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# Association of Nondiscrimination Policies With Mental Health Among Gender Minority Individuals

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**IMPORTANCE** In the past decade, many states have implemented policies prohibiting private health insurers from discriminating based on gender identity. Policies banning discrimination have the potential to improve access to care and health outcomes among gender minority (ie, transgender and gender diverse) populations.

**OBJECTIVE** To evaluate whether state-level nondiscrimination policies are associated with suicidality and inpatient mental health hospitalizations among privately insured gender minority individuals.

**DESIGN, SETTING, AND PARTICIPANTS** In this cohort study, difference-in-differences analysis comparing changes in mental health outcomes among gender minority enrollees before and after states implemented nondiscrimination policies in 2009-2017 was conducted. A sample of gender minority children and adults was identified using gender minority–related diagnosis codes obtained from private health insurance claims. The present study was conducted from August 1, 2018, to September 1, 2019.

**EXPOSURE** Living in states that implemented policies banning discrimination based on gender identity in 2013, 2014, 2015, and 2016.

**MAIN OUTCOMES AND MEASURES** The primary outcome was suicidality. The secondary outcome was inpatient mental health hospitalization.

**RESULTS** The study population included 28 980 unique gender minority enrollees (mean [SD] age, 26.5 [15] years) from 2009 to 2017. Relative to comparison states, suicidality decreased in the first year after policy implementation in the 2014 policy cohort (odds ratio [OR], 0.72; 95% CI, 0.58-0.90; $P = .005$), the 2015 policy cohort (OR, 0.50; 95% CI, 0.39-0.64; $P < .001$), and the 2016 policy cohort (OR, 0.61; 95% CI, 0.44-0.85; $P = .004$). This decrease persisted to the second postimplementation year for the 2014 policy cohort (OR, 0.48; 95% CI, 0.41-0.57; $P < .001$) but not for the 2015 policy cohort (OR, 0.81; 95% CI, 0.47-1.38; $P = .43$). The 2013 policy cohort experienced no significant change in suicidality after policy implementation in all 4 postimplementation years (2014: OR, 1.19; 95% CI, 0.85-1.67; $P = .31$; 2015: OR, 0.94; 95% CI, 0.73-1.20; $P = .61$; 2016: OR, 0.82; 95% CI, 0.65-1.03; $P = .10$; and 2017: OR, 1.29; 95% CI, 0.90-1.88; $P = .18$). Mental health hospitalization rates generally decreased or stayed the same for individuals living in policy states vs the comparison group.

**CONCLUSIONS AND RELEVANCE** Implementation of a state-level nondiscrimination policy appears to be associated with decreased or no changes in suicidality among gender minority individuals living in states that implemented these policies from 2013 to 2016. Given high rates of suicidality among gender minority individuals in the US, health insurance nondiscrimination policies may offer a mechanism for reducing barriers to care and mitigating discrimination.

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Supplemental content

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Gender minority populations, defined as transgender and gender diverse (eg, nonbinary or gender fluid) individuals, face health inequities and unique challenges in accessing health care in the US. The term *gender minority* includes a diverse range of identities and expressions and does not signify a medical or psychological condition. Many gender minority people experience gender dysphoria, which is a clinical diagnosis that describes the significant distress and difficulty functioning that can accompany discordance between an individual's current gender identity or expression and their assigned sex. Gender-affirming health care services—including hormone therapy, reconstructive surgeries, and mental health services—have been identified as medically necessary and effective treatments for gender dysphoria by the American Medical Association, the American Psychiatric Association, the American Psychological Association, and other professional medical associations.[1-4]

Despite these medical guidelines, many US insurers categorically exclude coverage of gender-affirming health care services.[5] Such exclusions have health implications for gender minority patients and compound existing barriers to care, including limited availability of clinicians to provide gender-affirming services and frequent experiences of discrimination during interactions with the health care system.[6-8] These barriers to care are particularly salient given notable mental health disparities: 40% of gender minority individuals have attempted suicide in their lifetime compared with less than 5% in the general population.[6] Among Medicare beneficiaries, gender minority individuals are significantly more likely than those who were not identified as gender minority to have an inpatient mental health hospitalization, even after adjusting for age and mental health conditions.[9]

Between 2012 and 2018, 20 states and the District of Columbia implemented policies prohibiting insurer discrimination based on gender identity.[10] These state-level policies do not necessarily mandate that private health insurers cover gender-affirming hormone therapy and surgery but require that these coverage exclusions be removed. To date, the effect of these policies on access to care and health outcomes remains unknown.

