

Table 11. Estimation area-level estimates for UTD* HPV vaccine among adolescents 13-17 years by sampling frame and year, National Immunization Survey-Teen, 2016

Area Name	Overall			Female			Male		
	Single	Dual	Difference †	Single	Dual	Difference	Single	Dual	Difference
Alabama	36.9 (30.1 , 43.7)	35.4 (29.2 , 41.6)	1.5 (-0.5 , 3.5)	48.1 (37.8 , 58.4)	46.5 (37.3 , 55.7)	1.6 (-1.8 , 5.0)	26.0 (17.7 , 34.3)	24.7 (17.2 , 32.2)	1.3 (-0.3 , 2.9)
Alaska	42.9 (35.8 , 50.0)	43.3 (37.0 , 49.6)	-0.4 (-2.5 , 1.7)	46.6 (36.9 , 56.3)	47.8 (38.8 , 56.8)	-1.2 (-4.3 , 1.9)	39.3 (29.1 , 49.5)	39.1 (30.5 , 47.7)	0.2 (-2.5 , 2.9)
Arizona	44.4 (37.1 , 51.7)	44.1 (37.3 , 50.9)	0.3 (-2.2 , 2.8)	44.6 (34.4 , 54.8)	46.6 (37.0 , 56.2)	-2.0 (-5.5 , 1.5)	44.3 (34.0 , 54.6)	41.7 (32.3 , 51.1)	2.6 (-0.6 , 5.8)
Arkansas	35.1 (28.5 , 41.7)	34.5 (28.6 , 40.4)	0.6 (-1.4 , 2.6)	34.2 (24.3 , 44.1)	35.5 (26.5 , 44.5)	-1.3 (-4.6 , 2.0)	35.9 (27.2 , 44.6)	33.6 (25.9 , 41.3)	2.3 (0.0 , 4.6)
California	50.1 (41.9 , 58.3)	49.1 (42.1 , 56.1)	1.0 (-2.1 , 4.1)	59.4 (47.4 , 71.4)	58.3 (47.8 , 68.8)	1.1 (-2.9 , 5.1)	41.2 (30.5 , 51.9)	40.3 (31.4 , 49.2)	0.9 (-3.7 , 5.5)
Colorado	49.6 (41.6 , 57.6)	48.0 (41.0 , 55.0)	1.6 (-1.1 , 4.3)	56.3 (44.7 , 67.9)	52.1 (41.8 , 62.4)	4.2 (0.8 , 7.6) §	43.2 (32.2 , 54.2)	44.0 (34.4 , 53.6)	-0.8 (-5.0 , 3.4)
Connecticut	51.1 (43.5 , 58.7)	49.0 (42.7 , 55.3)	2.1 (-0.7 , 4.9)	56.8 (46.9 , 66.7)	56.9 (48.2 , 65.6)	-0.1 (-3.6 , 3.4)	45.6 (34.4 , 56.8)	41.5 (32.5 , 50.5)	4.1 (0.0 , 8.2)
Delaware	54.7 (47.9 , 61.5)	56.9 (50.9 , 62.9)	-2.2 (-4.4 , 0.0)	65.9 (56.9 , 74.9)	66.8 (58.8 , 74.8)	-0.9 (-3.8 , 2.0)	43.9 (34.2 , 53.6)	47.3 (38.7 , 55.9)	-3.4 (-6.8 , 0.0)
District of Columbia	62.5 (54.9 , 70.1)	62.0 (55.5 , 68.5)	0.5 (-2.4 , 3.4)	62.6 (51.5 , 73.7)	65.1 (55.8 , 74.4)	-2.5 (-6.2 , 1.2)	62.4 (52.0 , 72.8)	58.8 (49.6 , 68.0)	3.6 (-0.6 , 7.8)
Florida	40.0 (32.8 , 47.2)	40.4 (33.8 , 47.0)	-0.4 (-2.3 , 1.5)	50.2 (39.4 , 61.0)	46.4 (36.6 , 56.2)	3.8 (1.3 , 6.3) §	30.3 (21.0 , 39.6)	34.5 (25.7 , 43.3)	-4.2 (-7.2 , -1.2) §
