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The Politics of Rural Hospital Closures

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Abstract

Who do citizens hold responsible for outcomes and experiences? Hundreds of rural hospitals have closed or significantly reduced their capacity since just 2010, leaving much of the rural U.S. without access to emergency health care. I use data on rural hospital closures from 2008 to 2020 to explore where and why hospital closures occurred as well as who–if anyone–rural voters held responsible for local closures. Despite closures being over twice as likely to occur in the Republican-controlled states that did not expand Medicaid, closures were associated with reduced support for federal Democrats and the Affordable Care Act following local closures. I show that rural voters who lost hospitals were roughly 5–10 percentage points more likely to vote Republican in subsequent presidential elections. If anything state Republicans seemed to benefit in rural areas from rejecting Medicaid and resulting rural health woes following the passage of the ACA. These results have important implications for population health and political accountability in the U.S.

Keywords Elections · Voting · Health politics · Rural politics

> "*The reason rural hospitals in South Carolina have closed is because Obamacare has been a disaster for our state.*" - Senator Lindsey Graham (R-SC), 10/30/2020.

Since the 1980s, hundreds of rural communities have lost their access to local emergency medicine as swaths of rural hospitals have closed their doors (Hart et al., 1991; Kaufman et al., 2016; O'Connor, 2023; Planey et al., 2024). The causes of rural hospital closures are multifaceted and complex. The older, less healthy, less likely to be insured, and lower-income populations of rural areas leads to the systematic under

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provision of medical services in rural areas generally, especially as for-profit actors have expanded their influence in U.S. health care (Bruch et al., 2024; Douthit et al., 2015; Hoffman, 2012; Kaufman et al., 2016; Olson, 2022). Outside of these compositional differences, important policy differences between states under varied partisan control have influential in explaining more recent closures.

Specifically, the politics of the Affordable Care Act (ACA) and subsequent state decisions over whether to expand Medicaid under the ACA have shaped patterns of recent rural hospital closures. Due to the Supreme Court's ruling in *National Federation of Independent Business v. Sebelius*, states were given the authority to opt out of the expanded Medicaid provisions of the ACA. Despite the many rural health and financial gains of the ACA, many heavily Republican-controlled states opted out (Jacobs & Callaghan, 2013; Béland et al., 2016; Hertel-Fernandez, 2019; Cohn, 2021). These choices imperiled the health access of non-expansion state's rural residents. I show using data from the UNC Sheps Center that after the *Sebelius* decision–but not before–upwards of 80% of rural hospital closures have occurred in the Republican states that did not expand Medicaid. In contrast, closures have become exceedingly rare in the states that expanded Medicaid under the ACA.

As the quote above from Senator Lindsey Graham in the epigraph suggests, Republican elites have attempted to connect rural hospital closures to the ACA, blaming the Democratic Party and the ACA for the recent negative health experiences of rural voters. Who do people blame for these types of changes to their health care? How do policy-relevant experiences versus the policy responses of politicians' shape who voters hold responsible? These questions strike at the foundations of democratic government. How and which voters respond to government failure directly affects who holds power and how important social problems are handled (Malhotra & Kuo, 2008; Patterson, 2022). More theoretically, answers to these questions have important implications for our understandings of political accountability and policy feedback in the U.S.

In the U.S., the institution of federalism and subsequent shared policymaking authority between federal and state governments creates a potential roadblock for accountability by blurring who is responsible for what. Significant research suggests that, although federalism may complicate matters relative to other political systems in this way (Powell Jr & Whitten, 1993), voters may be able to appropriately hold politicians accountable for salient forces that fall under politicians' purview (Arceneaux, 2006). Conversely, other scholars have shown that political accountability in the U.S. tends to be presidency-centered as a result of federalism, with the president–often times only the president–receiving the blame or credit for a variety social phenomenon (Achen & Bartels, 2016; Heersink et al., 2020; Malhotra & Kuo, 2008; Sances, 2017). While state government officials are rarely penalized for their performance in office (Rogers, 2017, 2023a).

Here, I argue that part of what has complicated the study of varied political accountability and led to competing findings has been the focus on events or factors in which the choices or responses of politicians has not clearly varied for voters. For example, in the study of accountability and natural disasters (Achen & Bartels, 2016; Heersink et al., 2020; Malhotra & Kuo, 2008), whether politicians actually made differing decisions, supported alternative policy remedies, or provided disparate care

for voters in response to the unfolding situation is not typically formally considered.[1] Moreover, while the disaster shock may have been out of the control of the politician–surely no politicians are rooting for the occurrence of a natural disaster—policy preparedness or culpability for and responsiveness to the experiences of voters may provide meaningful information to them. Indeed, in their formal critique of the accountability literature, Ashworth et al. (2018) argue that politicians' responses to the forces of nature may be as consequential as the forces of nature themselves for voting decisions.[2]

I use the case of rural hospital closures, influenced by the different partisan politics of the ACA and policy courses of states surrounding Medicaid expansion, to address this gap in our understanding. To do so, I merge data on rural hospital closures from 2008–2020 with data on county-level demographics, health access, and economic outcomes. To explore whether voters held local Republican politicians, who have long-resisted sweeping reforms to the American health care system and rejected Medicaid expansion explicitly, versus the federal Democratic Party, which "owns" the issue of health and provided the new resources responsible for curbing local closures and expanding health access, accountable for closures, I match respondents based on whether they reside in states with Republican state governments and did not expand Medicaid (Clinton & Sances, 2018; Egan, 2013; Hacker, 1998; Hertel-Fernandez, 2019; Lerman et al., 2017; Petrocik, 1996; Sances & Clinton, 2019; Starr, 1982). To so, I use nearest neighbor matching (Stuart et al., 2011) to construct a matched set of control counties from the most similar rural communities that did not lose their sole hospital. Because over one-fourth of all active rural hospitals remain in danger of closing in the near future (Adams, 2023; Chartis, 2020) control communities face similar levels of closure risk, implying the treatment of closure is likely *as-if* random conditional on observable factors.

I use the matched set of communities as a sampling frame to merge with survey data from Cooperative Election Study (CES) during the same period. With these survey data, I estimate the relationship between losing a local hospital and rural Americans presidential and gubernatorial voting. Despite the greater responsibility of state Republicans in contributing to recent rural hospital closures, statistical analyses reveal that rural voters largely followed Senator Graham's attribution suggestion in the epigraph above. Rural voters who lost their local hospital were 5–10 percentage points more likely to support Republicans in the subsequent presidential election, even increasing their support state Republican gubernatorial candidates by similar amounts. Mechanistically, I show that these voting trends are explained by rural voters lowering their approval of the ACA, Barack Obama, and state Democrats following closures. Exploiting the timing of closures, I use placebo tests and within-county robustness checks to show that these partisan differences did not exist prior to the closures.

[1] Though see Gasper and Reeves (2011), who find that disaster declarations are rewarded by voters following natural disasters.

[2] We know, for example, that presidents regularly vary their responses to disasters and other economic shocks based on partisan and electoral considerations (Reeves 2011).

These findings have important implications for the status of rural health and electoral politics in the U.S. Electorally, these results highlight the potential electoral moral hazard in which many rural Americans find themselves. Not expanding Medicaid has limited healthcare access among vulnerable state residents. However, Republican state incumbents have largely been insulated from electoral backlash. For population health, these findings less positively imply that some of the least healthy and most needy rural communities are likely to experience continued declines in access to health as more rural hospitals close. Until especially state-level Republican elites are electorally incentivized to improve rural health care access, more aggressive health policy solutions are pursued by the federal government, or advocates take-up ballot initiatives (Franko & Witko, 2018), access to health care in rural America is likely to become more restricted.

The Politics of Rural Hospital Closures

Access to healthcare in rural America has long been limited (Getzen, 2022; Grey, 2002; Hoffman, 2012). The largely (and increasingly) private and for-profit American health care industry naturally incentivizes medical professionals to provide services to the largest amount of paying, privately insured people possible (Douthit et al., 2015; Grogan, 2023; Hacker, 1998; Olson, 2022). Consequently, sparsely populated, less healthy, and less likely to be insured rural communities tend to be underserved by private markets (Douthit et al., 2015; Kaufman et al., 2016). To compensate, the federal government has periodically provided for the construction of hospitals and other forms of medical infrastructure in rural communities. For instance, the Public Works Administration during the New Deal and the Hill-Burton Act of 1946 led to the construction hundreds of rural hospitals between the 1940s and 1980s (Brinker & Walker, 1962; Grey, 2002; Smith, 2006; Thomas, 2006; Wolfson & Hopes, 1994). However, many rural hospitals were constructed in areas in which the population was so sparse or so low-income that many struggled to financially survive, especially as health costs increased in the 1980s (Hart et al., 1991; Planey et al., 2024; Probst et al., 1999).

