

484 **Supplementary Table 1. Characteristics of adolescents aged 13-17 years—National Immunization Survey-Teen, United States,**485 **2014**

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Variables	All adolescents N=20 827		Vaccinated with 1-dose Varicella Vaccine (and no disease history) N=2 478		Vaccinated with ≥2 doses Varicella Vaccine (and no disease history) N=13 084	
	N	Weighted % (95% CI)	N	Weighted % (95% CI)	N	Weighted % (95% CI)
Age at interview						
13-15 years	12 764	59.7 (58.4-61.1)	1 464	59.6 (55.9-63.4)	8 589	63.7 (62.0-65.3)
16-17 years	8 063	40.3 (38.9-41.6)	1 014	40.4 (36.6-44.1)	4 495	36.3 (34.7-38.0)
Gender						
Male	10 743	51.1 (49.8-52.5)	1 275	51.4 (47.6-55.2)	6 764	50.9 (49.2-52.5)
Female	10 084	48.9 (47.5-50.2)	1 203	48.6 (44.8-52.4)	6 320	49.1 (47.5-50.8)
Race/Ethnicity						
Non-Hispanic White	13 443	54.4 (53.1-55.6)	1 676	60.8 (56.9-64.7)	8 351	53.8 (52.2-55.5)
Non-Hispanic Black	1 986	14.0 (13.1-14.9)	212	11.0 (8.8-13.1)	1 345	15.3 (14.1-16.5)
Hispanic	3 255	22.4 (21.2-23.7)	344	18.4 (14.8-22.0)	2 062	22.4 (20.8-24.0)
Other	2 143	9.2 (8.4-10.0)	246	9.8 (7.2-12.5)	1 326	8.5 (7.6-9.4)
Foreign-born/Immigration Status						
Born in U.S.	20 068	95.0 (94.4-95.7)	2 409	96.8 (95.4-98.1)	12 718	96.5 (95.9-97.1)
Born outside U.S.	670	4.4 (3.8-5.0)	61	3.0 (1.6-4.3)	314	3.1 (2.5-3.7)
Region (based on Census categories)						
Northeast	3 975	16.7 (16.2-17.2)	298	14.5 (12.3-16.7)	2 903	18.5 (17.6-19.3)

Variables	All adolescents N=20 827		Vaccinated with 1-dose Varicella Vaccine (and no disease history) N=2 478		Vaccinated with ≥2 doses Varicella Vaccine (and no disease history) N=13 084	
	N	Weighted % (95% CI)	N	Weighted % (95% CI)	N	Weighted % (95% CI)
Midwest	4 512	21.7 (21.1-22.2)	532	19.6 (17.2-22.1)	2 698	20.9 (20.0-21.7)
South	7 375	37.8 (37.0-38.5)	990	39.9 (36.5-43.4)	4 618	37.3 (36.1-38.5)
West	4 965	23.8 (23.0-24.7)	658	26.0 (22.0-30.0)	2 865	23.4 (22.0-24.7)
Metropolitan Statistical Area (MSA)						
Urban	8 242	39.7 (38.4-41.0)	867	36.3 (32.4-40.2)	5 455	41.0 (39.4-42.6)
Suburban	7 970	46.0 (44.7-47.3)	944	44.4 (40.7-48.1)	5 155	46.8 (45.2-48.5)
Rural	4 615	14.3 (13.6-15.0)	667	19.3 (16.6-21.9)	2 474	12.2 (11.3-13.1)
Maternal marital status						
Married	15 279	66.8 (65.5-68.0)	1 823	68.0 (64.2-71.7)	9 692	67.2 (65.6-68.8)
Widowed/divorced/separated	3 852	22.6 (21.4-23.8)	473	24.5 (20.8-28.3)	2 261	21.5 (20.0-23.0)
Never married	1 696	10.6 (9.7-11.5)	182	7.5 (5.9-9.1)	1 131	11.3 (10.2-12.4)
Maternal age						
≤ 34 years	1 587	9.2 (8.4-10.0)	186	7.6 (5.9-9.3)	1 028	9.8 (8.7-10.8)
35-44 years	8 420	44.0 (42.6-45.3)	1 022	44.0 (40.1-47.8)	5 165	43.2 (41.6-44.9)
≥ 45 years	10 820	46.9 (45.6-48.2)	1 270	48.5 (44.7-52.3)	6 891	47.0 (45.4-48.7)
Maternal education						
< High School	2 299	13.7 (12.7-14.7)	244	11.2 (8.5-14.0)	1 340	12.8 (11.6-14.0)
High School	3 598	23.5 (22.3-24.7)	458	25.8 (22.2-29.3)	2 121	21.8 (20.4-23.2)
Some college or college graduate	5 641	25.9 (24.7-27.0)	714	27.3 (23.9-30.7)	3 388	26.5 (24.9-28.0)
> College graduate	9 289	36.9 (35.7-38.2)	1 062	35.7 (32.2-39.2)	6 235	38.9 (37.3-40.5)
Income to poverty ratio <sup>a</sup>						