Georgia	45.4 (38.2 , 52.6)	45.6 (39.0 , 52.2)	-0.2 (-2.3 , 1.9)	55.4 (45.1 , 65.7)	55.4 (46.3 , 64.5)	0.0 (-3.0 , 3.0)	35.7 (26.0 , 45.4)	36.2 (27.2 , 45.2)	-0.5 (-3.4 , 2.4)
Hawaii	52.5 (45.3 , 59.7)	54.0 (47.5 , 60.5)	-1.5 (-4.1 , 1.1)	59.1 (48.8 , 69.4)	61.5 (52.3 , 70.7)	-2.4 (-6.2 , 1.4)	46.1 (36.1 , 56.1)	46.9 (38.1 , 55.7)	-0.8 (-4.3 , 2.7)
Idaho	36.4 (30.0 , 42.8)	36.5 (30.6 , 42.4)	-0.1 (-1.9 , 1.7)	42.3 (32.9 , 51.7)	43.4 (34.6 , 52.2)	-1.1 (-4.1 , 1.9)	30.8 (22.1 , 39.5)	30.0 (22.1 , 37.9)	0.8 (-1.0 , 2.6)
Illinois-City of Chicago	53.7 (39.2 , 68.2)	55.7 (45.7 , 65.7)	-2.0 (-8.5 , 4.5)	61.9 (41.1 , 82.7)	65.3 (52.3 , 78.3)	-3.4 (-11.2 , 4.4)	45.7 (25.9 , 65.5)	46.4 (32.1 , 60.7)	-0.7 (-9.9 , 8.5)
Illinois-Rest of State	46.5 (40.5 , 52.5)	46.1 (40.5 , 51.7)	0.4 (-1.5 , 2.3)	54.1 (45.4 , 62.8)	49.8 (41.8 , 57.8)	4.3 (1.9 , 6.7) §	39.3 (31.2 , 47.4)	42.6 (35.0 , 50.2)	-3.3 (-6.2 , -0.4) §
Indiana	33.6 (27.0 , 40.2)	33.9 (27.8 , 40.0)	-0.3 (-2.2 , 1.6)	42.0 (32.0 , 52.0)	43.5 (34.0 , 53.0)	-1.5 (-4.2 , 1.2)	25.5 (17.3 , 33.7)	24.7 (17.3 , 32.1)	0.8 (-1.6 , 3.2)
Iowa	47.4 (40.9 , 53.9)	45.5 (39.6 , 51.4)	1.9 (-0.4 , 4.2)	50.4 (41.1 , 59.7)	47.4 (38.9 , 55.9)	3.0 (-0.3 , 6.3)	44.5 (35.4 , 53.6)	43.8 (35.6 , 52.0)	0.7 (-2.4 , 3.8)
Kansas	37.1 (30.2 , 44.0)	35.6 (29.3 , 41.9)	1.5 (-0.3 , 3.3)	46.1 (36.2 , 56.0)	45.6 (36.3 , 54.9)	0.5 (-2.3 , 3.3)	28.6 (19.2 , 38.0)	26.0 (17.8 , 34.2)	2.6 (0.5 , 4.7) §

	Overall			Female			Male		
Area Name	Single	Dual	Difference †	Single	Dual	Difference	Single	Dual	Difference
Kentucky	34.1 (27.2 , 41.0)	34.0 (27.8 , 40.2)	0.1 (-2.5 , 2.7)	39.9 (29.6 , 50.2)	39.7 (30.4 , 49.0)	0.2 (-3.7 , 4.1)	28.6 (19.6 , 37.6)	28.5 (20.3 , 36.7)	0.1 (-3.4 , 3.6)
Louisiana	42.2 (35.1 , 49.3)	41.8 (35.6 , 48.0)	0.4 (-2.0 , 2.8)	52.0 (41.6 , 62.4)	50.8 (41.7 , 59.9)	1.2 (-2.1 , 4.5)	32.7 (23.5 , 41.9)	33.2 (25.1 , 41.3)	-0.5 (-3.8 , 2.8)