We examined the association between health insurance nondiscrimination policies and mental health outcomes for gender minority individuals. Using a large, private health insurance claims database, we constructed a sample of enrollees with gender minority-related diagnosis codes in 2009-2017. We used a difference-in-differences design to evaluate changes in suicidality and inpatient mental health hospitalizations among gender minority enrollees in states with and without nondiscrimination policies. The present study was conducted from August 1, 2018, to September 1, 2019.

### Key Points

**Question** Are state-level nondiscrimination policies associated with changes in suicidality among gender minority individuals?

**Findings** In this cohort study of 28 980 gender minority individuals, nondiscrimination policies were associated with a decrease in suicidality in the first postimplementation year among states that implemented policies in 2014-2016 compared with states that did not implement policies. Among states that implemented policies in 2013, there was no association with suicidality.

**Meaning** The results of this study suggest that nondiscrimination policies appear to be associated with a decrease or no change in suicidality in all years following the policy implementation.

## Methods

We used the IBM MarketScan Commercial Database, which contains deidentified private health insurance claims and enrollment data, including information on inpatient and outpatient health care services, for 26 million to 53 million individuals per year younger than 65 years from a convenience sample of US health plans and large employers. In 2009-2017, we identified gender minority enrollees using a set of gender minority–related *International Classification of Diseases, Ninth Revision* (*ICD-9*) or *International Statistical Classification of Diseases and Related Health Problems, Tenth Revision* (*ICD-10*) codes that have been described previously (eMethods in the Supplement).[11,12] Individuals were included in our sample if they had a gender minority–related *ICD* code on an inpatient or outpatient claim in any year of the study period, and we did not require continuous enrollment. The institutional review board at Harvard Medical School determined that this was not human subjects research and did not require informed consent.

We used a difference-in-differences design to compare changes in suicidality and inpatient mental health hospitalizations among gender minority enrollees before and after states implemented nondiscrimination policies. Nondiscrimination policies were defined as state-level policies that provide protections for gender minority individuals who have or want to obtain private health insurance. Specifically, this includes policies that ban discrimination based on gender identity among private health insurers and/or ban categorical exclusion of transgender-related services among private insurers. We estimated associations in the policy implementation year (because the policy is active for a portion of this year) and for each subsequent postimplementation year. Policy references provided by the Movement Advancement Project and the National Center for Transgender Equality were used to identify these dates.[10,13] When the referenced legal document did not explicitly state when the policy took effect, we consulted alternative resources (eg, follow-up policy bulletins, newspaper articles, and direct communication with state insurance divisions) to determine implementation dates.

We grouped states into 4 separate cohorts based on their policy implementation year to capture heterogeneity by treatment year (**Figure 1**). In 2013, the District of Columbia and 6 states (California, Colorado, Connecticut, Delaware, Oregon, and Vermont [n = 7]) implemented policies; states that implemented policies in 2014 (n = 3) were Massachusetts, New York, and Washington; states that implemented policies in 2015 (n = 4) were Illinois, Minnesota, Nevada, and Rhode Island; and states that implemented policies in 2016 (n = 5) were Hawaii, Maryland, Michigan, Montana, and Pennsylvania. Each of these



