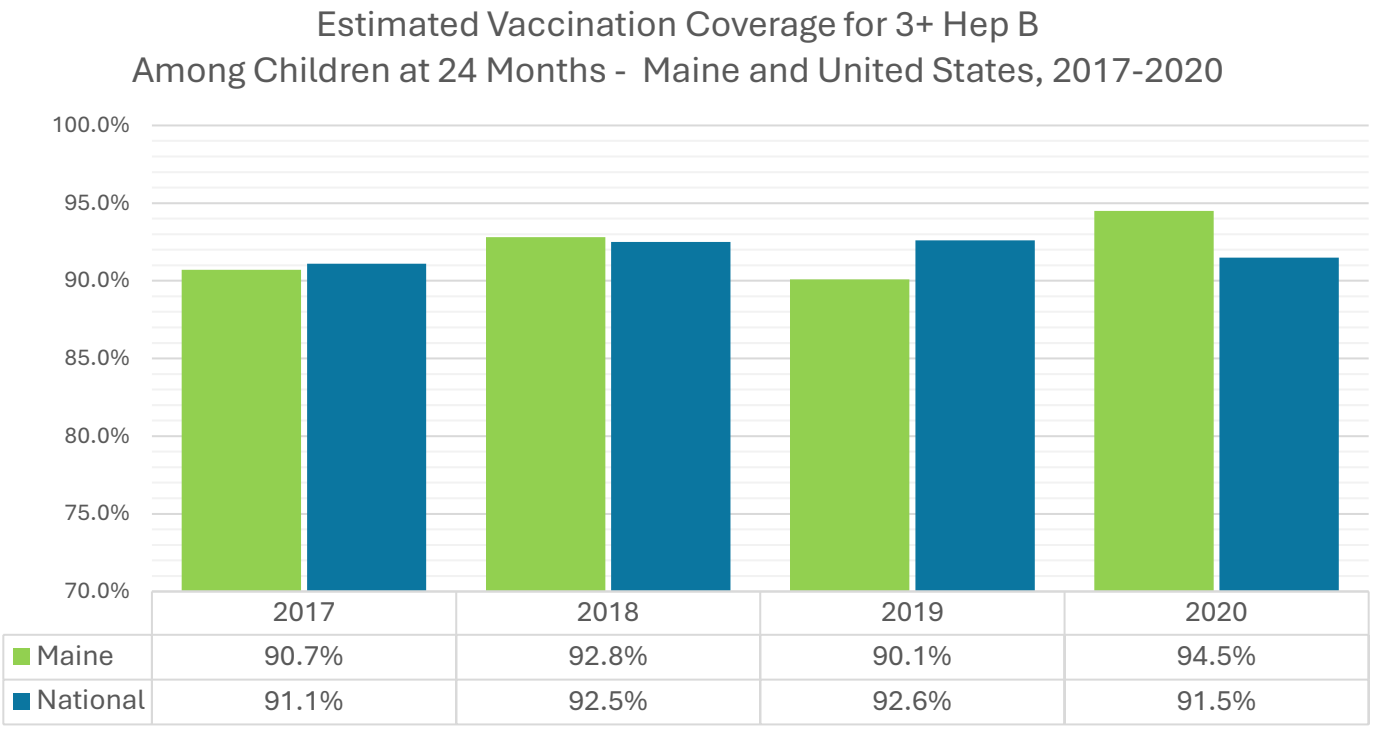
Figure 4: Children at 24 Months 3+Hib Vaccine Coverage Estimate, Maine and U.S., 2017-2020



	2017	2018	2019	2020
Maine	93.0%	95.5%	93.9%	97.6%
National	90.5%	92.0%	92.6%	91.2%

