Electoral Accountability and Bureaucratic Discretion
Evidence from County Coroners and the COVID-19 Pandemic

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Abstract

More than one million Americans are reported to have died from COVID-19. However, many measures of COVID-19 deaths rely on data created and reported by public health professionals, such as county coroners or medical examiners. Because many of these positions are elected, and COVID-19 quickly became a politically salient and polarized issue in the 2020 general election and beyond, some public health officials may have under-reported COVID-19 deaths. We compare data on reported COVID-19 deaths with estimates of surplus deaths to create county-level estimates of under- or over-reported COVID-19 deaths and then explore the relationship between under-reporting, local-level partisanship, and the selection method of the local coroner or medical examiner. Our results have important implications for understanding the relationship between public health and partisan politics.

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Keeping records of deaths is a foundational responsibility of the government. In the US today, a patchwork of different institutions dictates who makes determinations of death and the qualifications that they must have. Aside from record-keeping, causes of death may have implications for legal and insurance issues, and the closest kin of the deceased may view some causes of death, such as suicide or drug overdose, as stigmatizing, especially since death certificates are public records. Some causes of death, such as COVID-19, may also become politicized.

Most deaths occur without controversy and do not require investigation. For these cases, the cause of death is determined by a medical professional designated by state law. A coroner or medical examiner is tasked with determining the cause in cases requiring investigation. Typically, coroners are elected and require no medical training, while medical examiners are appointed and are licensed physicians. In some states, medical examiners are appointed at the county level; in others, the office is centralized at the state level. In this paper, we examine how this variety of institutions affects administrative designations around causes of death by magnifying or diminishing the preferences of the community in the context of the COVID-19 pandemic.

We examine how the political composition of a locale combined with the political exposure or insulation of the death-recording official is related to the under- or over-counting of COVID-19 deaths during the pandemic. Perceptions of the severity of COVID-19 and the decisions to take the vaccine were polarized along partisan lines (Clinton et al., 2021), with Democrats tending to view COVID-19 as more severe and being more willing to take the vaccine than Republicans. Our primary question is how reporting of COVID-19 deaths is associated with the political characteristics of a place and how this relationship is mitigated or exacerbated by death-determining institutions of the place. Specifically, we consider deaths determined by medical professionals versus those decided by death investigators (i.e., coroners and medical examiners), who are either elected or appointed.

While other studies have examined the relationship between partisanship and excess mortality during the pandemic (Wallace, Goldsmith-Pinkham, and Schwartz, 2023; Paglino et al., 2023),

our study focuses on the nature of the administrative reporting of deaths and how under-reporting is associated with the administrative and political characteristics of the agent responsible for reporting. We, therefore, contribute to a growing body of scholarship connecting politics to the COVID-19 pandemic by demonstrating that preferences and institutions interact to affect not only pandemic outcomes but also the public record of those outcomes.

Determining Causes of Death

Administering death is an ancient and foundational function of government. County coroners originated in England and have likely existed since at least 1194, though the precise date of origin is an unsettled question (Gross, 1892). In this context, coroners were influential local bureaucrats tasked with ensuring the crown received the duties unto which it was entitled upon the death of a subject (Gross, 1892).

In the US today, when a death occurs, that death must be certified and the cause of death determined. The death certificate is a public record that may be referenced in matters ranging from litigation to family research. Its main purpose is to report the incident to the federal government to compile vital statistics (Adeyinka and Bailey, 2024). Each year, the National Center for Health Statistics (NCHS), part of the Centers for Disease Control and Prevention (CDC), records about 2.6 million deaths (Adeyinka and Bailey, 2024). The reporting of these statistics depends on the filing of death certificates. This may be done by a number of different individuals, operating in a variety of institutional contexts. Regardless of the particular qualifications that a death-certifier has, that individual assumes an administrative, bureaucratic role in reporting the occurrence of death and the cause.

Death certifiers fall into two broad categories. The first is medical professionals. Typically, when individuals die in medical settings, such as hospitals, senior care facilities, or in hospice care, they are under the care of a medical professional who is qualified and legally empowered to certify

that they have died and what they have died from. We emphasize that while such deaths are certified by trained professionals, there is still the potential for politics to intrude on what should be an objective determination. First, capacity may play a role. The COVID-19 pandemic, for example, overwhelmed local medical resources. Instead of adequately investigating or verifying a death, medical professionals may simply take the word of the next of kin, for example, who may have political preferences over how that death is recorded. Second, and relatedly, families of the deceased may directly pressure the medical professional to record or not record the death in a particular way. While one can readily imagine such circumstances in the context of a politicized pandemic, it may also be the case that next of kin may prefer that other types of deaths, such as suicides, drug overdoses, etc., not be accurately reported. Finally, medical professionals are also members of the communities they serve. Whether through socialization or selection (Martin and Webster, 2020), they are likely to, on average, reflect the preferences of that community and may themselves be biased or preferential in how they choose to report deaths.

The second broad category of death certifiers are those tasked with investigating deaths that occur outside medical settings. When an investigation is required, either an elected coroner or appointed medical examiner takes the lead in determining the cause of death. One estimate is that 20 percent of all deaths are investigated by either a medical examiner or coroner.[1] While the United States inherited the aforementioned coroner institution from the United Kingdom, the trend over the past 150 years has been to move toward the use of medical examiners instead (Hanzlick and Combs, 1998, p. 870). These offices are differentiated both by selection method and qualifications: "With few exceptions, coroners are elected lay individuals who rely on whatever medical personnel are available to assist in investigations and perform autopsies, while medical examiners are usually physicians and pathologists who are appointed and often have special training in medicolegal death investigations and forensic autopsy performance" (Hanzlick and Combs,

[1]Board on Health Promotion, Disease Prevention, and Committee for the Workshop on the Medicolegal Death Investigation System. *Medicolegal death investigation system: Workshop summary*. National Academies Press, 2003.

1998, p. 870). In most states, these officers—either coroners or medical examiners—are selected locally, at the county level; in some, detailed below, states use a centralized or district-based medical examiner system.

