Beyond Tuskegee, To Middlesboro:
How Perspectives of Policing Shape Vaccine Attitudes for Black Americans

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Abstract

Attempts to explain the higher levels of vaccine skepticism among Black Americans frequently focus on the history of racial discrimination within the American healthcare system. While studying this discrimination is important, we argue that past research overlooks the role of law enforcement actors *outside* the healthcare system; both in their history of supporting medical discrimination, and in its contemporary function as a coercive face of the state that may influence Black American's concerns about vaccines. Using cross-sectional and longitudinal nationally representative surveys, we demonstrate that police attitudes have a strong and causal effect on vaccine skepticism and opposition to pro-vaccine policies among Black Americans. These findings point to the importance of reforming areas outside of the medical field, such as policing, in order to promote lasting declines in vaccine hesitancy.

[Word Count: 3,965]

In the winter of 1898, a surge of smallpox took hold in Middlesboro, Kentucky. Initially confined to the city's Black neighborhoods, the local newspaper reported "no white people have been attacked and there is positively no occasion for alarm" (McCormack 1898). When the virus spread to white residents, however, the city council called for compulsory vaccination. As this order was enforced, the city's Black community "learned how a smallpox epidemic could transform years of official indifference and neglect into coercion and violence" (Willrich 2011, 112). Black residents who resisted the vaccination were met by local police who placed them in handcuffs and held them at gunpoint while physicians administered the vaccine. Middlesboro was not alone in adopting this tactic, as cities across the country frequently utilized law enforcement to carry out smallpox vaccine campaigns (Willrich 2011).

Efforts to document and explain elevated levels of COVID-19 vaccine hesitancy among Black Americans often exclude stories like Middlesboro (e.g. Callaghan et al. 2021; Razai et al. 2021). Instead, accounts focus on the history of racial discrimination within the medical field, as epitomized by the Tuskegee Syphilis Study (Bajaj and Stanford 2021). In doing so, the role of the police in enforcing this discrimination is often lost (Olivarius 2019). Such accounts fail to acknowledge that a broader mistrust of government "is the context within which we can understand the Black public's reluctance to simply take the word of public officials that the vaccine is safe. The face of government in most ordinary African-Americans' daily lives is one of deceit, intimidation, coercion, and sometimes death" (Taylor 2021). And while this coercive face of government may take many forms in Black communities, the police stand out as the most consistent and visible (Rosenthal 2020; Soss and Weaver 2017), including in recent discriminatory enforcement of pandemic-related guidelines (Southall 2020; Dunbar and Jones

2021). As former Attorney General Loretta Lynch put it, for many Black Americans, “the police are the only face of government they see” (2015).

Thus, we argue that vaccine skepticism among Black Americans today is not just about mistrust in medical professionals, but also about state control readily represented by the police. We illuminate this dynamic by showing that perceptions of the police have a causal effect on Black American’s vaccine attitudes. This finding should inform current efforts to address vaccine hesitancy, indicating that just as the police accompanied physicians in Middlesboro, so too must changes in policing be combined with attempts to root out racial discrimination in health care.

Background

Throughout the COVID-19 pandemic, approximately one-third of Americans expressed reluctance to vaccines (Daly, Jones, and Robinson 2021; Troiano and Nardi 2021). This skepticism, however, is not distributed evenly throughout the public. People of color, highly religious populations, and political conservatives have tended to express greater levels of COVID-19 vaccine hesitancy than the U.S. population as a whole (Callaghan et al. 2021; Razai et al. 2021). Beyond the current pandemic, Black Americans are more likely to hold negative views of a range of vaccines (Freimuth et al. 2017; Kester et al. 2013). Moreover, due to histories of healthcare discrimination and medical mistrust (e.g. Mays, Coles, and Cochran 2012; Thomas and Quinn 1991; Waters 1997), Black Americans may be more sensitive to vaccine misinformation (Quinn et al. 2019), presenting additional challenges for increasing vaccine uptake.

Regarding COVID-19, racial disparities in vaccine intentions among Black Americans are particularly concerning given the pandemic’s unequal impact. Black Americans are

significantly more likely to experience severe infection and mortality as a result of COVID-19 when compared to whites (Kim and Bostwick 2020; Price-Haywood et al. 2020), making vaccination particularly important in providing Black Americans with effective protection against these unequal health risks.

