

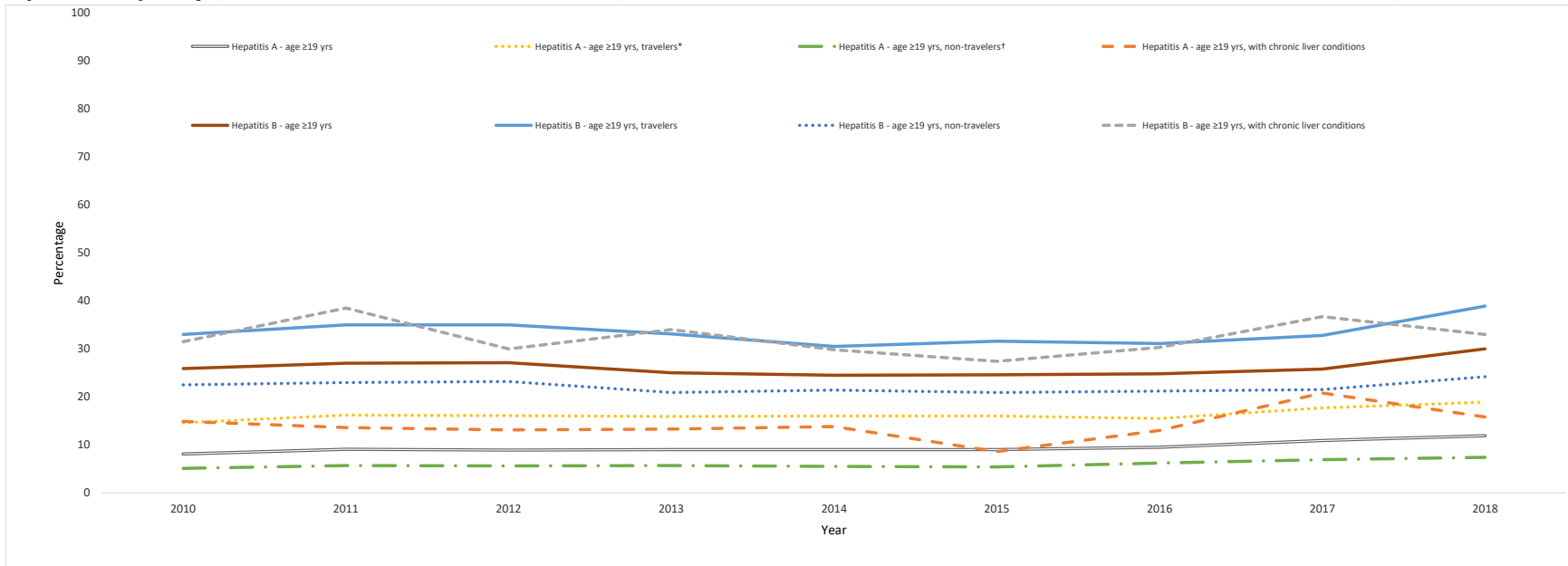
SUPPLEMENTARY BOX 3. Estimated proportion of adults aged ≥ 19 years who received hepatitis A and hepatitis B vaccines, by age group, increased-risk status, and race/ethnicity — National Health Interview Survey, United States, 2018

Supplementary Tables/Figure	Result summary
Proportion of Adults aged ≥ 19 Years Who Received Hepatitis A Vaccination by Age Group, Increased-risk Status, and Race/ethnicity	<p>In 2018, reported hepatitis A vaccination coverage (≥ 2 doses) was 11.9% for adults aged ≥ 19 years, 17.5% for adults aged 19–49 years, and 6.2% for adults aged ≥ 50 years, similar to the estimates for 2017. Among adults aged 19–49 years, compared with whites (18.2%), coverage was lower for blacks (12.8%) while coverage was higher for Asians (24.1%).</p> <p>Among adults aged ≥ 19, 19–49, and ≥ 50 years, vaccination coverage was higher among adults who had traveled outside the United States to a country in which hepatitis A is of high or intermediate endemicity than among respondents who did not travel outside the United States or had traveled only to countries in which the disease is of low endemicity. Overall coverage among adults aged ≥ 19 years with chronic liver conditions was 15.8%, similar to the 2017 estimate (Table 1).</p>
Proportion of Adults aged ≥ 19 Years Who Received Hepatitis B Vaccination by Age Group, Increased-risk Status, and Race/ethnicity	<p>In 2018, reported hepatitis B vaccination coverage (≥ 3 doses) was 30.0% for adults aged ≥ 19 years, 40.3% for adults aged 19–49 years, and 19.1% for adults aged > 50 years, a 4.2 percentage points, 6.0 percentage points, and 2.5 percentage points increase compared with the 2017 estimates, respectively.</p> <p>Among adults aged 19–49 years, coverage for blacks (35.4%) and Hispanics (33.1%) was lower than that for whites (43.6%).</p> <p>Among adults aged ≥ 19, 19–49, and ≥ 50 years, vaccination coverage was higher among adults who had traveled outside the United States to a country in which hepatitis B is of high or intermediate endemicity than among respondents who did not travel outside the United States or had traveled only to countries in which the disease is of low endemicity. Overall coverage among adults aged ≥ 19 years with chronic liver conditions was 33.0%, similar to the 2017 estimate. Vaccination coverage among persons with diabetes was 33.0% for those aged 19–59 years, an increase of 7.9 percentage points from the 2017 estimate. Vaccination</p>

