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2018 National Immunization Survey Childhood 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 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 (HepB)
- Varicella zoster (chickenpox) vaccine (VAR)
- Pneumococcal conjugate vaccine (PCV)
- Hepatitis A vaccine (HepA)
- Vaccine Series – 4DTap:3Polio:1MMR:3Hib:3HepB:1VAR:4PCV (4:3:1:3:3:1:4)

For 2018, national vaccination coverage estimates were based on a sample of 25,059 children (425 Maine children) with completed household interviews and adequate provider data. The NIS is best suited for estimating immunization coverage at a national level, where the standard for error for most estimates is less than 1.0 percent. 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 estimate. Such comparisons must be made with awareness of sampling uncertainty. Maine's 2018 estimated coverage for the 4:3:1:3:3:1:4 vaccine series was 74.0±5.8% compared to 2017's 72.7±6.0%. Factoring in the margins of error, Maine could have had a 10.5% decrease in coverage levels or as high as a 13.1% increase in immunization rates. 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 whose margin of error is ±6.0 to a more populated state such as Texas whose margin of error is only ±2.6%. 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.

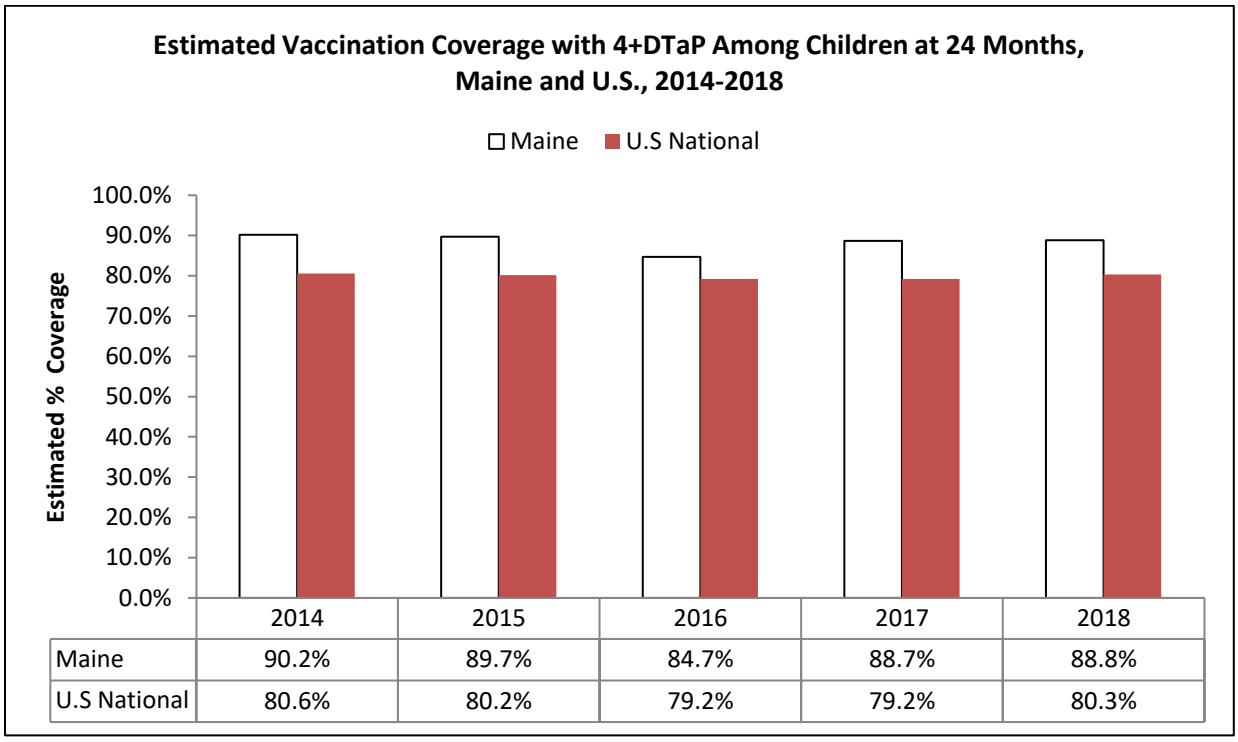
While the NIS continues to provide valuable national and state level data, the Maine Immunization Program (MIP) recognizes that the sampling size used for the survey is too small to accurately depict Maine's true vaccination coverage levels. MIP calculates immunization rates for children 24-35 months 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 425 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 5 year for trending comparisons (Figures 1-11). 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 12). 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.