Efforts to explain the American public's reluctance to vaccinate against COVID-19 often identify distrust in medical/scientific authorities and the acceptance of pandemic misinformation (Callaghan et al. 2021; Loomba et al. 2021; Romer and Jamieson 2020) – both of which are, at least in the *general population*, entangled with ideological conservatism and right-leaning media exposure (Jamieson and Albarracin 2020; Matthew Motta 2018; Matt Motta, Stecula, and Farhart 2020) – as key challenges to overcoming vaccine hesitancy. Although the degree to which these tendencies underlie COVID-19 vaccine skepticism for Black Americans is an open question, misinformation acceptance and distrust in scientific authorities are both thought to play a role in motivating vaccine hesitancy in communities of color (Joslyn and Sylvester 2019; Quinn et al. 2018). Yet, “skepticism among the Black public is not rooted in the same kind of anti-scientific sentiment” that is generally associated with vaccine hesitancy in the U.S. (Taylor 2021). Instead, qualitative investigations reveal that Black vaccine reluctance is tied to a broader distrust of government. A focus group study found that “African Americans often introduced the topic of government trust,” with one woman exclaiming “You don’t trust a government vaccine!” (Jamison, Quinn, and Freimuth 2019, 91).

While government distrust is historically low in contemporary America (Raine, Keeter, and Perrin 2019), it is important to recognize that its roots differ across racial groups. Levels of trust in government among Black Americans are specifically tied to attitudes about the police

(Rosenthal 2020). This connection between distrust and the police becomes clear when listening to Black views on vaccines, as seen in this excerpt from another focus group participant:

“Everybody is on high alert, in the black community... very distrusting, because we don’t know what’s going to be perpetrated against us... You see what’s going on with police brutality and things, things have been caught on tape and it’s not being addressed, so [it’s not so] weird in thinking that the vaccines that go to zip codes 19131, 19139, 19103 would be tainted or just- it’s just that that paranoia, but there’s substance to the paranoia” (Momplaisir et al. 2021, 6).

This link to policing is particularly salient in the context of the COVID-19 pandemic, which arose in conjunction with the largest racial justice protests in U.S. history following George Floyd’s murder by officers in the Minneapolis Police Department (McAdam 2020). Such protests brought people like Willie Adams into the street, who recalled the difference between the police responses to the Black Lives Matter protests he attended in 2020 and the January 2021 insurrection at the U.S. Capitol. Reflecting on this difference, Adams noted that it was not Tuskegee that weighed on his “mind when he thinks about the vaccine” but rather “a deeper sense that the government places little value on his life” (Stacey 2021).

Demonstrating an awareness of these beliefs, anti-vaccine groups have started building connections with Black communities. The Children’s Health Defense, a popular anti-vaccine group, runs stories that use police abuse to discredit vaccine outreach directed towards Black Americans (Loffredo and Webb 2020). Such misinformation campaigns help to explain how the initial concern from Willie Adams “about the government’s intentions has bled into a host of conspiracy theories,” including using vaccines to implant microchips (Stacey 2021).

While anecdotal, Adams’ story highlights how discriminatory policing can drive the development of a range of attitudes among Black Americans, including vaccine skepticism but also broader misinformed and conspiracy theory beliefs. In doing so, it reinforces the value of scholars more deliberately investigating the intersection of race, policing, and vaccine beliefs,

and motivates our expectation that negative views toward policing among Black Americans – but not necessarily White Americans – will lead to more negative attitudes toward vaccines and policies encouraging widespread vaccination.

Data and Methods

To begin this investigation, we turn to the 2020 American National Election Study (ANES, www.electionstudies.org), which asked respondents to share their opinions on both the police and vaccines. We measure *Vaccine Attitudes* as respondents' level of support for vaccine mandates in schools, their perception of the health benefits of vaccines relative to their risks, and if they think most scientific evidence shows that vaccines cause autism.¹ As these measures include attitudes toward vaccination and policy orientations, they allow us to explore the extent to which policing attitudes impact opinion across a wide range of vaccine beliefs. The implication of state control in the vaccine mandate question creates a clearer link to policing attitudes, whereas the health benefits and autism questions are less direct yet still illuminate how far feelings about the police consequently “spill over” to negatively influence health behaviors and misinformed beliefs.