3+Hib: *≥3 doses of Haemophilus influenzae type b (Hib) vaccine.*

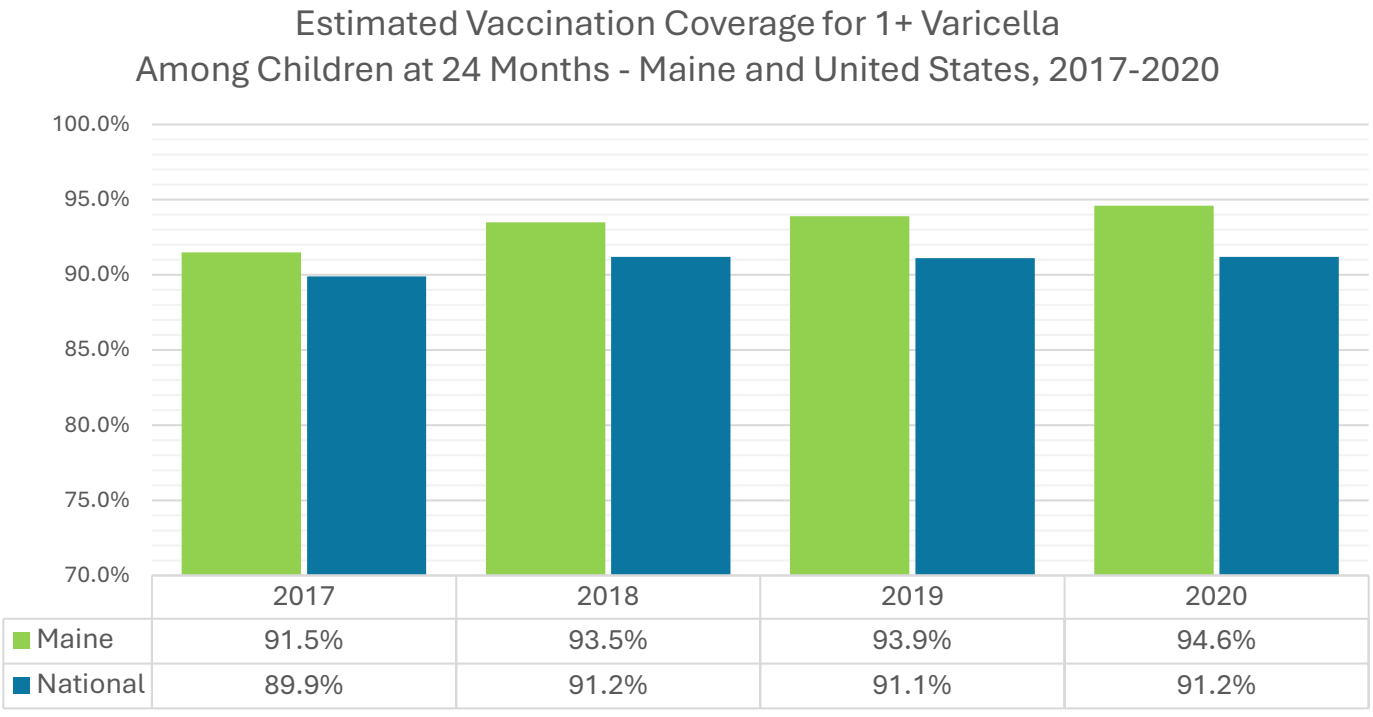
Figure 5: Children at 24 Months 3+HepB Vaccine Coverage Estimate, Maine and U.S., 2017-2020



	2017	2018	2019	2020
Maine	90.7%	92.8%	90.1%	94.5%
National	91.1%	92.5%	92.6%	91.5%