Counting Deaths During COVID

Counting deaths was a crucial function during the pandemic. It guided local governmental responses to the pandemic and determined the need for federal support. Despite its paramount importance, there is anecdotal evidence that COVID-19 deaths were undercounted by the hundreds of thousands. According to one report, in 2020 and 2021, almost a million more people died than would be expected, and less than 800,000 of those deaths were attributed to COVID-19.[2]

There are likely many factors driving the undercounting of COVID-19 deaths. For example, the country's medical infrastructure, including coroners and medical examiners, was pushed to its limit during the pandemic. One account notes that the capacity of these offices to dutifully investigate deaths was severely limited, noting that:

> Short-staffed, undertrained and overworked coroners and medical examiners took families at their word when they called to report the death of a relative at home. Coroners and medical examiners didn't review medical histories or order tests to look for COVID-19. They and some physicians attributed deaths to inaccurate and nonspecific causes that are meaningless to pathologists. In some cases, stringent rules for attributing a death to COVID-19 created obstacles for relatives of the deceased and contradicted CDC guidance.[3]

[2] Bergin, Dillon, Betsy Ladyzhets, Mohar Chatterjee, and Derek Kravitz. "The US is undercounting COVID-19 deaths, researchers say. Now they have a tool to figure out why." *USA Today*. December 9, 2021.

[3] Bergin, Dillon, Betsy Ladyzhets, Jake Kincaid and Derek Kravitz. "Uncounted: Inaccurate death certificates across the country hide the true toll of COVID-19" *USA Today*. December 22, 2021.

Another related factor is likely political. Some individuals refused to be tested for COVID-19, further limiting the ability of medical professionals to determine its prevalence. This is because of the political prism through which partisans viewed the pandemic and its prophylactic. One coroner noted that "In 2020, getting COVID, or dying from COVID, or being a family member that had COVID, was a scarlet letter... It was shunned."[4] For certain individuals, death from COVID-19 was viewed as a stigma. As medical investigators were forced to rely more on the judgment of family, this stigma potentially played an outsized role in death designations.

The partisan sentiment around the pandemic extended beyond those affected and their family. Numerous journalistic accounts exist of death investigators who simply shunned medical guidelines, often with the effect of reducing the likelihood that a cause of death would be designated as COVID-19. Consider the case of Wavis Jordan, who was elected in 2020 as coroner of Cape Girardeau County, Missouri. Birthplace and boyhood home of the late conservative talk show host Rush Limbaugh, Cape Girardeau is a solidly Republican county, with Donald Trump receiving over 71 percent of the vote in 2020. Before becoming coroner, Jordan "worked as a school security guard, hearse driver and funeral florist but has no prior training or experience handling the dead."[5] In 2021, Jordan told the media that he "doesn't do COVID deaths" and had not pronounced anyone dead of COVID-19 during all of 2021 in Cape Girardeau.[6] To declare a death to be from COVID, his policy, contrary to CDC guidance, was to require the family to provide evidence of a recent positive polymerase chain reaction (PCR) test from the deceased; often, he reported probable COVID-19 deaths to be from myocardial infarction, or heart attacks.[7] Jordan, who was eventually suspended from the position by Missouri's Attorney

[4]Ibid.

[5]Bergin, Dillon and Rudi Keller. "Uncounted: Inaccurate Death Certificates Across the Country Hide the True Toll of COVID-19." *Missouri Independent*. December 22, 2021.

[6]Ibid.

[7]Erickson, Kurt. "Missouri Coroner Faces Charges After Recording False Causes of Death, Stealing." *St. Louis Post-Dispatch* (St. Louis, MO), February 8, 2024.

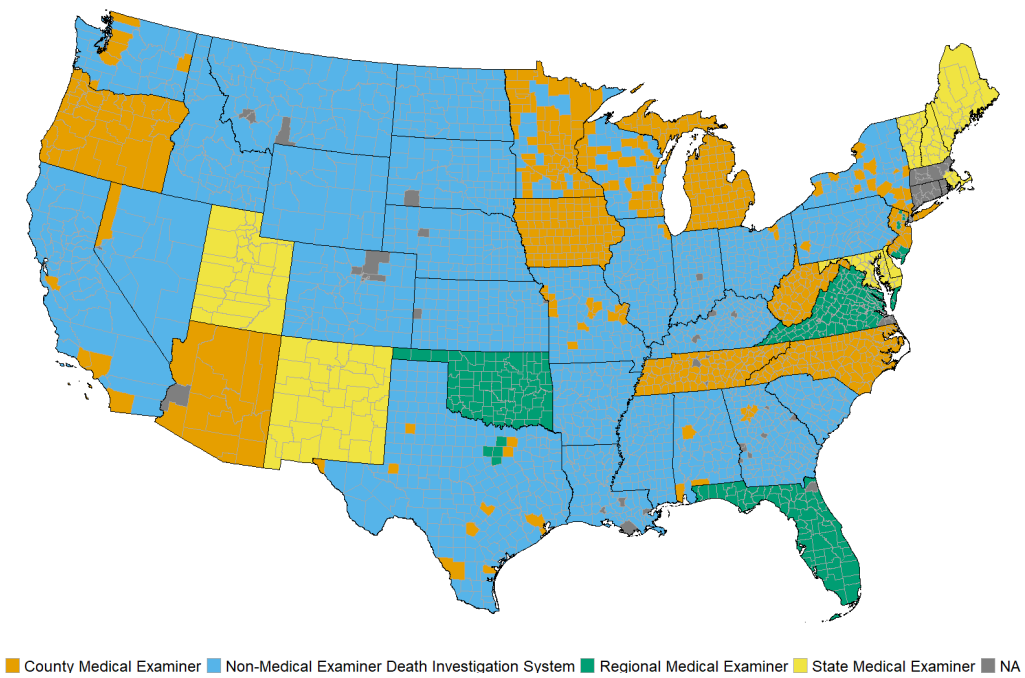

Figure 1: Death Investigation Systems. Data from Centers for Disease Control (CDC)

General for stealing from the dead and knowingly designating the wrong causes of death,[8] was one of hundreds of men and women who lead death investigation systems across the US. Figure 1 plots type(s) of institution(s) used across the United States for death investigations, by county.

