

# Reports of Insurance-Based Discrimination in Health Care and Its Association With Access to Care

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Lack of insurance is widely recognized as a persistent barrier to accessing health care.<sup>1,2</sup> Since 2010, the Patient Protection and Affordable Care Act (ACA) has offered an opportunity to improve health care access and equity through Medicaid expansion and the establishment of states' health insurance marketplaces.<sup>3</sup> Although the ACA is demonstrating its ability to reduce the number of uninsured people,<sup>4-6</sup> policymakers need more information on how well health insurance coverage actually translates into reduced barriers to health care.

Several studies have indicated that even when insurance is available, barriers in accessing needed health care still remain.<sup>7-10</sup> Health insurance per se could create unintentional barriers for people seeking health care.<sup>11</sup> More specifically, research has revealed the existence of insurance-based discrimination in health care settings.<sup>12-16</sup> Insurance-based discrimination is defined as the unfair treatment that patients receive from health care providers because of the type of insurance they have or because they do not have insurance.<sup>12,15,16</sup> For example, physicians may sort patients by their insurance status,<sup>17</sup> serving patients with public insurance differently than other patients.<sup>18</sup> Additional evidence lies in the fact that some physicians are not willing to accept Medicaid patients because of the low reimbursement rates.<sup>19-22</sup> A 2007 study in Florida indicated that 14% of Medicaid beneficiaries reported experiencing discrimination by health care providers because of their insurance coverage.<sup>15</sup> Higher rates of discrimination were also reported among Medicaid and uninsured respondents than among respondents with other types of insurance in a California survey.<sup>23</sup>

Insurance-based discrimination in health care is associated with delays in needed care and receipt of suboptimal services. In Oregon, pregnant women who were Medicaid enrollees or uninsured were more likely to experience insurance-based discrimination than those who had private insurance.<sup>16,24</sup> In addition, among

**Objectives.** We examined reports of insurance-based discrimination and its association with insurance type and access to care in the early years of the Patient Protection and Affordable Care Act.

**Methods.** We used data from the 2013 Minnesota Health Access Survey to identify 4123 Minnesota adults aged 18 to 64 years who reported about their experiences of insurance-based discrimination. We modeled the association between discrimination and insurance type and predicted odds of having reduced access to care among those reporting discrimination, controlling for sociodemographic factors. Data were weighted to represent the state's population.

**Results.** Reports of insurance-based discrimination were higher among uninsured (25%) and publicly insured (21%) adults than among privately insured adults (3%), which held in the regression analysis. Those reporting discrimination had higher odds of lacking a usual source of care, lacking confidence in getting care, forgoing care because of cost, and experiencing provider-level barriers than those who did not.

**Conclusions.** Further research and policy interventions are needed to address insurance-based discrimination in health care settings. (*Am J Public Health*. 2015;105:S517-S525. doi:10.2105/AJPH.2015.302668)

mothers with employer-sponsored insurance, experiencing insurance-based discrimination was associated with receiving suboptimal care, such as having fewer breastfeeding support actions.<sup>16</sup> In North Carolina, insurance-based discrimination was associated with an increased likelihood of going without needed care among Latino immigrants.<sup>25</sup>

All research on insurance-based discrimination to date precedes the 2010 passage of the ACA. Given the push to promote access to health insurance and evidence that much of the increase in coverage is attributable to enrollment in public programs<sup>26</sup> (in which this form of discrimination is higher), understanding insurance-based discrimination and its association with access to care may provide important policy implications in the era of full implementation of the ACA. In this study, we examined reports of insurance-based discrimination among people with different types of insurance and whether reduced access to health care is associated with insurance-based discrimination. Our goal was to provide up-to-date

evidence on insurance-based discrimination and to discuss policy solutions that target the reduction of insurance-based discrimination in health care.