3+ HepB: *≥3 doses of hepatitis B (HepB) vaccine.*

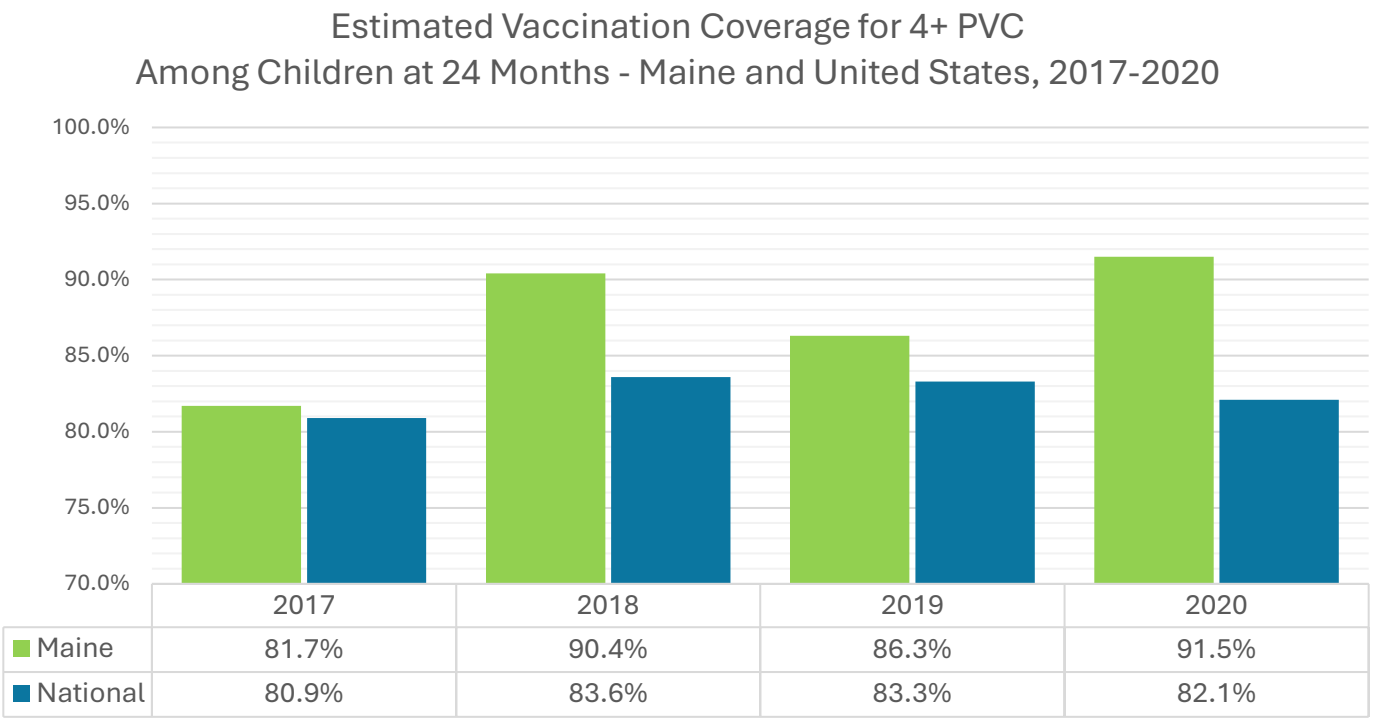
Figure 6: Children at 24 Months 1+VAR Vaccine Coverage Estimate, Maine and U.S., 2017-2020



	2017	2018	2019	2020
Maine	91.5%	93.5%	93.9%	94.6%
National	89.9%	91.2%	91.1%	91.2%

1+Varicella: *≥ 1 dose of varicella (VAR) vaccine at or after child's first birthday, unadjusted for history of varicella disease (by parent/guardian report or provider records).*