Representation, Institutions, and Administrative Decision-Making

Death declarations are a street-level bureaucratic function (Lipsky, 2010). While most declarations of death are made by medical professionals who are not public officials, these individuals nevertheless perform an essential administrative, bureaucratic function when making death declarations. Coroners and medical examiners, on the other hand, more clearly match the traditional

[8]While suspended and under criminal investigation, Jordan has opted to run for reelection. Miller, Bob and Christopher Borro. "Embattled Cape Girardeau County coroner seeks reelection amid legal turmoil." *Southeast Missourian*, March 28, 2024.

understanding of a "street-level bureaucrat" insofar as they are government functionaries who fulfill an important, at least moderately public-facing service. Death reporting and investigation is a bureaucratic reporting function that, like any bureaucratic action, can be influenced by an array of principals to whom the medical professional is responsible. The decisions these individuals make potentially have social, legal, and financial implications for the family of the deceased. In the case of the COVID-19 pandemic, the case count also had implications for the resources a community might receive from state and federal governments. We exploit the various contexts in which these decisions are made to better understand how institutions affect representation as well as important bureaucratic functions of government.

A core finding in the study of American politics is that institutions shape the relationship between those who govern and those who are governed. This is true in legislative politics (Olson and Rogowski, Forthcoming; Gailmard and Jenkins, 2009; Hirano et al., 2010; Harden and Kirkland, 2021), the executive branch (Berry and Gersen, 2008; Reeves and Rogowski, 2022; Gathman, 2019), and the judiciary (Bonneau and Hall, 2009; Stone and Olson, N.D.; Gordon and Huber, 2007). At the local level, recent studies identify a range of institutional factors that can affect local politics. For example, off-cycle local elections (de Benedictis-Kessner, 2018), party competition (Bucchianeri, 2020), non-partisan elections (Lucas, McGregor, and Tuxhorn, 2022; Tausanovitch and Warshaw, 2014), and city manager systems (Lineberry and Fowler, 1967; Dove, 2017; Deno and Mehay, 1987; Feiock, Steinacker, and Park, 2009; Hawkins, 2010; Carr, 2015) all can affect electoral and representational outcomes at the local level. Studies of bureaucracy show that officials are responsive to the political directives of their bosses even when those orders diverge from best practices (Gordon, 2011), and public preferences influence both the behavior of local political officials (Benedictis-Kessner and Warshaw, 2016; Tausanovitch and Warshaw, 2014) as well as local bureaucrats (Wilkins and Williams, 2008; Walker, 2015). Other studies show that local bureaucrats prioritize the professional obligations of their office over political pressure (Ferrer, Geyn, and Thompson, 2024).

Though there is not a large literature on death investigators specifically, several studies explore how politics and institutions shape their determinations. One study examined the frequency of autopsies and compared states with only medical examiners to those with only coroners and found that coroners perform fewer autopsies than expected and are less likely to be accredited by the most prominent professional organization for medical investigators (Choi and Gulati, 2017). Other studies have examined differences in reporting stigmatized causes of death. While some find that elected coroners are prone to under-reporting suicides compared to their appointed counterparts (Clarke-Finnegan and Fahy, 1983), others find the opposite relationship (Neeleman and Wessely, 1997). In England and Wales, for example, families of the deceased play a substantial role when an inquest is made into a cause of death and frequently object to a death being classified as a suicide. This pressure causes coroners to be "significantly more likely to bring in an open verdict, evidence to the contrary notwithstanding"(Tait and Carpenter, 2015, p. 557). Based on interviews with coroners in the UK and Australia, the same study found that some viewed their role as "fundamentally administrative." In contrast, others viewed the role as "pastoral…, pertaining first and foremost to helping the grieving family" (562-563). Similarly, until 1984, alcohol-related deaths in the UK required inquests, which led medical professionals to frequently classify the cause of death as other immediately proximate aliments to shield families from the social stigma of having a loved one succumb to alcoholism (Maxwell, 1986).

In this paper, we focus on the interaction between local political preferences and the method used to select death investigators. Recent studies emphasize that voters increasingly view local politics through a nationalized lens (Hopkins, 2018). Instead of preferring an accurate count of deaths and a valid measure of impact on their community, citizens may demand that the cause of death reflect their partisan worldview. Previous scholarship characterizes the depth and breadth of the politicization of the COVID-19 pandemic. From early in the pandemic through the end of the federal public health emergency, partisans were dramatically polarized on the urgency of the pandemic and the appropriate public and private steps to take to mitigate it. This polarization was

reflected in the public (Kerr, Panagopoulos, and Van Der Linden, 2021), in the media (Hart, Chinn, and Soroka, 2020), and among political elites (Green et al., 2020). Because of the partisan nature of the pandemic, we assume that Republican areas are more likely to prefer a cause of death be designated as something other than COVID. Those preferences are translated through various actors who see differential exposure or insulation from community preferences.

In addition to our interest in the unconditional effect of constituent preferences on COVID-19 death determinations, we are also interested in how the institutional variation in the American death investigation system conditions the relationship between preferences and such determinations. We also explore how centralization matters, with our expectation that centralization in more-professionalized state-level systems produces less political influence in death determinations. However, our primary focus is on the choice of elected or appointed medical investigators. Other scholarship has examined the effects of electing versus appointing municipal treasurers (Whalley, 2013), county assessors (Sances, 2019; Bowman and Mikesell, 1989), and school officials (Hoover, 2008; Partridge and Sass, 2011).

While the determination of death is a judgment based on extensive guidance and international standards,[9], it is also a political act that can be a function of the preferences of the deceased, their next of kin, and the various agents who influence the determination process. As we note above, there are many opportunities for politics to enter into COVID-19 death determinations. Families of the deceased may pressure death certifiers not to list COVID-19 as a cause of death. Just as members of Congress factor constituent preferences into roll call voting (Miller and Stokes, 1963; Ansolabehere and Jones, 2010), attending physicians, coroners, or medical examiners may respond to the preferences of those they serve in the administrative determination of a cause of death. The individual determining the cause of death must balance an obligation to report true death statistics with the pressure to do what the family of the deceased prefers. We suggest that the institutional arrangement will affect the relative balance of these considerations.