## METHODS

We obtained data from the 2013 Minnesota Health Access Survey, a statewide random-digit-dial dual-frame telephone survey (overlapping design) conducted by the Minnesota Department of Health and University of Minnesota State Health Access Data Assistance Center, with 11 778 interviews completed from August to November 2013 in Minnesota.<sup>27</sup> The survey collects detailed information on health insurance coverage of household members, as well as access to, utilization of, and experiences with health care, health status, and basic sociodemographic characteristics of respondents. One household member was randomly selected as the interview target. An adult aged 18 years or older who was knowledgeable about health insurance

coverage was invited to answer the survey (interviews for child targets were completed by adults). The survey used stratified random sampling to ensure reliable estimates for each of the state's 13 economic development regions and certain racial/ethnic groups. The overall response rate was 48% (50.4% for the landline frame and 40.4% for cellphone frame, calculated on the basis of American Association for Public Opinion Research response rate 4 standards), a relatively high rate among state-specific telephone surveys, particularly given documented declines in response rates over the years.<sup>28,29</sup> Further details about the Minnesota Health Access Survey are available online.<sup>30,31</sup>

### Study Population

Our study population was first restricted to 7201 nonelderly targets aged 18 to 64 years, excluding 2734 children younger than 18 years whose interviews were completed by adults and 1843 adults older than 64 years who were mostly covered by Medicare and likely to have different experiences with health care and access to health insurance than the nonelderly adults. We further limited the sample to 4222 nonelderly adult respondents who answered the survey themselves to ensure measurement of personal experiences (we excluded 2979 targets providing proxy reports for other household members). Finally, we excluded 99 responses of “don't know” or “refused” to the insurance-based discrimination question, resulting in a total of 4123 respondents in the analytical sample. We compared the restricted study population with the total population on a range of demographic characteristics and found that the restricted population tends to be older and had higher income and education levels than the total population.

### Measures

**Insurance-based discrimination.** Consistent with previous research,<sup>11,13,14</sup> we measured insurance-based discrimination by the survey questions asking insured and uninsured respondents about their experiences of unfair treatment by health care providers because of their insurance type or because they did not have health insurance, and a qualitative gauge of how often these experiences occurred is

employed as response option (e.g., never, sometimes, usually, and always). We created a binary variable to indicate whether respondents experienced insurance-based discrimination in the past and treated those reporting unfair treatment (sometimes, usually, and always vs never) as experiencing insurance-based discrimination.

**Insurance type.** We assessed insurance type on the basis of respondents' health insurance coverage source at the time of the interview and categorized it as public insurance (e.g., Medical Assistance, MinnesotaCare, Medicare), private insurance (e.g., employer-sponsored or self-purchased insurance), and uninsured (e.g., no sources of coverage or Indian Health Services only). We designated respondents reporting multiple sources of insurance as publicly insured only if 1 of the responses included a public insurance option.

**Access to care.** We examined 4 measures of access to care in this study: (1) lack of a usual source of care, (2) lack of confidence in getting needed care, (3) any care forgone because of cost, and (4) any provider-level barriers. These measures have been widely used in other national and state-specific surveys.<sup>32,33</sup>

Lack of a usual source of care was indicated by a “no” response to the question of whether respondents had a regular place to go for medical care (excluding emergency department visits). We assessed lack of confidence in getting needed care by the question of how confident respondents were that they could get the health care they need, with 4 response options ranging from *very confident* to *not confident at all*. We created a binary variable to indicate whether respondents had confidence in getting needed care, and we treated a negative response as a lack of confidence.

The measure of any care forgone because of cost was based on survey questions concerning not getting specific types of needed health care during the past 12 months because of cost. The types of care included

1. a prescription for medicine,
2. dental care,
3. routine medical care,
4. mental or behavioral health care, and
5. specialist care.

We treated responses of “yes” to any of the 5 indicators as any care forgone because of cost.

We measured any provider-level barriers by specific types of problems gaining access to providers that respondents experienced when seeking care during the past 12 months. Those barriers were being (1) told by a doctor's office or clinic that it did not accept their health care coverage, (2) told by a doctor's office or clinic that it was not accepting new patients, and (3) unable to get an appointment at a doctor's office or clinic as soon as they thought one was needed. We treated responses of “yes” to any of the 3 indicators as any provider-level barrier.