Maine	57.1 (49.8 , 64.4)	56.0 (49.8 , 62.2)	1.1 (-1.7 , 3.9)	64.8 (54.8 , 74.8)	64.3 (55.9 , 72.7)	0.5 (-3.5 , 4.5)	49.8 (39.4 , 60.2)	48.2 (39.5 , 56.9)	1.6 (-2.0 , 5.2)
Maryland	48.2 (40.6 , 55.8)	48.1 (41.6 , 54.6)	0.1 (-3.0 , 3.2)	50.7 (40.2 , 61.2)	51.8 (42.6 , 61.0)	-1.1 (-4.7 , 2.5)	45.7 (34.8 , 56.6)	44.5 (35.4 , 53.6)	1.2 (-3.6 , 6.0)
Massachusetts	55.6 (48.5 , 62.7)	56.6 (50.6 , 62.6)	-1.0 (-3.8 , 1.8)	61.5 (51.5 , 71.5)	62.0 (53.5 , 70.5)	-0.5 (-4.6 , 3.6)	49.9 (40.0 , 59.8)	51.4 (43.1 , 59.7)	-1.5 (-5.4 , 2.4)
Michigan	46.1 (38.2 , 54.0)	44.8 (37.8 , 51.8)	1.3 (-1.1 , 3.7)	54.0 (43.0 , 65.0)	55.4 (45.5 , 65.3)	-1.4 (-4.5 , 1.7)	38.5 (27.8 , 49.2)	34.6 (25.4 , 43.8)	3.9 (1.0 , 6.8) §
Minnesota	45.8 (38.8 , 52.8)	44.1 (38.0 , 50.2)	1.7 (-0.8 , 4.2)	48.3 (38.2 , 58.4)	46.4 (37.5 , 55.3)	1.9 (-1.4 , 5.2)	43.4 (33.6 , 53.2)	42.0 (33.6 , 50.4)	1.4 (-2.3 , 5.1)
Mississippi	28.5 (22.3 , 34.7)	29.1 (23.3 , 34.9)	-0.6 (-2.0 , 0.8)	34.1 (24.5 , 43.7)	33.9 (25.0 , 42.8)	0.2 (-2.2 , 2.6)	23.2 (15.4 , 31.0)	24.5 (17.1 , 31.9)	-1.3 (-2.7 , 0.1)
Missouri	36.0 (29.1 , 42.9)	35.8 (29.4 , 42.2)	0.2 (-1.4 , 1.8)	38.5 (28.8 , 48.2)	38.5 (29.3 , 47.7)	0.0 (-1.9 , 1.9)	33.7 (23.9 , 43.5)	33.3 (24.6 , 42.0)	0.4 (-2.2 , 3.0)
Montana	37.9 (30.9 , 44.9)	39.9 (33.6 , 46.2)	-2.0 (-4.2 , 0.2)	53.8 (43.7 , 63.9)	52.5 (43.6 , 61.4)	1.3 (-1.1 , 3.7)	22.7 (14.9 , 30.5)	27.9 (20.0 , 35.8)	-5.2 (-9.2 , -1.2) §
Nebraska	44.8 (37.4 , 52.2)	45.9 (39.3 , 52.5)	-1.1 (-3.6 , 1.4)	50.8 (40.0 , 61.6)	50.6 (41.1 , 60.1)	0.2 (-3.5 , 3.9)	39.1 (28.9 , 49.3)	41.3 (32.2 , 50.4)	-2.2 (-5.6 , 1.2)
Nevada	42.7 (35.2 , 50.2)	39.9 (33.4 , 46.4)	2.8 (0.3 , 5.3) §	44.4 (34.1 , 54.7)	43.0 (33.9 , 52.1)	1.4 (-1.3 , 4.1)	41.1 (30.1 , 52.1)	37.0 (27.8 , 46.2)	4.1 (0.1 , 8.1) §
New Hampshire	52.8 (44.7 , 60.9)	51.2 (44.5 , 57.9)	1.6 (-1.5 , 4.7)	57.3 (45.9 , 68.7)	56.5 (47.4 , 65.6)	0.8 (-3.6 , 5.2)	48.5 (37.0 , 60.0)	46.3 (36.7 , 55.9)	2.2 (-2.2 , 6.6)
