

**Table 12. Estimation area-level estimates for UTD\* HPV vaccine among adolescents 13-17 years by sampling frame and year, National Immunization Survey-Teen, 2017**

Area Name	Overall			Female			Male		
	Single	Dual	Difference †	Single	Dual	Difference	Single	Dual	Difference
Alabama	41.0 (34.5 , 47.5)	40.3 (34.3 , 46.3)	0.7 (-1.4 , 2.8)	48.0 (38.9 , 57.1)	47.2 (38.7 , 55.7)	0.8 (-1.6 , 3.2)	34.2 (25.0 , 43.4)	33.7 (25.2 , 42.2)	0.5 (-2.8 , 3.8)
Alaska	41.8 (35.0 , 48.6)	42.6 (36.5 , 48.7)	-0.8 (-3.3 , 1.7)	47.0 (37.4 , 56.6)	45.7 (37.1 , 54.3)	1.3 (-2.2 , 4.8)	36.9 (27.3 , 46.5)	39.8 (31.2 , 48.4)	-2.9 (-6.6 , 0.8)
Arizona	52.2 (44.9 , 59.5)	53.0 (46.3 , 59.7)	-0.8 (-2.7 , 1.1)	57.8 (47.5 , 68.1)	57.9 (48.2 , 67.6)	-0.1 (-3.0 , 2.8)	46.8 (36.6 , 57.0)	48.4 (39.2 , 57.6)	-1.6 (-4.3 , 1.1)
Arkansas	33.8 (27.5 , 40.1)	35.2 (29.2 , 41.2)	-1.4 (-3.5 , 0.7)	43.0 (32.9 , 53.1)	46.6 (37.1 , 56.1)	-3.6 (-7.2 , 0.0)	24.9 (17.8 , 32.0)	24.3 (17.6 , 31.0)	0.6 (-0.6 , 1.8)
California	58.8 (50.3 , 67.3)	53.4 (46.3 , 60.5)	5.4 (2.1 , 8.7) §	64.1 (51.7 , 76.5)	60.9 (50.3 , 71.5)	3.2 (-1.5 , 7.9)	53.7 (41.9 , 65.5)	46.3 (36.9 , 55.7)	7.4 (2.7 , 12.1) §
Colorado	53.0 (46.2 , 59.8)	53.8 (47.5 , 60.1)	-0.8 (-3.1 , 1.5)	51.4 (41.6 , 61.2)	53.1 (44.0 , 62.2)	-1.7 (-4.9 , 1.5)	54.5 (45.0 , 64.0)	54.4 (45.7 , 63.1)	0.1 (-3.0 , 3.2)
Connecticut	56.0 (48.5 , 63.5)	58.0 (51.5 , 64.5)	-2.0 (-4.7 , 0.7)	61.6 (51.2 , 72.0)	63.5 (54.4 , 72.6)	-1.9 (-5.5 , 1.7)	50.7 (40.3 , 61.1)	52.7 (43.7 , 61.7)	-2.0 (-5.9 , 1.9)
Delaware	59.2 (52.1 , 66.3)	58.1 (51.6 , 64.6)	1.1 (-1.1 , 3.3)	60.4 (50.1 , 70.7)	59.6 (50.3 , 68.9)	0.8 (-2.8 , 4.4)	58.0 (48.2 , 67.8)	56.7 (47.7 , 65.7)	1.3 (-1.2 , 3.8)
District of Columbia	76.7 (69.5 , 83.9)	78.0 (71.7 , 84.3)	-1.3 (-3.2 , 0.6)	80.0 (70.9 , 89.1)	79.4 (70.7 , 88.1)	0.6 (-1.9 , 3.1)	73.4 (62.2 , 84.6)	76.6 (67.5 , 85.7)	-3.2 (-6.0 , -0.4) §
Florida	42.4 (35.2 , 49.6)	42.3 (35.7 , 48.9)	0.1 (-2.0 , 2.2)	44.2 (33.8 , 54.6)	45.3 (35.9 , 54.7)	-1.1 (-4.2 , 2.0)	40.6 (30.7 , 50.5)	39.4 (30.3 , 48.5)	1.2 (-1.5 , 3.9)