### Statistical Analysis

We first performed the Pearson  $\chi^2$  test to examine variation in reports of insurance-based discrimination among uninsured, publicly insured, and privately insured adults and to compare the percentage distribution of reduced access to care for those who reported insurance-based discrimination and those who did not. We then ran 2 multivariate logistic regression models. The first model explored the adjusted associations between insurance-based discrimination and insurance type, in which insurance-based discrimination acted as the outcome of interest. The second model investigated whether insurance-based discrimination was associated with 4 measures of access to care (i.e., lack of usual source of care, lack of confidence in getting needed care, any care forgone because of cost, and any provider-level barriers), in which insurance-based discrimination acted as a main predictor in each access model. We also included the measure of insurance type in the access models to see whether insurance type was a mediator of these relationships.

We performed sensitivity analyses using Poisson regression with count indicators of care forgone because of cost and provider-level barriers; the results were consistent across methods (data not shown; detailed results are available on request). We performed all multivariate analyses controlling for respondents' demographic characteristics and health status. Characteristics that were significantly related to insurance-based discrimination in bivariate analyses were included in the regression models.

Data were weighted to adjust for nonresponse bias and ensure that estimates were

**TABLE 1—Reports of Insurance-Based Discrimination by Insurance Type and Selected Characteristics: 2013 Minnesota Health Access Survey**

Characteristic	No Insurance-Based Discrimination		Insurance-Based Discrimination		P
	No. (%)	SE	No. (%)	SE	
Total	3810 (90.7)	0.8	313 (9.3)	0.8	
Insurance type					< .001
Uninsured	2764 (75.2)	3.8	71 (24.8)	3.8	
Public insurance	750 (79.0)	2.5	164 (21.0)	2.5	
Private insurance	296 (96.7)	0.6	78 (3.3)	0.6	
Gender					.684
Female	2068 (91.0)	1.1	168 (9.0)	1.1	
Male	1742 (90.3)	1.2	145 (9.7)	1.2	
Country of birth					< .001
Non-US-born	205 (82.0)	3.6	49 (18.0)	3.6	
US-born	3594 (91.9)	0.8	261 (8.1)	0.8	
Age, y					.002
18-25	270 (93.2)	1.9	27 (6.8)	1.9	
26-45	999 (87.4)	1.6	116 (12.6)	1.6	
46-64	2541 (92.9)	0.9	170 (7.1)	0.9	
Race/ethnicity					< .001
Hispanic Latino	101 (84.7)	4.2	30 (15.3)	4.2	
Non-Hispanic African American	140 (70.0)	5.7	48 (30.0)	5.7	
Non-Hispanic American Indian	60 (80.8)	7.9	17 (19.2)	7.9	
Non-Hispanic Asian	91 (87.5)	4.9	15 (12.5)	4.9	
Non-Hispanic other and multiple races	45 (92.5)	3.5	7 (0.8)	3.5	
Non-Hispanic White	3316 (92.7)	0.8	192 (7.3)	0.8	
Family income, % of federal poverty guideline					< .001
< 138	575 (78.9)	2.7	147 (21.1)	2.7	
138-400	1368 (90.3)	1.3	123 (9.7)	1.3	
> 400	1867 (97.4)	0.6	43 (2.6)	0.6	
Education					.001
≤ high school	846 (87.4)	2.0	104 (12.6)	2.0	
Some college	1108 (88.4)	1.7	100 (11.6)	1.7	
≥ college degree	1856 (93.8)	0.9	109 (6.2)	0.9	
Marital status					< .001
Unmarried	1912 (87.4)	1.4	216 (12.6)	1.4	
Married	1876 (93.4)	1.0	94 (6.6)	1.0	
Employment status					.001
Unemployed	838 (84.8)	2.4	117 (15.2)	2.4	
Employed	2946 (92.1)	0.8	193 (7.9)	0.8	
Health status					< .001
Fair or poor	464 (77.2)	3.2	107 (22.8)	3.2	
Excellent, very good, or good	3335 (92.9)	0.8	204 (7.1)	0.8	