[9] https://www.cdc.gov/nchs/hus/sources-definitions/icd.htm

The death certifier may also bring their own political preferences to bear in determining causes of death. Finally, for elected coroners in particular but also for appointed officials to a lesser extent, pressure may be exerted through the political system to heed the preferences of the constituency more broadly, including those individuals not directly connected to the deceased but who may be able to exert political influence through elections.

We expect the effect of these various pressures to vary systematically with the nature of the death investigation system operating in a particular jurisdiction. The office most exposed to political influence is the elected coroner. Not only are they not typically required to have medical experience, but they are also subject to election. In the trade-off between competency and responsiveness, the coroner falls at the extreme end of being elected, though without necessarily having any expertise at all. We hypothesize that elected coroners will be most influenced by community characteristics when determining the cause of death. Appointed medical examiners generally have greater levels of expertise and are somewhat insulated from local political pressures, though the executive that appoints them may not be. Finally, centralized, state-level systems are likely to be the most professional and have the least incentive to heed strictly local preferences, although state-level institutions can become politicized as well.

Data and Empirical Strategy

Our primary outcome variable is the ratio of excess deaths in a county to the number of reported COVID-19 deaths in that county, using data from Paglino et al. (2023). This measure captures the relationship between *actual* deaths from COVID-19 and *reported* deaths from COVID-19. Paglino and coauthors constructed this measure using cause of death data from CDC Wonder from 2015 to 2029 aggregated to the county-month level (e.g., Cook County, IL, January 2018) and several relevant population demographic characteristics. Next, they train a Bayesian hierarchical model on the data to generate "expected" death counts in a given county and time, then

compare them to the actual number of deaths in those units in 2020 and beyond.

This measure is normalized to the number of actual COVID-19 deaths, so it adjusts for differences in population across counties and is readily interpretable. A value of one corresponds to a perfectly matched reported number of COVID-19 deaths and estimated excess deaths. A value below one indicates that COVID-19 deaths were over-reported, while a value above one indicates that COVID-19 deaths were under-reported. For our main outcome measure, we use excess death estimates that focus on natural causes of death and that allow for COVID-19 to be a contributing cause of death.[10] We pool across much of the pandemic period, using data from early 2020 through August 2022, the full period provided by Paglino et al. (2023); doing so offers the most precise possible measures of the measure. Figure 2 plots the distribution of our main outcome measure across counties. As this figure suggests, the modal county underreported COVID-19 deaths, though many also seem to have overreported them. In the most extreme cases, counties reported only one-quarter to one-sixth of all probable COVID-19 deaths.

One of the key quantities of interest is the selection method of the medical investigator. Coroners and medical examiners are drawn from a wide variety of methods. Drawing from a variety of national[11] and state resources, our team of undergraduate research assistants documented the county-level coroner selection method for 2,160 United States Counties. For counties i, we code $Elected_i = 1$ if the relevant official is elected to the office (including if they are elected to another office that shares the role of the coroner) and $Elected_i = 0$ otherwise.

We are also focused on the political characteristics of the community. The national and state-level policy response to COVID-19 varied by partisanship; in particular, compliance with state shutdown and stay-at-home orders was a function of county-level partisanship (Camobreco and He, 2022) and response to elite party cues (Bisbee and Lee, 2022). To account for this, we

[10] Alternatives would be to focus on all causes of death and requiring COVID-19 to be an underlying cause of death; practically speaking, the measures are similar across combinations.

[11] E.g., https://www.cdc.gov/phlp/publications/coroner/death.html

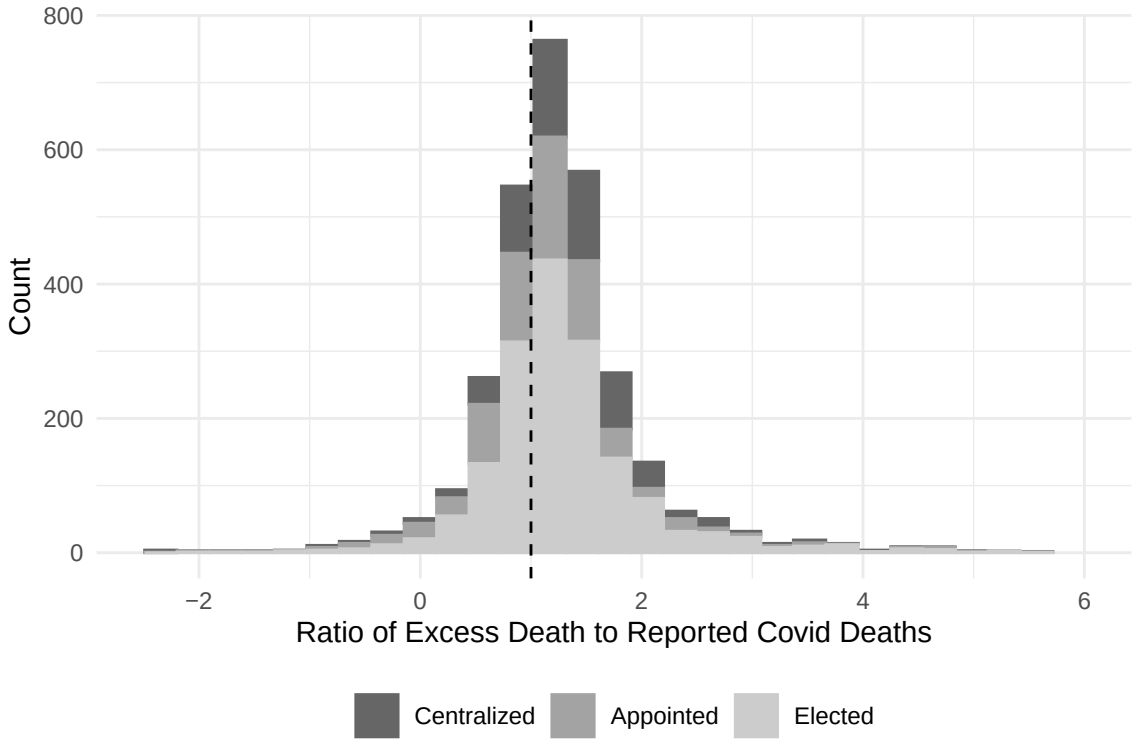

Figure 2: County-Level Estimated Unreported COVID-19 Deaths

Note: Figure plots the distribution of the ratio of excess deaths to reported deaths, as calculated by Paglino et al. (2023), across U.S. counties. The vertical line at "1" indicates the point at which reported deaths and estimated excess deaths are equal; lower values correspond to overreporting of COVID-19 deaths, and higher values correspond to underreporting.

measure the county-level vote share for Donald Trump and Hillary Clinton in 2016, collected from the MIT Election Data Lab.[12] Furthermore, we utilize Warshaw and Tausanovitch (2022) MRP estimates of county ideology for 2016.

