

Trends in influenza immunization among pregnant women: A cross-sectional examination of the Behavioral Risk Factor Surveillance System from 2017-2020



COLLEGE OF
OSTEOPATHIC MEDICINE
at the Cherokee Nation

Allisyn Shed, M.S.¹, Kelli Swank, B.S.¹, Kristen McPherson, M.P.H.¹, Micah Hartwell, Ph.D.^{1,2}

BACKGROUND

- Maternal influenza vaccination is a vital aspect of prenatal care and is recommended by both ACOG and ACIP.
- Pregnant individuals with influenza are at a higher risk of many adverse maternal and neonatal outcomes. As of December 2021, data indicates that among women of childbearing age, nearly 50% of flu-associated hospitalizations have been among those who were pregnant.
- One contributing factor may be declining flu vaccination uptake among pregnant individuals.
- Receiving the flu vaccine in pregnancy can decrease the risk of hospitalization by approximately 40% and can also provide infants with protection for their first few months of life.

OBJECTIVE

- Given the declining rates of vaccination and the increased risk of serious illness in pregnancy, we sought to examine trends in influenza immunization among pregnant individuals from 2017-2020 and determine if disparities exist by race/ethnicity.

STUDY DESIGN

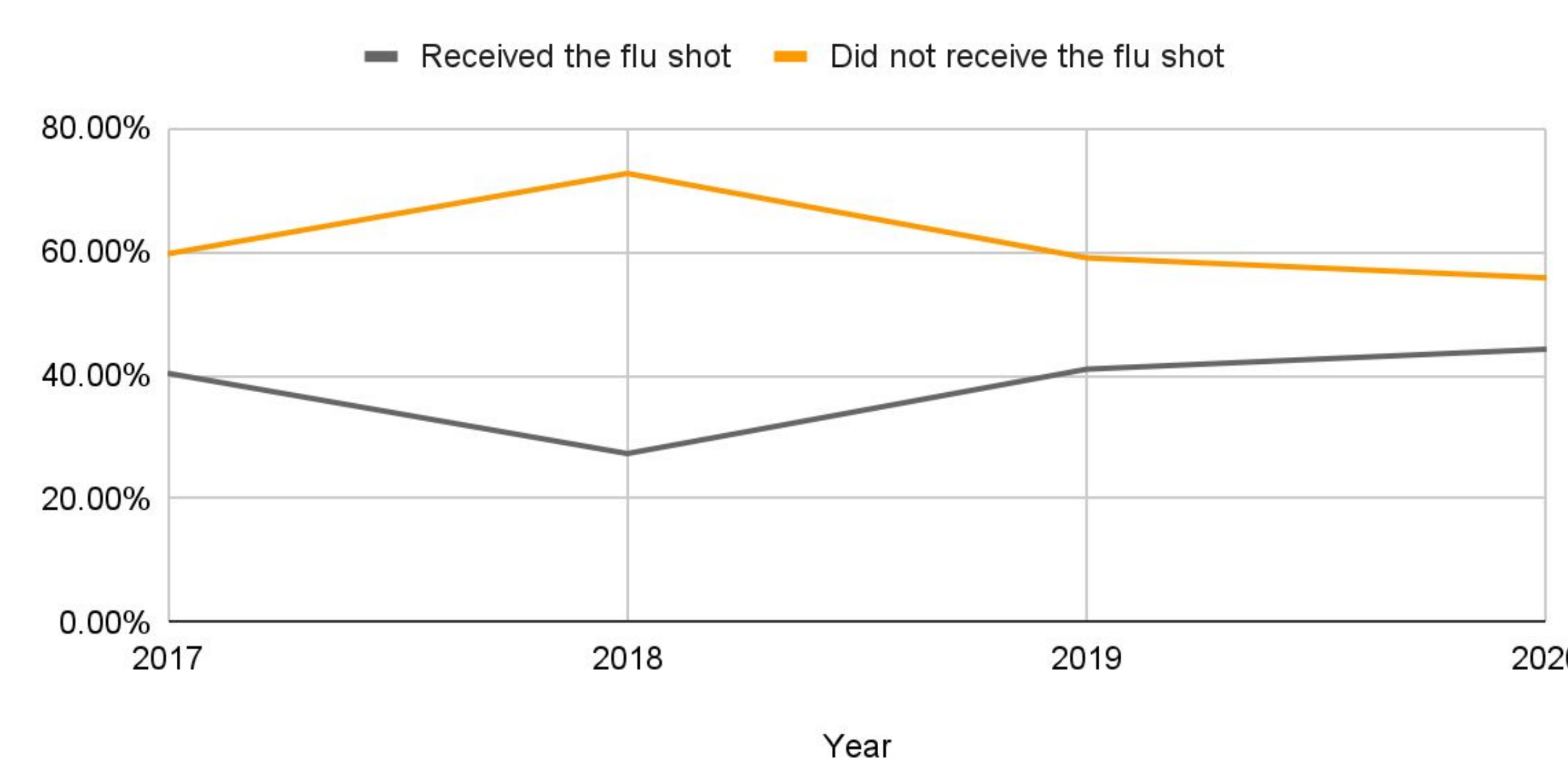
- We utilized data from BRFSS from 2017-2020 to examine trends in influenza immunization uptake among pregnant individuals overall and by race/ethnicity.
- Respondents were included if they identified as being pregnant and responded to a question about flu vaccination, and race/ethnicity was self-reported.
- We then assessed the prevalence of flu vaccination among pregnant individuals for each BRFSS cycle and then tested for disparities between race/ethnicity groups using χ^2 -square tests of independence.