Note. Data from the 2013 Minnesota Health Access Survey were restricted to adults aged 18-64 years who reported about their own experiences of insurance-based discrimination. Data were weighted to represent the state's population. The number presents the unweighted sample size. Some sample sizes do not add up to 4123 because some characteristics contain missing data. Standard errors were calculated using Taylor linearized series. P values presented were from the Pearson  $\chi^2$  test.

representative of the state's noninstitutionalized population, based on a set of population controls from the Census Bureau.<sup>30</sup> We report percentages and standard errors from the  $\chi^2$  test and odds ratios (ORs) and 95% confidence intervals (CIs) from the regression models. The level of significance was set at P values of .05, .01, and .001 using the 2-tailed test. We performed all analyses with Stata version 13.0 (StataCorp LP, College Station, TX), accounting for the complex survey design.

## RESULTS

Overall, 9.3% of Minnesota nonelderly adults reported insurance-based discrimination by health care providers (Table 1). We found significant variation in reports of insurance-based discrimination by type of health insurance: reports of insurance-based discrimination were similar among uninsured adults (24.8%) and adults with public insurance (21.0%) but significantly lower among privately insured adults (3.3%). Except for gender, all other demographic characteristics were significantly related to insurance-based discrimination.

We also found significant differences in access to care between adults who did and did not report discrimination (Table 2). Results showed that adults reporting insurance-based discrimination were more likely to lack a usual source of care (34.5% vs 18.0%), lack confidence in getting needed care (21.6% vs 4.2%), forgo needed care because of the cost (63.8% vs 22.0%), and experience provider-level barriers (35.7% vs 13.5%) when seeking care. This pattern held for each individual indicator of care forgone because of cost and provider-level barriers.

### Reports of Insurance-Based Discrimination and Insurance Type

Regression analysis demonstrated a strong relationship between reports of insurance-based discrimination and insurance type, controlling for demographics and health status differences between adults who did and did not report discrimination. As shown in Table 3, the odds of reporting insurance-based discrimination were 5.75 times higher (95% CI= 3.19, 10.37) among uninsured adults and 4.40 times higher (95% CI= 2.58, 7.52) among publicly

**TABLE 2—Comparison of Access to Care Between Insurance-Based Discrimination and No Insurance-Based Discrimination: 2013 Minnesota Health Access Survey**

Access to Care	No Insurance-Based Discrimination, % (SE)	Insurance-Based Discrimination, % (SE)
Lack of a usual source of care	18.0 (1.1)	34.5 (4.6)
Lack of confidence in getting care	4.2 (0.5)	21.6 (3.8)
Any care forgone because of cost	22.0 (1.1)	63.8 (4.5)
Did not fill a prescription for medicine	8.3 (0.7)	34.6 (4.4)
Did not get dental care	15.2 (1.0)	44.5 (4.6)
Did not get routine medical care	7.9 (0.8)	32.6 (4.1)
Did not get mental health care	3.9 (0.5)	20.5 (3.5)
Did not get specialist care	4.5 (0.6)	22.8 (3.6)
Any provider level barriers	13.5 (0.9)	35.7 (4.4)
Refusal of insurance coverage	2.2 (0.3)	13.1 (2.9)
Not accepting new patients	3.1 (0.4)	15.7 (3.2)
Unable to get doctor's visit as soon as needed	10.9 (0.8)	27.5 (4.2)

Note. All *P*s < .001. Data from the 2013 Minnesota Health Access Survey were restricted to adults aged 18–64 years who reported about their own experiences of insurance-based discrimination. Data were weighted to represent the state's population. Standard errors were calculated using Taylor linearized series.

insured adults than among privately insured adults.

### Access to Care and Insurance-Based Discrimination

Insurance-based discrimination was associated with reduced access to care in the regression models, adjusting for adults' health status and demographics related to insurance-based discrimination (Table 4). Compared with adults who did not report insurance-based discrimination, those reporting discrimination had 1.79 times higher odds (95% CI = 1.09, 2.95) of lacking a usual source of care, 2.79 times higher odds (95% CI = 1.44, 5.39) of lacking confidence in getting needed care, 4.68 times higher odds (95% CI = 3.02, 7.24) of forgoing needed care because of cost, and 2.63 times higher odds (95% CI = 1.62, 4.25) of experiencing provider-level barriers.

