

Differences in influenza vaccination by gender identity and state-level gender equity policies: Data from the Behavioral Risk Factor Surveillance System, 2015-2019

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INTRODUCTION

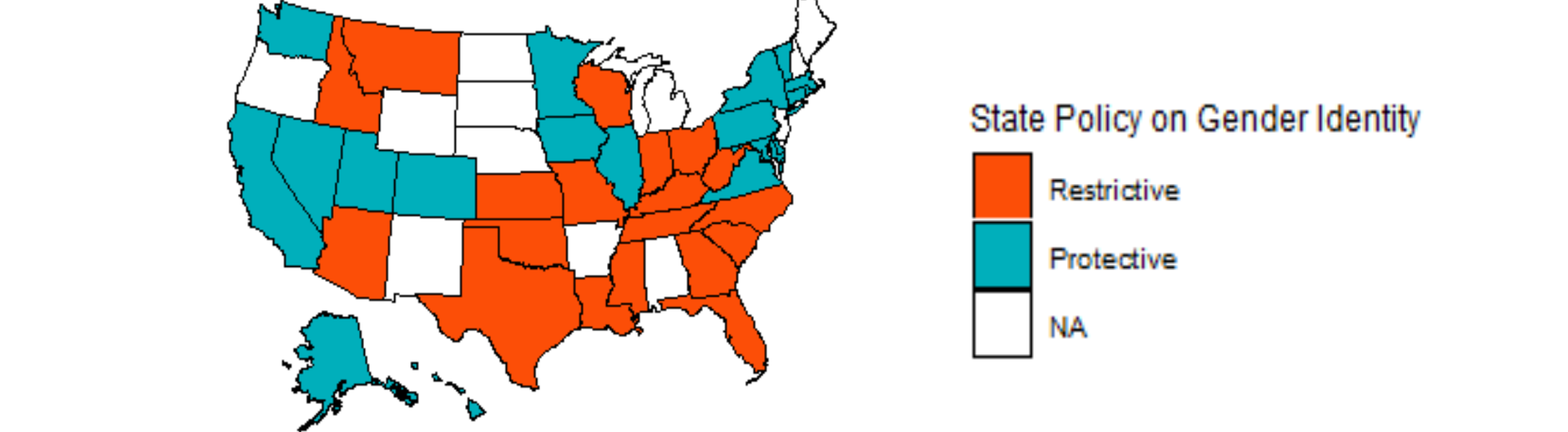
- There are 1.4 million transgender and >700,000 non-binary people in the United States (U.S.), many of whom face significant barriers to health care access contributing to health disparities.
- Previous studies have reported greater vaccine uptake in cisgender women compared to men; however, national-level estimates of influenza vaccine uptake among transgender and non-binary people are unknown.

Objectives: Characterize differences in influenza vaccination by gender identity; examine associations between vaccination status and state-based gender equity policies.

METHODS

- Study population & design:** Cross-sectional study of adults 18+ years who participated in the 2015-2019 U.S. Behavioral Risk Factors Surveillance System surveys (BRFSS).
- Analyses:**
- Exposure: Self-reported gender identity.*
 - Outcome: Weighted prevalence differences (PDs) of being unvaccinated against influenza by self-reported gender identity (95% CIs).
 - Method: Generalized linear regression models.
 - Effect modifier: State-level gender equity policies.

Figure 1. U.S. states implementing the SOGI module in BRFSS 2015-2019, by policies on gender equality (N = 38)^{1,2,3}



¹ Based on participant responses to question "Do you consider yourself to be transgender?". The option for "non-binary gender identity" is not included as a response option in BRFSS. For data from 2015, respondent's birth sex is assigned by interviewer based on voice pitch.

² Policy status classified as "protective" (policy tally score= High/Medium/Fair) or "restrictive" (policy tally score= Low/Negative overall) based on the Transgender Law Center's 2020 national equality map.

³ N.B. Guam (restrictive) is not depicted in this figure.