RESULTS

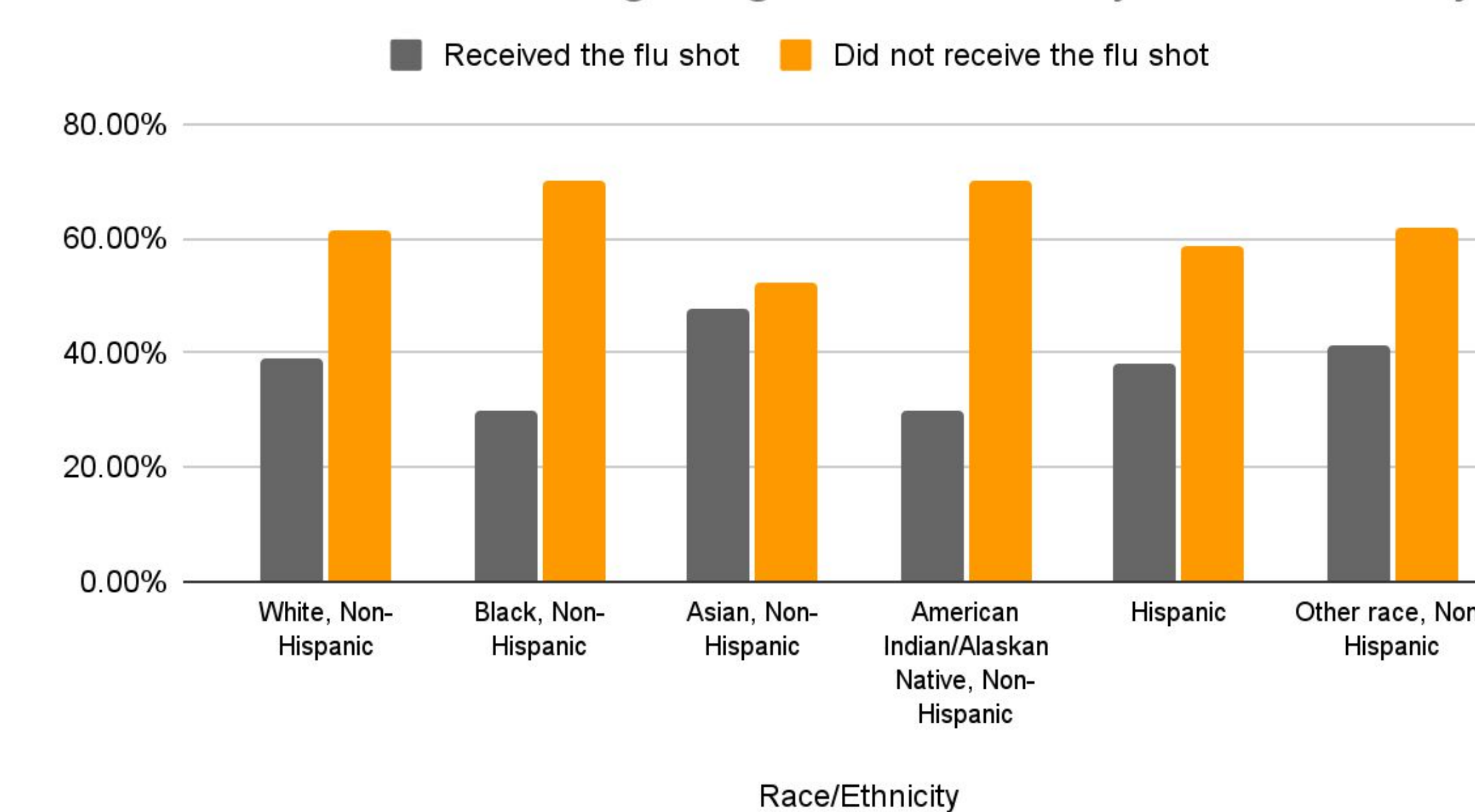
Table 1. Flu Vaccination in Pregnancy from 2017-2020 and by Race/Ethnicity