We also control for of a number of additional influences. We use data from the 2020 ACS Five-Year Estimates at the county level to control for additional relevant socioeconomic and demographic covariates. These include county population and population density, median age, population over the age of 65, racial composition, poverty rate, median household income, and median housing value. By doing so, we mitigate the risk of omitted variable bias in measuring

[12]We do not use the 2020 vote share to maintain temporal validity.

death reporting, particularly given that many of these covariates were highly correlated with COVID-19 risk.[13]

Local Preferences Influence COVID-19 Death Reporting

We begin our analysis of the relationship between COVID-19 death reporting and political factors by assessing whether more Republican (Democratic) areas were associated with greater levels of under-(over-)reporting of COVID-19 deaths. To do so, we regress our measure of COVID-19 reporting on county-level 2016 Republican two-party presidential vote share, as well as a variety of control variables drawn from the American Community Survey. Our estimating equation is as follows:

$$\left(\frac{\textit{Estimated Excess Deaths}}{\textit{Reported COVID-19 Deaths}} \right)_i = \beta \textit{Pct. Republican}_i + \boldsymbol{\phi}\mathbf{X}_i + \alpha + \epsilon_i \tag{1}$$

Our outcome measure is the previously described ratio of estimated excess deaths in a county to the number of reported COVID-19 deaths in that county. The quantity of interest is β, and $\mathbf{X}$ is a vector of county-level control variables. In some models, we also add state-fixed effects to control for any unobservable state-level characteristics, although these fixed effects also absorb a substantial share of the variation in our independent variables of interest. We use Huber-White robust standard errors for inference.

Our estimates of Model 1 are presented in Table 1. The two leftmost models do not include county-level covariates other than *Percent Republican*; the two rightmost models include a variety of county-level controls drawn from the American Community Survey. The second and fourth models from the left also include state-fixed effects. Across all four models, we find consistent evidence that higher Republican vote shares in 2016 are associated with greater levels of

[13] https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-care/underlyingconditions.html

COVID-19 underreporting. Focusing on the leftmost model that captures the bivariate relationship, we find that an all-Democratic county would slightly over-report COVID-19 deaths, as the Constant is 0.88, below the value of 1 that would correspond to evenly matched excess deaths and reported COVID-19 deaths. The coefficient estimates further suggest that a county giving 23% of the two-party vote to Donald Trump in the 2016 election would have matching excess deaths and reported COVID-19 deaths, while a 100% Republican county would be expected to have a ratio of 1.41, suggesting that nearly forty percent of COVID-19 cases in these counties go unreported. While adding covariates and fixed effects in the subsequent models complicates such simple calculations, we find a similar relationship between county-level Republican-ness and COVID-19 underreporting.

We also note that the coefficient estimates for our various county-level control variables offer a considerable amount of face validity to our model. We find, in particular, that areas with a greater share of seniors are more likely to have underreporting—possibly reflecting both seniors' greater susceptibility to COVID-19 as well as their disproportionate tendency to live in rural, Republican areas—and that greater white population shares and local property values are associated with greater overreporting, all else equal. Perhaps surprisingly, better-educated areas appear to have more underreporting.

To explore the robustness of our results to alternative measurement strategies, we replicate our analysis using a measure of county *ideology*, rather than partisanship. While our theory suggests largely that the effects of local politics on COVID-19 reporting should be primarily driven by party, rather than ideology, it is nevertheless valuable to establish that our results are robust to using an alternative measurement strategy. To measure county ideology, we use estimates of county ideology created using survey data in combination with multilevel regression and post-stratification (MRP) from Tausanovitch and Warshaw (2013). Our results are presented in Table A.1 in the Supplementary Materials. Broadly speaking, our results are consistent with those in Table 1. However, we fail to find a significant relationship between ideology and COVID-19

Table 1: Local Political Preferences and Unreported COVID Deaths

	Dependent variable:			
	Excess Deaths / Reported Covid Deaths			
% Republican	0.53**	0.65**	0.84**	0.68**
	(0.13)	(0.17)	(0.18)	(0.28)
ln(Population)			0.03	0.00
			(0.05)	(0.06)
ln(Density)			−0.04	−0.01
			(0.04)	(0.06)
% Over 65			4.66**	5.85**
			(1.42)	(1.35)
% Under 25			−1.38	−1.05
			(1.08)	(1.06)
% Black			−0.24	−0.60**
			(0.27)	(0.30)
% White			−1.59**	−1.90**
			(0.30)	(0.34)
% High School			0.28	0.55
			(0.45)	(0.58)
% Bachelors			1.37**	1.94**
			(0.57)	(0.66)
Median Income			−0.20	0.55
			(0.37)	(0.44)
Median Home Value			−0.16**	−0.37**
			(0.07)	(0.11)
Constant	0.88**		1.23	
	(0.09)		(0.96)	
State Fixed Effects		✓		✓
Observations	2,999	2,999	2,999	2,999
Adjusted R^2	0.01	0.64	0.12	0.69

Note: Estimates are from OLS regressions with robust standard errors in parentheses. The unit of observation is the county. Median Income and Median Home Value are in 100,000s of dollars. Per-Capita Health Expenditures are in 1,000s of dollars per person. $^{*}p < 0.10$ $^{*}p < 0.05$ (two-tailed test).

death reporting in the model with covariates and state-fixed effects.