Notably, regression models of the 4 access measures also indicated that uninsured adults had significantly higher odds of lacking a usual source of care (OR = 4.40; 95% CI = 2.89, 6.71), lacking confidence in getting needed care (OR = 7.13; 95% CI = 3.67, 13.86), and forgoing needed care because of cost (OR = 3.42; 95% CI = 2.30, 5.08) than did privately insured adults. Adults with public

insurance had higher odds of provider-level barriers (OR = 1.69; 95% CI = 1.12, 2.57). However, insurance-based discrimination maintained strong associations with reduced access to care.

### DISCUSSION

This study contributes to the limited literature examining insurance-based discrimination in health care and its association with access to care in the early years of the ACA. Our findings indicate that rates of reporting insurance-based discrimination were higher among uninsured and publicly insured adults than among privately insured adults. This relationship held in regression analysis, revealing the vulnerability of uninsured and publicly insured adults in the current health care system.

The reason that uninsured adults experience discrimination may be explained in part by provider concerns about their ability to pay for medical care.<sup>17</sup> Regarding publicly insured adults, low payments are known to deter physicians from accepting Medicaid patients<sup>19,34–36</sup> and may also lead providers who accept Medicaid to hold these patients in lower regard.<sup>17,37</sup> Yet, a previous study using 2011 data indicated a relatively high Medicaid

acceptance rate among Minnesota physicians (96%),<sup>19</sup> and low reimbursements may not be as much of an issue in Minnesota because the vast majority of nondisabled adults receiving Medicaid are enrolled through managed care programs.<sup>38</sup>

The social stigma of public programs, especially Medicaid,<sup>39,40</sup> may contribute to a greater degree to the experience of insurance-based discrimination among Minnesota nonelderly publicly insured adults than do Medicaid reimbursement policies. Historically, social preconceptions often link the Medicaid program to other public assistance programs, such as welfare. Common assumptions are that Medicaid is geared toward less educated people living in poverty who are often stigmatized by society.<sup>41,42</sup> Exposure to challenging life circumstances associated with poverty may result in more challenges in providing care to Medicaid enrollees, or at least to the belief that care provision will be challenging.<sup>34,39</sup>

Health care providers may possibly, implicitly or explicitly, communicate this view of the value of Medicaid enrollees to patients with public insurance.<sup>43</sup> A recent Oregon study revealed that 80% of respondents reported stigmatizing experiences in encounters with providers and the health care system, whereas only 20% reported stigma grounded in personal feelings of shame and embarrassment.<sup>39</sup>

The ACA is designed to reduce health care disparities by expanding insurance coverage to millions of uninsured people. Yet, it is still unclear whether the stigma of public program enrollment and reports of insurance-based discrimination will fade as public insurance becomes more commonplace after the ACA's full implementation, at the same time intensifying for uninsured people given the individual mandate. Future research is needed to monitor the trends in reports of insurance-based discrimination in health care, contrasting pre- and post-ACA implementation periods.

### Policy Implications

Since the passage of the ACA, Minnesota has witnessed a considerable reduction in the number of uninsured people,<sup>27</sup> and much of the decline in uninsurance is attributed to enrollment in the state's 2 public programs,

**TABLE 3—Adjusted Logistic Regression Model of Insurance-Based Discrimination by Insurance Type, Controlling for Respondents' Characteristics and Health Status: 2013 Minnesota Health Access Survey**