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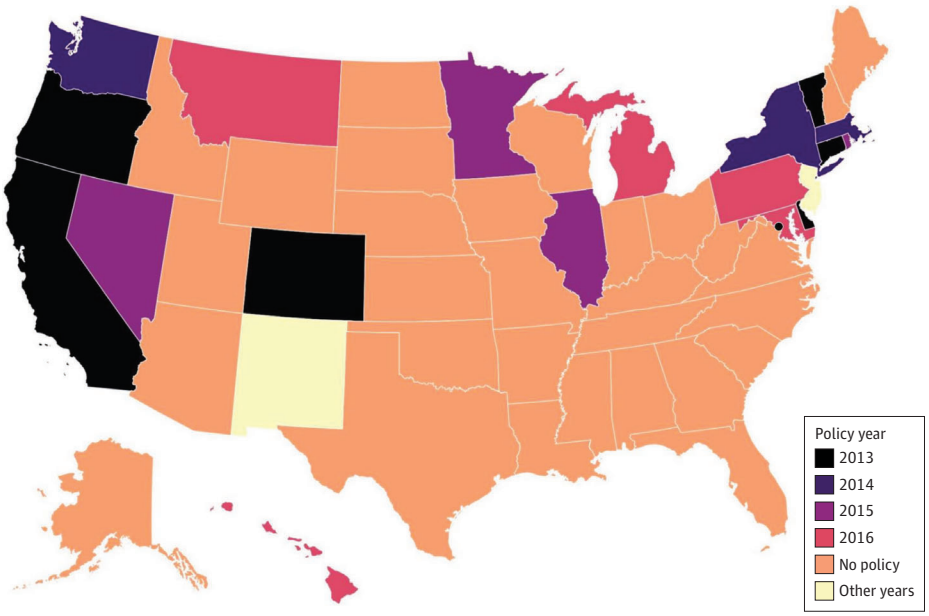
Figure 1. State Policy Cohorts and Comparison Group




Other years refers to states that implemented policies between January 1, 2017, and December 31, 2018. No policy refers to states that had not implemented a policy as of December 31, 2018.

policy cohorts was compared with the same primary comparison group, which included all states that had not implemented a policy as of December 31, 2018 (n = 30).

Two measures were used to characterize the association of nondiscrimination policies with gender minority mental health: suicidality, which was our primary outcome, and inpatient mental health hospitalizations. We determined whether individuals in our sample had any suicidality or mental health hospitalization diagnosis codes in each year that they were enrolled in an observed health insurance plan. Enrollees with a suicide-related diagnosis code in any position on 1 inpatient or 1 outpatient claim were considered to have suicidality. Suicide-related diagnosis codes included codes for suicide attempt, potential suicide attempt, and suicidal ideation, incorporating those that have been previously demonstrated to indicate suicidal behavior[14,15] (eTable 1 in the Supplement). For inpatient mental health hospitalization, enrollees were required to have any mental health diagnosis code in the first diagnosis position on 1 inpatient claim[16] or have their reason for admission be a mental health condition (eMethods in the Supplement).

## Statistical Analysis

We estimated separate enrollee-level multivariable logistic regression models with SEs clustered at the state level for each of the 4 policy cohorts (eMethods in the Supplement). Within these models, we interacted policy exposure with each postimplementation year to estimate associations for each year after implementation. For the 2013 cohort, 2009-2012 was the prepolicy period and 2013-2017 was the postimplementation period; thus, we estimated associations in 2013, 2014, 2015, 2016, and 2017. We followed the same procedure for the 2014, 2015, and 2016 cohorts: the prepolicy period was 2009-2013 for the 2014 cohort, 2009-2014 for the 2015 cohort, and 2009-2015 for the 2016 cohort. Models included year fixed-effects and enrollee-level covariates, which adjusted for age (in years), documented sex, whether the individual was enrolled in a health maintenance organization for most (>50%) of their covered time in that year, mental health comorbidities, and physical health comorbidities. For models estimating the association between policies and mental health hospitalizations, mental health comorbidity indicators were not included because they were used to identify the outcome.