In analyzing the impact of *Law Enforcement Attitudes* on vaccine beliefs, we use a feeling thermometer where respondents expressed their opinions of the police on a scale from 0 to 100 (cool to warm feelings, respectively). To examine if these police attitudes do more to

¹ More information about the specific question wording and coding for these variables is included in Online Appendix A.

shape vaccine beliefs among Black Americans, our analysis interacts *Police Attitudes* and *Racial Self-Identification* (a dichotomous indicator of respondents' self-identity as white or Black).²

Each of our models include a range of control variables, including party identification, ideology, gender, age, income, education, political knowledge, and religiosity. We also control for trust in government, the extent to which respondents believe the federal government treats whites better than Blacks, and a feeling thermometer for whites, allowing us to isolate the specific role of police attitudes as opposed to more generalized feelings about race and the state. Finally, to account for beliefs about the healthcare system and medical experts, we include a feeling thermometer for Dr. Anthony Fauci, the most visible member of the national medical community during the COVID-19 pandemic. This variable provides us with greater assurance that our results are isolating the specific impact of police attitudes, as opposed to conflating police attitudes with perceptions of the healthcare system.

Finally, our vaccine attitude variables were measured using intervalized scales to indicate the strength of the respondents' beliefs, allowing us to employ OLS regression. As variables were coded to run from 0 to 1, coefficients can be interpreted as the change in proportion of support for each vaccine belief when moving from the minimum to maximum value for each

² Other racial groups, including multi-racial individuals, were dropped from our analysis. We chose to focus on this Black-white dichotomy due to the specific history of both law enforcement and the medical field in upholding white supremacy and perpetuating anti-Black racism (Alexander 2010; Washington 2006). Space constraints prevent us from delving into the troubling, but distinct histories connecting these entities to other communities of color (e.g. Chang 2003; Nichols, LeBrón, and Pedraza 2018)

independent variable. Survey weights provided by the ANES are employed throughout our analysis.

Results

Table 1 provides a condensed version of our results, showing only the coefficients for our variables of interest (i.e. race and police attitudes).³ Models 1.1, 1.2, and 1.3 begin by examining the impact of police attitudes on vaccine beliefs. In alignment with previous findings (e.g., Callaghan et al. 2021), these results show a higher level of vaccine skepticism among Black respondents, with white respondents indicating a higher level of agreement with vaccine mandates in schools, a greater belief in the benefits of vaccines, and less support for the false claim that vaccines cause autism. These models also suggest that – at least in the *general* population – opinions about the police are not closely linked to vaccine attitudes. Police attitudes only reach marginal significance in relation to requiring vaccines in schools ($b=.055$, $p=.085$), perhaps stemming from the question’s connoted connection to state control.

[Table 1 here]

The remaining models in Table 1 turn to variation in the role of police attitudes across racial groups by introducing an interaction term between our two independent variables of interest: *Racial Self-Identification*, and *Police Attitudes*. As seen in Models 1.4, 1.5, and 1.6, this interaction reaches statistical significance in each case, indicating that the role of police attitudes in shaping vaccine beliefs does vary for white and Black respondents. This variation is illustrated in Figure 1, demonstrated by predicted probability plots for each interaction term.

³ Full results are provided in the online appendix.

In alignment with our expectations, these figures show that police attitudes have a significant impact on vaccine beliefs, but this impact is driven by Black respondents. For Black respondents, moving from those with the most negative to most positive feelings about the police is associated with a 21.5% increase in support for vaccine mandates in schools and a 23.8% increase in belief in vaccine benefits. By comparison, this same shift in police attitudes among white respondents leads to much smaller changes, and notably works in the opposite direction for vaccine benefits, such that white police supporters are *less* likely to believe in the benefits of vaccines. Similarly, police attitudes have an opposing influence on vaccine misinformation endorsement across racial groups, though this impact is again stronger among Black respondents. Here, moving from strong opposition to strong support for the police is associated with a 21.1% decrease in the perception that vaccines lead to autism, while this same shift among white respondents leads to a 6.7% increase in this belief. Ultimately, these results reveal the power of police attitudes in shaping vaccine beliefs among Black Americans, demonstrating their capacity to alter broader opinions about vaccine efficacy and vaccine-related misinformation.