Characteristic	Insurance-Based Discrimination, OR (95% CI)
<b>Insurance type</b>	
Uninsured	5.75*** (3.19, 10.37)
Public insurance	4.40*** (2.58, 7.52)
Private insurance (Ref)	1.00
<b>Race/ethnicity</b>	
Hispanic Latino	0.38 (0.14, 1.08)
Non-Hispanic African American	2.20** (1.25, 3.88)
Non-Hispanic American Indian	1.26 (0.51, 3.14)
Non-Hispanic Asian	0.86 (0.28, 2.64)
Non-Hispanic other and multiple races	0.66 (0.23, 1.90)
Non-Hispanic White (Ref)	1.00
<b>Country of birth</b>	
Non-US-born	1.66 (0.81, 3.38)
US-born (Ref)	1.00
<b>Age, y</b>	
18–25	0.56 (0.24, 1.29)
26–45	1.54 (0.96, 2.47)
46–64 (Ref)	1.00
<b>Family income, % of federal poverty guideline</b>	
< 138	3.68** (1.69, 8.06)
138–400	2.38* (1.21, 4.69)
> 400 (Ref)	1.00
<b>Education</b>	
≤ high school	0.89 (0.47, 1.70)
Some college	1.33 (0.77, 2.30)
≥ college degree (Ref)	1.00
<b>Marital status</b>	
Unmarried	1.22 (0.78, 1.90)
Married (Ref)	1.00
<b>Employment status</b>	
Unemployed	0.85 (0.53, 1.35)
Employed (Ref)	1.00
<b>Health status</b>	
Fair or poor	2.09** (1.34, 3.26)
Excellent, very good, or good (Ref)	1.00

Note. CI = confidence interval; OR = odds ratio. Data from the 2013 Minnesota Health Access Survey were restricted to adults aged 18–64 y who reported about their own experiences of insurance-based discrimination. Data were weighted to represent the state's population. Variables that showed significant differences in the Pearson  $\chi^2$  test were included in the adjusted model.

\* $P < .05$ ; \*\* $P < .01$ ; \*\*\* $P < .001$ .

with some increase in private insurance.<sup>44</sup> People gaining insurance are also expected to experience improved access to health care, yet our study indicates that experiencing

discrimination by health care providers because of insurance type is associated with lacking a usual source of care, lacking confidence in getting needed care, forgoing needed

care because of cost, and experiencing provider-level barriers when seeking care. Previous research has found insurance-based discrimination to be associated with delays in needed care and receipt of suboptimal care.<sup>16,25</sup>

These findings highlight the need for both academic and policy attention to addressing insurance-based discrimination in health care settings. One intervention would be to foster positive relationships between providers and patients<sup>45</sup> at both the organizational and the state level. Health care sectors could establish, monitor, and enforce policies that prohibit discriminatory practices and provide ongoing cultural competency training for health care providers (at all levels within the organization) that targets their perceptions and behavior toward patients with public insurance and without insurance. Education to improve physicians' ability to understand, communicate with, and effectively interact with Medicaid enrollees could increase their propensity to maintain consistent, respectful, and fair relationships with Medicaid patients.<sup>43</sup> State legislators might consider enforcing mandatory provisions and adopting voluntary provisions of the National Standards for Culturally and Linguistically Appropriate Services. This blueprint, designed for individuals and organizations to promote health care equity and quality, has been recommended by the US Department of Health and Human Services' Office of Minority Health.<sup>46</sup> Six states have adopted these standards,<sup>47,48</sup> and positive effects on improving patients' overall health care experiences and quality of care have been demonstrated.<sup>49</sup>

Reducing insurance-based discrimination in health care may also require long-term support and investment from government agencies. In 2013 and 2014, all states' Medicaid programs were required to raise primary care reimbursements on par with Medicare rates to boost physicians' participation in Medicaid,<sup>50–52</sup> and the fee increase is federally funded. Still, it is unclear whether this temporary incentive to promote health care services effectively reduces discriminatory attitudes and behaviors toward Medicaid patients. We recommend including measures of insurance-based discrimination in the federal surveillance system (e.g., through the

**TABLE 4—Adjusted Logistic Regression Models of 4 Access Measures by Insurance-Based Discrimination, Controlling for Respondents' Characteristics and Health Status: 2013 Minnesota Health Access Survey**