Just as distant policies provided for the construction of many rural hospitals, so too have more recent health policy decisions played critical roles in their recent destruction. For instance, the Emergency Medical Treatment and Labor Act (EMTALA) of 1986 required hospitals to provide appropriate care for all individuals who arrived in emergency departments regardless of their insurance status or income (Hoffman, 2012). In rural communities, this policy change meant that hospitals, which were often the only forms of medical infrastructure present to begin with, started providing emergency and even routine medical care for the many lowerincome and uninsured residents of their communities essentially for free. Scholars estimate that emergency room visits increased by over 25% in the twenty years that followed EMTALA (Fields et al., 2001; McDonnell et al., 2013; O'Connor, 2023; Rust et al., 2009).

This surge caused many rural hospitals to take on increasing "uncompensated care" loads– that is care not paid for insurance companies or individuals (Camilleri, 2018; Dranove et al., 2016; Kaufman et al., 2016; O'Connor, 2023; Rubin, 2018). As

a result of the poor financing of many rural hospitals historically and later EMTALA, hundreds of rural hospitals across the U.S. have closed since the 1980s, ceasing emergency medical services for even larger swaths of the rural U.S. (Kaufman et al., 2016; O'Connor, 2023; Rubin, 2018). Since 2010 alone, roughly 200 rural hospitals have permanently closed or have closed on a limited basis, severely limiting their offered services (Kaufman et al., 2016; Rubin, 2018). Figure 1 maps the number of these more recent hospital closures by state. As can be seen, southern and heavily rural states like Georgia, Tennessee, and especially Texas lead the country in the number of rural hospital closures. The politics of the Affordable Care Act (ACA) and state decisions over whether to expand Medicaid under the ACA have been influential in these shaping these more recent closures.

The ACA included many components specifically designed to improve the quality of health care in rural areas, such as expanded medical residency programs options and incentives to work in rural hospitals to recruit health professionals to rural areas generally (Cohn, 2021; Kaiser, 2013). In addition to these rural-focused provisions, the expansion of Medicaid to individuals making 138% of the poverty line or below under the Affordable Care Act was likely to deliver significant rural dividends as higher percentages of rural Americans lacked health insurance at the time (Camilleri, 2018; Dranove et al., 2016; Lindrooth et al., 2018). Medicaid expansion promised to be beneficial not only for the insured, but the finances of rural hospitals.

Because rural hospitals had long carried significant "uncompensated care" costs due to providing legally required care for lower-income and uninsured individuals, the ACA offered a financial life-line to rural hospitals by reducing the number of insured people. However, not all rural hospitals benefited equally from this provision of the ACA. Due to the U.S. Supreme Court's ruling in *National Federation of Independent Business v. Sebelius* (2012), states were given the authority to opt in or out of expansion of Medicaid under the ACA. As a result, many Republican-

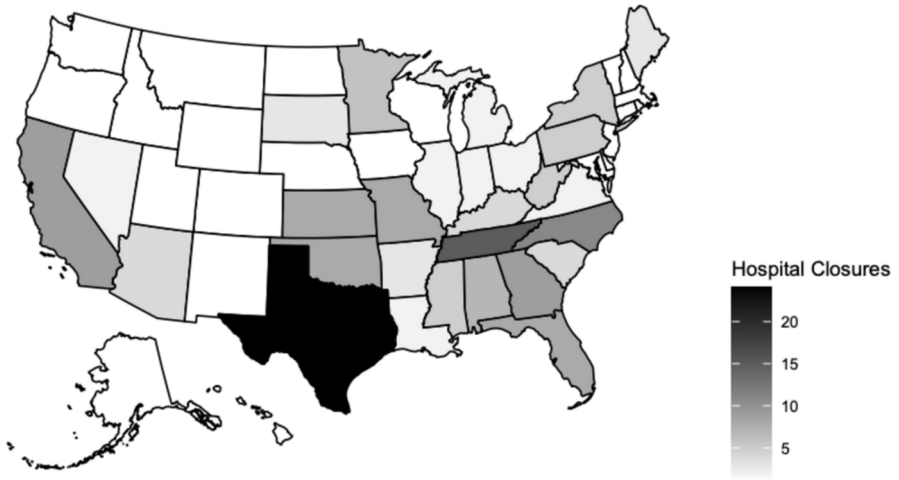

Fig. 1 Map of States with Rural Hospital Closures. *Notes*: Fig. 1 presents the total number of hospital closures experienced in the state between 2005 and 2020. Sources: University of North Carolina Sheps Center

controlled states rejected Medicaid expansion, bypassing the many health gains of the law (Jacobs & Callaghan, 2013; Béland et al., 2016; Hertel-Fernandez, 2019).

These state decisions had important effects on the trajectory of health generally and the rural hospital closures specifically. As Medicaid expansion increased the number of insured Americans (Clinton & Sances, 2018; Sances & Clinton, 2021), uncompensated care loads decreased significantly in rural hospitals (Camilleri, 2018; Dranove et al., 2016). In contrast, rural hospitals in states that have not expanded Medicaid have continued to face soaring uncompensated care costs, leading to increasing rates rural hospital closures (Camilleri, 2018; Dranove et al., 2016; Lindrooth et al., 2018). Moreover, health care and insurance costs increased for some privately insured (rural) residents, potentially leading to reduced service uptake that asymmetrically affected the finances of already struggling rural hospitals (Dranove et al., 2016; Hobbs & Hopkins, 2021; Kaufman et al., 2016; Miller & Wherry, 2017). In essence, the partisan decision to expand Medicaid or not provided clear and meaningfully different responses to the unfolding rural hospital financial crisis, with Democratic states effectively ending their rural hospital closure threat.

Figure 2 graphically displays the relationship between state Medicaid decisions and closures. Prior to the passage of the ACA in 2010 and the 2012 *Sebelius* decision, similar rates of hospital closures occurred between the states that later expanded Medicaid and those that did not. However after 2012, the number of rural hospital closures in expansion states fell to 0–1 per year, while non-expansion states experienced rapidly increasing rates of rural hospital closures. Figure 2 reveals that these states have lost 10–20 rural hospitals per year since the 2012 *Sebelius* decision led many Republican-controlled states to announce their opposition to expansion, leading many financially wavering Republican-state hospitals to choose to close their

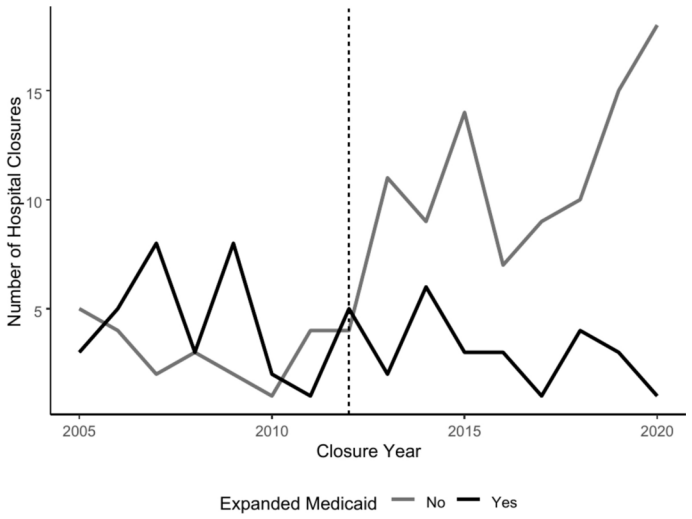

Fig. 2 Rural Hospital Closures, the ACA, and Medicaid Expansion. *Notes*: Fig. 2 presents the annual total number of hospital closures by whether or not the state expanded Medicaid between 2013–2019. The dotted line notes the 2012 *National Federation of Independent Business v. Sebelius* that gave states the power to opt in or out of Medicaid expansion. *Sources*: University of North Carolina Sheps Center

doors in response even before the major components of the ACA were implemented. While many factors influence whether a particular hospital closes, scholars have shown that state Medicaid expansion decisions are one of the most important factors explaining in which states closures continue to occur, with as many one-third of remaining rural hospital in nonexpansion states facing potential closure in the future (Kaufman et al., 2016; Chartis, 2020; Adams, 2023).