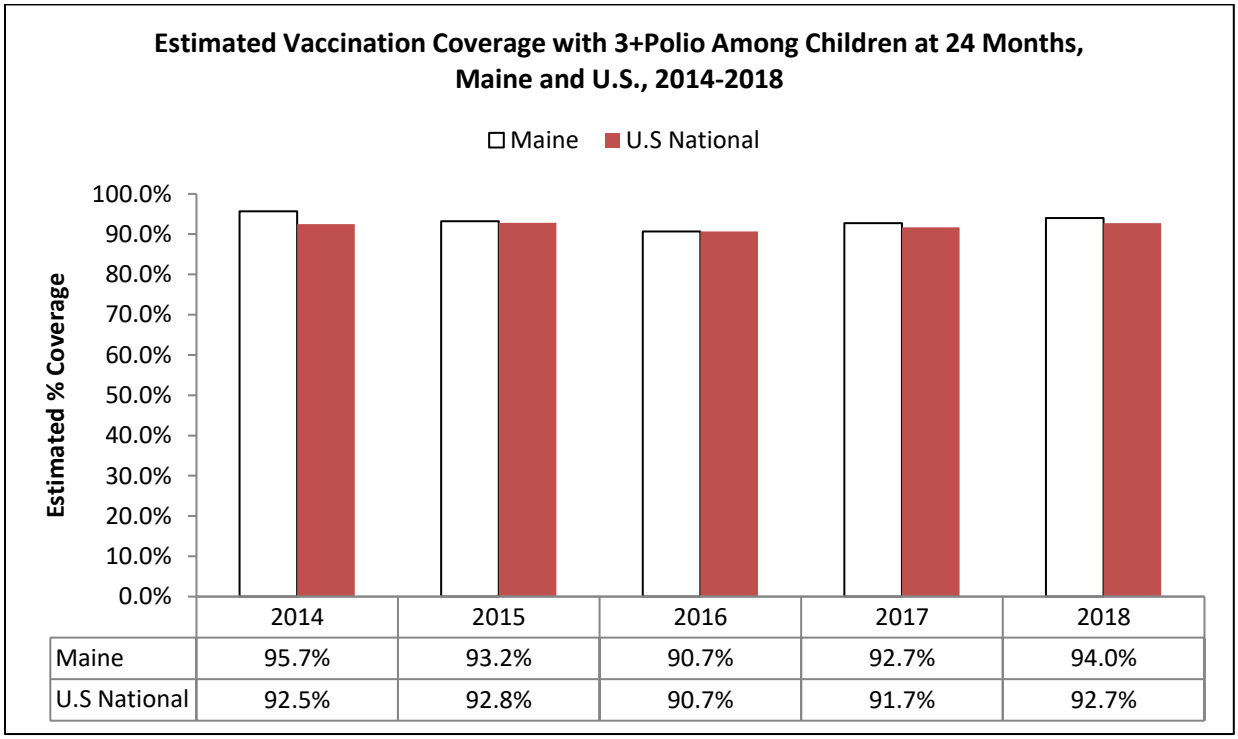
Figure 1: Children at 24 Months 4+DTaP Vaccine Coverage Estimate, Maine and U.S., 2014-2018



	2014	2015	2016	2017	2018
Maine	90.2%	89.7%	84.7%	88.7%	88.8%
U.S National	80.6%	80.2%	79.2%	79.2%	80.3%

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

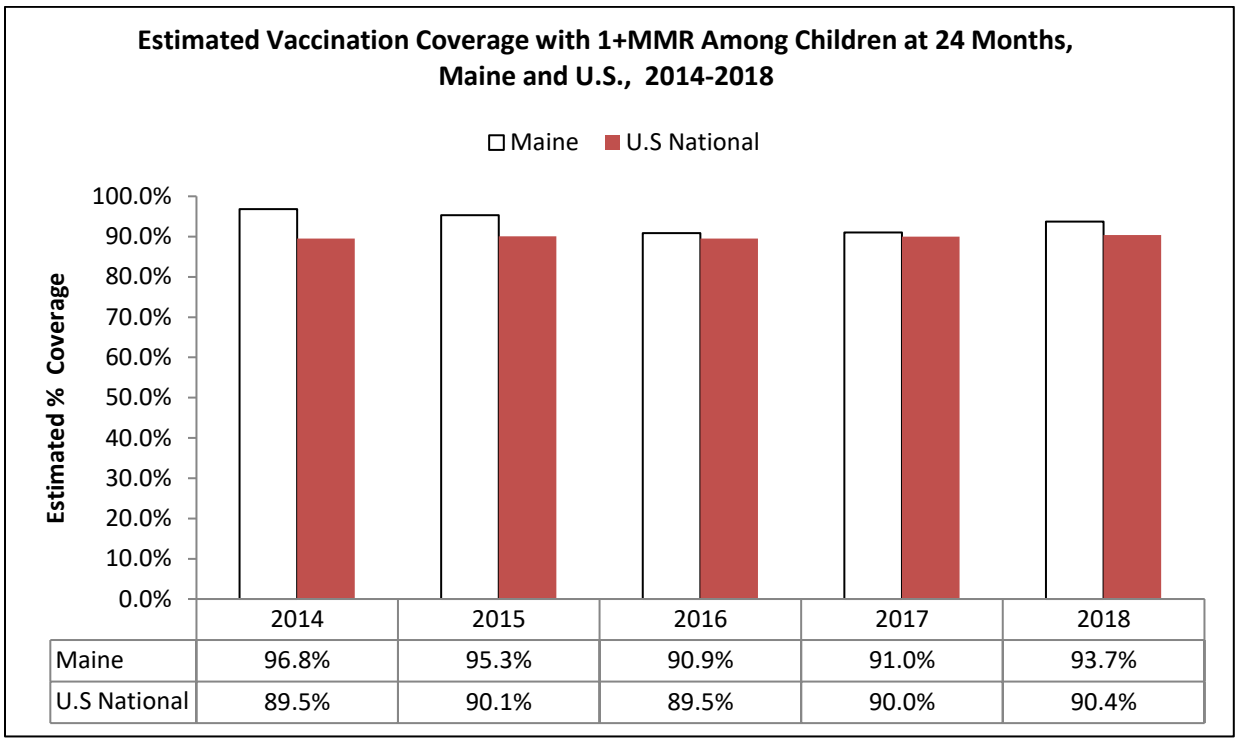
Figure 2: Children at 24 Months 3+Polio Vaccine Coverage Estimate, Maine and U.S., 2014-2018