Institutions and Declaring Deaths

We continue exploring the relationship between local political preferences and COVID-19 death reporting by examining the potential moderating effects of public health institutions on that relationship. Specifically, we ask whether institutions that should result in more professional public servants in charge of death determinations—such as centralized state-level agencies or appointed, accredited medical examiners—produce a smaller relationship between local political preferences and COVID-19 death reporting than institutions that facilitate the injection of politics into these determinations, such as elected coroners. We do so in two ways. First, examine centralized state-level institutions versus county-level institutions for death determinations; second, we consider whether variation in the appointment or election of those county-level officials matters.

For both of these analyses, we turn to a slight variation on our previous specification:

$$\left(\frac{Estimated\ Excess\ Deaths}{Reported\ COVID\text{-}19\ Deaths}\right)_i = \beta Pct.\ Republican_i \times Institution_i + \gamma Pct.\ Republican + \psi Institution_i + \boldsymbol{\phi}\mathbf{X}_i + \alpha + \epsilon_i \tag{2}$$

In this model specification, we interact our measure of local partisanship with an indicator for whether a particular county has a certain institution. We also include both base terms from the interaction as well as other features of the model inherited from Model 1. We note that one of the institutions we study, centralization, is actually a state-level institution; in models with state fixed effects, therefore, we are unable to generate a coefficient estimate for ψ.

Centralization

We begin by exploring whether using a centralized system at the state level for death investigation and reporting attenuates the relationship between local political preferences and COVID-19 reporting that we document in Table 1 above. All counties in states with a state-level medical examiner office (see Figure 1 above) are indicated as having a centralized system, as is Florida, which uses district-based medical examiners in a state-level system.

Our results are presented in Table 2. We continue to find, as the top row suggests, that local political preferences matter for COVID-19 death reporting. However, that coefficient in this table reflects that relationship strictly in states without centralized systems. The interaction between *Republican* and *Centralized* captures the *difference* in the relationship between Republican vote share and COVID-19 reporting in places with centralized systems, relative to those without. If centralization completely obviated local preferences as an influence, for example, we would expect these to be the same in magnitude as those in the top row, but negative; this would suggest that the marginal effect of local preferences in centralized states would be zero. We do not, however, find this—instead, we find that the coefficient estimates for the interaction are substantively small and fail to achieve statistical significance. This implies that political preferences have a similar relationship to COVID-19 reporting in states with and without centralized systems.

As above, we evaluate the robustness of our findings to alternative measurement strategies. We again replicate the models in Table 2 using the MRP estimates of county ideology from Tausanovitch and Warshaw (2013). We continue to find little to no evidence of heterogeneity across centralized and non-centralized systems using this alternative data source.

Table 2: Preferences, Death Reporting Centralization, and Unreported COVID Deaths

	Dependent variable:			
	Excess Deaths / Reported Covid Deaths			
% Republican	0.57**	0.67**	0.88**	0.70**
	(0.16)	(0.20)	(0.20)	(0.29)
Centralized System	0.11		0.21	
	(0.20)		(0.20)	
Republican × Centralized	0.04	−0.06	−0.21	−0.09
	(0.29)	(0.38)	(0.29)	(0.34)
ln(Population)			0.04	0.01
			(0.05)	(0.06)
ln(Density)			−0.04	−0.01
			(0.04)	(0.06)
% Over 65			4.63**	5.86**
			(1.42)	(1.36)
% Under 25			−1.24	−1.04
			(1.11)	(1.07)
% Black			−0.19	−0.60**
			(0.27)	(0.30)
% White			−1.53**	−1.89**
			(0.30)	(0.33)
% High School			0.29	0.55
			(0.45)	(0.58)
% Bachelors			1.25**	1.93**
			(0.61)	(0.67)
Median Income			−0.18	0.55
			(0.37)	(0.44)
Median Home Value			−0.16**	−0.37**
			(0.07)	(0.11)
Constant	0.82**		1.06	
	(0.11)		(0.99)	
State Fixed Effects		✓		✓
Observations	2,999	2,999	2,999	2,999
Adjusted R^2	0.01	0.64	0.12	0.69

Note: Estimates are from OLS regressions with robust standard errors in parentheses. The unit of observation is the county. Median Income and Median Home Value are in 100,000s of dollars. $^*p < 0.10$ $^*p < 0.05$ (two-tailed test).

Local Selection Method

Next, we turn our attention to the method used to select death investigation officials at the local level. In states where death investigation systems are not centralized, coroners or medical examiners are generally selected at the county level. As we note above, it may be the case that the same selection method is used throughout the state, or it may be that different counties within a state use different methods to select officials. We expect elections to induce greater pressure among officials to hew their death determinations to reflect local preferences. In contrast, appointed officials are further insulated from such pressures and are often selected based on their qualifications, which may increase their objectivity as well.

We again use Model 2 to estimate the heterogeneous effect of local political preferences across institutional setups. For these models, we limit our sample to non-centralized states. The results are presented in Table 3. The top line is the coefficient estimates for *Percent Republican* and gives the relationship between local political preferences and COVID-19 death reporting in counties that use an appointed medical examiner or coroner. In general, we find less evidence of responsiveness to local preferences in such jurisdictions than we find in our previous estimates in Tables 1 and 2 above. The coefficient estimates for *Elected Coroner* give the average hypothetical difference in our outcome measure in an all-Democratic county with an elected rather than appointed death investigation official. Particularly in our models with covariates, we find some evidence that election in such (fictional) places would be associated with higher levels of *over*-reporting of COVID-19 deaths. Our main quantity of interest is the interaction between these two variables. While our findings are mixed, in the more credible models with county-level covariates, our estimates for this interaction are positive and statistically significant ($p < 0.05$). This suggests greater responsiveness to local preferences in terms of COVID-19 underreporting in more-Republican areas. As above, our covariate estimates are broadly consistent with expectations.