We conducted several analyses to assess the robustness of our approach (eMethods in the Supplement). First, we tested for differential trends in the prepolicy period to evaluate the parallel trends assumption that is key to the difference-in-differences design. Second, to address concerns about confounding caused by differential trends in mental health access between treatment and comparison states, we ran models that included a metropolitan statistical area–level psychiatrist-to-population ratio. Third, to explore potential confounding caused by differences in other state-level policies related to sexual and gender minority well-being (eg, housing or employment nondiscrimination policies) in treatment and comparison states, we also ran models including state-time varying indicators for 36 state-level nondiscrimination policies that could not be used in the main analyses as they were not available for all years (Bryn Austin, ScD, written communication, April 19, 2019). Fourth, we removed documented sex from our models given the possibility that it is misclassified. Fifth, we limited our sample to enrollees aged 18 years and older because gender minority children and adolescents face unique challenges accessing gender-affirming services. Sixth, we estimated all models using an alternative comparison group that excluded states that were most similar to the states in each of the 4 policy cohorts in terms of overall policy environment related to sexual and gender minority well-being. All analyses used a 2-sided $P < .05$ value as a threshold for statistical significance and



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Table 1. Characteristics of Gender Minority Individuals in State Policy Cohorts and Comparison Group

| Characteristic | Cohorts | | | | Comparison group |
|---|---|---|---|---|---|
| | 2013 | 2014 | 2015 | 2016 | |
| States, No. | 7: CA, CO, CT, DC, DE, OR, VT | 3: MA, NY, WA | 4: IL, MN, NV, RI | 5: HI, MD, MI, MT, PA | 30 |
| Person-years, No. | 20 799 | 15 175 | 5910 | 10 164 | 51 066 |
| Age, mean (SD), y | 27 (15) | 27 (15) | 26 (15) | 25 (14) | 27 (15) |
| Documented female sex, No. (%) | 11 342 (55) | 8660 (57) | 3196 (54) | 5797 (57) | 27 666 (54) |
| HMO, No. (%)[a] | 5971 (29) | 1878 (12) | 293 (5) | 2040 (20) | 6111 (12) |
| Living in rural area, No. (%) | 842 (4) | 712 (5) | 366 (6) | 698 (7) | 4878 (10) |
| Psychiatrists per person, No. | 0.0001 | 0.0002 | 0.0001 | 0.0002 | 0.0001 |
| Policy tally, mean (SD)[b] | 1.15 (0.05) | 1.17 (0.04) | 1.12 (0.06) | 1.01 (0.06) | 0.98 (0.05) |

Abbreviations: CA, California; CO, Colorado; CT, Connecticut; DC, District of Columbia; DE, Delaware; HI, Hawaii; HMO, health maintenance organization; IL, Illinois; MA, Massachusetts; MD, Maryland; MI, Michigan; MN, Minnesota; MT, Montana; NV, Nevada; NY, New York; OR, Oregon; PA, Pennsylvania; RI, Rhode Island; VT, Vermont; WA, Washington.

[a] Individuals spent most of their observed months (>%50) in a given year enrolled in an HMO.

[b] Larger policy tally is indicative of a more welcoming policy environment for sexual and gender minority communities.

were performed using R statistical software, version 1.1.456.[17] Results should be interpreted as exploratory.

## Results

The final sample included 106 705 person-year observations from 2009 to 2017; the total study population included 28 980 unique gender minority individuals (mean [SD] age, 26.5 [15] years). The number of gender minority individuals in each of the policy cohorts ranged from 442 to 2968 per year and ranged from 2967 to 7606 per year in the comparison group (eTable 2 in the Supplement). Mean age and documented sex were similar in policy cohorts (age: range, 25-27 years; female sex: range, 54%-57%) and the comparison group (age: 27 years; female sex: 54%) (**Table 1**). However, the comparison group had a higher percentage of gender minority individuals living in a rural area (10% vs 4%-7%) and a less protective policy environment for sexual and gender minority communities (mean, 0.98 vs 1.01-1.17).