The community-wide effects of these rural hospital closures are not trivial. Rural areas tend to already face under-provision of healthcare services and heightened need for them. These hospital closures reduce local residents' abilities to use emergency care (which is commonly used by uninsured individuals), lead to decreases in access to other forms of health care (including preventative medicine, responsible pain management and mental health), and can cause other medical professionals to abandon the area all together–further exacerbating all of these issues (Wishner et al., 2016). Moreover, losing a local hospital directly costs lives, as distance to emergency health care is commonly associated within increased patient mortality (Nicholl et al., 2007).

Community hospital closures also have important economic affects, leading to large reductions in employment and declines in personal spending and income in the affected areas (Holmes et al., 2006). When a rural hospital closes, the entire community is affected. Needy people lose their access to health care and many others their lose their jobs, providing a particularly large economic shock to the many rural communities in which hospitals serve as the largest employer (Winant, 2021). Some scholars suggest that between 2012 and 2016–when many of these hospital closures occurred–rural voters began to respond to their declining health and economic conditions by supporting Donald Trump and the Republican Party more broadly (Brown & Mettler, 2023; Cramer, 2016; Gest, 2016; Goodwin et al., 2018; Monnat, 2016; Wuthnow, 2018). Moreover, as the quote from Senator Graham at the onset of this manuscript suggests, Republican politicians attempted to deflect responsibility and place the blame for local closures on the ACA and the federal Democratic Party.

How Do Citizens Respond in a System of Federalism

Understanding how citizens respond electorally to life changing social forces–like when access to health care is suddenly cut off–is of theoretical and practical importance. Theoretically, these questions strike at core debates in the political accountability and policy feedback literatures over whether voters respond to government and environmental changes. In the real world, these questions have implications for the trajectories of health crises facing the public. In competitive partisan environments, where parties offer radically different policy responses to health crises, who voters hold accountable for their health experiences can have important and direct consequences for who lives and dies (Patterson, 2022). However, the institution of federalism may complicate American voters' abilities to attribute blame and credit.

Significant scholarly debate exists in both the political accountability and policy feedback literatures for how much of a problem federalism poses in this regard. Some empirical studies have provided reason for optimism for the ability of voters to function and respond appropriately to these changes in a federalist system. While federal-

ism may create a harder decision environment than that of unitary system (Powell Jr & Whitten, 1993; Soroka & Wlezien, 2010), some have argued that voters hold the correct politicians accountable for their job functions if that information is made salient (Arceneaux, 2006). Similarly, Stein (1990) finds that voters tend to hold governors responsible for state economic performance. Other scholars have found that voters generally hold incumbents at all levels accountable (de Benedictis-Kessner & Warshaw, 2020), suggesting we may observe local level accountability as well–especially in a crisis like the hospital crisis that was salient to affected voters. Moreover, significant work suggests that the health inequalities produced by state Medicaid differences are stark and deeply meaningful, especially for the people affected by the program (Campbell, 2014; Michener, 2018). As a result, we might expect voters to observe and consider who is more responsible for the loss of their local hospital. According to this perspective, we would expect the hospital crisis to cause voters to blame state Republicans for declining local health access.

H1:*Hospital closures will lead to decreased support for state Republicans.*

Alternatively, studies have documented how federalism potentially blurs accountability, creating a presidency-centered system where the president and the president's party receives the blame or credit for both local and national phenomena (Achen & Bartels, 2016; Healy et al., 2010; Heersink et al., 2020; Malhotra & Kuo, 2008; Sances, 2017). Due to Americans' little knowledge of state and local government affairs (Carpini & Keeter, 1996; Rogers, 2023a), voters tend to evaluate and hold accountable state legislators based on their more general evaluations of the president (Rogers, 2017). Of relevance here, Rogers (2023b) finds that only 50% of voters know whether their state has expanded Medicaid. Given the high salience and deeply divisive partisan politics of the ACA over the last decade and the Democratic Party's more general "ownership" of health policy matters (Egan, 2013; Hacker & Pierson, 2018; Hopkins, 2023; Jacobs & Callaghan, 2013; Lerman & McCabe, 2017; Lerman et al., 2017; Petrocik, 1996; Sances & Clinton, 2019), we may expect voters to observe worse health outcomes–especially in the Obama/ACA era–to blame President Obama, the ACA, and the Democratic Party for these negative health experiences.

These studies suggest that presidents and the president's party may be held accountable by aggrieved voters for how the decisions of political actors at lower levels stymied their own partisan federal policies. Further, these findings imply–especially Rogers (2017)–that political actors at lower levels are unlikely to be held accountable for their own performance or actions related to these matters. Political actors like members of Congress or state government officials likely contribute to the presidency and party-centered nature of accountability, as they often focus their efforts on undermining presidential policy items and blame the president for most negative news (Herd & Moynihan, 2019; Lee, 2016; Noble, 2024). Consider Fig. 3, which provides a clipping from a 2015 press release and policy report from the Senate Republican Policy Committee and Missouri Senator Roy Blunt blaming recent rural hospital closures on "Obamacare," the Democratic Party, and President Obama. The report declares, "Obamacare has been a major factor causing rural hospitals to shut down." In a presidency-centered system, especially one where the many of the

Fig. 3 Republican's Blame Rural Closures on "Obamacare". *Notes*: Figure 3 *Source: Senate Republican Policy Committee, October 21, 2015,*https://www.rpc.senate.gov/policy-papers/obamacare-crushing-rural-hospitals

politicians from the other party level blame at the president's feet such as this, we may expect a local hospital closure to reduce support for the president but not other more local political actors.

H2:*Hospital closures will lead to decreased support for federal Democrats.*

Alternatively, theories of retrospective voting–even biased retrospective voting–suggest that voters will hold incumbent politicians accountable for important outcomes, economic and otherwise (Achen & Bartels, 2016; Fiorina, 1981; Key, 1966). Significant empirical scholarship has shown that incumbents at all levels of government are held electorally accountable for outcomes, regardless of their ultimate culpability (Kramer, 1971, 1983; Arceneaux, 2006; Duch, 2008; Healy & Lenz, 2014; Bartels, 2014; Achen & Bartels, 2016; Sances, 2017; de Benedictis-Kessner & Warshaw, 2020). Thus, we may expect state Republicans *and* federal Democrats to be blamed for local closures.

H3:*Hospital closures will lead to decreased support for federal Democrats and state Republicans.*

Data and Methods

To test these hypotheses, I focus on the shock of experiencing a hospital closure in one's community. While demographic differences between urban and rural areas explain why rural areas are more vulnerable to experiencing these shocks (e.g. rural places tend to be older and less healthy Lindrooth et al. (2018); Wishner et

al. (2016); Kaufman et al. (2016); Carr and Kefalas (2009)) many rural hospitals in non-expansion states face similar risks of closure (Adams, 2023; Chartis, 2020). As a result, conditional on observable differences in the kinds demographic variables known to influence rural hospital financial well-being (e.g. the health of the population, population income, Medicaid expansion status, etc.), exactly which rural hospitals ultimately close and, thus, which rural voters lose their access to health care is essentially quasi-random.

For my analyses, I gather data on hospital closures from the University of North Carolina Sheps Center. The Sheps Center provides the location and timing of every hospital closure in the U.S. since 2005. With these data, I extract information on the location of each hospital closure and when the closure occurred. For my purposes here, I focus on the closures that occurred from 2008–2020—the closures plausibly connected with the politics of the ACA (Kaufman et al., 2016).

I further restrict my sample to only the complete closures in Republican and non-Medicaid expansion states, to improve my ability to answer the theoretical questions of interest. If we are interested in exploring whether federal Democrats or state Republicans are blamed, we must look at cases where state politicians (Republicans) differ from politicians at the federal level (Democrats) who took alternative courses of action. More practically, this limitation reflects the fact that all Democratic states expanded Medicaid and, as result, since 2012 only three rural hospitals have closed in Democratic states–further revealing the importance Medicaid expansion in driving these patterns. Thus, to better test the theory at hand I remove these three outlier cases from the analyses and focus on the 90% of closures that occurred in non-expansion and Republican states.[3]

With this subset of closures, I aggregate the available geospatial data of each hospital closure to the county level and define a unit as being treated if a hospital closure occurred in that county. Though others may have been affected by the closure, the counties where the hospitals are located are where people are most likely to have directly experienced the shock and most significantly had their access to care to altered. Following the definition used by the UNC Sheps Center and the U.S. Office of the Inspector General, I consider a hospital to be closed if the facility has "stopped providing general, short-term, acute inpatient care." I did not code a hospital "closed" if it, "merged with, or was sold to, another hospital but the physical plant continued to provide inpatient acute care, [c]onverted to critical access status, or [b]oth closed and reopened during the same calendar year and at the same physical location."[4] I subset to the 52 rural hospitals (counties) meet these criteria.[5]

[3] Looking at these three cases of Democratic-state ACA closures reveals that in two of three cases, Republican voting for President increased in the county following the closure, while one showed no evidence of this change.