Georgia	47.9 (40.6 , 55.2)	45.7 (39.0 , 52.4)	2.2 (0.6 , 3.8) §	45.0 (35.0 , 55.0)	45.0 (35.5 , 54.5)	0.0 (-2.5 , 2.5)	50.8 (40.4 , 61.2)	46.4 (36.7 , 56.1)	4.4 (2.3 , 6.5) §
Hawaii	55.0 (48.2 , 61.8)	54.7 (48.3 , 61.1)	0.3 (-1.4 , 2.0)	62.8 (53.3 , 72.3)	62.7 (53.6 , 71.8)	0.1 (-1.8 , 2.0)	47.7 (38.3 , 57.1)	47.2 (38.4 , 56.0)	0.5 (-2.3 , 3.3)
Idaho	43.9 (36.4 , 51.4)	44.1 (37.5 , 50.7)	-0.2 (-2.7 , 2.3)	49.0 (37.9 , 60.1)	52.1 (42.3 , 61.9)	-3.1 (-6.1 , -0.1) †	39.1 (29.0 , 49.2)	36.5 (27.9 , 45.1)	2.6 (-0.8 , 6.0)
Illinois-City of Chicago	65.5 (55.4 , 75.6)	66.6 (58.2 , 75.0)	-1.1 (-5.1 , 2.9)	70.7 (57.6 , 83.8)	73.0 (62.5 , 83.5)	-2.3 (-7.6 , 3.0)	60.4 (45.5 , 75.3)	60.2 (47.6 , 72.8)	0.2 (-5.4 , 5.8)
Illinois-Rest of State	47.2 (41.4 , 53.0)	46.9 (41.6 , 52.2)	0.3 (-1.6 , 2.2)	43.7 (35.2 , 52.2)	43.6 (35.9 , 51.3)	0.1 (-3.0 , 3.2)	50.5 (42.7 , 58.3)	50.1 (42.9 , 57.3)	0.4 (-1.8 , 2.6)
Indiana	41.8 (34.6 , 49.0)	40.8 (34.2 , 47.4)	1.0 (-0.6 , 2.6)	50.2 (39.3 , 61.1)	48.4 (38.4 , 58.4)	1.8 (-0.7 , 4.3)	33.8 (24.5 , 43.1)	33.5 (25.0 , 42.0)	0.3 (-1.8 , 2.4)
Iowa	53.6 (47.1 , 60.1)	53.7 (47.6 , 59.8)	-0.1 (-2.0 , 1.8)	66.1 (56.9 , 75.3)	65.5 (56.9 , 74.1)	0.6 (-2.3 , 3.5)	41.7 (32.8 , 50.6)	42.6 (34.4 , 50.8)	-0.9 (-3.6 , 1.8)

Area Name	Overall			Female			Male		
	Single	Dual	Difference †	Single	Dual	Difference	Single	Dual	Difference
Kansas	35.8 (29.2 , 42.4)	34.4 (28.3 , 40.5)	1.4 (-0.5 , 3.3)	42.2 (31.8 , 52.6)	38.5 (29.2 , 47.8)	3.7 (0.3 , 7.1) §	29.7 (21.5 , 37.9)	30.4 (22.5 , 38.3)	-0.7 (-2.6 , 1.2)
Kentucky	39.5 (33.4 , 45.6)	37.7 (31.9 , 43.5)	1.8 (0.0 , 3.6)	44.8 (35.8 , 53.8)	44.7 (36.0 , 53.4)	0.1 (-2.5 , 2.7)	34.5 (26.1 , 42.9)	31.1 (23.4 , 38.8)	3.4 (1.4 , 5.4) §
Louisiana	52.8 (45.9 , 59.7)	52.9 (46.6 , 59.2)	-0.1 (-2.5 , 2.3)	63.1 (53.8 , 72.4)	64.3 (55.8 , 72.8)	-1.2 (-4.7 , 2.3)	42.9 (33.2 , 52.6)	41.9 (33.2 , 50.6)	1.0 (-2.0 , 4.0)
Maine	58.1 (51.6 , 64.6)	59.2 (53.3 , 65.1)	-1.1 (-3.6 , 1.4)	61.0 (52.0 , 70.0)	61.5 (53.0 , 70.0)	-0.5 (-3.8 , 2.8)	55.4 (46.2 , 64.6)	57.0 (48.8 , 65.2)	-1.6 (-5.3 , 2.1)