New Jersey	42.2 (35.0 , 49.4)	42.8 (36.9 , 48.7)	-0.6 (-3.7 , 2.5)	51.9 (41.9 , 61.9)	50.1 (41.7 , 58.5)	1.8 (-2.2 , 5.8)	32.9 (23.4 , 42.4)	35.8 (27.8 , 43.8)	-2.9 (-7.5 , 1.7)
New Mexico	43.9 (37.2 , 50.6)	42.9 (36.9 , 48.9)	1.0 (-1.3 , 3.3)	50.8 (41.2 , 60.4)	49.0 (40.2 , 57.8)	1.8 (-1.9 , 5.5)	37.2 (28.1 , 46.3)	37.0 (28.9 , 45.1)	0.2 (-2.5 , 2.9)
New York-City of New York	60.0 (51.9 , 68.1)	61.7 (55.1 , 68.3)	-1.7 (-5.3 , 1.9)	68.2 (56.9 , 79.5)	69.9 (61.2 , 78.6)	-1.7 (-5.7 , 2.3)	52.1 (40.8 , 63.4)	53.9 (44.3 , 63.5)	-1.8 (-7.4 , 3.8)
New York-Rest of State	50.2 (42.7 , 57.7)	51.8 (45.6 , 58.0)	-1.6 (-4.8 , 1.6)	52.7 (41.7 , 63.7)	55.8 (46.8 , 64.8)	-3.1 (-8.2 , 2.0)	47.8 (37.7 , 57.9)	48.0 (39.5 , 56.5)	-0.2 (-4.0 , 3.6)
North Carolina	40.9 (33.7 , 48.1)	41.2 (34.8 , 47.6)	-0.3 (-2.4 , 1.8)	47.0 (37.1 , 56.9)	46.9 (37.9 , 55.9)	0.1 (-2.4 , 2.6)	35.0 (24.7 , 45.3)	35.7 (26.7 , 44.7)	-0.7 (-4.1 , 2.7)
North Dakota	50.9 (43.5 , 58.3)	52.7 (46.0 , 59.4)	-1.8 (-4.2 , 0.6)	58.1 (47.2 , 69.0)	60.2 (50.4 , 70.0)	-2.1 (-5.6 , 1.4)	44.1 (34.1 , 54.1)	45.5 (36.4 , 54.6)	-1.4 (-4.6 , 1.8)

	Overall			Female			Male		
Area Name	Single	Dual	Difference †	Single	Dual	Difference	Single	Dual	Difference
Ohio	42.2 (35.0 , 49.4)	41.8 (35.1 , 48.5)	0.4 (-1.8 , 2.6)	42.0 (31.9 , 52.1)	42.5 (33.3 , 51.7)	-0.5 (-3.7 , 2.7)	42.4 (32.1 , 52.7)	41.1 (31.5 , 50.7)	1.3 (-1.9 , 4.5)
Oklahoma	39.0 (31.3 , 46.7)	39.2 (32.1 , 46.3)	-0.2 (-1.7 , 1.3)	41.9 (30.8 , 53.0)	43.6 (33.2 , 54.0)	-1.7 (-3.8 , 0.4)	36.3 (25.6 , 47.0)	35.0 (25.4 , 44.6)	1.3 (-0.7 , 3.3)
Oregon	48.5 (41.0 , 56.0)	47.5 (40.9 , 54.1)	1.0 (-1.9 , 3.9)	53.8 (42.5 , 65.1)	50.3 (40.6 , 60.0)	3.5 (-1.2 , 8.2)	43.4 (33.7 , 53.1)	44.7 (35.8 , 53.6)	-1.3 (-4.7 , 2.1)
Pennsylvania-Philadelphia County	69.9 (63.6 , 76.2)	68.4 (62.7 , 74.1)	1.5 (-1.1 , 4.1)	78.4 (70.5 , 86.3)	76.2 (68.6 , 83.8)	2.2 (-1.0 , 5.4)	62.0 (52.7 , 71.3)	61.1 (53.0 , 69.2)	0.9 (-3.2 , 5.0)