The prevalence of suicidality among gender minority enrollees in all policy cohorts and comparison groups generally increased over the study period, with 1.8% to 2.0% experiencing suicidality in 2009 and 5.1% to 6.4% experiencing suicidality in 2017 (eTable 3 in the Supplement). Across all study years and policy cohorts, suicidality prevalence was highest among enrollees in the 2016 cohort in 2016, with 7.6% of gender minority enrollees experiencing suicide attempt, potential suicide attempt, or suicidal ideation. The unadjusted prevalence of gender minority individuals with suicidality in the 2013 policy cohort decreased from 3.9% in 2014 to 3.6% in 2015 but increased similarly to the comparison group in all other postimplementation years. The 2014 policy cohort had a small increase in unadjusted suicidality in the first postimplementation year (0.2 percentage points), although this yearly increase was smaller than it had been in the 2 years before policy implementation (**Figure 2**). The 2015 and 2016 policy cohorts had similar unadjusted decreases in suicidality in the first postimplementation year. Suicidality decreased by 1.3 percentage points in the 2015 policy cohort and 1.4 percentage points in the 2016 policy cohort.

In adjusted analyses for the 2014, 2015, and 2016 policy cohorts, nondiscrimination policies were associated with no change in suicidality in the implementation year and a significant reduction in suicidality in the first postimplementation year relative to the comparison group. For the 2014 policy cohort, suicidality also decreased by 52% in 2016, the second postimplementation year (odds ratio [OR], 0.48; 95% CI, 0.41-0.57; $P < .001$), and there was a nonsignificant decrease in suicidality in the third postimplementation year (OR, 0.77; 95% CI, 0.58-1.03; $P = .08$). In the 2015 policy cohort, there was a similar 50% decrease in suicidality for 2016 (OR, 0.50; 95% CI, 0.39-0.64; $P < .001$), but the decrease in 2017 was not significant (OR, 0.81; 95% CI, 0.47-1.38; $P = .43$). For the 2016 policy cohort, there was a 39% decrease in suicidality in 2017 (OR, 0.61; 95% CI, 0.44-0.85; $P = .004$) relative to the comparison group. For the 2013 policy cohort, there was mixed directionality in suicidality with no significant associations (**Table 2**).

The unadjusted percentage of the sample with inpatient mental health hospitalizations generally increased over the study period. Among enrollees in each of the policy cohorts and the comparison group, mental health hospitalizations ranged from 2.1% to 3.4% in 2009 and 5.4% to 7.0% in 2017 (eTable 4 in the Supplement). The unadjusted trends in mental health hospitalizations in the 2014, 2015, and 2016 policy cohorts demonstrated decreases in the first postimplementation year followed by increases, whereas the 2013 policy cohort only had a postimplementation decrease in 2015 (eFigure in the Supplement).

In adjusted analyses, the association between policy implementation and mental health hospitalizations had mixed directionality, although there was a general downward trend relative to the comparison group. For the 2013 policy cohort vs the comparison group, mental health hospitalizations decreased by 17% in 2013 (OR, 0.83; 95% CI, 0.70-0.99; $P = .04$), 29% in 2015 (OR, 0.71; 95% CI, 0.54-0.91; $P = .01$), and 24% in 2016 (OR, 0.76; 95% CI, 0.60-0.97; $P = .03$). In the 2014 policy cohort, mental health hospitalizations increased by 28% in 2014 (OR, 1.28; 95% CI, 1.03-1.58; $P = .03$) and had nonsignificant reductions in 2016 (OR, 0.86; 95% CI, 0.71-1.04; $P = .13$) and 2017 (OR, 0.87; 95% CI, 0.64-1.17; $P = .37$). Mental health hospitalizations decreased significantly in the implementation year and the 2 postimplementation years



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Figure 2. Unadjusted Trends in Suicidality for Each Policy Cohort vs the Comparison Group, 2009-2017