Maryland	56.3 (47.9 , 64.7)	52.9 (45.5 , 60.3)	3.4 (-0.2 , 7.0)	60.7 (49.0 , 72.4)	57.5 (47.0 , 68.0)	3.2 (-1.3 , 7.7)	52.0 (39.9 , 64.1)	48.4 (37.9 , 58.9)	3.6 (-2.1 , 9.3)
Massachusetts	68.7 (62.1 , 75.3)	65.5 (59.9 , 71.1)	3.2 (0.2 , 6.2) §	73.5 (64.5 , 82.5)	67.4 (59.1 , 75.7)	6.1 (1.8 , 10.4) §	64.0 (54.5 , 73.5)	63.7 (56.2 , 71.2)	0.3 (-3.8 , 4.4)
Michigan	55.1 (48.2 , 62.0)	54.3 (47.9 , 60.7)	0.8 (-1.5 , 3.1)	62.1 (52.7 , 71.5)	60.4 (51.7 , 69.1)	1.7 (-1.7 , 5.1)	48.4 (38.8 , 58.0)	48.5 (39.3 , 57.7)	-0.1 (-3.1 , 2.9)
Minnesota	47.0 (40.1 , 53.9)	46.9 (40.6 , 53.2)	0.1 (-2.2 , 2.4)	49.0 (39.2 , 58.8)	48.6 (39.6 , 57.6)	0.4 (-3.2 , 4.0)	45.0 (35.2 , 54.8)	45.4 (36.5 , 54.3)	-0.4 (-3.4 , 2.6)
Mississippi	27.2 (21.2 , 33.2)	28.8 (23.1 , 34.5)	-1.6 (-3.4 , 0.2)	30.5 (21.6 , 39.4)	34.4 (25.8 , 43.0)	-3.9 (-6.9 , -0.9) §	24.0 (15.9 , 32.1)	23.4 (16.0 , 30.8)	0.6 (-1.2 , 2.4)
Missouri	38.9 (32.5 , 45.3)	39.6 (33.4 , 45.8)	-0.7 (-2.3 , 0.9)	44.5 (35.3 , 53.7)	45.2 (36.4 , 54.0)	-0.7 (-3.0 , 1.6)	33.6 (24.7 , 42.5)	34.2 (25.6 , 42.8)	-0.6 (-2.8 , 1.6)
Montana	48.9 (41.4 , 56.4)	49.1 (42.4 , 55.8)	-0.2 (-2.9 , 2.5)	49.0 (38.1 , 59.9)	50.1 (40.5 , 59.7)	-1.1 (-5.1 , 2.9)	48.8 (38.6 , 59.0)	48.1 (38.9 , 57.3)	0.7 (-2.9 , 4.3)
Nebraska	58.6 (51.8 , 65.4)	58.3 (52.0 , 64.6)	0.3 (-1.8 , 2.4)	61.0 (50.7 , 71.3)	61.4 (52.0 , 70.8)	-0.4 (-3.0 , 2.2)	56.4 (47.4 , 65.4)	55.3 (46.8 , 63.8)	1.1 (-2.2 , 4.4)
Nevada	50.4 (43.2 , 57.6)	49.0 (42.5 , 55.5)	1.4 (-0.7 , 3.5)	53.0 (42.6 , 63.4)	52.9 (43.6 , 62.2)	0.1 (-3.1 , 3.3)	47.9 (37.8 , 58.0)	45.3 (36.2 , 54.4)	2.6 (-0.3 , 5.5)
New Hampshire	57.6 (50.5 , 64.7)	59.9 (53.8 , 66.0)	-2.3 (-4.9 , 0.3)	61.9 (52.5 , 71.3)	63.0 (54.8 , 71.2)	-1.1 (-4.8 , 2.6)	53.5 (42.9 , 64.1)	56.9 (47.9 , 65.9)	-3.4 (-7.2 , 0.4)
New Jersey	50.3 (42.8 , 57.8)	49.6 (43.4 , 55.8)	0.7 (-2.5 , 3.9)	51.2 (40.6 , 61.8)	53.8 (44.9 , 62.7)	-2.6 (-7.3 , 2.1)	49.5 (39.0 , 60.0)	45.5 (36.9 , 54.1)	4.0 (-0.2 , 8.2)