[4] https://www.shepscenter.unc.edu/programs-projects/rural-health/rural-hospital-closures/.

[5] One treated unit posses an issue for this strategy. Little River Health Care shut down two hospital branches both within Milam County, TX in 2018 (Collins 2018). In the in-text analyses, I remove this case given its outlier status as going from numerous hospitals to none. In the appendix, I replicate the primary analyses including Milam County and its' algorithmic match (both in-state and using the nationwide matching strategies). The results are indistinguishable regardless of how Milam County is treated.

Defining a control group for these affected communities is a bit more difficult than one may assume. We may naturally want to compare individuals in counties with and without hospital closures, but these kinds of counties can be highly varied. Counties that have experienced hospital closures tend to be more rural, poorer, and have lower quality health than the broader set of all non-closure counties. To help construct a more comparable control group, I collect data at the county-level for all U.S. counties on their demographic characteristics from the U.S. Census and information on their health care infrastructure and economics from the Robert Wood Johnson Foundation County Health Rankings.

I preprocess these data using the "MatchIt" package in R (Stuart et al., 2011). Specifically, I use the program to predict treatment eligibility (being affected by a hospital closure between 2008–2020) using nearest-neighbor matching as a function of a county's percentage of population that is rural, Black, Hispanic, over the age of 65, in poor or fair health, and uninsured, as well as the median household income and the number of hospitals open in each community at the beginning of the period and later expansion status. Specifically, I limit matches to communities with two or less hospitals at the start of the period to focus on communities that had similarly limited levels of hospital access prior to treatment unit's hospital closure and to allow for the loss of a hospital to result in the loss of hospital access in the community.

After matching, there are essentially no substantive differences between the communities. Further, because the closure risk facing rural hospitals is so widely-shared (Adams, 2023; Chartis 2020) whether a particular rural county is treated with the shock of a closure or is eligible to be in the control group is quasi-exogenous conditional on the very factors included in the matching process (e.g. sparse populations, uninsured percentages, poor health, age, income, expansion status). Once these basic demographic differences are accounted for, closure status is largely quasi-random. Despite not explicitly matching on previous partisanship, there is no evidence that closure counties and matched control counties differed in previous voting, as pre-treatment Democratic voting was not statistically distinguishable between sets of counties, the two trended together from 2000 to 2004, and Republican voting was if anything a bit higher in the control counties prior to the closures (Table 1).

I use these matched counties to form a sampling frame to apply to individual-level survey data from the Cooperative Election Survey (CES) (Kuriwaki, 2020). The CES is a nationally representative online survey that has interviewed about 60,000 Americans each election year since 2006 about their presidential and gubernatorial electoral choices as well turnout. I geolocate CES survey respondents from the cumulative CES file from 2008–2020 to compare individuals who experienced a hospital closure prior to taking the survey, with otherwise similar respondents living in these otherwise similar communities that did not experience a hospital closure.

We may assume that matching counties within states exactly would lead to better matches in observable characteristics. However, I show in the appendix that matches are somewhat worse within-state due to the realities of limited rural hospital infrastructure. About 50% of rural counties do not have a hospital to begin with, eliminating them from potential matching. In some states, one runs out of comparable rural counties to match with once previous closures or counties without hospitals have been removed. As a result, I opt for this more expansive matching but show in the appen-

Table 1 Balance statistics from nearest neighbor matching

Variable	Closure counties	Control (after matching)	P-value
% Rural	66%	65%	0.58
% Black	17%	17%	0.91
% Hispanic	7%	6%	0.62
% Over 65	16%	16%	0.65
Median Household Income	$36,960	%36,930	0.98
% in Poor or Fair Health	22%	22%	0.92
% Uninsured	21%	21%	0.75
# Hospitals (2010)	1	1	0.66
# Democratic Vote Share (2000)	42	44	0.61
# Democratic Vote Share (2004)	38	40	0.98
N	52	52	

Notes: Table 1 presents balance statistics on a series of demographics related to the probability of a community experiencing a hospital closure from matching for all variables. P-value from difference of means test via OLS regression. Democratic Vote share was not included in matching; weighted averages and p-values from regressions from separate analyses presented. *Sources*: University of North Carolina Sheps Center; Robert Wood Johnson Foundation County Health Rankings

dix that results are robust and, in some cases, stronger using within-state matches. We may also worry that because counties in the Western U.S. are larger in size than those in the South or Midwest, that the results are driven in some way by county size or region (Nemerever & Rogers, 2021). Fortunately, only one hospital closure in a non-expansion, Republican state occurred in the entire Western region and this county was matched to another Western County. Moreover, about 90% of these matches end up being matched within region, with the only out-of-region matches involving states like Texas, Missouri, and Kansas being categorized as Southern (Texas and Missouri) or Midwestern (Kansas) and being merged to Southwestern/Midwestern counties (Texas and Missouri) or Southern counties (Kansas).

I focus on two outcome measures from the CES to assess political accountability for rural hospital closures: presidential and gubernatorial vote choice among the two major parties. These choices are meant to capture whether voters attribute blame to national or state political elites for in the closure. The inclusion of presidential vote choice reflects the presidents' central position in previous studies of political accountability in the U.S. (Achen & Bartels, 2016; Rogers, 2017; Sances, 2017). To capture federal-level accountability, the primary outcome utilized is whether the respondent voted for the Republican nominee for president over the Democratic nominee.

The choice of gubernatorial voting to measure state level accountability was less clear. In this context, the governors in question assuredly had significant roles in shaping whether or not hospital closures occurred in their states via their state's Medicaid expansion decision– though they were not the only ones. Due to their roles, governors are the exact kinds of actors who should be held responsible for local hospital closures. I could, of course, assess the relationship of hospital closures on

state legislative elections. However, doing so would lead to many cases where groups of respondents who are being compared, even within the same state, were voting in vastly different electoral competitions and occasionally uncontested races. As a result, looking simply at gubernatorial vote choice allows me to better account for the electoral choice environment and provide more reasonable empirical comparisons.

Overall, the CES interview 5,279 respondents in “closure" or matched counties. Just over 1,000 of these respondents were interviewed in closure counties following their hospital closing. In the supplemental appendix I show that the matching process created balance on individual-level demographics as well. Individuals interviewed in treated counties did not differ from those in control communities on age, gender, educational attainment, religion, income, and partisanship, further revealing causal credibility. The typical respondent in each type of county was a 50 year-old female, who identified as Christian and as a political independent with a slight Republican lean, had some college education and a household income of $40,000-$50,000.The electoral analyses rely on data from all respondents. In the appendix, I show that the results are larger sub-setting to White respondents.

I demonstrate the logic of this matching and geolocation process in Fig. 4 and provide face validity to my claims with the example of the May 2016 Tennova Health Care McNairy Regional hospital closure in McNairy County, Tennessee. Figure 4 plots the location of the survey respondents interviewed by the CES following the

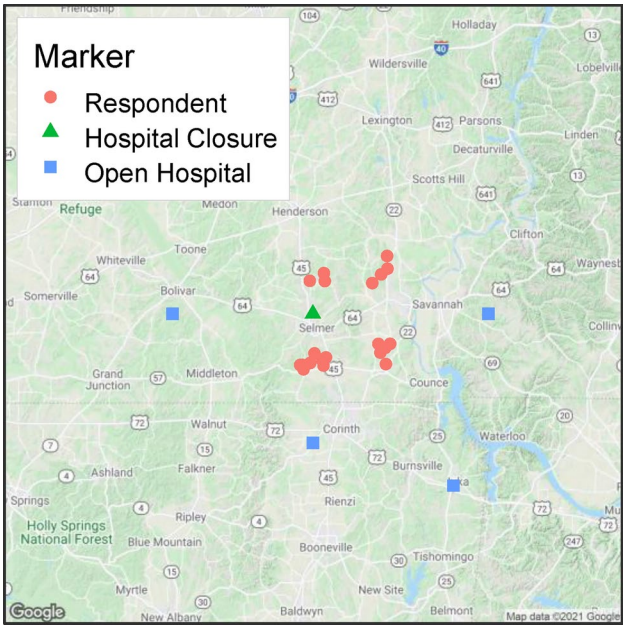

Fig. 4 Example Rural Hospital Closure and Spatial Merge: McNairy County, TN. *Notes*: Fig. 4 provides an example of the geolocation process and the likely increased travel distance to open hospitals affected respondents face as a result of the local closure. Respondent locations have been jittered to prevent point stacking and provide aesthetic geographic variation as the CES does not include physical address. *Source*: Google Maps; Cooperative Election Study; UNC Sheps Center

closure of McNairy Regional.[6] Respondents like these serve as the “treatment" group. Figure 4 shows that once the McNairy Regional hospital (plotted with the green triangle) closed the respondents (plotted in red circles) in this area faced substantially longer travel times to the nearest open hospitals (plotted with blue squares).