	<p>coverage among persons with diabetes was 15.3% among those aged ≥ 60 years, similar to the estimate for 2017 (Table 2).</p>
<p>Trends in the estimated proportion of adults aged ≥ 19 years who received hepatitis A and hepatitis B vaccines, by age group and high-risk status</p>	<p>During 2010–2018 among all adults aged ≥ 19 years, hepatitis A vaccination coverage increased (range: 8.1%–11.9%; test for trend: $p < 0.01$). Coverage also increased during 2010–2018 among travelers (test for trend: $p < 0.01$), and among non-travelers (test for trend: $p < 0.01$) but remained stable among persons with chronic liver conditions. During 2010–2018, hepatitis B vaccination coverage increased (range: 25.9%–30.0%; test for trend: $p = 0.01$) but remained stable overall among travelers aged ≥ 19 years, nontravelers aged ≥ 19 years, and adults aged ≥ 19 years with chronic liver conditions (Figure).</p>

SUPPLEMENTARY BOX 3, FIGURE. Estimated proportion of adults aged ≥19 years who received hepatitis A and hepatitis B vaccines, by age group and high-risk status – National Health Interview Survey, United States, 2010–2018

	Unweighted sample size (2010–2018)	2010	2011	2012	2013	2014	2015	2016	2017	2018	Average annual change (95%CI)	Linear trend test p-value
Hepatitis A - age ≥19 yrs	243,153	8.1	9.1	8.9	9.0	9.0	9.0	9.5	10.9	11.9	0.4 (0.3, 0.4)	<0.01
Hepatitis A - age ≥19 yrs, travelers*	78,255	14.6	16.2	16.1	15.9	16.0	16.0	15.5	17.7	18.9	0.4 (0.2, 0.5)	<0.01
Hepatitis A - age ≥19 yrs, non-travelers [†]	164,481	5.1	5.7	5.6	5.7	5.5	5.4	6.2	6.9	7.4	0.2 (0.1, 0.3)	<0.01
Hepatitis A - age ≥19 yrs, with chronic liver conditions	3,354	14.9	13.6	13.1	13.3	13.8	8.6	13.0	20.8	15.8	0.4 (-0.3, 1.0)	0.27
Hepatitis B - age ≥19 yrs	251,838	25.9	27.0	27.1	25.0	24.5	24.6	24.8	25.8	30.0	0.1 (0.0, 0.3)	0.01
Hepatitis B - age ≥19 yrs, travelers	83,386	33.0	35.0	35.0	33.1	30.5	31.6	31.1	32.8	38.9	0.2 (-0.0, 0.4)	0.05
Hepatitis B - age ≥19 yrs, non-travelers	167,975	22.5	23.0	23.2	20.9	21.4	20.9	21.2	21.5	24.2	0.0 (-0.2, 0.1)	0.55
Hepatitis B - age ≥19 yrs, with chronic liver conditions	3,554	31.5	38.5	30.0	34.0	29.8	27.4	30.3	36.7	33.0	-0.1 (-1.0, 0.7)	0.81



* Travelers, persons who had traveled outside the United States to countries other than countries in Europe, Japan, Australia, New Zealand, or Canada since 1995.

[†] Nontravelers, persons who had not traveled outside the United States to countries other than countries in Europe, Japan, Australia, New Zealand, or Canada since 1995.

SUPPLEMENTARY BOX 3, TABLE 1. Estimated proportion of adults aged ≥ 19 years who received hepatitis A vaccination, by age group, increased-risk status,* and race/ethnicity[†] – National Health Interview Survey, United States, 2018

Vaccination, age group, increased-risk status, and race/ethnicity	Sample size	%	(95% CI)	Simple difference from 2017
Hepatitis A vaccination (at least 2 doses), ever[§]				
≥ 19 years				
Total	20,986	11.9	(11.1, 12.6)	0.9
Traveler [¶]	7,645	18.9	(17.7, 20.2)	1.2
Nontraveler**	13,301	7.4	(6.7, 8.2) ^{††}	0.5
With chronic liver conditions, overall	357	15.8	(11.5, 21.3)	-5.0
19-49 years				
Total	8,669	17.5	(16.3, 18.7)	1.8
White	5,365	18.2	(16.9, 19.7)	1.9
Black	1,051	12.8	(10.5, 15.4) ^{§§}	1.0
Hispanic	1,444	15.7	(13.4, 18.3)	2.4
Asian	509	24.1	(19.3, 29.5) ^{§§}	0.7
Other	300	22.0	(16.1, 29.1)	2.0
Traveler	3,765	24.9	(23.1, 26.8)	2.7
Nontraveler	4,890	11.9	(10.7, 13.3) ^{††}	0.9
With chronic liver conditions, overall	96	16.9	(10.2, 26.5)	-8.2
≥ 50 years				
Total	12,317	6.2	(5.7, 6.8)	0.1
Traveler	3,880	11.5	(10.3, 12.8)	-0.5
Nontraveler	8,411	3.5	(3.0, 4.0) ^{††}	0.2
With chronic liver conditions, overall	261	15.2	(9.8, 22.8)	-4.0

Abbreviations: CI = confidence interval

* For hepatitis A vaccination, data were collected on selected respondent characteristics that increase the risk for infection (travel to countries where hepatitis A infections are endemic and having chronic liver disease).