	2014	2015	2016	2017	2018
Maine	95.7%	93.2%	90.7%	92.7%	94.0%
U.S National	92.5%	92.8%	90.7%	91.7%	92.7%

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

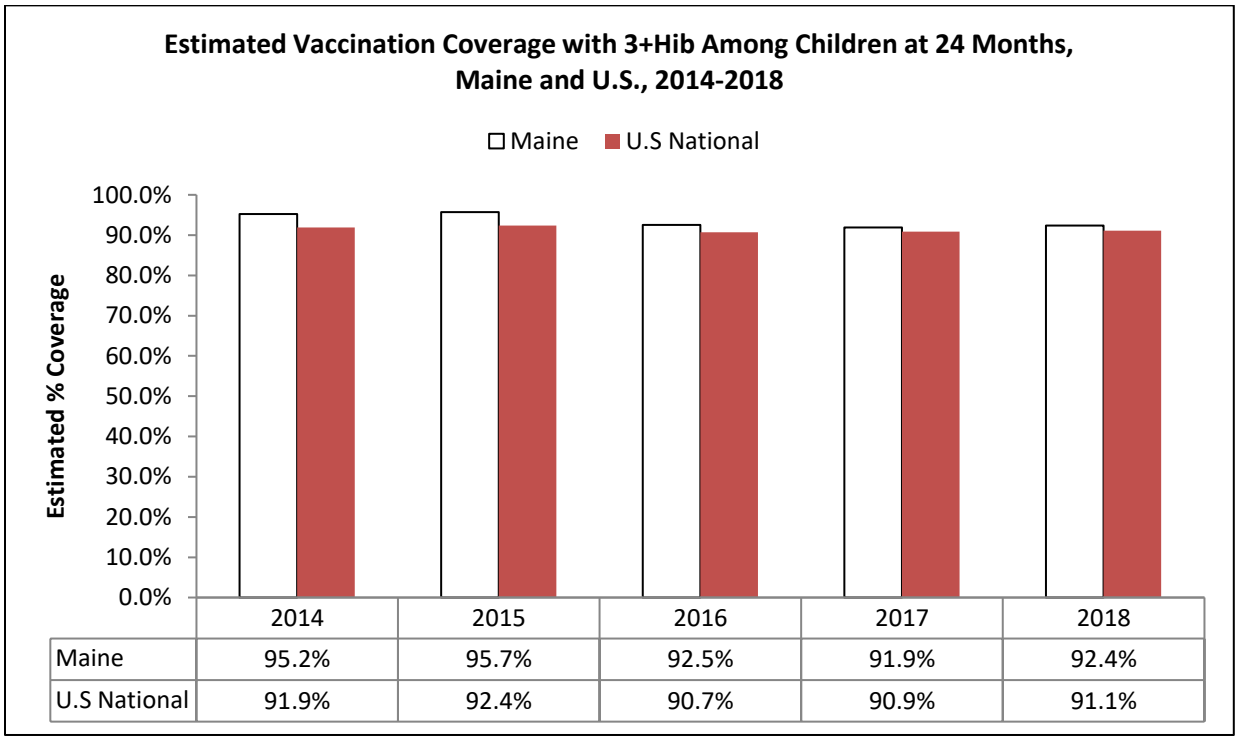
Figure 3: Children at 24 Months 1+MMR Vaccine Coverage Estimate, Maine and U.S., 2014-2018