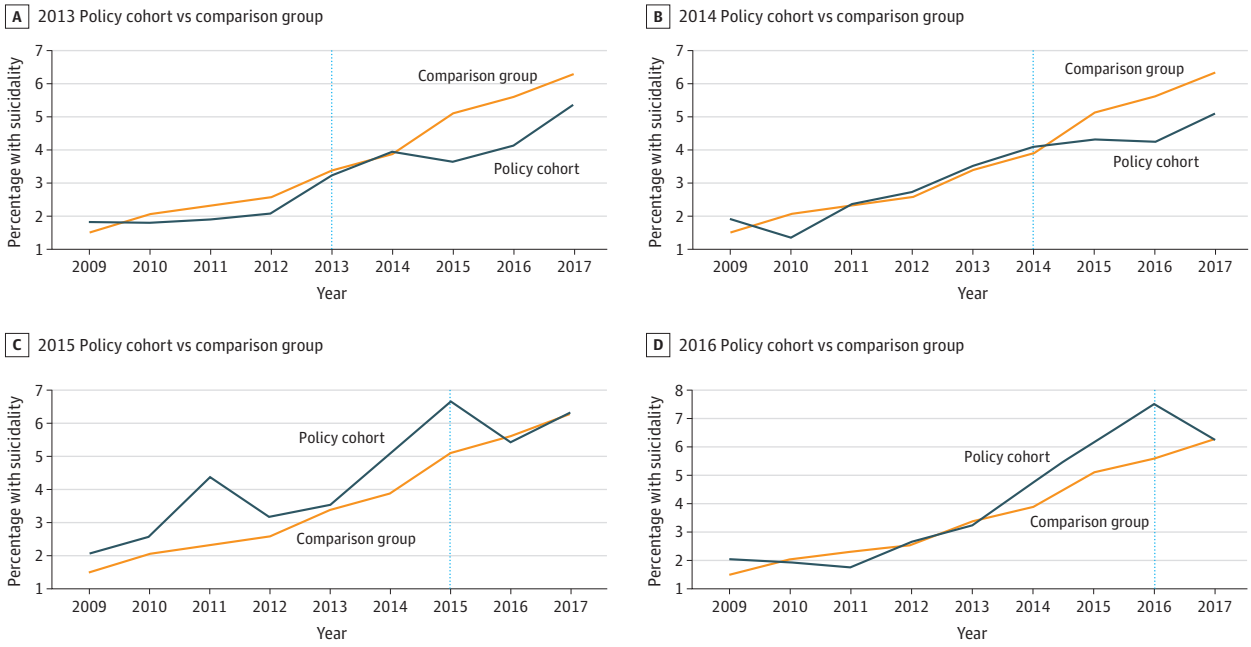


Table 2. Estimated Changes in Suicidality Associated With State-Level Nondiscrimination Policies[a]

| | 2013 Cohort | | 2014 Cohort | | 2015 Cohort | | 2016 Cohort | |
|---|---|---|---|---|---|---|---|---|
| Year | Odds ratio (95% CI) | *P* value | Odds ratio (95% CI) | *P* value | Odds ratio (95% CI) | *P* value | Odds ratio (95% CI) | *P* value |
| 2013 | 1.16 (0.77-1.73) | .49 | NA | NA | NA | NA | NA | NA |
| 2014 | 1.19 (0.85-1.67) | .31 | 0.84 (0.68-1.04) | .12 | NA | NA | NA | NA |
| 2015 | 0.94 (0.73-1.20) | .61 | 0.72 (0.58-0.90) | .005 | 1.10 (0.79-1.52) | .58 | NA | NA |
| 2016 | 0.82 (0.65-1.03) | .10 | 0.48 (0.41-0.57) | <.001 | 0.50 (0.39-0.64) | <.001 | 0.93 (0.81-1.07) | .35 |
| 2017 | 1.29 (0.90-1.88) | .18 | 0.77 (0.58-1.03) | .08 | 0.81 (0.47-1.38) | .43 | 0.61 (0.44-0.85) | .004 |

Abbreviation: NA, not applicable.

[a] All models use data from 2009 to 2017 and cluster SEs at the state level.