New Mexico	46.6 (40.0 , 53.2)	48.3 (42.1 , 54.5)	-1.7 (-3.7 , 0.3)	52.2 (42.3 , 62.1)	55.0 (45.9 , 64.1)	-2.8 (-5.8 , 0.2)	41.1 (32.4 , 49.8)	41.9 (33.8 , 50.0)	-0.8 (-3.1 , 1.5)
New York-City of New York	66.1 (58.0 , 74.2)	61.0 (54.2 , 67.8)	5.1 (1.3 , 8.9) §	74.3 (63.1 , 85.5)	69.9 (60.7 , 79.1)	4.4 (-1.0 , 9.8)	58.1 (46.5 , 69.7)	52.4 (42.8 , 62.0)	5.7 (0.4 , 11.0) §
New York-Rest of State	48.1 (40.7 , 55.5)	48.8 (42.6 , 55.0)	-0.7 (-3.7 , 2.3)	52.9 (42.4 , 63.4)	50.7 (41.6 , 59.8)	2.2 (-2.2 , 6.6)	43.6 (33.5 , 53.7)	47.0 (38.6 , 55.4)	-3.4 (-7.5 , 0.7)
North Carolina	49.9 (42.7 , 57.1)	51.9 (45.3 , 58.5)	-2.0 (-4.4 , 0.4)	45.7 (34.9 , 56.5)	50.0 (40.1 , 59.9)	-4.3 (-7.7 , -0.9) §	54.0 (44.6 , 63.4)	53.7 (44.9 , 62.5)	0.3 (-3.1 , 3.7)

Area Name	Overall			Female			Male		
	Single	Dual	Difference †	Single	Dual	Difference	Single	Dual	Difference
North Dakota	58.8 (52.7 , 64.9)	57.8 (52.0 , 63.6)	1.0 (-1.0 , 3.0)	64.8 (56.3 , 73.3)	62.6 (54.4 , 70.8)	2.2 (-1.0 , 5.4)	53.1 (44.6 , 61.6)	53.2 (45.0 , 61.4)	-0.1 (-2.6 , 2.4)
Ohio	46.9 (40.7 , 53.1)	47.0 (41.2 , 52.8)	-0.1 (-2.0 , 1.8)	53.2 (44.6 , 61.8)	54.9 (46.8 , 63.0)	-1.7 (-4.1 , 0.7)	40.9 (32.0 , 49.8)	39.3 (31.2 , 47.4)	1.6 (-0.9 , 4.1)
Oklahoma	42.2 (35.6 , 48.8)	41.4 (35.1 , 47.7)	0.8 (-0.6 , 2.2)	46.2 (36.7 , 55.7)	45.6 (36.3 , 54.9)	0.6 (-0.9 , 2.1)	38.5 (29.5 , 47.5)	37.5 (29.0 , 46.0)	1.0 (-1.3 , 3.3)
Oregon	53.0 (46.4 , 59.6)	54.8 (48.7 , 60.9)	-1.8 (-3.7 , 0.1)	53.6 (44.4 , 62.8)	55.1 (46.6 , 63.6)	-1.5 (-4.5 , 1.5)	52.3 (42.9 , 61.7)	54.4 (45.6 , 63.2)	-2.1 (-4.6 , 0.4)
Pennsylvania-Philadelphia County	70.6 (64.4 , 76.8)	69.5 (63.7 , 75.3)	1.1 (-0.9 , 3.1)	70.6 (61.7 , 79.5)	69.2 (60.9 , 77.5)	1.4 (-1.4 , 4.2)	70.5 (61.9 , 79.1)	69.8 (61.8 , 77.8)	0.7 (-2.0 , 3.4)
Pennsylvania-Rest of State	49.6 (43.1 , 56.1)	50.3 (44.5 , 56.1)	-0.7 (-3.1 , 1.7)	53.2 (43.5 , 62.9)	54.4 (45.6 , 63.2)	-1.2 (-5.3 , 2.9)	46.1 (37.5 , 54.7)	46.4 (38.7 , 54.1)	-0.3 (-3.1 , 2.5)
Rhode Island	77.4 (70.9 , 83.9)	77.7 (72.1 , 83.3)	-0.3 (-2.3 , 1.7)	77.8 (68.2 , 87.4)	76.8 (68.5 , 85.1)	1.0 (-2.8 , 4.8)	77.0 (68.3 , 85.7)	78.4 (70.9 , 85.9)	-1.4 (-2.8 , 0.0)