Since 2006, the CES has interviewed 65 people who resided in McNairy County at the time of their interview. Of this 65, 42 were interviewed after the local hospital closed, about half during or after the 2016 election and half during or after the 2020. All but one of the respondents interviewed in McNairy voted for Donald Trump in 2016. Of the 15 respondents who interviewed following the 2020 election, all 15 voted for Donald Trump. In other words, over 95% of the respondents interviewed after the closure voted for Donald Trump. Additionally, while McNairy residents were already overwhelmingly Republican prior to the closure, support for Republicans Mitt Romney and John McCain from those interviewed by the CES in McNairy was considerably lower, with 72% of residents voting for these Republican candidates in 2012 and 2008 respectively.[7]

In addition to these primary outcome measures, I analyze the association of hospital closures with a number of potential mechanistic explanations for how hospital closures influence vote choice, including presidential and gubernatorial approval as tests of face validity. If hospital closures are associated with changes in voting for president or governor, they ought to also affect presidential and gubernatorial approval. Finally, I examine whether attitudes towards the ACA are influenced by local closures. Each of these questions allow me to further probe how voters process and respond to local health care issues and ultimately make accountability judgements.

I supplement the survey data analyses with county-level presidential election returns from the MIT Election Lab.[8] Specifically, I gather data on the Republican Party’s share of the two-party vote from 2000–2020, measured within county. These data run from 0 to 1, with values of 1 indicating that the Republican Party received 100% of the two-party vote in that county-year observation. As demonstrated again in the in the case of McNairy County, Fig. 5 shows that following closure Republican support in the community increased drastically. In 2016, just months after McNairy Regional Hospital closed, McNairy County voters shifted 8 percentage points in favor of Trump. The shift observed in previous and subsequent elections was decidedly smaller–typically about two percentage points–than this 2016 post-closure surge. Moreover, while McNairy’s matched comparison county also shifted toward the GOP in 2016, it did so by 4 percentage points less, revealing a substantial Republican surge following the closure. Table 2 provides the voting patterns of those from McNairy County who were surveyed by the CES in 2016.

[6] These are not the actual addresses of respondents. These are jittered locations from the zipcode centroid of the respondent as the CES does not provide exact addresses.

[7] Many of these same McNairy residents were asked their opinions about the ACA in the years after the closure. Only 14% of those asked were in favor of keeping the ACA after the closure (6 versus 36 respondents). Prior to the closure, McNairy residents expressed considerably higher levels of support for the ACA, having 50–50 support for keeping versus repealing the ACA.

[8] https://electionlab.mit.edu/

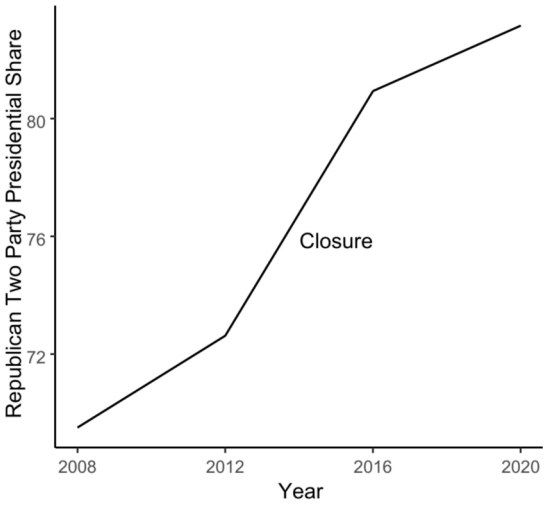

Fig. 5 Republican Vote Share McNairy County, TN. *Notes*: Fig. 5 provides trends in the Republican vote in McNairy County from 2008–2020. *Source*: MIT Election Lab

Table 2 McNairy county post-closure respondent trump support

Variable	Percent of sample	Trump vote 2016
Age 18–45	23%	100%
Age 46–65	40%	87%
Age 65+	33%	100%
High School or Less	42%	100%
Some College or More	57%	90%
<$30,000	48%	100%
$30,000−$50,000	24%	86%
$50,000−$100,000	17%	83%
>$100,000	7%	100%
Women	64%	91%
Men	36%	100%
Republican	69%	100%
Democrat	10%	33%
Independent	17%	100%

Notes: Table 2 presents balance statistics on a series of demographics related to the probability of a community experiencing a hospital closure. *Sources*: University of North Carolina Sheps Center; Robert Wood Johnson Foundation County Health Rankings

Voting and Rural Hospital Closures

I estimate the relationship between the shock losing a local rural hospital and presidential and gubernatorial voting using the matched sample of individual survey respondents using a series of linear probability OLS regression models. I estimate three versions of the following equation:

$$Y_i = \beta Closure_c + \delta_c + \alpha_t + \varepsilon_{cs}$$

where Y_i refers to whether the respondent voted for the Republican candidate (1) over the Democratic candidate (0) in the presidential or gubernatorial election. In this model, $\beta Closure_c$ represents residing in a closure county and being interviewed by the CES following the closure. δ_c represents the county-level propensity score

produced by the matching process, which accounts for each observations'/county's probability of being treated with a hospital closure given observable demographics. α_t represents year fixed effects, removing the possibility of year-to-year fluctuations in Republican voting influencing the results. In the model, ε_{cs} represent county × state clustered standard errors, which adjust for spatial correlation within counties and states.

Outside of this base model, I replicate each result controlling for a series of individual level demographic controls (γ_i) such as partisanship (-3 to 3, with 3 = Republican), religion (Christian = 1), age (years), gender (female = 1), educational attainment (no high school = 1; post-grad = 6), and family income (less than 10 k = 1, more than 150 k = 12). In a final set of analyses, I allow the relationship between the hospital to vary based on the reported partisanship of the respondent by interacting the treatment variable with the partisanship variable. Table 3 presents the results of the presidential analyses. In the appendix, I show that these results are robust to adopting explicit *within* county and *within* matched pair designs via fixed effects, re-matching observations to purely within state matches, and a variety of other specifications.

The first set of results are consistent with the presidential/party centered accountability theories (H2). The results presented in Table 3 imply that relative to surveyed individuals in communities that did not experience a hospital closure those who did were substantially more likely to vote for Republicans in subsequent presidential elections.[9] The results of the base model in column 1 and the fully-specified model 2 suggest that experiencing a hospital closure was related to an increased likelihood of voting for the Republican over the Democratic candidate by about 5–10 percentage points. Allowing the relationship to vary by partisanship, reveals that hospital closures seemed to influence all groups.

Turning to gubernatorial voting, there is no evidence that state Republicans who were culpable in recent years (against H1 and H3). If anything, the results displayed in Table 4 suggests that state Republicans either performed *better* or not differently

[9] Full results are available in the appendix.

Table 3 Hospital closures and presidential voting

Hospital Closure	0.090**	0.065***	0.071**
	(0.036)	(0.024)	(0.029)
Hospital Closure × Party			− 0.020
			(0.015)
Constant	0.590***	0.540***	0.549***
	(0.090)	(0.071)	(0.071)
Observations	3,365	3,028	3,028
R^2	0.022	0.595	0.0596
Adjusted R^2	0.018	0.591	0.593
County × State Clustered Errors	Yes	Yes	Yes
Propensity Score	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Expansion Status	Yes	Yes	Yes
Demographic Controls	No	Yes	Yes

***p < 0.01; **p < 0.05; *p < 0.1

Table 4 Hospital closures and Republican gubernatorial voting

Hospital Closure	0.113	− 0.007	− 0.008
	(0.090)	(0.045)	(0.044)
Hospital Closure × Party			0.001
			(0.010)
Constant	0.359***	0.396***	0.396***
	(0.067)	(0.147)	(0.147)
Observations	1,095	842	842
R^2	0.061	0.564	0.0564
Adjusted R^2	0.051	0.555	0.555
County × State Clustered Errors	Yes	Yes	Yes
Propensity Score	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Expansion Status	No	Yes	Yes
Demographic Controls	No	Yes	Yes

***p < 0.01; **p < 0.05; *p < 0.1

following local closures. However, none of these estimates reach traditional levels of statistical significance. Analyses in the appendix based on *within*-state matches reveals even larger gains for state Republicans some of which are significant, cutting further against hypotheses one and three.