Characteristic	Lack of a Usual Source of Care, OR (95% CI)	Lack of Confidence in Getting Needed Care, OR (95% CI)	Any Forgone Care Because of Cost, OR (95% CI)	Any Provider-Level Barriers, OR (95% CI)
<b>Insurance-based discrimination</b>				
Yes	1.79* (1.09, 2.95)	2.79** (1.44, 5.39)	4.68*** (3.02, 7.24)	2.63*** (1.62, 4.25)
No (Ref)	1.00	1.00	1.00	1.00
<b>Insurance type</b>				
Uninsured	4.40*** (2.89, 6.71)	7.13*** (3.67, 13.86)	3.42*** (2.30, 5.08)	0.75 (0.41, 1.36)
Public insurance	0.78 (0.51, 1.18)	0.77 (0.40, 1.51)	1.07 (0.73, 1.55)	1.69* (1.12, 2.57)
Private insurance (Ref)	1.00	1.00	1.00	1.00
<b>Race/ethnicity</b>				
Hispanic Latino	0.89 (0.42, 1.89)	0.18* (0.04, 0.79)	1.34 (0.67, 2.67)	1.13 (0.50, 2.55)
Non-Hispanic African American	1.47 (0.82, 2.63)	1.09 (0.54, 2.23)	0.89 (0.49, 1.61)	1.13 (0.60, 2.15)
Non-Hispanic American Indian	0.46 (0.20, 1.06)	0.02*** (0.00, 0.12)	0.64 (0.25, 1.66)	0.66 (0.19, 2.29)
Non-Hispanic Asian	0.70 (0.29, 1.72)	1.03 (0.26, 4.18)	0.49 (0.20, 1.22)	1.16 (0.50, 2.70)
Non-Hispanic other and multiple races	0.72 (0.28, 1.89)	1.25 (0.41, 3.83)	1.31 (0.55, 3.12)	1.77 (0.69, 4.57)
Non-Hispanic White (Ref)	1.00	1.00	1.00	1.00
<b>Country of birth</b>				
Non-US-born	1.61 (0.90, 2.88)	1.49 (0.61, 3.64)	0.60 (0.34, 1.05)	0.54 (0.28, 1.06)
US-born (Ref)	1.00	1.00	1.00	1.00
<b>Age, y</b>				
18-25	3.16*** (2.01, 4.97)	0.18*** (0.07, 0.45)	1.63 (0.99, 2.67)	0.95 (0.53, 1.70)
26-45	2.19*** (1.60, 2.99)	0.72 (0.41, 1.28)	1.32 (0.99, 1.76)	1.47* (1.05, 2.05)
46-64 (Ref)	1.00	1.00	1.00	1.00
<b>Family income, % of federal poverty guideline</b>				
< 138	1.20 (0.76, 1.91)	2.93** (1.33, 6.45)	1.61* (1.04, 2.50)	1.88** (1.23, 2.88)
138-400	1.54* (1.10, 2.14)	2.17** (1.21, 3.91)	2.32*** (1.73, 3.10)	1.10 (0.80, 1.51)
> 400 (Ref)	1.00	1.00	1.00	1.00
<b>Education</b>				
≤ high school	1.65** (1.16, 2.36)	1.94* (1.04, 3.63)	0.77 (0.54, 1.10)	0.59* (0.39, 0.88)
Some college	0.93 (0.66, 1.31)	1.4 (0.79, 2.51)	1.33 (0.99, 1.78)	0.97 (0.68, 1.37)
≥ college degree (Ref)	1.00	1.00	1.00	1.00
<b>Marital status</b>				
Unmarried	1.25 (0.92, 1.69)	1.00 (0.60, 1.65)	0.78 (0.59, 1.02)	0.91 (0.67, 1.25)
Married (Ref)	1.00	1.00	1.00	1.00
<b>Employment status</b>				
Unemployed	0.85 (0.57, 1.25)	0.88 (0.51, 1.52)	1.28 (0.90, 1.81)	0.93 (0.59, 1.46)
Employed (Ref)	1.00	1.00	1.00	1.00
<b>Health status</b>				
Fair or poor	0.61* (0.37, 0.99)	2.21** (1.30, 3.76)	2.07*** (1.42, 3.01)	1.72** (1.18, 2.50)
Excellent, very good, or good (Ref)	1.00	1.00	1.00	1.00

Note. CI = confidence interval; OR = odds ratio. Data from the 2013 Minnesota Health Access Survey were restricted to adults aged 18–64 years who reported their own experiences of insurance-based discrimination. Data were weighted to represent the state's population. Variables that showed significant differences in the Pearson  $\chi^2$  test were included in the adjusted models. \* $P < .05$ ; \*\* $P < .01$ ; \*\*\* $P < .001$ .