South Carolina	41.5 (34.0 , 49.0)	42.7 (35.9 , 49.5)	-1.2 (-3.9 , 1.5)	41.4 (30.7 , 52.1)	47.4 (37.8 , 57.0)	-6.0 (-9.8 , -2.2) §	41.6 (31.2 , 52.0)	38.0 (28.6 , 47.4)	3.6 (0.4 , 6.8) §
South Dakota	44.4 (37.6 , 51.2)	44.8 (38.4 , 51.2)	-0.4 (-2.6 , 1.8)	47.7 (37.5 , 57.9)	48.8 (39.3 , 58.3)	-1.1 (-4.2 , 2.0)	41.3 (32.2 , 50.4)	40.9 (32.3 , 49.5)	0.4 (-2.6 , 3.4)
Tennessee	40.2 (33.2 , 47.2)	39.2 (32.5 , 45.9)	1.0 (-1.4 , 3.4)	46.7 (36.6 , 56.8)	47.7 (38.1 , 57.3)	-1.0 (-4.5 , 2.5)	33.8 (24.2 , 43.4)	31.1 (22.2 , 40.0)	2.7 (0.3 , 5.1) §
Texas-Bexar County	45.0 (38.5 , 51.5)	46.4 (40.2 , 52.6)	-1.4 (-2.9 , 0.1)	54.4 (45.2 , 63.6)	55.6 (46.7 , 64.5)	-1.2 (-2.8 , 0.4)	35.8 (27.0 , 44.6)	37.2 (28.8 , 45.6)	-1.4 (-4.0 , 1.2)
Texas-City of Houston	53.3 (43.3 , 63.3)	55.2 (45.9 , 64.5)	-1.9 (-4.5 , 0.7)	45.0 (30.2 , 59.8)	50.6 (36.7 , 64.5)	-5.6 (-10.2 , -1.0) §	61.3 (48.3 , 74.3)	59.7 (47.6 , 71.8)	1.6 (-1.1 , 4.3)
Texas-El Paso County	59.3 (52.0 , 66.6)	60.0 (53.1 , 66.9)	-0.7 (-1.6 , 0.2)	65.3 (55.2 , 75.4)	65.4 (55.9 , 74.9)	-0.1 (-1.4 , 1.2)	53.3 (42.8 , 63.8)	54.6 (44.8 , 64.4)	-1.3 (-2.6 , 0.0)
Texas-Dallas County	35.2 (27.7 , 42.7)	35.7 (28.5 , 42.9)	-0.5 (-2.2 , 1.2)	41.2 (30.1 , 52.3)	41.7 (31.0 , 52.4)	-0.5 (-3.4 , 2.4)	29.5 (19.7 , 39.3)	29.9 (20.5 , 39.3)	-0.4 (-2.2 , 1.4)
Texas-Travis County	52.3 (45.2 , 59.4)	52.0 (45.4 , 58.6)	0.3 (-1.7 , 2.3)	56.6 (46.4 , 66.8)	57.0 (47.5 , 66.5)	-0.4 (-2.6 , 1.8)	47.9 (38.0 , 57.8)	46.9 (37.9 , 55.9)	1.0 (-2.3 , 4.3)
TX-Rest of State	37.3 (32.8 , 41.8)	36.6 (32.2 , 41.0)	0.7 (-0.4 , 1.8)	40.6 (34.0 , 47.2)	40.2 (33.7 , 46.7)	0.4 (-1.0 , 1.8)	34.1 (28.1 , 40.1)	33.1 (27.3 , 38.9)	1.0 (-0.6 , 2.6)
Utah	39.1 (32.3 , 45.9)	37.4 (31.3 , 43.5)	1.7 (-0.4 , 3.8)	43.0 (32.8 , 53.2)	42.1 (33.1 , 51.1)	0.9 (-2.7 , 4.5)	35.4 (26.3 , 44.5)	32.9 (24.7 , 41.1)	2.5 (0.3 , 4.7) §
Vermont	64.0 (57.2 , 70.8)	64.5 (58.6 , 70.4)	-0.5 (-3.3 , 2.3)	67.1 (57.2 , 77.0)	68.5 (60.0 , 77.0)	-1.4 (-5.6 , 2.8)	61.0 (51.6 , 70.4)	60.8 (52.5 , 69.1)	0.2 (-3.6 , 4.0)

Area Name	Overall			Female			Male		