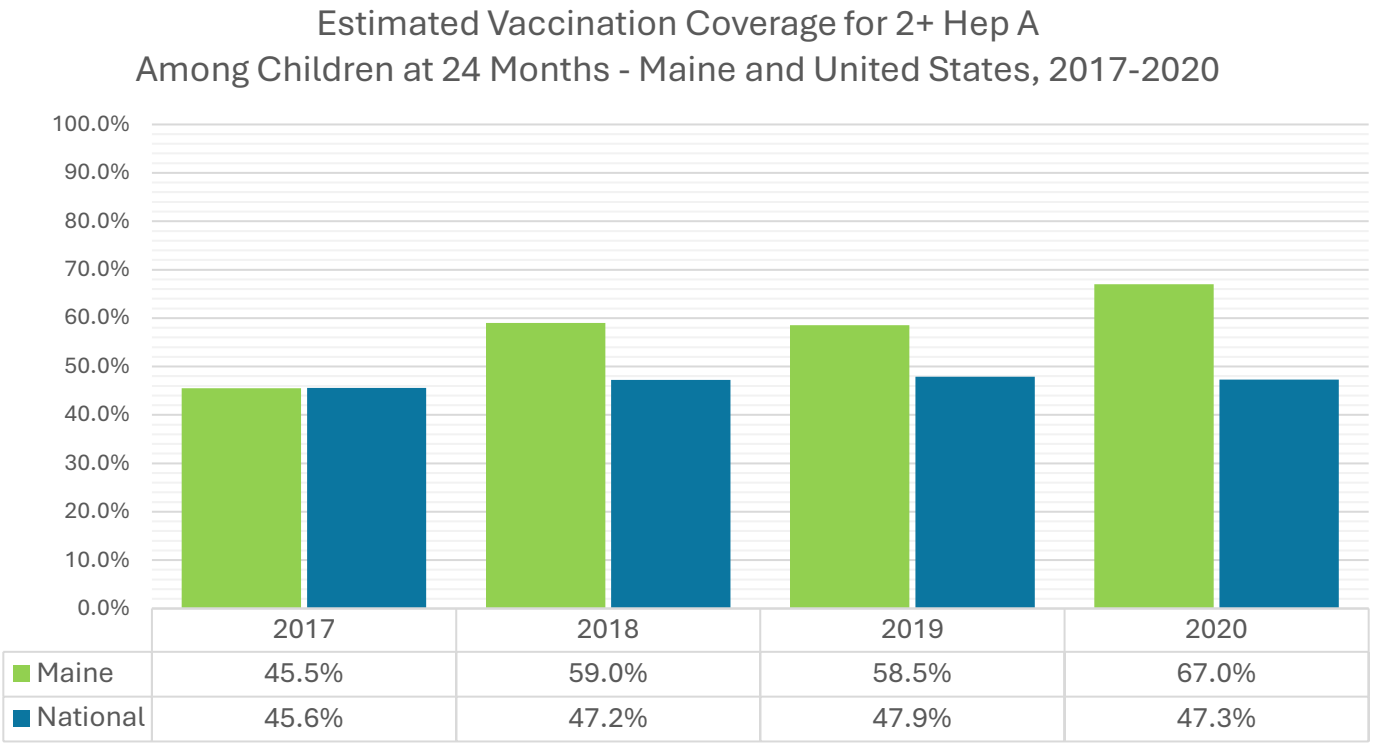
Figure 7: Children at 24 Months 4+PCV Vaccine Coverage Estimate, Maine and U.S., 2017-2020



	2017	2018	2019	2020
Maine	81.7%	90.4%	86.3%	91.5%
National	80.9%	83.6%	83.3%	82.1%