Consumer Assessment of Healthcare Providers and Systems program) and monitoring the impact of insurance-based discrimination

on timely use and patients' experiences of health care at the national, state, and local levels. Adopting this step may offer the

opportunity to adjust policies that ensure all forms of health insurance translate into actual access to care while at the same

time facilitating equity in the health care setting.

### Limitations

Our study provides recent evidence of insurance-based discrimination and its association with access to care for adult residents of Minnesota. Several limitations remain, however. First, the generalizability of our results to the nation and to other states merits discussion. To extrapolate findings from this study, it would be necessary to consider the specific policy context in each state in terms of Medicaid eligibility, payment and reimbursement rates, or attitudes toward Medicaid expansion. Our findings may not be fully generalizable to states with low Medicaid acceptance or reimbursement rates, because reports of insurance-based discrimination in these states may possibly be much higher. Also, in states that do not expand Medicaid, public programs may be viewed as less acceptable within their health care systems, potentially exacerbating rates of discrimination. Yet, our results for Minnesota are consistent with an earlier study of insurance-based discrimination conducted in Oregon.<sup>16</sup> Therefore, our findings may best represent those states that have similar Medicaid policies.

Second, the cross-sectional nature of the study design limits our ability to determine the causal pathway between insurance-based discrimination and access to care. However, it is plausible that insurance-based discrimination may have long-term consequences for patients' health through its impact on access to care.

Third, similar to most survey research on health care discrimination,<sup>53</sup> our analysis relied on a single measure to capture respondents' experiences of insurance-based discrimination and did not specify what kind of unfair treatment respondents have encountered. This could result in an underestimation of the true prevalence of discrimination.<sup>54</sup> Furthermore, the question does not reference a time frame (e.g., experiences at any point in time or within the past 6 or 12 months). If interpreted as "any experiences of unfair treatment," this measure could lead to an overestimation of the prevalence of discrimination.<sup>54</sup> Finally, the question does not specify a type of

provider. However, the question was asked with direct reference to respondents' insurance type or status and clearly distinguished insurance-based discrimination from discrimination based on other factors, ensuring the specificity and accuracy of discrimination measurement in this domain. Future research that explores these issues will improve understanding and measurement of insurance-based discrimination in health care.

Fourth, other factors, such as being a member of an underrepresented racial or ethnic community, may influence respondents to report insurance-based discrimination and their access to care. The 2013 survey included a measure of racial discrimination, using the same unfair-treatment language as the insurance-based discrimination question. Although we found a significant relationship between racial discrimination and insurance-based discrimination (data not shown), including the measure of racial discrimination in the access models did not diminish the association between access to care and insurance-based discrimination. Finally, future research might also consider linking to other data sets to control for supply-side measures such as medically underserved areas.

### Conclusions

Health insurance coverage, although significant, may not be sufficient to achieve accessible and equitable health care. Insurance-based discrimination contributes to disparities in health care and may reduce people's ability to access health care when needed. Given its negative effect on health care utilization and potential threat to longer term health outcomes, state and local governments should adopt policies targeting the reduction of insurance-based discrimination in health care. However, addressing insurance-based discrimination, especially reducing the stigma associated with public programs and poverty more generally, requires long-term commitment and joint efforts at both the government and the societal level. Because more Americans have gained coverage, the success of health care reform should not be judged simply by how many people are covered by insurance, but by how well coverage ensures access to needed health care. One important step forward in that direction includes measuring and

monitoring the presence and impact of insurance-based discrimination in health care settings. ■

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### Contributors

X. Han and K. T. Call originated the study, planned the analyses, and drafted the article. K. T. Call and A. B. Simon acquired the data. X. Han conducted statistical analysis and interpreted the data. K. T. Call supervised the study. J. K. Pintor and G. Alarcon-Espinoza provided technical support for statistical analysis. A. B. Simon helped to design the study. All authors analyzed the results and provided critical revision of the article.

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This study was approved by the University of Minnesota's institutional review board.

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