[Figure 1 here]

Still, it is difficult to tease out causality and/or the possibility that the effects are time-bound by relying solely on cross-sectional data. Some might argue, for example, that the co-occurrence of the COVID-19 pandemic and demonstrations following George Floyd's murder may have only *temporarily* elevated the salience of concerns about vaccines, police violence, and the potential link between the two. Others might also raise reverse causal concerns; e.g., that negative views toward vaccines, perhaps resulting from the renewed salience of the Tuskegee incident, might “spill over” to influence attitudes toward state actors more generally, including law enforcement.

Fortunately, the 2020 ANES included a panel component in which nearly 3,000 respondents from the 2016 web-mode survey were re-contacted. We constructed cross-lagged models using 2016 vaccine attitudes to predict 2020 police attitudes while controlling for 2016 police attitudes, as well as models using 2016 police attitudes to predict 2020 vaccine attitudes while controlling for 2016 vaccine attitudes. If our expectation about police attitudes driving vaccine beliefs is correct, we should find that the effect of 2016 police feeling thermometer scores on 2020 vaccine attitudes is stronger than the effect of 2016 vaccine attitudes on 2020 police feeling thermometer scores. As our focus is on this causal relationship for Black Americans, the cross-lagged analysis is limited to Black respondents only.⁴

Table 2 displays the results of our cross-lagged analysis and provides partial support for our causal argument. Consistent with our expectations, vaccine attitudes from 2016 are not significantly related to police attitudes from 2020 among Black Americans ($p = n.s.$ in Models 2.1 and 2.2). In contrast, Model 2.3 shows that Black police attitudes from 2016 are predictive of support for vaccine mandates in 2020 at $p < .001$, even when controlling for vaccine mandate attitudes from 2016. Tempering the robustness of our results, Model 2.4 indicates 2016 police attitudes are not significantly linked to a belief in vaccine benefits in 2020. Still, this coefficient approaches marginal significance ($p = .147$), which is relatively meaningful given the conservative nature of cross-lagged models. Police attitudes therefore seem to exert a causal

⁴ The vaccine misinformation question and the Dr. Fauci feeling thermometer were not included on the 2016 ANES. However, to maintain our causal focus, all of our control variables in these models are taken from 2016. Apart from these differences, the models follow the same specifications as Table 1.

influence on vaccine beliefs for Black respondents, particularly in applications related to state coercion.

[Table 2 here]

Discussion

Discussions of COVID-19 skepticism among Black Americans have generally centered on the history and ongoing discrimination of the American healthcare system, but too frequently these discussions fail to consider that “Some of the most outrageous acts of medical abuse directed at Black communities have been orchestrated by state-led entities,” frequently including the police (Taylor 2021). Such analyses miss the connections Black Americans might make between entrusting their health to a government-sponsored vaccine and images of coercive law enforcement entities using state-sponsored violence to take bodily autonomy away from Black people. Our work explores these under-studied connections and presents evidence that feelings about the police play a strong role in shaping public opinion related to vaccines for Black (but not white) Americans. We also present evidence of a causal relationship, wherein police attitudes drive opinions on vaccines among Black Americans (but not vice versa).

These findings have important implications for current conversations regarding vaccine hesitancy in America. While significant attention has been placed on messaging that will help assuage Black people’s skepticism in the short-term, this research reinforces how that skepticism is linked to longer-standing ways that Black people have experienced structural inequities and discriminatory interactions with representatives of the state. Such structural inequities frequently surface during public health emergencies when it is made clear that the nation’s success is dependent on equal access to services. Too often, this surfacing has led to stories like the one from Middlesboro which began this paper, wherein the state uses coercion to address the

skepticism created by its history of neglect. This leaves behind greater levels of skepticism that begin the cycle anew. Illuminating the connection between vaccine and police attitudes helps to acknowledge this cyclical history while underscoring the importance of incorporating criminal justice reform in order to break it.

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Tables and Figures

Table 1- Impact of Police Attitudes on Vaccine Beliefs

	Model 1.1 Support Mandate in School Impact of Police Attitudes and Race	Model 1.2 Belief in Vaccine Benefits Impact of Police Attitudes and Race	Model 1.3 Endorse Vaccine Misinformation Impact of Police Attitudes and Race	Model 1.4 Support Mandate in School Impact of Police Attitudes Across Racial Groups	Model 1.5 Belief in Vaccine Benefits Impact of Police Attitudes Across Racial Groups	Model 1.6 Endorse Vaccine Misinformation Impact of Police Attitudes Across Racial Groups
Police Attitudes	.055^ (.032)	-.019 (.027)	-.007 (.025)	.211** (.075)	.01 (.065)	-.118^ (.068)
White	.107*** (.022)	.157*** (.019)	-.134*** (.019)	.215*** (.05)	.238*** (.042)	-.211*** (.043)
White x Police Attitudes				-.201* (.081)	-.151* (.068)	.144* (.07)
N	4,950	4,942	4,921	4,950	4,942	4,921
Method	OLS	OLS	OLS	OLS	OLS	OLS
R ²	.21	.27	.21	.22	.27	.22