RESULTS

Participant characteristics: Among transgender men, transgender women, and gender non-conforming individuals (compared to cisgender men and cisgender women):

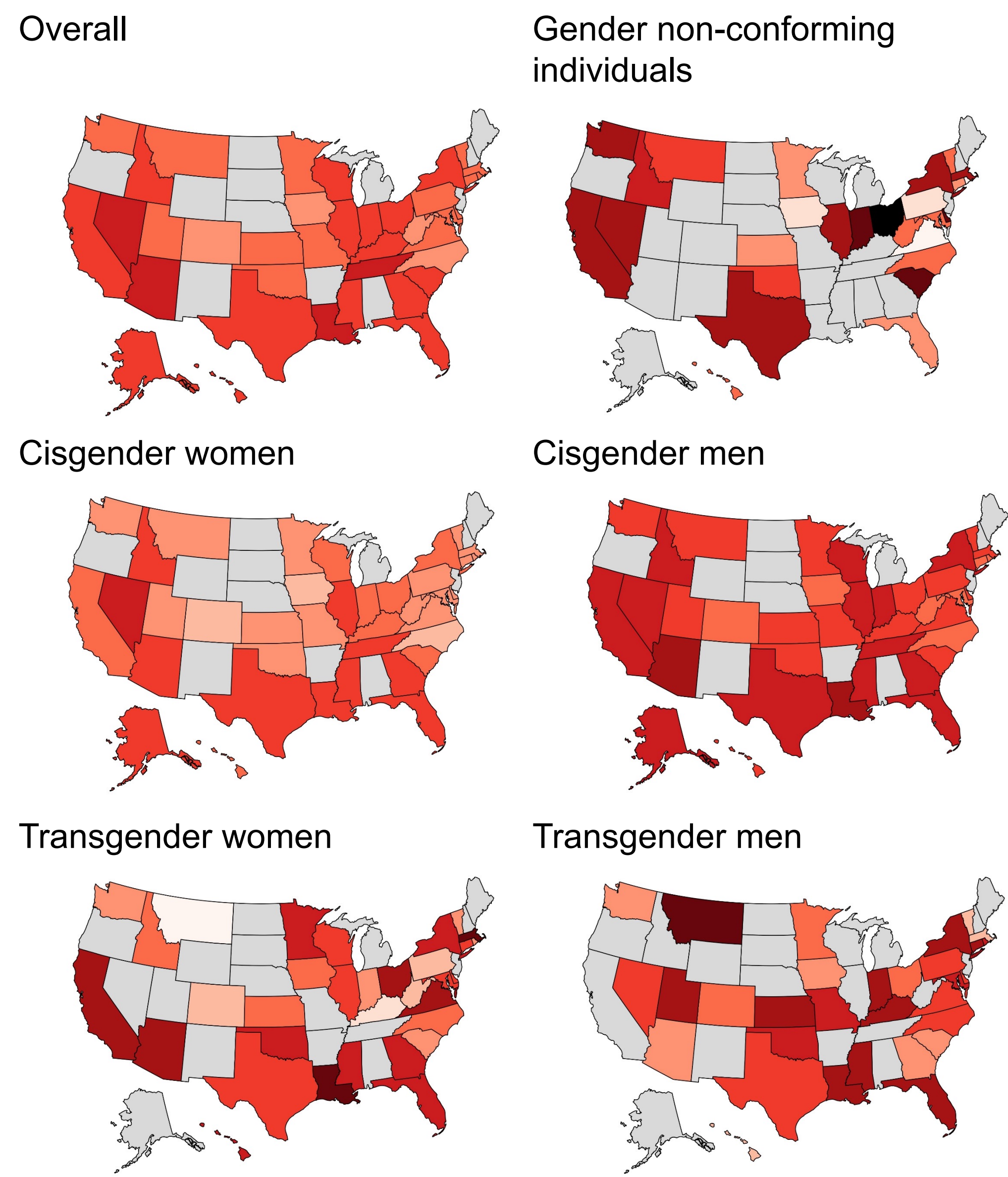
- a higher % were 18-24 years old, Hispanic, less educated, lower SES, unemployed or a student.
- a lower % were uninsured, unable to see a doctor due to cost, experienced more poor mental health.