Table 3. Estimated Changes in Inpatient Mental Health Hospitalization Associated with State-Level Nondiscrimination Policies[a]

| | 2013 Cohort | | 2014 Cohort | | 2015 Cohort | | 2016 Cohort | |
|---|---|---|---|---|---|---|---|---|
| Year | Odds ratio (95% CI) | *P* value | Odds ratio (95% CI) | *P* value | Odds ratio (95% CI) | *P* value | Odds ratio (95% CI) | *P* value |
| 2013 | 0.83 (0.70-0.99) | .04 | NA | NA | NA | NA | NA | NA |
| 2014 | 1.12 (0.93-1.36) | .23 | 1.28 (1.03-1.58) | .03 | NA | NA | NA | NA |
| 2015 | 0.71 (0.54-0.91) | .01 | 1.02 (0.78-1.34) | .90 | 0.74 (0.58-0.94) | .02 | NA | NA |
| 2016 | 0.76 (0.60-0.97) | .03 | 0.86 (0.71-1.04) | .13 | 0.61 (0.52-0.72) | <.001 | 0.90 (0.71-1.15) | .41 |
| 2017 | 0.85 (0.61-1.19) | .36 | 0.87 (0.64-1.17) | .37 | 0.79 (0.63-0.99) | .04 | 0.81 (0.57-1.16) | .26 |

Abbreviation: NA, not applicable.

[a] All models use data from 2009 to 2017 and cluster SEs at the state level.

for the 2015 cohort relative to the comparison group: 26% lower in 2015 (OR, 0.74; 95% CI, 0.58-0.94 $P = .02$), 39% lower in 2016 (OR, 0.61; 95% CI, 0.52-0.72; $P < .001$), and 21% lower in 2017 (OR, 0.79; 95% CI, 0.63-0.99; $P = .04$). There was a downward but nonsignificant trend in mental health hospitalizations for the 2016 policy cohort vs the comparison group (**Table 3**).

In sensitivity analyses, there were no differences in prepolicy suicidality trends between the policy cohorts and the comparison groups (eTable 5 and eTable 6 in the Supplement). However, there was a difference in the prepolicy trends in mental health hospitalizations between the 2013 policy cohort and both the main comparison group (OR, 0.88; 95% CI, 0.79-0.99; $P = .04$) and the alternative comparison group (OR, 0.88; 95% CI, 0.78-1.00; $P = .046$). Our multivariable regression findings were robust to the inclusion of a mental health access covariate, removing the documented sex variable, and to an alternative comparison group that dropped states with policy environments most similar to those in the policy cohort in question (eTables 7-10 in the Supple-



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ment). Overall, restricting our sample to enrollees aged 18 years and older and models that controlled for 36 other state-level policies related to sexual and gender minority well-being generated findings with similar directionality. Divergent results included reductions in suicidality that were slightly larger or smaller and became nonsignificant in one postimplementation year; mental health hospitalization findings remained mixed.

## Discussion

In this national study of mental health outcomes among gender minority individuals, implementation of a state-level health insurance nondiscrimination policy was associated with a significant reduction in suicidality in 3 of 4 policy cohorts defined by implementation year. Among states that implemented policies in 2014, 2015, and 2016, there was no change in the implementation year and a significant decrease in suicidality in the first postimplementation year relative to the comparison group. This significant decrease in suicidality persisted to the second postimplementation year for the 2014 policy cohort, disappeared for the 2015 policy cohort, and was not observed for the 2016 policy cohort because the first postimplementation year was the final study year. In the 2013 policy cohort, there was no association with suicidality. Lang[18] reported a similar reduction in suicide rate in the first year after implementation of state-level mental health parity laws. These findings are consistent with evidence that gender minority mental health has a positive association with gender-affirming hormone therapy and surgery, knowledgeable health care professionals, and nondiscrimination laws.[19-24]

Inpatient mental health hospitalizations decreased among gender minority individuals in the 2013 (by 17%) and 2015 (by 26%) policy cohorts in the implementation year relative to the comparison group. However, gender minority individuals in the 2014 policy cohort experienced a 28% increase in mental health hospitalizations compared with those living in nonpolicy states in the implementation year. Although mental health hospitalizations were somewhat mixed, there appears to be a general downward trend in mental health hospitalizations after policy implementation. Together with findings of decreased suicidality, these results suggest that health insurance nondiscrimination policies overall may have, at worst, no association with gender minority mental health and, at best, a notable association with gender minority suicidality and mental health hospitalization.