Accordingly, there is little evidence in support of H1 or H3 or localized blame reflecting an understanding of the role of rejecting Medicaid expansion in driving hospital closures or simple anti-incumbent retrospection. Instead, these results provide strong evidence that Democrats at the federal level and more tentatively at the state level were held accountable for local hospital closures, even though state Republicans were more responsible in increasing their likelihood. Affected rural voters seemingly blamed President Obama and the national Democratic Party from the top to the bottom of the ballot for their negative health experiences.

Discussion of Robustness and Mechanisms

In this section, I probe the robustness of the previous relationships in multiple ways. First, we may be interested in exploring whether these trends appear in county-level election returns.[10] I predict Republican two-party vote share in a county-election year as a function of a hospital closure in two ways. First, I adopt a *within* county analyses comparing county vote share before and after closures between communities that lost or did not lose their hospital. Second, I compare Republican vote following closures after adjusting for county-level demographics and state fixed effects. The results (Table 5 are consistent across both models and with the individual-level matching results present previously. The county-level results show that ACA-era hospital closures were associated with increased support of the Republican Party in presidential

[10] County-data, while informative, are limited in important ways. First, scholars have found that hospital closures also led to changes turnout within these counties (Cox, Epp and Shepherd 2024). As a result, changes or the lack thereof in county-level vote shares may be due to different underlying individual-level changes in behavior or may be plagued by an ecological inference issues.

Table 5 Hospital closures and county presidential voting

Hospital Closure	0.044*	0.038***
	(0.023)	(0.014)
Constant	0.556***	0.736***
	(0.004)	(0.100)
Observations	1,198	1,198
R^2	0.169	0.151
Adjusted R^2	0.090	0.132
County × State Clustered Errors	Yes	Yes
County Fixed Effect	Yes	No
Matched Pair Fixed Effect	No	Yes
County Demographic Controls	No	Yes

***p < 0.01; **p < 0.05; *p < 0.1

elections by 3.8 to 4.4 percentage points, nearly mirroring the 5–10 percentage point relationships observed in the survey data.

To further probe how confident we can be that the "treatment" of a hospital closure is actually influencing voters in the ways I have argued and that prior partisanship is not affecting the results, I conducted a series of placebo tests (in the appendix), where I explore whether the "effect" of the closure in communities is apparent in the survey data in prior waves. Specifically, I estimated "closure" differences among respondents in communities that experienced closures this time for those interviewed one, two, three, and four years prior to when the closure actually occurred in the same communities. If the relationships uncovered previously are the result of pre-treatment differences, then we should observe similar differences among the respondents interviewed in treatment communities in the years prior to the closure. However, if there are no differences between those residing in treated and untreated communities in prior years, we essentially have evidence of parallel trends in voting prior to the closure. Full results for this placebo analysis are presented in Table 37 in the appendix, but overall, they provide no evidence that these resulting voting differences following hospital closures existed prior to them. Ranging from −0.024 to −0.013, each placebo estimate is essentially zero in magnitude, always negative, and never approaches statistical significance.

Having taken steps to rule out pre-treatment differences in explaining these patterns, I also explored multiple potential mechanistic paths to further corroborate and contextualize the voting results presented in the previous section. For instance, scholars often characterize the path between negative external forces, like community hospital closures and vote choice, as first impacting voters' evaluations of politician performance (Ashworth, 2012; Fiorina, 1981). In other words, the voter observes the state of the world and updates their views of it and the politician's performance that gave (may have given) rise to it. More related to health, others have argued that variation in the quality of social assistance and health programs influences voting behavior and patterns of policy feedback (Campbell, 2014; Clinton & Sances, 2018; Hobbs & Hopkins, 2021; Michener, 2018; Sances & Clinton, 2021). As a result, we might expect these negative health experiences to have domain specific effects on individuals' attitudes towards health policy and reform, which in turn may affect their voting behavior. Given the connection between the ACA/Medicaid Expansion and

these closings, attitudes toward the ACA seem likely to also be influenced by local hospital closures.

To probe these possibilities, I estimated respondent approval of the president, their governor, and the Affordable Care Act in OLS regressions as a function of experiencing a local hospital closure, the county propensity score, and demographic controls. For each outcome, I plot estimates for the Obama and post-Obama eras separately. If these evaluations are presidency centered and surround the politics of the ACA, we should observe strong negative effects of hospital closure on presidential approval during the Obama years and not the Trump years and (perhaps) positive effects on gubernatorial approval. If closures are incumbent-centered however, we would expect to see diminished support for President Trump, Obama, and all governors following a closure. If voters properly hold politicians accountable for their role, we would see reduced support for state governors throughout. It is unclear whether ACA attitudes should or would be more negatively influenced under President Obama or Trump, but we may assume that declines in ACA support were especially large during the Obama years–when the policy and politician were directly connected (Tesler, 2012).

The results are again mostly consistently with the party-presidency-centered blame hypothesis (H2). Table 6 demonstrates that during the Obama presidency those who experienced hospital closures were less approving of President Obama's performance than those who did not experience a hospital closure, with no apparent relationship with Trump performance evaluations. Additionally, if anything, respondents were *more* approving of Republican governors and Trump and following closures in their communities, though these results only are statistically significant by traditional standards in the Trump years. In terms of policy blame, voters who experienced hospital closures were somewhat less supportive of the ACA than those who did not, though this result is only significant in the post-Obama era.

Conclusion

In this paper I have explored the political causes and consequences of widespread rural hospital closures. Over the last few decades, many rural communities have lost their hospitals, greatly limiting their access to doctors and medical care. I have

Table 6 Plausible mechanisms analysis

	Presidential Approval		ACA Support		Governor Approval	
	(*Obama*)	(*Post-Obama*)	(*Obama*)	(*Post-Obama*)	(*Obama*)	(*Post-Obama*)
Hospital Closure	−0.126**	0.082	−0.018	−0.038*	−0.006	0.079*
	(0.061)	(0.053)	(0.024)	(0.020)	(0.060)	(0.047)
Constant	1.138***	0.929***	0.387***	0.561***	1.094***	0.891***
	(0.065)	(0.101)	(0.037)	(0.038)	(0.063)	(0.092)
Propensity Score	Yes	Yes	Yes	Yes	Yes	Yes
Demographic Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6,156	2,680	2,669	2,753	5,749	2,496
R^2	0.069	0.067	0.045	0.066	0.013	0.049
Adjusted R^2	0.068	0.064	0.042	0.063	0.012	0.045

***p < .01; **p < .05; *p < .1

argued that partisan politics has played an increasingly important role in the both the patterns of hospital closings and the resulting lack of political accountability we have observed. Most recent rural hospital closures have occurred in states with Republican governors that have not expanded Medicaid under the Affordable Care Act. Despite this, my analyses show that rural voters who experienced a hospital closing directly were more likely to support Donald Trump in the 2016 and 2020 presidential elections than otherwise similar rural voters who did not experience a hospital closure.

Indeed, despite the incorrect and strategic nature of Senator Graham's remarks in the s presented at the beginning of this manuscript, rural voters updated their political beliefs much in manner the Senator argued that they should. Rural voters responded to hospital closures in their communities by lowering their support for the ACA and by blaming Democrats, especially federal Democrats, for these post-ACA health care losses. Moreover, Republican governors or gubernatorial candidates were if anything rewarded electorally for rural hospital closings. Given that the governors and other state officials played important roles in shaping where rural hospitals have closed, these results paint a troubling picture for political accountability and policy feedback in the realm of rural health care.