Table 1. Weighted prevalence and prevalence differences (PDs) of not receiving an influenza vaccine.¹

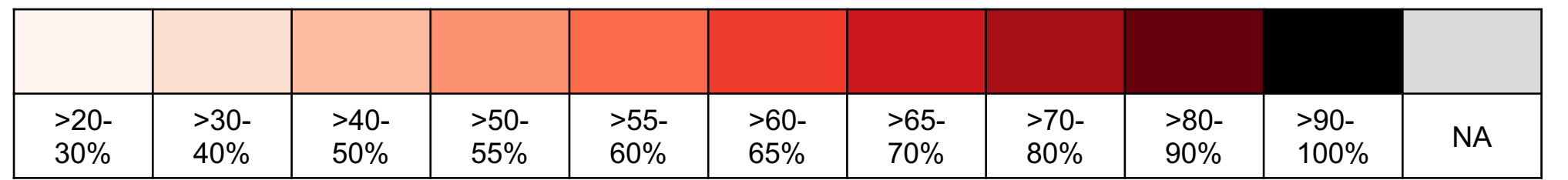
Gender identity	Prevalence unvaccinated ¹	PD per 100 people ²	95% CI
Overall (n=1,016,012)			
Cisgender women	57.3%	Ref	
Cisgender men	64.4%	7.0	6.7, 7.4
Transgender women	65.4%	8.1	4.0, 12.2
Transgender men	64.6%	7.3	2.7, 11.9
Gender non-conforming	64.6%	7.2	1.3, 13.2
Protective states (n=578,234)			
Cisgender women	55.6%	Ref	
Cisgender men	63.1%	7.5	7.0, 8.0
Transgender women	65.5%	9.9	4.5, 15.3
Transgender men	66.4%	10.9	4.5, 15.3
Gender non-conforming	63.2%	5.2	-2.7, 13.1
Restrictive states (n=437,778)			
Cisgender women	59.1%	Ref	
Cisgender men	65.7%	6.6	6.0, 7.2
Transgender women	65.4%	6.3	0.2, 12.4
Transgender men	60.8%	4.1	-2.3, 10.5
Gender non-conforming	69.6%	10.5	1.9, 19.1

¹ n for each subgroup as follows: Cisgender women (n = 568,369), Cisgender men (n = 443,374), Transgender men (n = 1,451), Transgender women (n = 1,846), Non-binary individuals (n = 972).

Figure 2. State-level map of weighted prevalence of U.S. adults unvaccinated against influenza by gender identity.¹



¹ States with no gender identity data or with <15 individuals with no influenza vaccination when stratified by gender were listed as NA. Some states were included in the overall map, but listed as NA when stratified by gender identity due to small sample sizes. N.B. Guam is not depicted in this figure (71% overall, 72% cisgender women, 71% cisgender men, 66% transgender women, 60% transgender men, NA non-binary individuals).



STRENGTHS & LIMITATIONS

- Strengths:**
- Largest nationally representative analysis to evaluate influenza vaccine uptake disaggregated by gender identity.
 - Results contribute to the evidence base on the general health and wellbeing of transgender and non-binary individuals, an under-researched area.
- Limitations:**
- Poor structure of BRFSS gender identity question and limited response options likely contribute to misclassification of gender identity. Informed by community guidance, questions related to gender identity should be revised.
 - Potential for unmeasured confounding by rurality; living in an urban area may promote or impede vaccination at a local level outweighing the impact of state gender equity policies.

CONCLUSION

- Our results provide evidence of a disparity in influenza vaccine uptake by gender identity.
- Future research should focus on identifying barriers to and facilitators of vaccination by gender identity.
- These findings can inform policies and interventions to improve vaccine uptake among gender minorities.

Key Findings: Compared to cisgender women, the prevalence of being unvaccinated was significantly higher among cisgender men, transgender women, transgender men, and gender non-conforming individuals, in both states with protective versus restrictive gender equity policies.

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