Pennsylvania-Rest of State	47.8 (41.3 , 54.3)	48.7 (43.0 , 54.4)	-0.9 (-3.3 , 1.5)	53.3 (43.9 , 62.7)	55.6 (47.4 , 63.8)	-2.3 (-5.7 , 1.1)	42.6 (33.6 , 51.6)	42.1 (34.2 , 50.0)	0.5 (-2.6 , 3.6)
Rhode Island	73.3 (66.5 , 80.1)	70.8 (64.8 , 76.8)	2.5 (-0.2 , 5.2)	78.5 (69.3 , 87.7)	73.0 (64.3 , 81.7)	5.5 (1.3 , 9.7) §	68.3 (58.4 , 78.2)	68.7 (60.3 , 77.1)	-0.4 (-3.8 , 3.0)
South Carolina	28.5 (21.8 , 35.2)	29.1 (22.9 , 35.3)	-0.6 (-2.8 , 1.6)	29.6 (19.9 , 39.3)	30.8 (21.6 , 40.0)	-1.2 (-4.3 , 1.9)	27.5 (18.2 , 36.8)	27.4 (19.1 , 35.7)	0.1 (-2.9 , 3.1)
South Dakota	39.9 (32.7 , 47.1)	38.6 (32.2 , 45.0)	1.3 (-0.7 , 3.3)	52.8 (42.1 , 63.5)	47.3 (37.5 , 57.1)	5.5 (2.5 , 8.5) §	28.0 (19.1 , 36.9)	30.5 (22.4 , 38.6)	-2.5 (-5.3 , 0.3)
Tennessee	34.8 (27.6 , 42.0)	36.0 (29.4 , 42.6)	-1.2 (-3.7 , 1.3)	34.9 (24.6 , 45.2)	36.9 (27.6 , 46.2)	-2.0 (-6.3 , 2.3)	34.7 (24.7 , 44.7)	35.2 (25.9 , 44.5)	-0.5 (-3.2 , 2.2)
Texas-Bexar County	39.8 (33.0 , 46.6)	39.2 (32.7 , 45.7)	0.6 (-0.9 , 2.1)	47.2 (36.9 , 57.5)	45.2 (35.5 , 54.9)	2.0 (-0.4 , 4.4)	32.4 (23.9 , 40.9)	33.3 (25.0 , 41.6)	-0.9 (-2.9 , 1.1)
Texas-City of Houston	47.2 (37.3 , 57.1)	46.4 (37.5 , 55.3)	0.8 (-1.6 , 3.2)	43.8 (29.6 , 58.0)	44.2 (31.1 , 57.3)	-0.4 (-3.9 , 3.1)	50.6 (37.0 , 64.2)	48.6 (36.5 , 60.7)	2.0 (-1.3 , 5.3)
Texas-El Paso County	66.0 (58.8 , 73.2)	66.0 (59.3 , 72.7)	0.0 (-0.9 , 0.9)	68.5 (58.4 , 78.6)	69.0 (59.6 , 78.4)	-0.5 (-1.8 , 0.8)	63.6 (53.5 , 73.7)	63.2 (53.7 , 72.7)	0.4 (-0.9 , 1.7)
Texas-Dallas County	24.2 (18.0 , 30.4)	23.9 (18.3 , 29.5)	0.3 (-1.5 , 2.1)	24.5 (15.4 , 33.6)	24.3 (15.9 , 32.7)	0.2 (-2.2 , 2.6)	24.0 (15.5 , 32.5)	23.6 (16.1 , 31.1)	0.4 (-2.4 , 3.2)
Texas-Rest of State	30.8 (26.0 , 35.6)	30.7 (26.2 , 35.2)	0.1 (-1.3 , 1.5)	38.5 (31.2 , 45.8)	39.2 (32.2 , 46.2)	-0.7 (-2.7 , 1.3)	23.4 (17.7 , 29.1)	22.5 (17.2 , 27.8)	0.9 (-0.8 , 2.6)
Utah	31.1 (24.3 , 37.9)	30.5 (24.5 , 36.5)	0.6 (-1.6 , 2.8)	39.3 (29.1 , 49.5)	41.3 (32.0 , 50.6)	-2.0 (-5.1 , 1.1)	23.3 (14.3 , 32.3)	20.3 (12.9 , 27.7)	3.0 (0.4 , 5.6) §
