

Appendix
Geographic Variation in Human Papillomavirus Vaccination Initiation and Completion Among Young Adults in the U.S.
Adjei Boakye et al.

Appendix Table 1. HPV Vaccine Initiation and Completion Rates of Young Adults Aged 18–26 Years, BRFSS (2015–2017)

Variable	n (w%)				p-value
	Total n=6,303	Southern n=10,354 (80.0%)	West/Midwest n=5,295 (11.8%)	Northeast n=2,429 (8.2%)	
HPV vaccine initiation: yes	2,318 (35.3)	33.4	33.9	55.9	<0.0001
HPV vaccine completion: yes	1,220 (16.3)	14.5	17.7	30.9	<0.0001

Note: Boldface indicates statistical significance ($p < 0.05$). p -value based on chi-square tests.

n, frequency; w%, weighted percentage; BRFSS, Behavioral Risk Factor Surveillance System; HPV, human papillomavirus.

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Appendix Table 2. Association Between Region of Residence and HPV Vaccination Uptake Among 18–26 Year Olds, BRFSS (2015–2017)

Variable	AOR (95% CI)	
	HPV vaccine initiation (n=3,258)	HPV vaccine completion (n=3,258)
Geographic region		
Northeast	ref	ref
West/Midwest	0.44 (0.33, 0.59)	0.58 (0.42, 0.80)
Southern	0.44 (0.34, 0.57)	0.53 (0.40, 0.71)
Sex		
Female	ref	ref
Male	0.22 (0.18, 0.27)	0.15 (0.11, 0.20)
Race/Ethnicity		
Non-Hispanic White	ref	ref
Non-Hispanic Black	0.96 (0.72, 1.27)	0.39 (0.27, 0.57)
Hispanic	0.91 (0.67, 1.24)	0.64 (0.44, 0.95)
Non-Hispanic other	0.88 (0.59, 1.31)	0.69 (0.39, 1.21)
Marital status		
Married	ref	ref
Not married	1.08 (0.81, 1.44)	1.29 (0.92, 1.82)
Educational attainment		
College graduate or higher	ref	ref
Some college or associate degree	0.97 (0.72, 1.29)	0.60 (0.44, 0.83)
High school diploma	0.86 (0.63, 1.16)	0.51 (0.36, 0.73)
Less than high school diploma	0.51 (0.33, 0.81)	0.45 (0.24, 0.87)
Income level		
>\$50,000	ref	ref
\$25,000 to \$49,999	1.10 (0.81, 1.50)	0.95 (0.65, 1.39)
<\$25,000	0.79 (0.59, 1.05)	0.80 (0.57, 1.12)
Refused/Missing	0.65 (0.49, 0.87)	0.57 (0.41, 0.79)
Has insurance coverage		
Yes	ref	ref
No	0.72 (0.55, 0.95)	0.74 (0.51, 1.09)
Has regular provider		
Yes	ref	ref
No	0.79 (0.63, 1.00)	0.77 (0.58, 1.02)
Time since last medical checkup		
Within past year	ref	ref
More than a year	0.84 (0.67, 1.05)	0.87 (0.66, 1.15)
General health		
Excellent/Very good	ref	ref
Good	0.84 (0.66, 1.06)	0.94 (0.70, 1.26)
Poor/Fair	0.99 (0.69, 1.41)	0.92 (0.61, 1.39)
Survey year		
2017	ref	ref
2016	0.72 (0.55, 0.94)	0.74 (0.54, 1.02)
2015	1.16 (0.88, 1.53)	1.34 (0.95, 1.87)

Note: Boldface indicates statistical significance ($p < 0.05$).

BRFSS, Behavioral Risk Factor Surveillance System; HPV, human papillomavirus.

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Appendix Table 3. Association Between Region of Residence and HPV Vaccination Uptake Among 18–34 Year Olds Stratified by Sex, BRFSS (2015–2017)

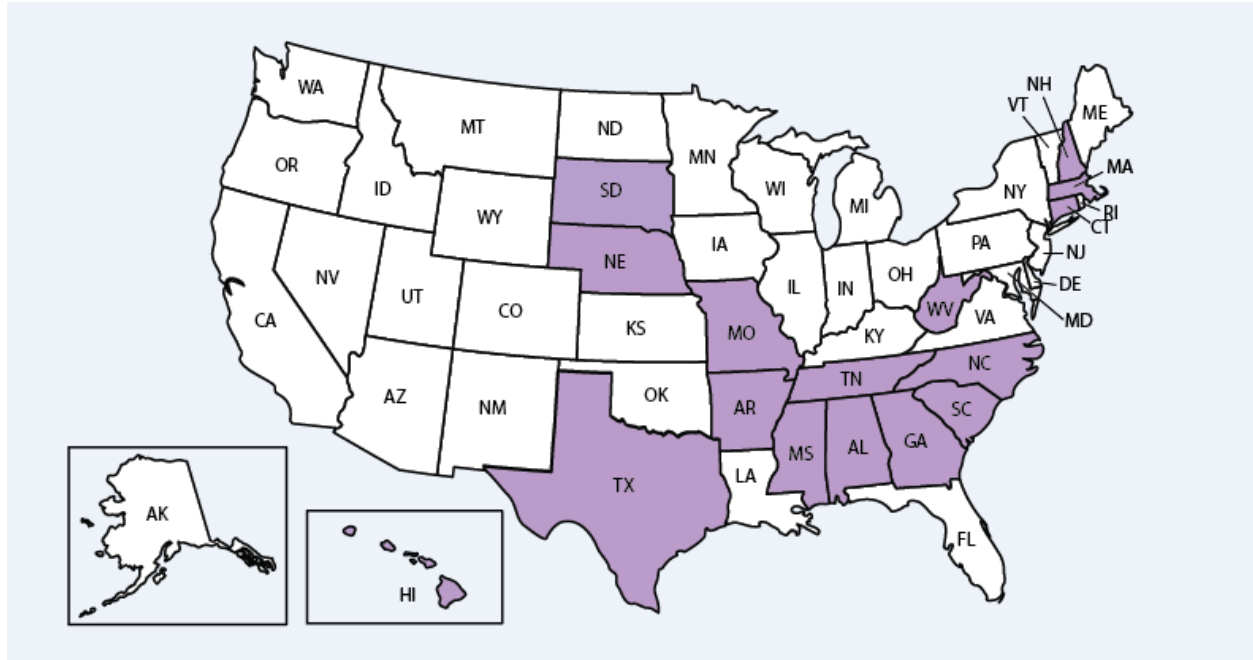
Geographic region	AOR (95% CI)	
	HPV vaccine initiation (n=3,258)	HPV vaccine completion (n=3,258)
Females		
Northeast	ref	ref
West/Midwest	0.65 (0.51, 0.82)	0.82 (0.63, 1.08)
Southern	0.46 (0.37, 0.56)	0.56 (0.45, 0.70)
Males		
Northeast	ref	ref
West/Midwest	0.39 (0.28, 0.56)	0.33 (0.20, 0.55)
Southern	0.51 (0.38, 0.67)	0.60 (0.39, 0.94)

Note: Boldface indicates statistical significance ($p < 0.05$).

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Appendix Figure 1. States that administered the optional adult HPV vaccination module.



HPV, human papillomavirus.