Source: 2020 ANES, ^p<.1, *p<.05, **p<.01, ***p<.001. Standard errors in parentheses. Significance tests are two-tailed. Survey weights provided by the ANES are employed. Control variables not shown here include attitudes concerning Dr. Fauci, government discrimination, trust in government, and white people, as well as party ID, ideology, gender, age, income, education, political knowledge, and religiosity. Results for these control variables are shown in Tables A.1 and A.2 in the supplemental appendix.

Figure 1- Racial Differences in Impact of Police Attitudes on Vaccine Beliefs

**Table 2- Cross-Lagged Models: Causal Relationship between
Police and Vaccine Attitudes Among Black Americans**

	Model 2.1 Impact of 2016 Vaccine Mandate Attitudes on 2020 Police Attitudes	Model 2.2 Impact of 2016 Vaccine Benefit Attitudes on 2020 Police Attitudes	Model 2.3 Impact of 2016 Police Attitudes on 2020 Vaccine Mandate Attitudes	Model 2.4 Impact of 2016 Police Attitudes on 2020 Vaccine Benefit Attitudes
Vaccine Mandate Attitudes 2016	.03 (.061)		.365*** (.081)	
Vaccine Benefit Attitudes 2016		-.009 (.086)		.158 (.098)
Police Attitudes 2016	.299** (.098)	.303** (.098)	.307*** (.103)	.122 (.084)
N	188	187	190	186
Method	OLS	OLS	OLS	OLS
R^2 /Pseudo R^2	.24	.24	.32	.32

Source: 2020 ANES, ^p<.1, *p<.05, **p<.01, ***p<.001. Standard errors in parentheses. Significance tests are two-tailed. Survey weights provided by the ANES are employed. Control variables not shown here include attitudes concerning government discrimination, trust in government, and white people, as well as party ID, ideology, gender, age, income, education, political knowledge, and religiosity. Results for these control variables are shown in Table A3 in the supplemental appendix.

Supplemental Online Appendix for “Beyond Tuskegee, to Middlesboro”

Appendix A: Question Wording

Dependent Variables

Vaccine Mandate- 7 categories, scaled to run from opposing the requirement of vaccines in schools a great deal (0) to favoring the requirement of vaccines in schools a great deal (1).

Vaccine Benefits- 7 categories, scaled to run from believing that the risks of vaccines are much greater than their health benefits (0) to believing that the health benefits of vaccines are much greater than their risks (1).

Vaccine Misinformation- 10 categories, scaled to run from being extremely confident that most scientific evidence shows childhood vaccines do not cause autism (0) to being extremely confident that most scientific evidence shows childhood vaccines do cause autism (1).

Independent Variables of Interest

Police Feeling Thermometer- Response to how people would rate the police on a feeling thermometer running from 0 to 100, rescaled to run from most negative (0) to most positive (1).

Race- Self-identification of the respondent’s racial identity as a person of color (0) or white (1). People of color include individuals who identified as black, American Indian or Alaska Native, Asian, Native Hawaiian or other Pacific Islander, or Hispanic.

Control Variables

Whites Feeling Thermometer- response to how people would rate white people on a feeling thermometer running from 0 to 100, rescaled to run from most negative (0) to most positive (1).

Dr. Fauci Feeling Thermometer- Response to how people would rate Dr. Fauci on a feeling thermometer running from 0 to 100, rescaled to run from most negative (0) to most positive (1).

Government Discrimination- 7 categories, scaled to run from the federal government treats Blacks much better than whites (0) to the federal government treats whites much better than Blacks (1).

Political Trust scale- Constructed from four questions, where 0 is the lowest level of trust and 1 is the highest level of trust. These are then added together and rescaled to run from lowest level of trust across all questions (0) to highest level of trust across all questions (1). Below are the specific questions.

How often can you trust the federal government in Washington to do what is right?