In line with other recent work (Rogers, 2017; Sances, 2017), my findings demonstrate the voters often hold the president and the president's party and not more proximate elites–at least on the basis of their actions–more accountable for the forces that impact their lives. I build on existing work in this space by demonstrating that similar dynamics emerge even when voters are responding to hyper-localized and community destabilizing public health and economic crises, on which politicians have actively responded with different policies. These results are also consistent with studies of the nationalization of partisan politics and the effects of limited knowledge of state politics leading voters to hold state politicians accountable on the basis of their evaluations of national, presidential politics (Hopkins, 2018; Rogers, 2017, 2023a). In this case, voters rewarded state Republicans at the ballot box because they evaluated these politicians in light of their lowered support for Barack Obama, federal Democrats, and the Affordable Care Act.

This work also contributes to the literature on policy feedback effects. That citizens respond to public policies in self-interested ways to promote and protect the policies that they benefit from, providing so-called positive policy feedbacks, is well-established (i.e. Mettler (2005); Campbell (2002)). Moreover, previous work suggests that state-by-state variation in the generosity or rigidity of public policies, perhaps especially health policies, alters where policy feedback occurs and how voters participate in politics in response to their health experiences more broadly (Cox et al., 2024; Ojeda et al., 2024; Haselswerdt & Michener, 2019; Michener, 2018; Burden et al., 2017; Schur et al., 2002). The findings here add to evidence that variation in policy outcomes influences whether the feedback signal is positive or negative (Hobbs & Hopkins, 2021). Rural communities experiencing worse health outcomes under the ACA, even if due to local Republican resistance of the ACA, blamed the Democratic President Barack Obama and the ACA for these outcomes. As a consequence, this work points to potentially endemic issues for citizens connecting experiences to policies in the U.S. system of shared and obscured policymaking power in the U.S. (Mettler, 2011; Morgan & Campbell, 2011).

More work is needed to assess the degree to which things like experiencing negative public health crises and other forms of denials of access to care affect political behavior more generally. For example, following waves of hospital closures in their states, voters in Missouri, Nebraska, and Oklahoma bypassed their Republican state governments by expanding Medicaid via ballot initiative. These cases offer chances to analyze how hospital closures affect voting behavior when partisan voting options are no longer present and voters can directly vote their health care preferences. Do partisans and independents still behave differently if their communities were affected by the crisis? Additionally, more work is needed on how experiencing public health crises impact voters' health care attitudes and healthcare demands from government more generally. While these findings demonstrate the incumbents are held accountable, these negative health experiences may also contribute to longer-term declines in support for government assistance. Future research is needed to disentangle short-term anti-incumbent effects from longer-term anti-government attitude development.

Appendix

Appendix 1: Data Sources and Descriptive Statistics

Hospital Closure data come from the University of North Carolina at Chapel Hill Cecil G. Sheps Center. Accessed via: https://www.shepscenter.unc.edu/programs-projects/rural-health/rural-hospital-closures/. County level health data come from the Robert Wood Johnson 2011 County Health Rankings. Survey data come from the Cooperative Election Study Cumulative data file 2006–2022 (Kuriwaki, 2020). Table 7 provides county-level balance statistics from the primary nearest neighbor matching strategy including the Milam, TX case. Table 8 presents balance statistics after matching for the individual level CES data used in the analysis including the Milam, Texas case. Table 9 provides county-level balance statistics from the primary nearest neighbor matching strategy removing the Milam, TX case. Table 11 presents balance statistics after matching for the individual level CES data used in the analysis without the Milam case. Figure 6 provides the propensity scores from the matching process using MatchIt (Stuart et al., 2011). Figure 7 plots the balance achieved as a result of the variable used in the "nearest neighbor" matching procedure. Figures 8 and 9 provide maps of the matched treated and control units for the study without the Milam, TX case match. Table 10 presents summary statistics for the CES data for the full sample, excluding the Milam, TX case.

Table 7 Balance statistics from nearest neighbor matching (W Milam)

Variable	Closure counties	Control (after matching)	P-value
% Rural	66%	64%	0.72
% Black	17%	17%	0.84
% Hispanic	7%	6%	0.51
% Over 65	16%	16%	0.39
Median Household Income	$36,960	%36,930	0.98
% in Poor or Fair Health	22%	22%	0.71
% Uninsured	21%	21%	0.92
# Hospitals (2010)	1	1	0.50
# Democratic Vote Share (2000)	43	43	0.32
# Democratic Vote Share (2004)	39	40	0.55

Notes: Table 7 presents balance statistics on a series of demographics related to the probability of a community experiencing a hospital closure from matching for all variables. P-value from difference of means test via OLS regression. Democratic Vote share was not included in matching; weighted averages and p-values from regressions from separate analyses presented. *Sources*: University of North Carolina Sheps Center; Robert Wood Johnson Foundation County Health Rankings

Table 8 Overall individual-level balance statistics from nearest neighbor matching (all/ W Milam)

Variable	Closure counties	Control
Age	49	48
Female	52%	53%
Education	3	3
Christian	64%	64%
Family Income	5	5
Partisanship (-3 to 3)	0.1	0.1

Notes: Table 8 presents balance statistics on a series of individual-level demographics related to the probability of a community experiencing a hospital closure. *Sources*: University of North Carolina Sheps Center; Robert Wood Johnson Foundation County Health Rankings; Cooperative Election Survey (Kuriwaki, 2020)

Table 9 Balance statistics from nearest neighbor matching (no Milam)

Variable	Closure counties	Control (after matching)	P-value
% Rural	66%	65%	0.58
% Black	17%	17%	0.91
% Hispanic	7%	6%	0.62
% Over 65	16%	16%	0.65
Median Household Income	$36,960	$36,930	0.98
% in Poor or Fair Health	22%	22%	0.92
% Uninsured	21%	21%	0.75
# Hospitals (2010)	1	1	0.66
# Democratic Vote Share (2000)	42	44	0.61
# Democratic Vote Share (2004)	38	40	0.98

Notes: Table 9 presents balance statistics on a series of demographics related to the probability of a community experiencing a hospital closure from matching for all variables. P-value from difference of means test via OLS regression. Democratic Vote share was not included in matching; weighted averages and p-values from regressions from separate analyses presented. *Sources*: University of North Carolina Sheps Center; Robert Wood Johnson Foundation County Health Rankings

Table 10 Overall individual-level summary statistics (all, no Milam)

Variable	Mean	SD	*N*
Age	48	16	5279
Female	0.54	0.50	5276
Education	2.8	1.4	5279
Christian	0.62	0.47	4941
Family Income	4.7	2.8	4848
Partisanship (-3 to 3)	0.06	2.2	5031
GOP Gov Vote	0.54	0.5	1095
GOP Pres Vote	0.61	0.5	3365

Notes: Table 10 presents summary statistics on a series of individual-level demographics. *Sources*: Cooperative Election Survey (Kuriwaki, 2020)

Table 11 Overall individual-level balance statistics from nearest neighbor matching (all/no Milam)

Variable	Closure counties	Control
Age	49	47
Female	52%	55%
Education	2.8	2.8
Christian	63%	61%
Family Income	5	5
Partisanship (-3 to 3)	0.08	0.02

Notes: Table 11 presents balance statistics on a series of individual-level demographics related to the probability of a community experiencing a hospital closure. *Sources*: University of North Carolina Sheps Center; Robert Wood Johnson Foundation County Health Rankings; Cooperative Election Survey (Kuriwaki, 2020)

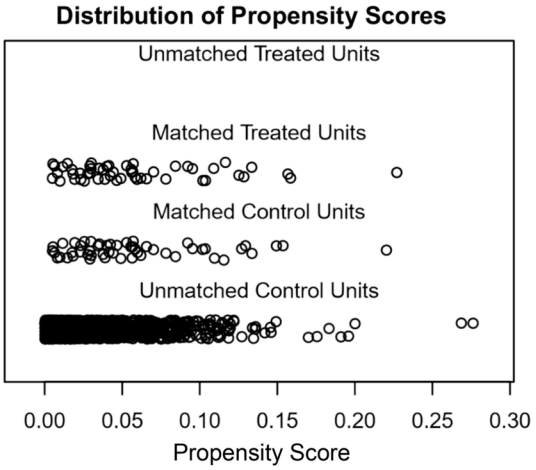

Fig. 6 Hospital Closure Propensity Scores (No Milam). *Notes*: Fig. 6 plots the propensity scores from the MatchIt pre-processing procedure (Stuart et al., 2011). *Source*: UNC Sheps Center