	Single	Dual	Difference †	Single	Dual	Difference	Single	Dual	Difference
Virginia	60.6 (50.9 , 70.3)	59.0 (51.2 , 66.8)	1.6 (-3.2 , 6.4)	64.3 (50.3 , 78.3)	68.0 (57.3 , 78.7)	-3.7 (-10.2 , 2.8)	56.9 (43.5 , 70.3)	50.4 (39.3 , 61.5)	6.5 (0.1 , 12.9) §
Washington	55.1 (48.0 , 62.2)	55.2 (48.9 , 61.5)	-0.1 (-2.4 , 2.2)	57.6 (48.0 , 67.2)	56.8 (48.0 , 65.6)	0.8 (-2.0 , 3.6)	52.7 (42.3 , 63.1)	53.7 (44.6 , 62.8)	-1.0 (-4.6 , 2.6)
West Virginia	45.8 (39.0 , 52.6)	43.9 (37.6 , 50.2)	1.9 (0.1 , 3.7) §	51.4 (41.3 , 61.5)	48.6 (39.2 , 58.0)	2.8 (0.1 , 5.5) §	40.5 (31.6 , 49.4)	39.3 (30.9 , 47.7)	1.2 (-1.2 , 3.6)
Wisconsin	53.6 (46.6 , 60.6)	52.3 (45.8 , 58.8)	1.3 (-0.6 , 3.2)	59.1 (48.9 , 69.3)	56.0 (46.5 , 65.5)	3.1 (0.7 , 5.5) §	48.3 (38.8 , 57.8)	48.8 (40.0 , 57.6)	-0.5 (-3.4 , 2.4)
Wyoming	32.3 (26.1 , 38.5)	30.9 (25.2 , 36.6)	1.4 (-0.4 , 3.2)	34.7 (25.8 , 43.6)	33.6 (25.3 , 41.9)	1.1 (-1.8 , 4.0)	30.0 (21.5 , 38.5)	28.4 (20.6 , 36.2)	1.6 (-0.5 , 3.7)
U.S. Virgin Islands	20.8 (8.4 , 33.2)	16.4 (6.7 , 26.1)	4.4 (1.9 , 6.9) §	25.7 (6.2 , 45.2)	16.7 (2.3 , 31.1)	9.0 (6.5 , 11.5) §	15.8 (1.0 , 30.6)	16.1 (3.3 , 28.9)	-0.3 (-4.6 , 4.0)
Guam	42.8 (34.4 , 51.2)	42.7 (36.7 , 48.7)	0.1 (-3.2 , 3.4)	49.8 (36.9 , 62.7)	48.2 (39.4 , 57.0)	1.6 (-3.5 , 6.7)	36.1 (25.7 , 46.5)	37.5 (29.4 , 45.6)	-1.4 (-5.5 , 2.7)
Puerto Rico	52.8 (44.1 , 61.5)	54.3 (46.2 , 62.4)	-1.5 (-4.3 , 1.3)	61.4 (49.4 , 73.4)	63.0 (52.1 , 73.9)	-1.6 (-5.4 , 2.2)	44.6 (33.0 , 56.2)	46.0 (34.7 , 57.3)	-1.4 (-5.6 , 2.8)

Abbreviations: HPV = human papillomavirus vaccine.

Note: “Dual”=landline & cell-phone, “Single”=cell-phone, CI=confidence interval

\* UTD HPV includes those with  $\geq 3$  doses, and those with 2 doses when the first HPV vaccine dose was initiated prior to age 15 years and there was at least five months minus four days between the first and second dose. This update to the HPV recommendation occurred in December of 2016.

† Difference=Single%-dual%

§ Denotes statistically significant difference between single- and dual-frame estimates