Vermont	58.8 (51.3 , 66.3)	55.7 (49.9 , 61.5)	3.1 (-0.3 , 6.5)	63.7 (52.7 , 74.7)	58.4 (49.8 , 67.0)	5.3 (-0.3 , 10.9)	54.1 (44.0 , 64.2)	53.1 (45.3 , 60.9)	1.0 (-3.1 , 5.1)
Virginia	40.5 (31.5 , 49.5)	39.2 (31.8 , 46.6)	1.3 (-2.3 , 4.9)	45.3 (31.7 , 58.9)	41.1 (30.2 , 52.0)	4.2 (-1.9 , 10.3)	35.9 (24.2 , 47.6)	37.4 (27.4 , 47.4)	-1.5 (-5.4 , 2.4)
Washington	52.1 (44.6 , 59.6)	49.5 (43.0 , 56.0)	2.6 (-0.2 , 5.4)	54.1 (43.4 , 64.8)	55.2 (45.9 , 64.5)	-1.1 (-4.9 , 2.7)	50.3 (39.9 , 60.7)	44.0 (35.1 , 52.9)	6.3 (2.6 , 10.0) §
West Virginia	42.1 (34.9 , 49.3)	41.2 (34.6 , 47.8)	0.9 (-1.2 , 3.0)	49.2 (38.8 , 59.6)	49.7 (40.0 , 59.4)	-0.5 (-3.5 , 2.5)	35.4 (25.5 , 45.3)	33.0 (24.3 , 41.7)	2.4 (-0.1 , 4.9)

Area Name	Overall			Female			Male		
	Single	Dual	Difference †	Single	Dual	Difference	Single	Dual	Difference
Wisconsin	45.5 (38.3 , 52.7)	45.5 (39.0 , 52.0)	0.0 (-2.3 , 2.3)	52.6 (42.2 , 63.0)	53.6 (44.0 , 63.2)	-1.0 (-3.9 , 1.9)	38.6 (28.9 , 48.3)	37.8 (29.3 , 46.3)	0.8 (-2.8 , 4.4)
Wyoming	26.4 (20.4 , 32.4)	26.7 (21.4 , 32.0)	-0.3 (-2.2 , 1.6)	33.3 (23.8 , 42.8)	33.9 (25.6 , 42.2)	-0.6 (-3.6 , 2.4)	19.9 (12.5 , 27.3)	19.9 (13.3 , 26.5)	0.0 (-2.1 , 2.1)
U.S. Virgin Islands	22.1 (16.5 , 27.7)	22.6 (17.5 , 27.7)	-0.5 (-2.3 , 1.3)	26.2 (17.6 , 34.8)	26.6 (18.8 , 34.4)	-0.4 (-3.0 , 2.2)	18.4 (11.1 , 25.7)	19.0 (12.4 , 25.6)	-0.6 (-3.0 , 1.8)
Guam	43.4 (35.9 , 50.9)	44.2 (39.0 , 49.4)	-0.8 (-3.6 , 2.0)	49.8 (38.5 , 61.1)	55.8 (48.1 , 63.5)	-6.0 (-10.0 , -2.0) §	37.3 (27.3 , 47.3)	33.2 (26.6 , 39.8)	4.1 (0.5 , 7.7) §
Puerto Rico	52.4 (45.5 , 59.3)	52.8 (46.5 , 59.1)	-0.4 (-2.4 , 1.6)	60.8 (50.9 , 70.7)	61.9 (53.0 , 70.8)	-1.1 (-2.8 , 0.6)	44.5 (35.1 , 53.9)	44.1 (35.4 , 52.8)	0.4 (-3.1 , 3.9)

Abbreviations: HPV = human papillomavirus vaccine.

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

* UTD HPV includes those with ≥ 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