	2014	2015	2016	2017	2018
Maine	96.8%	95.3%	90.9%	91.0%	93.7%
U.S National	89.5%	90.1%	89.5%	90.0%	90.4%

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

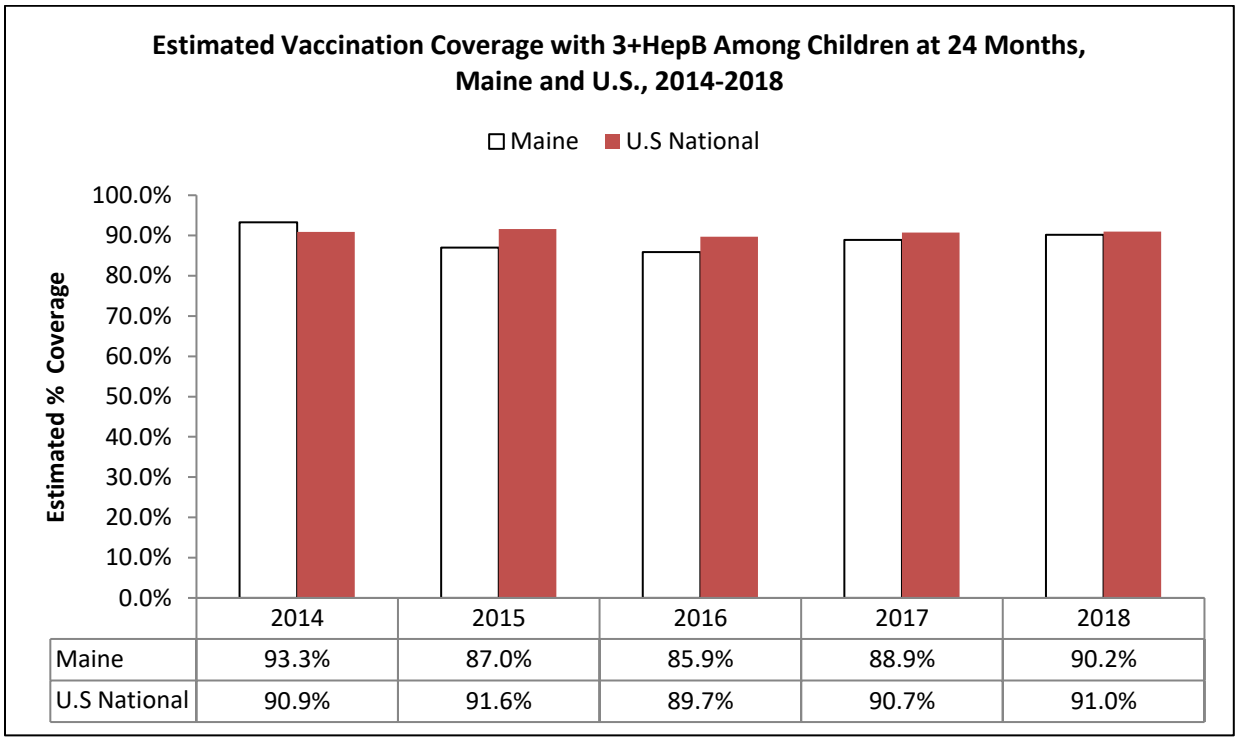
Figure 4: Children at 24 Months 3+Hib Vaccine Coverage Estimate, Maine and U.S., 2014-2018



	2014	2015	2016	2017	2018
Maine	95.2%	95.7%	92.5%	91.9%	92.4%
U.S National	91.9%	92.4%	90.7%	90.9%	91.1%