	Flu Shot Received if Pregnant			Test
	No No. (%)	Yes No. (%)	Total No. (%)	
Sample, weighted (%)	6231 (56.99)	4702 (43.01)	10933 (100)	
Year				$\chi^2_{(3)} = 157.50,$ $P < 0.001$
2017	1352 (59.66)	975 (40.34)	2327 (100)	
2018	1555 (72.66)	782 (27.34)	2337 (100)	
2019	1064 (59.00)	886 (41.00)	1950 (100)	
2020	1024 (55.77)	1033 (44.23)	2057 (100)	
Race/Ethnicity				$\chi^2_{(5)} = 59.93,$ $P = .0020$
White, Non-Hispanic	2933 (61.18)	2378 (38.82)	5311 (100)	
Black, Non-Hispanic	540 (70.11)	268 (29.89)	808 (100)	
Asian, Non-Hispanic	202 (52.28)	147 (47.72)	349 (100)	
American Indian/Alaskan Native, Non-Hispanic	134 (70.13)	95 (29.87)	229 (100)	
Hispanic	986 (61.76)	639 (38.24)	1625 (100)	
Other race, Non-Hispanic	200 (58.49)	149 (41.51)	349 (100)	

Trends in Flu Vaccination Among Pregnant Women From 2017-2020



Flu Vaccination Among Pregnant Women by Race/Ethnicity



From 2017-2020, less than half of individuals received a flu vaccine during their pregnancy (4702 of 10,933; 43.01%). Among pregnant individuals, flu vaccine uptake differed significantly by year, with the lowest rate seen in 2018 (27.34%) and the highest in 2020 (44.23%)--during the COVID-19 pandemic. There was also a statistically significant association between flu vaccination during pregnancy and race/ethnicity ($\chi^2_{(5)} = 59.93, P = .002$). Between 2017-2020, only 29.87% of American Indian/Alaskan Native and 29.89% of Black, Non-Hispanic pregnant individuals received a flu vaccine, compared with 47.72% of individuals who reported as Asian, 38.24% who reported as Hispanic, and 38.82% of whom reported as White.

CONCLUSION

- Our study showed that pregnant individuals who identified as American Indian/Alaskan Native or Black were less likely to receive the flu vaccine.
- These findings indicate clear disparities in flu vaccine uptake in pregnancy based on race/ethnicity.
- Further research into these disparities would be beneficial in order to identify specific factors that could be addressed in order to improve flu vaccination rates among pregnant women overall, as well as for specific groups.
- The overall low rate of flu vaccination among pregnant individuals from 2017-2020 is concerning and may indicate a need for improvements in patient education and awareness regarding the importance of receiving this vaccine during pregnancy.

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