Variables	All adolescents N=20 827		Vaccinated with 1-dose Varicella Vaccine (and no disease history) N=2 478		Vaccinated with $\geq 2$ doses Varicella Vaccine (and no disease history) N=13 084	
	N	Weighted % (95% CI)	N	Weighted % (95% CI)	N	Weighted % (95% CI)
<133%	5 285	33.1 (31.8-34.3)	592	28.2 (24.9-31.5)	3 170	32.4 (30.8-34.1)
133-322%	6 175	29.4 (28.2-30.6)	776	32.6 (28.9-36.3)	3 688	27.8 (26.3-29.3)
322->503%	4 334	17.6 (16.7-18.6)	547	18.9 (16.3-21.4)	2 801	18.7 (17.5-19.9)
$\geq 503\%$	5 033	19.9 (18.9-20.9)	563	20.3 (16.9-23.7)	3 425	21.1 (19.8-22.3)
Health Insurance Status						
Private only	10 409	45.1 (43.8-46.3)	1 165	43.5 (39.8-47.3)	6 892	46.9 (45.2-48.5)
Medicaid or IHS	8 080	41.8 (40.5-43.1)	1 016	44.1 (40.3-47.8)	4 850	40.5 (38.9-42.2)
Uninsured	906	6.3 (5.5-7.0)	125	6.5 (4.0-9.0)	461	5.5 (4.6-6.4)
CHIP (Public)	576	3.4 (2.8-4.0)	63	2.3 (1.5-3.2)	366	3.8 (3.0-4.5)
Military	856	3.5 (3.1-3.9)	109	3.6 (2.2-5.0)	515	3.4 (1.8-4.0)
Other		2 (1-9)		2 (1-9)		2 (1-9)
Well-child visit at 11-12 years <sup>b</sup>						
Yes	9 437	43.3 (42.0-44.6)	761	31.3 (27.8-34.8)	6 828	49.6 (48.0-51.3)
No	11 390	56.7 (55.4-58.0)	1 717	68.7 (65.2-72.2)	6 256	50.4 (48.7-52.0)
No. provider visits in the last year						
None	3 027	16.4 (15.3-17.5)	443	19.3 (16.2-22.4)	1 734	15.1 (13.8-16.4)
1	5 830	29.0 (27.8-30.2)	674	27.0 (23.6-30.5)	3 719	29.5 (28.0-31.1)
2-3	7 485	34.7 (33.5-36.0)	854	33.5 (30.1-36.9)	4 832	35.3 (33.7-36.8)
$\geq 4$	4 343	19.0 (18.0-20.0)	488	19.0 (15.8-22.2)	2 715	19.2 (17.9-20.5)
Type of facility where vaccinations received, mutually exclusive <sup>c</sup>						

Variables	All adolescents N=20 827		Vaccinated with 1-dose Varicella Vaccine (and no disease history) N=2 478		Vaccinated with $\geq 2$ doses Varicella Vaccine (and no disease history) N=13 084	
	N	Weighted % (95% CI)	N	Weighted % (95% CI)	N	Weighted % (95% CI)
All private facilities	3 013	15.8 (14.7-16.8)	427	18.2 (14.8-21.6)	1 626	13.7 (12.5-15.0)
All public facilities	2 329	10.0 (9.2-10.7)	240	8.2 (6.4-9.9)	1 437	9.5 (8.6-10.4)
All hospital facilities	9 948	51.2 (49.9-52.6)	1 097	49.0 (45.2-52.8)	6 728	54.8 (53.2-56.5)
Other	5 446	23.0 (22.0-24.1)	714	24.6 (21.6-27.6)	3 293	21.9 (20.6-23.2)

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488 Abbreviations, CHIP, Children's Health Insurance Program; CI, Confidence Interval; IHS, Indian Health Service

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490 <sup>a</sup> Income-to-poverty ratios were based on reported household income and number of persons living in surveyed households, and  
491 calculated using 2013 Census Bureau poverty thresholds.