To further emphasize the relationship between COVID-19 death reporting, local political

Table 3: Local Political Preferences, Local Selection Methods, and Unreported COVID Deaths

	Dependent variable:			
	Excess Deaths / Reported Covid Deaths			
% Republican	0.33*	0.31	0.44	−0.07
	(0.20)	(0.21)	(0.27)	(0.35)
Elected Coroner	−0.05	−0.34	−0.36*	−0.68**
	(0.20)	(0.22)	(0.20)	(0.25)
Republican × Elected	0.28	0.50	0.71**	0.97**
	(0.30)	(0.34)	(0.29)	(0.37)
ln(Population)			0.04	−0.07
			(0.05)	(0.06)
ln(Density)			−0.01	0.10*
			(0.04)	(0.05)
% Over 65			7.05**	8.85**
			(1.90)	(1.88)
% Under 25			−0.73	0.30
			(1.41)	(1.37)
% Black			−0.69**	−0.65*
			(0.32)	(0.34)
% White			−2.12**	−2.00**
			(0.40)	(0.39)
% High School			−0.05	−0.00
			(0.52)	(0.63)
% Bachelors			1.26*	1.74**
			(0.68)	(0.72)
Median Income			−0.01	1.07**
			(0.41)	(0.51)
Median Home Value			−0.21**	−0.47**
			(0.08)	(0.13)
Constant	0.89**		1.34	
	(0.12)		(1.09)	
State Fixed Effects		✓		✓
Observations	2,382	2,382	2,382	2,382
Adjusted R^2	0.01	0.63	0.14	0.68

Note: Estimates are from OLS regressions with robust standard errors in parentheses. The unit of observation is the county. Median Income and Median Home Value are in 100,000s of dollars. $^*p < 0.10$ $^*p < 0.05$ (two-tailed test).

preferences, and death investigator selection method, we visualize the predicted values from the rightmost model in Table 3 in Figure 3.[14] In the left panel, we plot the predicted value of our outcome across all hypothetical values of Republican vote share for a county with an appointed coroner. We find a relatively flat relationship; the higher-than-one value across the range of GOP support suggests that in most places with appointed death investigators there was some amount of underreporting of COVID-19 deaths. In the right panel, on the other hand, we find a strong effect of local preferences as measured with 2016 Republican presidential vote share. In the most Democratic counties with elected death investigators, we would expect to find substantial overreporting of COVID-19 deaths; in the most Republican counties, we would expect to find substantial underreporting of COVID-19 deaths; strikingly, the predicted values line crosses one at almost exactly 50% – a politically evenly split county, though for both panels we caution against over-interpreting the levels of the predicted values due to the fixed effects model used to generate them. Nevertheless, in this particular model specification we find a substantially different level of responsiveness to constituent preferences in the reporting of COVID-19 deaths.

As with our previous analyses, we replicate Table 3 using estimates of county ideology from Tausanovitch and Warshaw (2013). While we continue to find a positive interaction effect between our measure of district preferences and electing a local death investigator, these interactions fail to achieve statistical significance at conventional levels.

Discussion and Conclusion

In this study, we provide what we believe to be the first evidence that local political preferences systematically shaped the reporting of official death data during the COVID-19 pandemic, the most significant public health emergency in the past century. Data on COVID-19 cases and deaths was an essential part of the public health response to COVID-19, including state and

[14] To generate predicted values, we set all covariates to their median values and used the fixed effect for Mississippi, the 16th smallest out of 32 estimated state fixed effects.

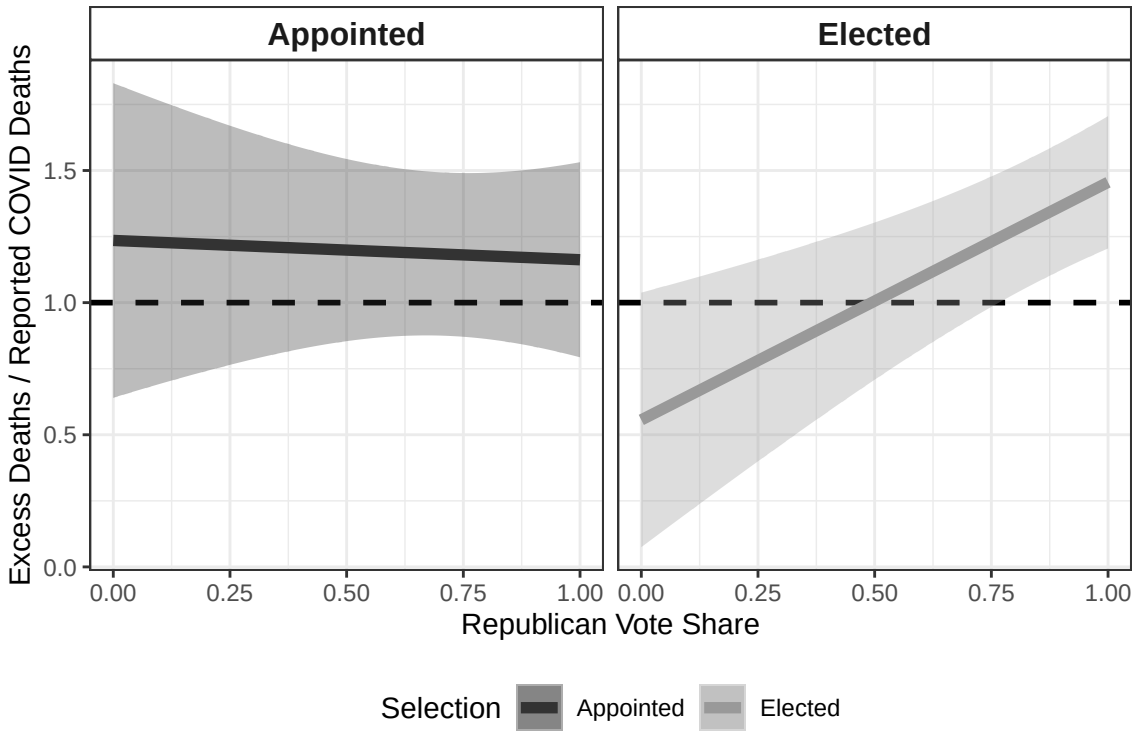

Figure 3: Selection Method and COVID-19 Death Reporting

Note: Figure plots predicted values based on rightmost model in Table 3. The horizontal line at one indicates the level at which reported COVID-19 deaths equal the estimated excess deaths in the county.

local "stay at home" orders, mask mandates, and quarantine requirements. We show that this data was systematically incorrect as a function of local preferences.