4+PCV: *≥ 4 doses of pneumococcal conjugate vaccine (PCV).*

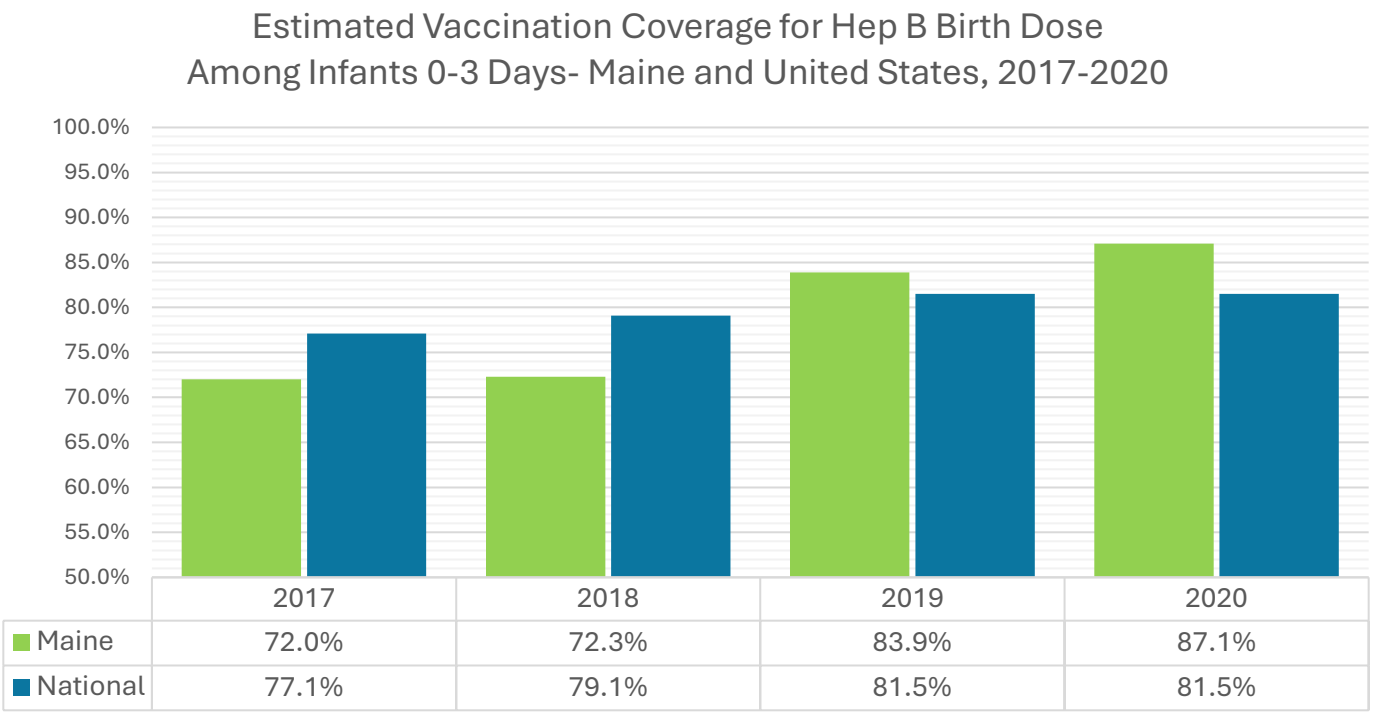
Figure 8: Children at 24 Months 2+HepA Vaccine Coverage Estimate, Maine and U.S., 2017-2020



	2017	2018	2019	2020
Maine	45.5%	59.0%	58.5%	67.0%
National	45.6%	47.2%	47.9%	47.3%

2+HepA: *≥ 2 doses of hepatitis A (HepA) vaccine.*

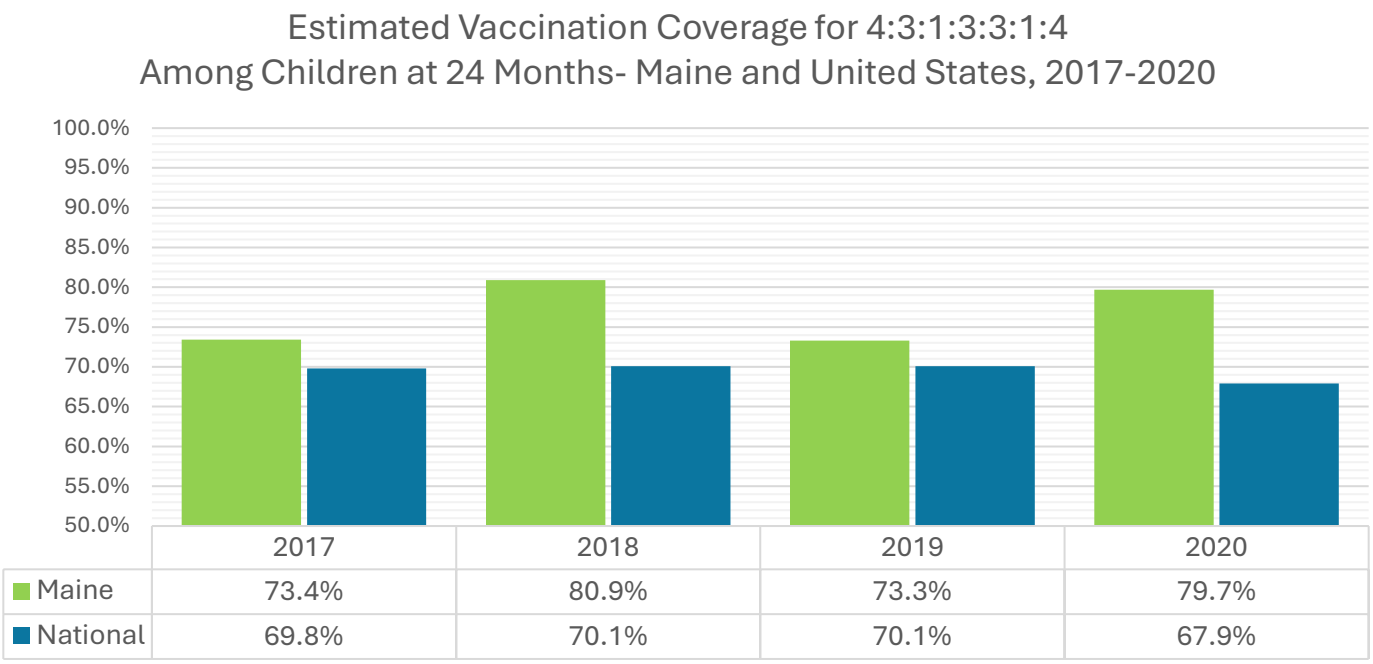
Figure 9: Hepatitis B Birth Dose Vaccine Coverage Estimate, Maine and U.S., 2017-2020