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

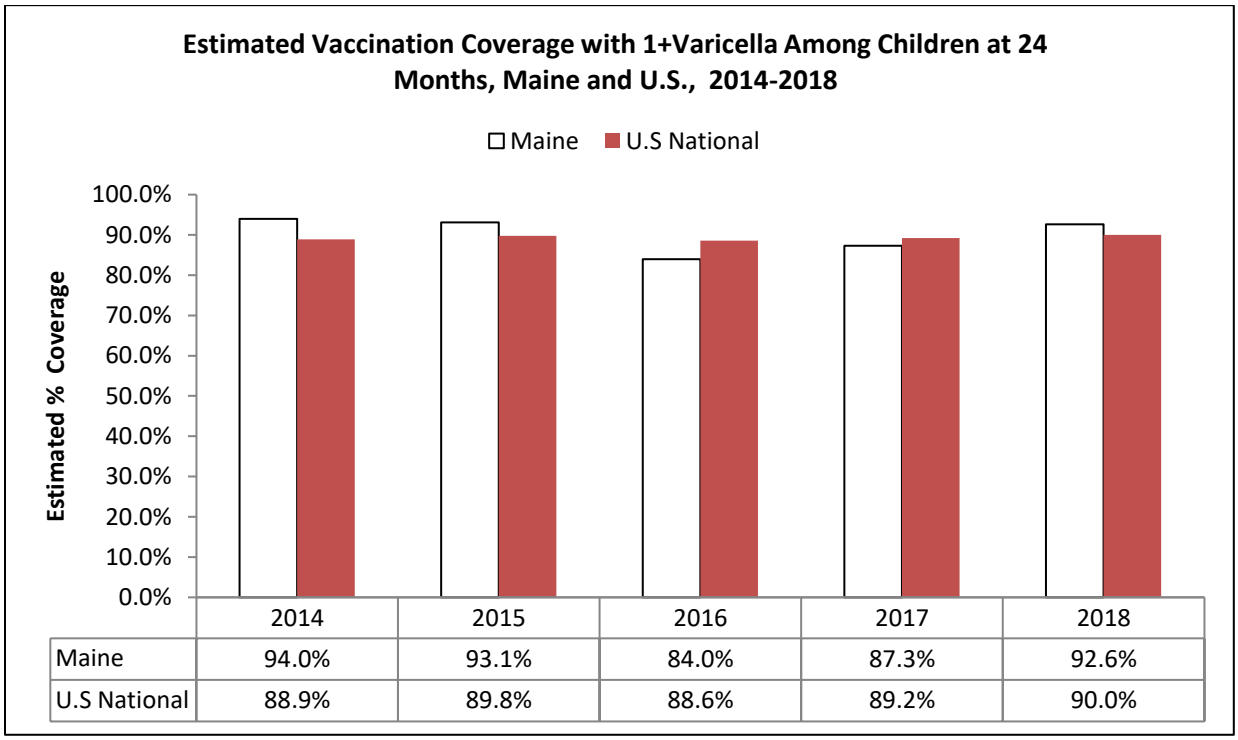
Figure 5: Children at 24 Months 3+HepB Vaccine Coverage Estimate, Maine and U.S., 2014-2018



	2014	2015	2016	2017	2018
Maine	93.3%	87.0%	85.9%	88.9%	90.2%
U.S National	90.9%	91.6%	89.7%	90.7%	91.0%

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

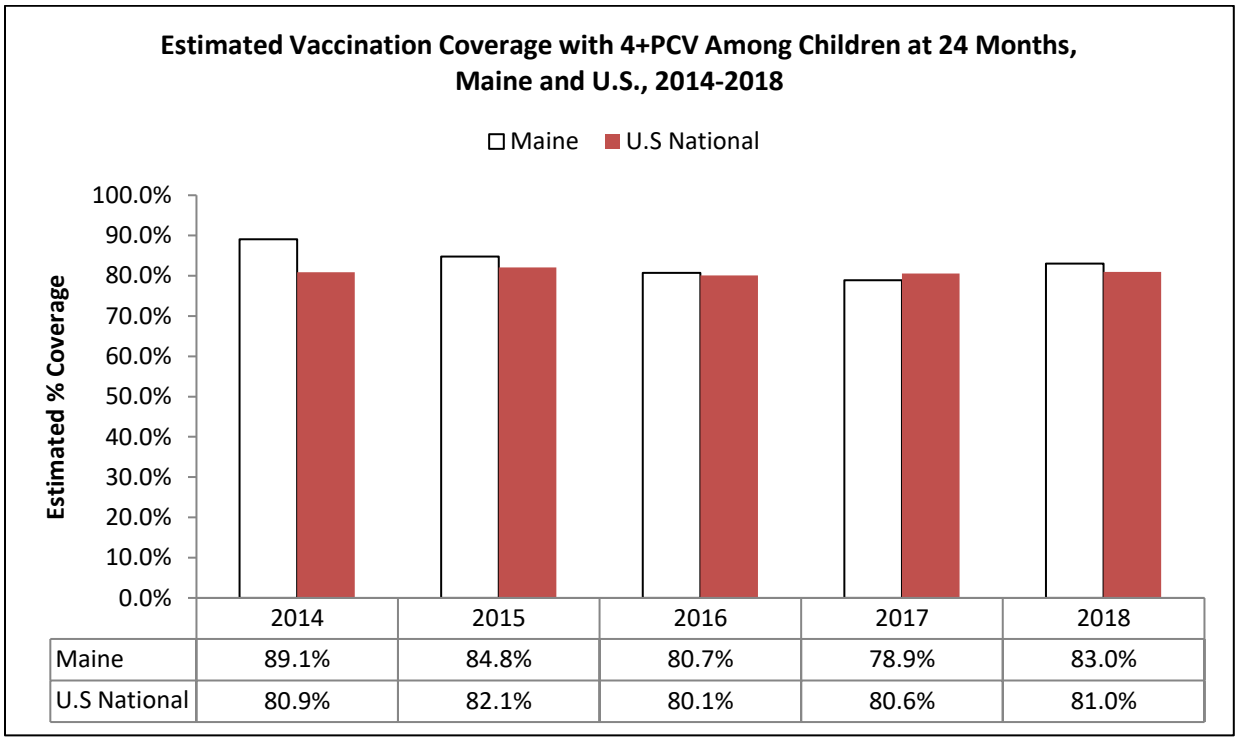
Figure 6: Children at 24 Months 1+VAR Vaccine Coverage Estimate, Maine and U.S., 2014-2018