[†] Race/ethnicity was categorized as follows: white, black, Hispanic, Asian and "other." In this report, persons identified as white, black, Asian, or other race are non-Hispanic. Persons identified as Hispanic might be of any race. "Other" includes American Indian/Alaska Native and persons who identified multiple races. The five racial/ethnic categories are mutually exclusive.

[§] Respondents were asked if they had ever received the hepatitis A vaccine, and if yes, were asked how many doses were received.

[¶] Had traveled outside the United States to countries other than countries in Europe, Japan, Australia, New Zealand, or Canada since 1995.

** Had not traveled outside the United States to countries other than countries in Europe, Japan, Australia, New Zealand, or Canada since 1995.

†† $p < 0.05$ by t-test for comparisons between persons who had traveled outside the United States to countries other than countries in Europe, Japan, Australia, New Zealand, or Canada since 1995 and persons who had not traveled outside the United States to these areas since 1995.

§§ $p < 0.05$ by t-test for comparisons with white as the reference.

SUPPLEMENTARY BOX 3, TABLE 2. Estimated proportion of adults aged ≥ 19 years who received hepatitis B vaccination, by age group, increased-risk status,* and race/ethnicity[†] – National Health Interview Survey, United States, 2018

Vaccination, age group, increased-risk status, and race/ethnicity	Sample size	%	(95% CI)	Simple difference from 2017
Hepatitis B vaccination (at least 3 doses), ever[§]				
≥ 19 years				
Total	22,043	30.0	(29.0, 31.0)	4.2[¶]
Traveler**	8,256	38.9	(37.3, 40.4)	6.1 [¶]
Nontraveler ^{††}	13,739	24.2	(23.1, 25.3) ^{§§}	2.8 [¶]
With chronic liver conditions, overall	379	33.0	(27.3, 39.2)	-3.7
19–49 years				
Total	9,479	40.3	(38.8, 41.8)	6.0[¶]
White	5,809	43.6	(41.8, 45.4)	7.0 [¶]
Black	1,140	35.4	(31.4, 39.6) ^{¶¶}	4.7
Hispanic	1,612	33.1	(30.1, 36.2) ^{¶¶}	5.8 [¶]
Asian	597	45.2	(40.1, 50.4)	5.5
Other	321	37.8	(31.2, 44.8)	-2.3
Traveler	4,209	48.5	(46.5, 50.5)	8.3 [¶]
Nontraveler	5,251	33.8	(31.9, 35.7) ^{§§}	4.0 [¶]
With chronic liver conditions, overall	106	36.6	(26.3, 48.3)	-12.3
≥ 50 years				
Total	12,564	19.1	(18.2, 20.1)	2.5[¶]
Traveler	4,047	26.0	(24.3, 27.8)	3.5 [¶]
Nontraveler	8,488	15.4	(14.4, 16.4) ^{§§}	1.8 [¶]
With chronic liver conditions, overall	273	30.8	(24.3, 38.1)	-0.8
With diabetes, overall				
19–59 years	881	33.0	(29.3, 37.0)	7.9[¶]
≥ 60 years	1,715	15.3	(13.3, 17.4)***	2.7

Abbreviations: CI = confidence interval

* For hepatitis B vaccination, data were collected on selected respondent characteristics that increase the risk for infection (having diabetes, travel to countries where hepatitis B infections are endemic, and having chronic liver disease).

† Race/ethnicity was categorized as follows: white, black, Hispanic, Asian and "other." In this report, persons identified as white, black, Asian, or other race are non-Hispanic. Persons identified as Hispanic might be of any race. "Other" includes American Indian/Alaska Native and persons who identified multiple races. The five racial/ethnic categories are mutually exclusive.

§ Respondents were asked if they had ever received the hepatitis B vaccine, and if yes, if they had received at least 3 doses or less than 3 doses.

¶ $p < 0.05$ by t-test for comparisons between 2018 and 2017 within each level of each characteristic.

** Had traveled outside the United States to countries other than countries in Europe, Japan, Australia, New Zealand, or Canada since 1995.

†† Had not traveled outside the United States to countries other than countries in Europe, Japan, Australia, New Zealand, or Canada since 1995.

§§ $p < 0.05$ by t-test for comparisons between persons who had traveled outside the United States to countries other than countries in Europe, Japan, Australia, New Zealand, or Canada since 1995 and persons who had not traveled outside the United States to these areas since 1995.

¶¶ $p < 0.05$ by t-test for comparisons with white as the reference.

*** $p < 0.05$ by t-test for comparisons between adults aged 19-59 years with diabetes and ≥ 60 years with diabetes.