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493 <sup>b</sup> Data on well-child visits at 11-12 years were obtained from the provider survey.

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495 <sup>c</sup> Private facilities include private practices, including solo and group practices, and health maintenance organizations. Public facilities  
496 include public health department-operated clinics, community health centers, rural health clinics, migrant health centers, Indian Health

497 Service-operated centers, tribal health facilities, or urban Indian healthcare facilities. Hospital facilities include hospital-based clinics.  
498 Other facilities include military, Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) clinics,  
499 pharmacies, and mixed facilities. Mixed facilities include facilities identified to be in more than one of the facility categories, such as  
500 private, public, or hospital facilities.

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503 **Supplementary Table 2. Factors associated with  $\geq 2$  dose varicella vaccination coverage among adolescents aged 13-17 years**  
 504 **with no disease history —National Immunization Survey-Teen, United States, 2014<sup>a</sup>**

Variable	$\geq 2$ dose coverage, unadjusted N=16 461		Adjusted Prevalence Ratio for $\geq 2$ dose coverage(i.e., risk ratio) (95% CI)	p-value (adjusted)
	N	Weighted % (95% CI)		
Age at interview				
13-15 years	10 555	80.8 (79.4-82.2)	1.02 (0.99-1.05)	0.1092
16-17 years	5 906	77.3 (75.2-79.3)	REF	
Gender				
Male	8 513	78.9 (77.1-80.5)	REF	
Female	7 948	80.2 (78.6-81.8)	1.01 (0.99-1.04)	0.3151
Race/Ethnicity				
Non-Hispanic White	10 602	78.0 (76.5-79.3)	REF	
Non-Hispanic Black	1 649	83.8 (81.0-86.2)	1.08 (1.04-1.12)	<b>0.0002</b>
Hispanic	2 545	81.9 (78.5-84.8)	1.06 (1.01-1.10)	<b>0.014</b>
Other	1 665	76.7 (71.8- 80.9)	1.02 (0.97-1.07)	0.4258
Foreign-born/Immigration Status				
Born in U.S.	15 984	79.6 (78.4-80.8)	REF	
Born outside U.S.	415	76.9 (69.4-83.0)	0.96 (0.87-1.05)	0.3261
Region (based on Census categories)				
Northeast	3 279	84.7 (82.5-86.7)	REF	
Midwest	3 432	79.3 (77.2-81.3)	1.00 (0.96-1.04)	0.9384
South	5 932	78.6 (76.7-80.3)	0.98 (0.95-1.02)	0.3704
West	3 818	77.5 (74.1-80.6)	1.02 (0.97-1.06)	0.4805
Metropolitan Statistical Area (MSA)				
Urban	6 672	81.1 (79.0-83.0)	REF	
Suburban	6 431	80.3 (78.6-81.8)	0.99 (0.96-1.02)	0.5461
Rural	3 358	72.4 (69.4-75.3)	0.94 (0.90-0.98)	<b>0.0023</b>

Variable	≥2 dose coverage, unadjusted N=16 461		Adjusted Prevalence Ratio for ≥2 dose coverage(i.e., risk ratio) (95% CI)	p-value (adjusted)
	N	Weighted % (95% CI)		
Maternal marital status				
Married	12 140	79.6 (78.2-80.9)	REF	
Widowed/divorced/separated	2 919	77.8 (74.7-80.7)	0.99 (0.96-1.03)	0.6953
Never married	1 402	82.5 (78.9-85.6)	0.99 (0.95-1.05)	0.8337
Maternal age				
≤ 34 years	1 291	81.4 (77.6-84.7)	REF	
35-44 years	6 562	79.2 (77.3-81.0)	0.97 (0.93-1.02)	0.2296
≥ 45 years	8 608	79.4 (77.7-81.1)	0.97 (0.92-1.01)	0.1495
Maternal education				
< High School	1 721	79.7 (75.7-83.3)	REF	
High School	2 760	76.9 (73.9-79.5)	1.00 (0.95-1.06)	0.8982
Some college or college graduate	4 355	79.4 (77.0-81.5)	1.03 (0.98-1.09)	0.2488
> College graduate	7 625	81.2 (79.5-82.8)	1.03 (0.97-1.10)	0.2631
Income to poverty ratio <sup>b</sup>				
<133%	4 030	81.0 (78.9-83.0)	REF	
133-322%	4 753	76.7 (74.2-79.0)	0.94 (0.91-0.98)	<b>0.0032</b>
322->503%	3 512	80.4 (78.0-82.6)	0.95 (0.91-1.00)	<b>0.0343</b>
≥503%	4 166	80.4 (77.6-83.0)	0.95 (0.90-0.99)	<b>0.0275</b>
Health Insurance Status				
Private only	8 443	80.9 (79.2-82.4)	REF	
Medicaid or IHS	6 236	78.3 (76.4-80.2)	0.97 (0.94-1.00)	0.0505
Uninsured	641	74.9 (67.8-80.8)	0.97 (0.91-1.04)	0.3824
CHIP (Public)	458	86.1 (81.1-89.9)	1.04 (0.98-1.10)	0.2079
Military	547	74.6 (67.4-80.7)	0.96 (0.87-1.06)	0.392
Other	136	87.2 (76.6-93.4)	1.06 (0.95-1.18)	0.3952
Well-child visit at 11-12 years <sup>c</sup>				
Yes	7 752	87.5 (86.0-88.8)	REF	