	2014	2015	2016	2017	2018
Maine	94.0%	93.1%	84.0%	87.3%	92.6%
U.S National	88.9%	89.8%	88.6%	89.2%	90.0%

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).

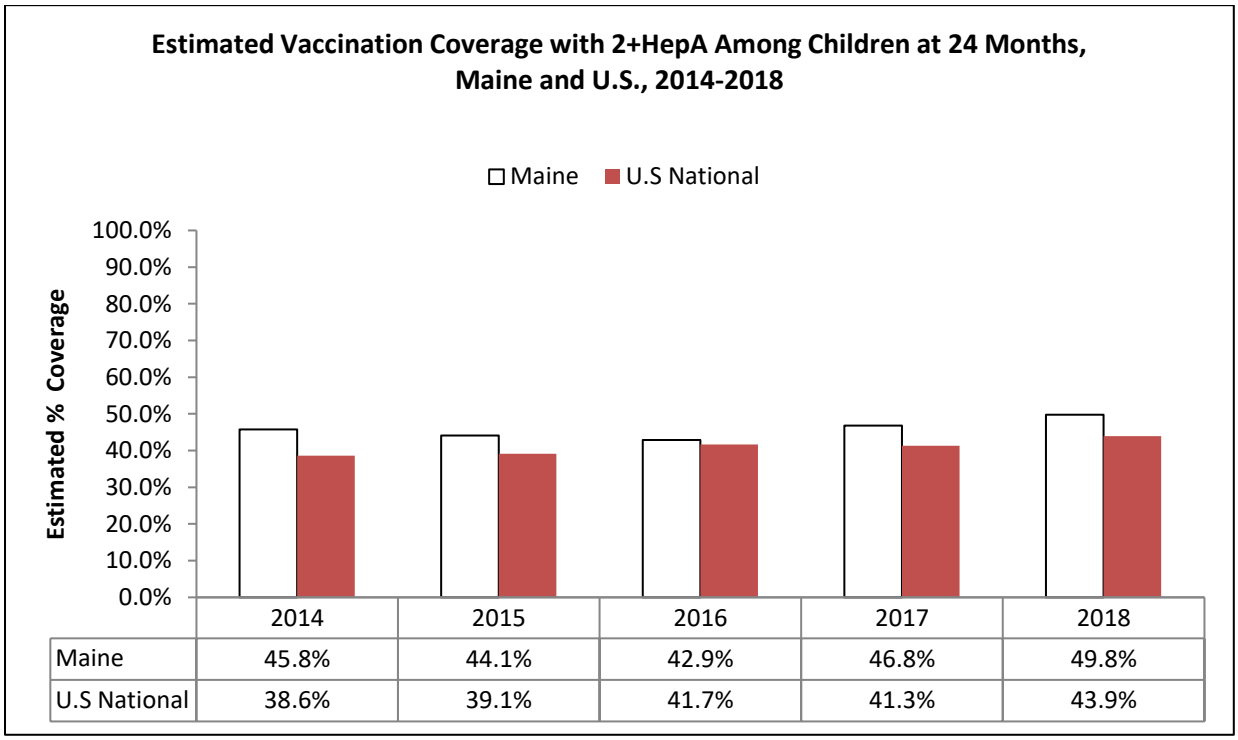
Figure 7: Children at 24 Months 4+PCV Vaccine Coverage Estimate, Maine and U.S., 2014-2018



	2014	2015	2016	2017	2018
Maine	89.1%	84.8%	80.7%	78.9%	83.0%
U.S National	80.9%	82.1%	80.1%	80.6%	81.0%