Health insurance nondiscrimination policies may be associated with improved mental health outcomes for gender minority populations through several mechanisms, including reduced gender minority stress and increased access to gender-affirming services. Gender minority stress, which includes internal stressors (eg, nondisclosure of one's gender identity) and external stressors (eg, gender-based harassment) related to an individual's gender identity, has been associated with poor mental health.[19,25-28] Insurance nondiscrimination policies could lessen gender minority stress through multiple pathways, including reduced internalized and ambient stigma owing to knowledge of new policies among patients and clinicians. Decreased discrimination in health care settings owing to increased clinician experience may also reduce gender minority stress. In addition, several studies highlight that gender-affirming services are associated with improved mental health.[19,20,23,24]

Barriers to implementation of health insurance nondiscrimination policies may be lower than expected. Because these policies do not necessarily require private health insurers to cover gender-affirming hormone therapy and surgery but rather prohibit categorical exclusion of these services from their policies, the policies do not necessitate increased health care spending. Furthermore, many states that have already enacted these policies have done so in the form of a bulletin or memo that is released by the state insurance division and amends an existing insurance nondiscrimination policy (eg, a state has an existing policy that prohibits discrimination by private insurers on the basis of sex and gender identity is added to this policy).

Debates over gender minority nondiscrimination policies are ongoing at the local, state, and federal levels. This study suggests that there may be a significant benefit of such policies on gender minority health and adds to the evidence base available to policy makers and other stakeholders when considering implementation of a state-level health insurance nondiscrimination policy. In addition, this work may serve as a model for future studies seeking to evaluate health policies that may affect gender minority individuals.

### Limitations

This study has limitations. First, the difference-in-differences design relies on the assumption that outcome trends are parallel in exposure and comparison groups and would remain so if not for the implementation of the policy. We did not find evidence of differential trends in suicidality before policy implementation. However, we found evidence of differential trends in mental health hospitalizations in 2013 and therefore used caution when interpreting these findings. Second, potential unmeasured confounders include availability of gender-affirming services, insurers' coverage decisions related to gender-affirming services, health plan generosity, socioeconomic factors, and coding practices. However, for these potential confounders to be factors in our findings, they must have been changing differentially over time between policy and nonpolicy states.[29] Third, suicide-related *ICD-10* codes, which were used for study years 2015-2017, have not been validated.[14,15] The change from validated *ICD-9* to nonvalidated *ICD-10* codes could distort who we identified as having suicidality in 2009-2014 vs 2015-2017, although we do not believe that the change in those identified as having suicidality would differ across policy and nonpolicy states. Fourth, we do not observe suicide death or other suicidal behavior that is not captured in insurance claims, which underestimates the overall level of suicidality among gender minority individuals, although this factor would not affect our conclusions unless the proportion of suicidality that appears in our data changed differentially over time between policy and comparison states. Similarly, our sample is not representative of all privately insured gender minority individuals in the states studied because not all gender minority individuals have a gender minority–related diagnosis code.[11] Fifth, our sample includes individuals enrolled in plans that may not be regulated by state insurance policies. However, all of the proposed mechanisms for the association between policy implementation and suicidality do not rely on enrollment in a state-regulated plan.



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## Conclusions

In this study, implementation of a state-level nondiscrimination policy was associated with decreased suicidality or no change in suicidality among gender minority individuals living in states that implemented these policies from 2013 to 2016. In the setting of rising suicidality among gender minority individuals in the US, consideration of health insurance nondiscrimination policies as a mechanism for reducing barriers to care and mitigating discrimination is warranted.

### ARTICLE INFORMATION

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**Author Contributions:** Ms McDowell had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.
*Concept and design:* All authors.
*Acquisition, analysis, or interpretation of data:* McDowell, Rose.
*Drafting of the manuscript:* McDowell, Progovac.
*Critical revision of the manuscript for important intellectual content:* All authors.
*Statistical analysis:* All authors.
*Administrative, technical, or material support:* McDowell.
*Supervision:* Raifman, Progovac, Rose.

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**Role of the Funder/Sponsor:** The funding source had no role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication.

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