Would you say the government is pretty much run by a few big interests looking out for themselves or that it is run for the benefit of all the people?

Do you think that people in government waste a lot of the money we pay in taxes, waste some of it, or don't waste very much of it?

How many of the people running the government are corrupt?

Party Identification- 7 categories, scaled to run from strong Democrat (0) to strong Republican (1).

Ideology- 7 categories, scaled to run from extremely liberal (0) to extremely conservative (1).

Gender- Self-identification of the respondent's gender as male (0) or female (1).

Age group- scaled to run from 18 (0) to 80 or older (1).

Income- 22 categories, scaled to run from under \$10,000 (0) to more than \$250,000 (1).

Education- 5 categories, scaled to run from "Less than high school" (0) to "Graduate degree" (1).

Political knowledge scale- Constructed from four questions, where 0 is the incorrect answer and 1 is the correct answer. These are then added together and rescaled to run from no correct answers (0) to four correct answers (1). Below are the specific questions.

For how many years is a United States Senator elected – that is, how many years are there in one full term of office for a U.S. Senator? Correct answer: 6.

On which of the following does the U.S. federal government currently spend the least [Foreign Aid, Medicare, National Defense, Social Security]? Correct answer: Foreign aid.

Do you happen to know which party currently has the most members in the U.S. House of Representatives in Washington? Correct answer: Democrats

Do you happen to know which party currently has the most members in the U.S. Senate? Correct answer: Republicans.

Religiosity- 5 categories, scaled to run from an individual indicating that religion is not an important part of their life at all (0) to being an extremely important part of their life (1).

Appendix B: Full Table Results

Table A1- Impact of Police Attitudes on Vaccine Beliefs, Full Results			
	Model A1.1	Model A1.2	Model A1.3
	Support Mandate	Belief in Vaccine	Endorse Vaccine
	in School	Benefits	Misinformation
	Impact of Police	Impact of Police	Impact of Police
	Attitudes and Race	Attitudes and Race	Attitudes and Race
Police Attitudes	0.055 [^]	-0.019	-0.007
	(0.03)	(0.03)	(0.02)
White	0.107***	0.157***	-0.134***
	(0.02)	(0.02)	(0.02)
	-0.072*	0.025	0.007
	(0.03)	(0.03)	(0.02)
Dr. Fauci Feeling	0.354***	0.273***	-0.169***
Thermometer	(0.03)	(0.02)	(0.02)
Government	0.028	0.036	-0.009
Discrimination	(0.03)	(0.02)	(0.02)
Political Trust Scale	0.026	-0.018	0.011
	(0.03)	(0.03)	(0.03)
Party Identification	0.017	0.035	0.031
	(0.02)	(0.02)	(0.02)
Ideology	-0.023	-0.012	0.006
	(0.02)	(0.02)	(0.02)
Female	0.014	0.005	0.011
	(0.01)	(0.01)	(0.01)
Age	0.153***	0.092***	-0.000
	(0.02)	(0.02)	(0.02)
Income	0.049*	0.108***	-0.054**
	(0.02)	(0.02)	(0.02)
Education	0.022	0.091***	-0.111***
	(0.02)	(0.02)	(0.02)
Political Knowledge	0.014	0.082***	-0.076***
	(0.02)	(0.02)	(0.02)
Religiosity	-0.044**	-0.043**	0.050***
	(0.02)	(0.01)	(0.01)
Constant	0.344***	0.267***	0.515***
	(0.05)	(0.04)	(0.04)
N	4,950	4,942	4,921
Method	OLS	OLS	OLS
R ²	.21	.27	.21

Source: 2020 ANES, [^]p<.1, *p<.05, **p<.01, ***p<.001. Standard errors in parentheses. Significance tests are two-tailed. Survey weights provided by the ANES are employed.