The reporting of data on deaths in the United States involves a multitude of actors: doctors and other health officials, state-level officers, and elected and appointed county officials with a variety of qualifications (or lack thereof). While our analyses point to wide-ranging effects of local preferences and some limited effects for institutional variation in the method of selecting death investigators (coroners and medical examiners), we are limited by the available data in our ability to directly ascertain who, in particular, is responsible for systemic over- or under-reporting. In the future, we hope to use more detailed data to explore to what extent our findings are driven by medical officials, who may be shaped either by patient or family pressures, and who are themselves

likely to reflect local preferences, or public death investigators, who may be directly accountable to those they serve.

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Appendix

Electoral Accountability and Bureaucratic Discretion

Jordan Duffin Wong, Michael P. Olson, and Andrew Reeves

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A Additional Results and Robustness Checks **A—2**
A.1 Tausanovitch and Warshaw . . . . . A—2

A Additional Results and Robustness Checks

A.1 Tausanovitch and Warshaw

Table A.1: Local Political Preferences and Unreported COVID Deaths

	Dependent variable:			
	Excess Deaths / Reported Covid Deaths			
County Ideology	0.85**	1.16**	0.60**	0.46
	(0.10)	(0.16)	(0.17)	(0.32)
ln(Population)			0.04	0.01
			(0.05)	(0.06)
ln(Density)			−0.03	−0.01
			(0.04)	(0.06)
% Over 65			4.64**	5.79**
			(1.42)	(1.37)
% Under 25			−1.27	−0.95
			(1.09)	(1.07)
% Black			−0.25	−0.65**
			(0.27)	(0.30)
% White			−1.30**	−1.64**
			(0.29)	(0.29)
% High School			0.24	0.62
			(0.44)	(0.56)
% Bachelors			1.21*	1.77**
			(0.66)	(0.80)
Median Income			−0.12	0.61
			(0.38)	(0.48)
Median Home Value			−0.16**	−0.38**
			(0.07)	(0.11)
Constant	1.00**		1.30	
	(0.03)		(0.92)	
State Fixed Effects		✓		✓
Observations	2,999	2,999	2,999	2,999
Adjusted R^2	0.02	0.65	0.12	0.69

Note: Estimates are from OLS regressions with robust standard errors in parentheses. The unit of observation is the county. Median Income and Median Home Value are in 100,000s of dollars. $^*p < 0.10$ $^*p < 0.05$ (two-tailed test).

Table A.2: County Ideology: Centralized vs. De-Centralized Death Investigation

	Dependent variable:			
	Excess Deaths / Reported Covid Deaths			
Conservatism	1.08**	1.42**	−0.07	0.47
	(0.22)	(0.42)	(0.30)	(0.56)
Centralized System	0.20**		0.08	
	(0.09)		(0.07)	
Conservatism × Centralized	−0.36	−0.49	0.14	0.05
	(0.27)	(0.48)	(0.27)	(0.43)
ln(Population)			0.00	0.06
			(0.07)	(0.09)
ln(Density)			−0.03	−0.07
			(0.06)	(0.09)
% Over 65			5.62**	5.59**
			(1.97)	(1.78)
% Under 25			1.22	0.86
			(1.61)	(1.51)
% Black			0.10	−0.34
			(0.38)	(0.46)
% White			−1.09**	−1.71**
			(0.35)	(0.38)
% High School			1.61**	1.73*
			(0.77)	(0.99)
% Bachelors			0.16	1.38
			(1.03)	(1.13)
Median Income			0.75	0.69
			(0.61)	(0.71)
Median Home Value			−0.25**	−0.33**
			(0.10)	(0.14)
Constant	0.96**		−0.68	
	(0.08)		(1.45)	
State Fixed Effects		✓		✓
Observations	1,234	1,234	1,234	1,234
Adjusted R^2	0.03	0.61	0.13	0.65

Note: Estimates are from OLS regressions with robust standard errors in parentheses. The unit of observation is the county. Median Income and Median Home Value are in 100,000s of dollars. $^*p < 0.10$ $^*p < 0.05$ (two-tailed test).

Table A.3: County Ideology: Elected vs. Appointed Death Investigators

	Dependent variable:			
	Excess Deaths / Reported Covid Deaths			
Conservatism	0.81**	1.13**	0.49*	0.17
	(0.18)	(0.24)	(0.27)	(0.45)
Elected Coroner	0.01	−0.16*	0.02	−0.21**
	(0.07)	(0.09)	(0.07)	(0.11)
Conservatism × Elected	0.29	0.23	0.38	0.60
	(0.26)	(0.33)	(0.26)	(0.37)
ln(Population)			0.03	−0.07
			(0.05)	(0.06)
ln(Density)			0.02	0.12**
			(0.04)	(0.06)
% Over 65			6.93**	8.67**
			(1.89)	(1.91)
% Under 25			−0.61	0.34
			(1.41)	(1.38)
% Black			−0.85**	−0.82**
			(0.31)	(0.33)
% White			−1.90**	−1.89**
			(0.35)	(0.33)
% High School			−0.01	0.09
			(0.52)	(0.59)
% Bachelors			1.21	1.80*
			(0.79)	(0.94)
Median Income			0.06	1.05*
			(0.44)	(0.57)
Median Home Value			−0.22**	−0.48**
			(0.09)	(0.14)
Constant	0.91**		1.19	
	(0.04)		(1.08)	
State Fixed Effects		✓		✓
Observations	2,382	2,382	2,382	2,382
Adjusted R^2	0.03	0.64	0.13	0.68

Note: Estimates are from OLS regressions with robust standard errors in parentheses. The unit of observation is the county. Median Income and Median Home Value are in 100,000s of dollars. $^*p < 0.10$ $^*p < 0.05$ (two-tailed test).