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

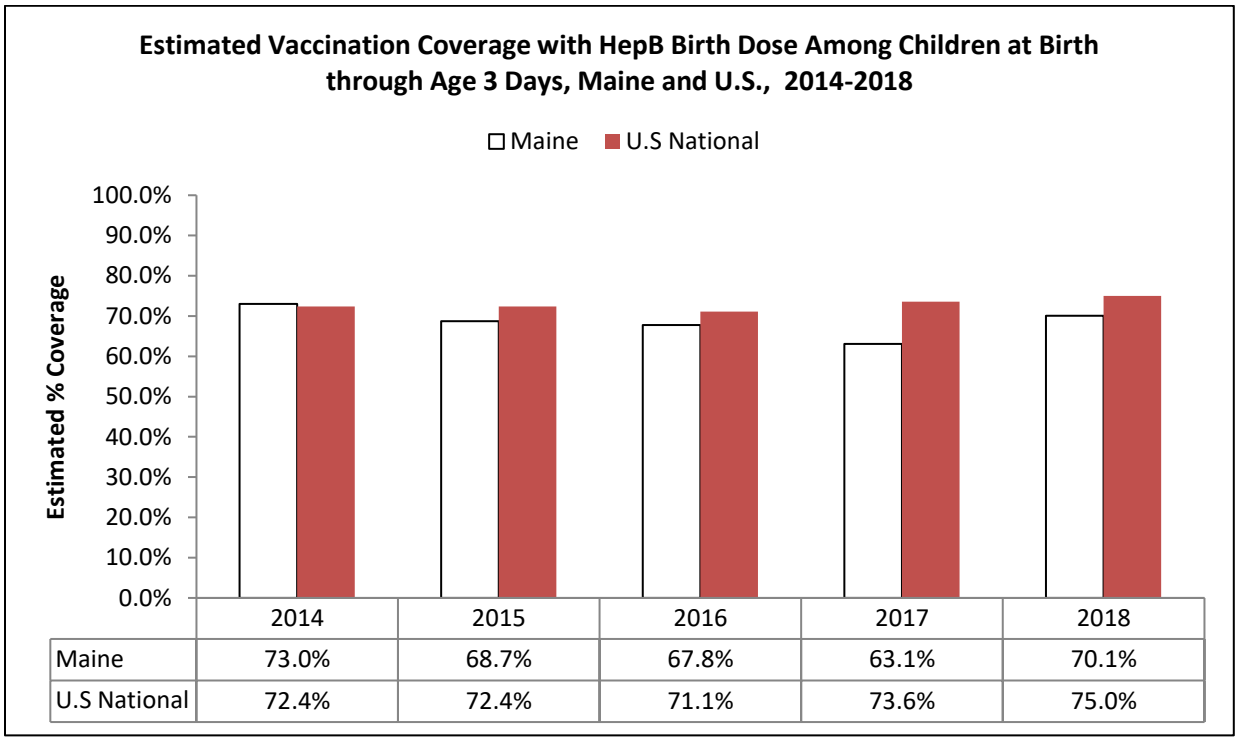
Figure 8: Children at 24 Months 2+HepA Vaccine Coverage Estimate, Maine and U.S., 2014-2018



	2014	2015	2016	2017	2018
Maine	45.8%	44.1%	42.9%	46.8%	49.8%
U.S National	38.6%	39.1%	41.7%	41.3%	43.9%

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

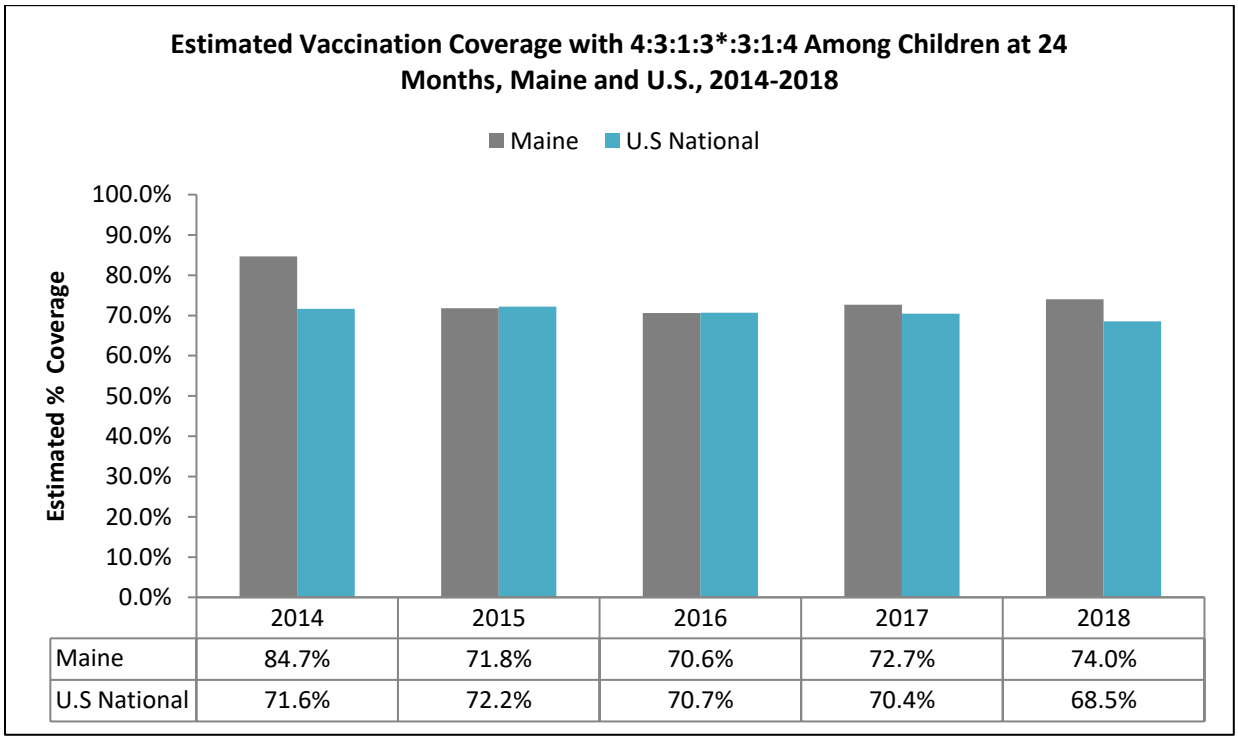
Figure 10: Hepatitis B Birth Dose Vaccine Coverage Estimate, Maine and U.S., 2014-2018