**Table A2- Impact of Police Attitudes on Vaccine Beliefs Across Racial Groups,
Full Results**

	Model A2.1 Support Mandate in School Impact of Police Attitudes Across Racial Groups	Model A2.2 Belief in Vaccine Benefits Impact of Police Attitudes Across Racial Groups	Model A2.3 Endorse Vaccine Misinformation Impact of Police Attitudes Across Racial Groups
Police Attitudes	0.211** (0.08)	0.099 (0.06)	-0.118^ (0.07)
White	0.215*** (0.05)	0.238*** (0.04)	-0.211*** (0.04)
White x Police Attitudes	-0.201* (0.08)	-0.151* (0.07)	0.144* (0.07)
Whites Feeling Thermometer	-0.076** (0.03)	0.022 (0.03)	0.010 (0.02)
Dr. Fauci Feeling Thermometer	0.349*** (0.03)	0.269*** (0.02)	-0.165*** (0.02)
Government Discrimination	0.022 (0.03)	0.032 (0.02)	-0.005 (0.02)
Political Trust Scale	0.023 (0.03)	-0.020 (0.03)	0.013 (0.03)
Party Identification	0.022 (0.02)	0.038^ (0.02)	0.028 (0.02)
Ideology	-0.021 (0.02)	-0.011 (0.02)	0.004 (0.02)
Female	0.015 (0.01)	0.006 (0.01)	0.010 (0.01)
Age	0.156*** (0.02)	0.094*** (0.02)	-0.002 (0.02)
Income	0.049* (0.02)	0.108*** (0.02)	-0.054** (0.02)
Education	0.021 (0.03)	0.091*** (0.02)	-0.110*** (0.02)
Political Knowledge	0.011 (0.02)	0.080*** (0.02)	-0.074*** (0.02)
Religiosity	-0.042* (0.02)	-0.042** (0.01)	0.049*** (0.01)
Constant	0.275*** (0.06)	0.215*** (0.04)	0.564*** (0.05)
N	4,950	4,942	4,921
Method	OLS	OLS	OLS
R ²	.22	.27	.22

Source: 2020 ANES, ^p<.1, *p<.05, **p<.01, ***p<.001. Standard errors in parentheses.
Significance tests are two-tailed. Survey weights provided by the ANES are employed.

**Table A3- Cross-Lagged Models: Causal Relationship between
Police and Vaccine Attitudes Among Black Americans, Full Results**

	Model A3.1	Model A3.2	Model A3.3	Model A3.4
	Impact of 2016 Vaccine Mandate Attitudes on 2020 Police Attitudes	Impact of 2016 Vaccine Benefit Attitudes on 2020 Police Attitudes	Impact of 2016 Police Attitudes on 2020 Vaccine Mandate Attitudes	Impact of 2016 Police Attitudes on 2020 Vaccine Benefit Attitudes
Police Attitudes 2016	0.299** (0.10)	0.303** (0.10)	0.307** (0.10)	0.122 (0.08)
Vaccine Mandate Attitudes 2016	0.030 (0.06)		0.365*** (0.08)	
Vaccine Benefit Attitudes 2016		-0.009 (0.09)		0.158 (0.10)
Whites Feeling Thermometer	0.080 (0.08)	0.080 (0.09)	-0.217* (0.10)	-0.266* (0.11)
Government Discrimination	-0.009 (0.06)	-0.006 (0.06)	-0.018 (0.06)	-0.064 (0.07)
Political Trust Scale	0.084 (0.12)	0.091 (0.12)	-0.102 (0.11)	0.006 (0.12)
Party Identification	0.203** (0.07)	0.202** (0.08)	-0.097 (0.10)	-0.195 (0.13)
Ideology	0.034 (0.07)	0.029 (0.07)	-0.014 (0.07)	-0.067 (0.08)
Female	-0.030 (0.05)	-0.026 (0.04)	-0.000 (0.05)	-0.031 (0.05)
Age	0.130^ (0.07)	0.133^ (0.08)	0.249* (0.11)	0.288** (0.09)
Income	-0.016 (0.09)	-0.009 (0.09)	-0.076 (0.10)	0.169 (0.11)
Education	-0.072 (0.16)	-0.076 (0.17)	0.375^ (0.20)	0.062 (0.20)
Political Knowledge	-0.014 (0.09)	-0.007 (0.10)	0.021 (0.10)	0.283* (0.12)
Religiosity	0.016 (0.05)	0.019 (0.05)	-0.002 (0.06)	-0.064 (0.07)
Constant	0.223 (0.17)	0.238 (0.16)	0.083 (0.19)	0.413* (0.19)
N	188	187	190	186
Method	OLS	OLS	OLS	OLS
R ² /Pseudo R ²	.24	.24	.32	.32

Source: 2020 ANES, ^p<.1, *p<.05, **p<.01, ***p<.001. Standard errors in parentheses.

Significance tests are two-tailed. Survey weights provided by the ANES are employed.