Variable	≥2 dose coverage, unadjusted N=16 461		Adjusted Prevalence Ratio for ≥2 dose coverage(i.e., risk ratio) (95% CI)	p-value (adjusted)
	N	Weighted % (95% CI)		
No	8 709	73.0 (71.2-74.7)	0.90 (0.88-0.93)	<0.0001
No. provider visits in the last year				
None	2 345	75.4 (71.9-78.6)	REF	
1	4 634	81.7 (79.5-83.7)	1.04 (0.99-1.08)	0.1008
2-3	4 634	79.7 (77.8-81.5)	1.01 (0.96-1.05)	0.7167
≥4	3 382	79.8 (76.8-82.5)	1.02 (0.98-1.07)	0.3356
No. vaccination providers				
1	8 867	81.4 (79.9-82.8)	REF	
2	4 662	78.5 (76.2-80.7)	0.99 (0.96-1.02)	0.6266
≥3	2 917	75.1 (71.6-78.4)	0.96 (0.91-1.01)	0.0695
Type of facility where vaccinations received, mutually exclusive <sup>e</sup>				
All private facilities	8 151	81.7 (80.0-83.2)	REF	
All public facilities	2 188	75.9 (71.9-79.5)	1.01 (0.97-1.06)	0.6303
All hospital facilities	1 841	78.0 (74.5-81.1)	1.02 (0.98-1.06)	0.3286
Other	4 221	78.0 (75.7-80.2)	1.02 (0.98-1.06)	0.4412
Whether child received ≥1 dose of adolescent vaccine <sup>d</sup>				
Yes	15 164	84.1 (83.0-85.1)	REF	
No	1 297	22.1 (18.0-26.9)	0.33 (0.27-0.41)	<0.0001
Lives in state with 2-dose varicella school entry requirement (Based on 2013 SY data)				
Yes	7 356	85.4 (83.9-86.9)	REF	
No	9 105	76.0 (74.3-77.6)	0.89 (0.86-0.91)	<0.0001

506 Abbreviations, CHIP, Children's Health Insurance Program; CI, Confidence Interval; IHS, Indian Health Service

507 Boldface indicates statistical significance ( $p < 0.05$ )

508 <sup>a</sup> Responses may not have been available for all teens. Percentages are rounded. A  $p$ -value  $< 0.05$  was considered statistically  
509 significant (significant values are in bold text).

510 <sup>b</sup> Income-to-poverty ratios were based on reported household income and number of persons living in surveyed households, and  
511 calculated using 2013 Census Bureau poverty thresholds.

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513 <sup>c</sup> Data on well-child visits at 11-12 years were obtained from the provider survey.

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515 <sup>d</sup> Adolescent vaccines included  $\geq 1$  dose Tdap or  $\geq 1$  dose Meningococcal or  $\geq 1$  dose HPV.

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517 <sup>e</sup> Private facilities include private practices, including solo and group practices, and health maintenance organizations. Public facilities  
518 include public health department-operated clinics, community health centers, rural health clinics, migrant health centers, Indian Health  
519 Service-operated centers, tribal health facilities, or urban Indian healthcare facilities. Hospital facilities include hospital-based clinics.  
520 Other facilities include military, Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) clinics,  
521 pharmacies, and mixed facilities. Mixed facilities include facilities identified to be in more than one of the facility categories, such as  
522 private, public, or hospital facilities.