	2014	2015	2016	2017	2018
Maine	73.0%	68.7%	67.8%	63.1%	70.1%
U.S National	72.4%	72.4%	71.1%	73.6%	75.0%

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

Figure 11: Children at 24 Months 4:3:1:3:3:1:4 Vaccine Series Vaccine Coverage Estimate, Maine and U.S., 2014-2018



	2014	2015	2016	2017	2018
Maine	84.7%	71.8%	70.6%	72.7%	74.0%
U.S National	71.6%	72.2%	70.7%	70.4%	68.5%

4:3:1:3:3:1:4 antigen series ~ 4:3:1 plus ≥3 doses of Haemophilus influenzae (Hib) vaccine of any type, ≥3 doses of hepatitis B (HepB) vaccine, ≥1 dose of varicella (Var) vaccine, and ≥4 doses of pneumococcal conjugate vaccine (PCV).

Table 1: Children at 24 Months National Vaccine Coverage Estimate Ranking, Maine 2014-2018

National Vaccine Coverage Ranking for Maine Among Children at 24 Months, 2014-2018					
Vaccine	**2014**	**2015**	**2016**	**2017**	**2018**
4+Dtap	1st	1st	7th	2nd	1st
3+Polio	7th	20th	37th	23rd	16th
1+MMR	1st	2nd	22nd	21st	4th
3+Hib	8th	7th	14th	19th	19th
3+HepB	14th	51st	46th	43rd	35th
1+Var	1st	8th	45th	41st	9th
4+PCV	2nd	17th	26th	33rd	18th
2+HepA	8th	14th	17th	13th	12th
HepB Birth Dose	35th	40th	42nd	49th	42nd
4:3:1:3:3:1:4	1st	29th	26th	18th	9th

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, 2018						
Vaccine	**Connecticut**	**Maine**	**Massachusetts**	**New Hampshire**	**Rhode Island**	**Vermont**
4+Dtap	5th	**1st**	2nd	3rd	4th	6th
3+Polio	3rd	**4th**	1st	5th	2nd	6th
1+MMR	6th	**3rd**	1st	4th	2nd	5th
3+Hib	2nd	**6th**	1st	5th	4th	3rd
3+HepB	3rd	**6th**	2nd	5th	1st	4th
1+Var	3rd	**4th**	1st	6th	2nd	5th
4+PCV	4th	**6th**	1st	5th	2nd	3rd
2+HepA	2nd	**3rd**	4th	5th	1st	6th
HepB Birth Dose	1st	**5th**	3rd	4th	2nd	6th
4:3:1:3:3:1:4	5th	**4th**	1st	3rd	6th	5th

2018 National Immunization Survey Childhood Talking Points

- Maine is either at, or above, the national average for every childhood vaccine, with the exception of hepatitis B.
- Maine saw an increase of over 1.3% for the primary vaccine series 4313314.
- Maine saw an increase in every individual antigen and overall series.
- NIS stressed that when available, states should utilize their IIS (Maine Immunization Registry ImmPact) for immunization rates as these are up to date and more accurate than a random sampling.
- NIS surveyed only 425 Maine children, only 3% of the same age cohort in ImmPact assessed on a quarterly basis (13,400).