	2017	2018	2019	2020
Maine	72.0%	72.3%	83.9%	87.1%
National	77.1%	79.1%	81.5%	81.5%

Hepatitis B Birth Dose: *≥1 dose of Hepatitis B vaccine, administered from birth through age 3 days.*

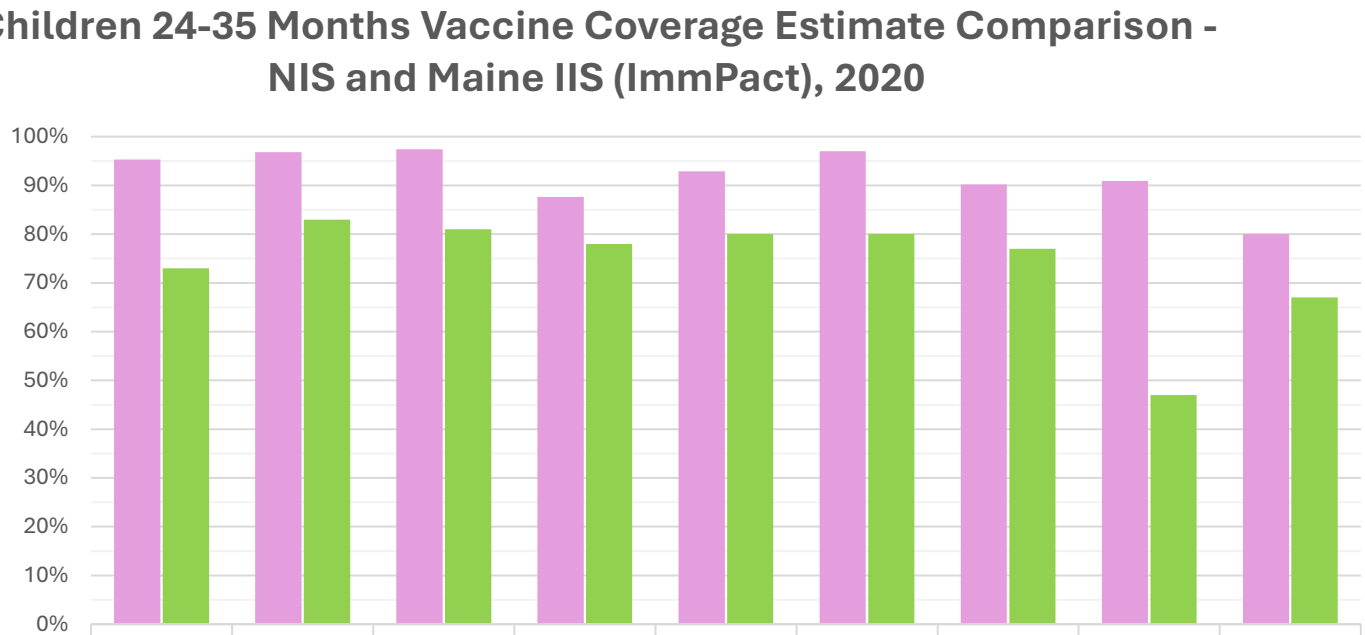
Figure 10: Children at 24 Months 4:3:1:3*:3:1:4 Vaccine Series Vaccine Coverage Estimate, Maine and U.S., 2017-2020



	2017	2018	2019	2020
Maine	73.4%	80.9%	73.3%	79.7%
National	69.8%	70.1%	70.1%	67.9%

The combined 7-vaccine series (4:3:1:3*:3:1:4) *includes ≥4 doses of DTaP, ≥3 doses of poliovirus vaccine, ≥1 doses of measles-containing vaccine, the full series of Hib* (≥3 or ≥4 doses, depending on product type), ≥3 doses of HepB, ≥1 dose of VAR, and ≥4 doses of PCV.*

Figure 11: Children 24-35 Months Individual Antigen and 4:3:1:3:3:1:4 Vaccine Series Vaccine Coverage Estimate Comparison, NIS and Maine IIS, ImmPact, 2020



	4+ DTaP	3+ Polio	1+ MMR	UTD Hib	UTD HepB	1+ Var	UTD PCV	2+ HepA	4:3:1:3:3:1:4
NIS	95%	97%	97%	88%	93%	97%	90%	91%	80%
Maine/ImmPact	73%	83%	81%	78%	80%	80%	77%	47%	67%

4+ DTaP: *≥4 doses of diphtheria and tetanus toxoids and acellular pertussis (DTaP) vaccine.*
3+ Polio: *≥3 doses of any poliovirus (Polio) vaccine.*
1+MMR*: ≥1 dose of measles-mumps-rubella (MMR) vaccine.*
UTD Hib: *≥3 doses of Haemophilus influenzae type b (Hib) vaccine.*
UTD HepB*: ≥3 doses of hepatitis B (HepB) vaccine.*
1+Varicella*: ≥ 1 dose of varicella (VAR) vaccine.*
UTD PCV*: ≥ 4 doses of pneumococcal conjugate vaccine (PCV).*
4:3:1:3:3:1:4 series: *comprised of all of the above individual antigens*

Note*: Hib, HepB and PCV vaccines are not part of the vaccine requirements for school children in Maine.*

The National Immunization Survey rates represent the 271 children randomly surveyed. ImmPact rates represent all fully integrated children in the Maine IIS 19-35 months of age, 12,403 total children.

Table 1: Children at 24 Months National Vaccine Coverage Estimate Ranking, Maine 2017-2020

National Vaccine Coverage Ranking for Maine Among Children at 24 Months, 2019-2020	
Vaccine	**Maine**
4+ DTap	6th
3+ Polio	4th
1+ MMR	8th
3+ Hib	6th
3+ Hep B	30th
Hep B Birth Dose	6th
1+ Var	8th
4+ PCV	6th
2+ Hep A	2nd
4:3:1:3:3:1:4	6th

Table 2: Children at 24 Months New England Vaccine Coverage Estimate Ranking, Maine, 2018

New England Vaccine Coverage Ranking for Maine Among Children at 24 Months, 2019-2020						
Vaccine	**Connecticut**	**Maine**	**Massachusetts**	**New Hampshire**	**Rhode Island**	**Vermont**
4+ DTap	3rd	4th	5th	6th	1st	2nd
3+ Polio	5th	3rd	6th	4th	1st	2nd
1+ MMR	5th	4th	2nd	6th	1st	3rd
3+ Hib	5th	4th	2nd	3rd	6th	1st
3+ Hep B	4th	6th	2nd	5th	1st	3rd
Hep B Birth Dose	3rd	1st	4th	2nd	6th	5th
1+ Var	1st	4th	2nd	6th	3rd	5th
4+ PCV	3rd	4th	5th	6th	1st	2nd
2+ Hep A	2nd	1st	4th	5th	3rd	6th
4:3:1:3:3:1:4	4th	5th	1st	6th	2nd	3rd