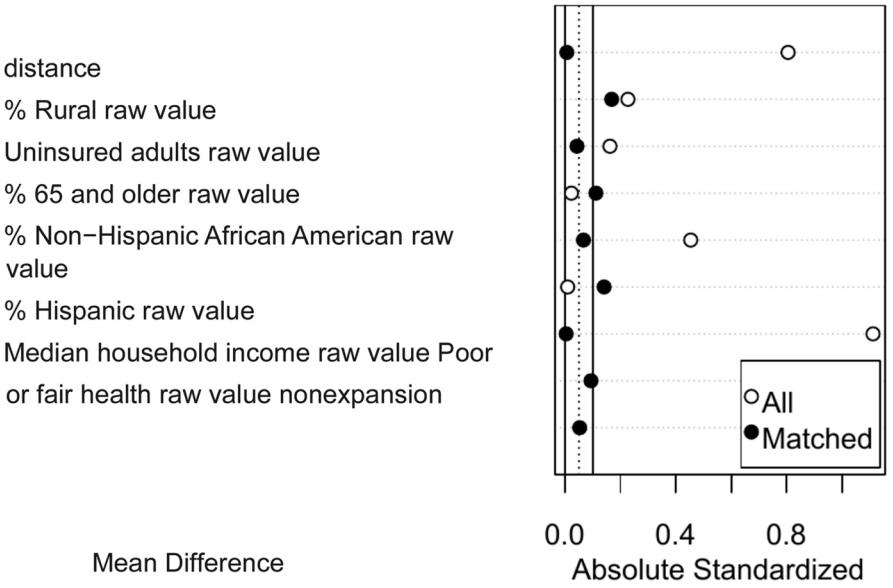

Fig. 7 Hospital Closure Matching Results (No Milam). *Notes*: Fig. 7 plots the results from the MatchIt pre-processing procedure (Stuart et al., 2011). *Source*: UNC Sheps Center

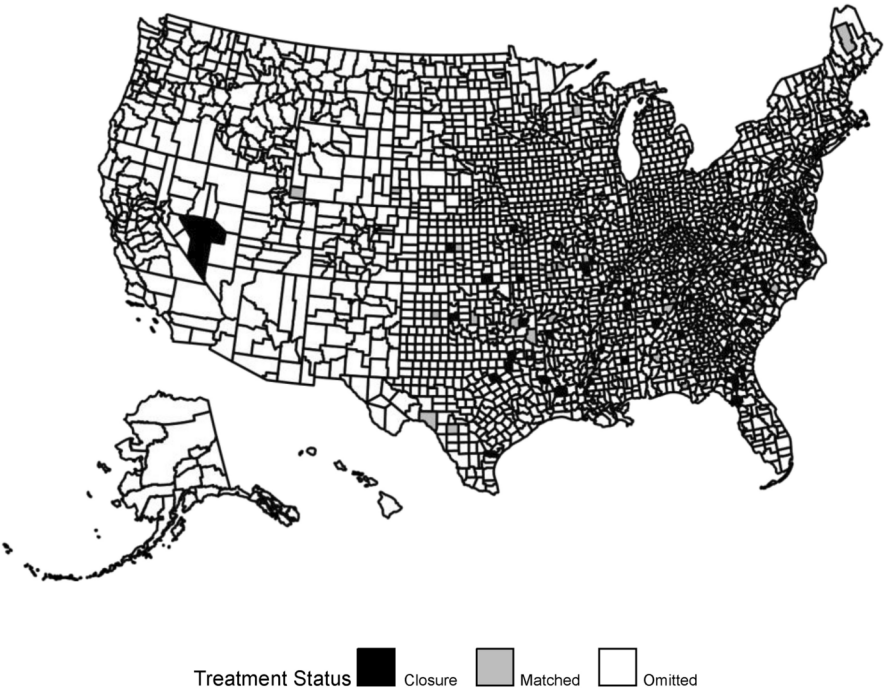

Fig. 8 Treated and Matched Counties (No Milam). *Notes*: Figure provides map of location of treated and control units

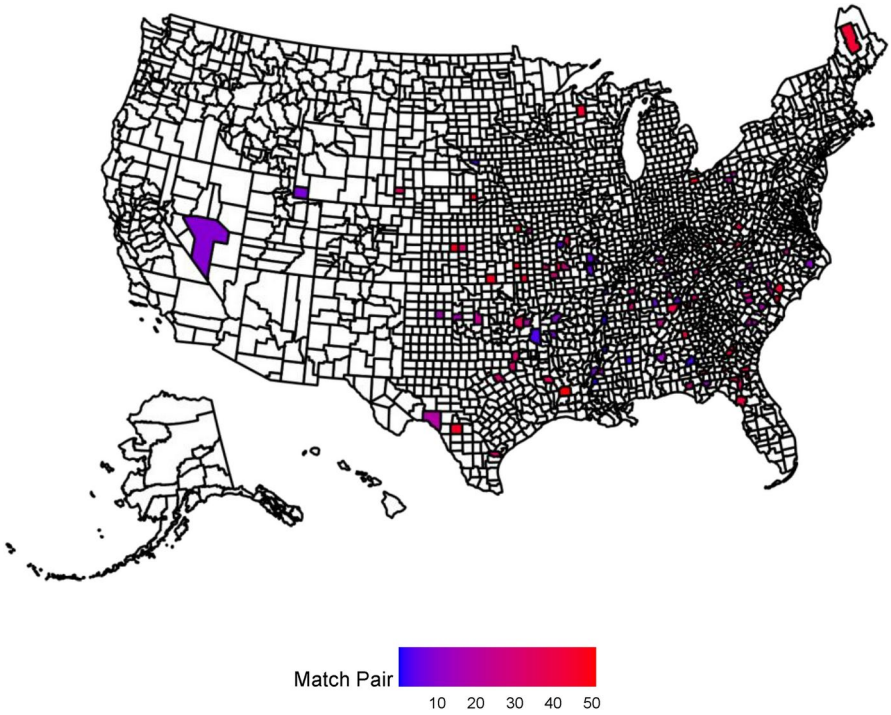

Fig. 9 Geographic Proximity of Matches (No Milam). *Notes*: Figure provides map of proximity of matched of treated and control units

Appendix 2: Full Regression Specifications From Nationwide Matching

In this section, I provide all individual-level regression analyses that rely on the nationwide nearest neighbor matching (Stuart et al., 2011) strategy, with and without Milam, Texas case for all respondents and White respondents alone. The "Matching Regression Results" subsection includes results relying on propensity score matching. The "Within Matched Pair and County Regressions" subsection includes *within* county and *within* matched pair regression results.

Matching Regression Results

See Tables 12, 13, 14, 15, 16, 17, 18, 19.

Table 12 Hospital closures and presidential voting (all respondents/w Milam)

	Republican Presidential Vote		
Hospital Closure	0.106***	0.053**	0.060**
	(0.032)	(0.023)	(0.029)
Party		0.156***	0.159***
		(0.007)	(0.006)
Hospital Closure × Party			−0.017
			(0.015)
Age		0.001**	0.001**
		(0.0005)	(0.0005)
Female		−0.032	−0.033
		(0.022)	(0.021)
Education		−0.026***	−0.026***
		(0.009)	(0.009)
Non-Expansion		−0.038*	−0.039*
		(0.021)	(0.022)
Christian		0.058***	0.057***
		(0.019)	(0.019)
Family Income		0.009**	0.009**
		(0.004)	(0.003)
Constant	0.634***	0.532***	0.537***
	(0.055)	(0.058)	(0.059)
County×State Clustered Errors	Yes	Yes	Yes
Propensity Score	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Observations	6,084	5,342	5,342
R^2	0.017	0.606	0.606
Adjusted R^2	0.015	0.604	0.605

***p < .01; **p < .05; *p < .1

Table 13 Hospital closures and presidential voting (White respondents/w Milam)

	Republican Presidential Vote		
Hospital Closure	0.114***	0.058**	0.080**
	(0.037)	(0.027)	(0.040)
Party		0.150***	0.154***
		(0.009)	(0.008)
Hospital Closure × Party			−0.028
			(0.020)
Age		0.001	0.001
		(0.001)	(0.001)
Female		−0.026	−0.028
		(0.023)	(0.022)
Education		−0.025***	−0.025***
		(0.009)	(0.008)
Non-Expansion		−0.024	−0.025
		(0.025)	(0.025)
Christian		0.079***	0.079***
		(0.017)	(0.017)
Family Income		0.008*	0.007*
		(0.004)	(0.004)
Constant	0.574***	0.514***	0.518***
	(0.074)	(0.048)	(0.048)
County×State Clustered Errors	Yes	Yes	Yes
Propensity Score	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Observations	4,883	4,280	4,280
R^2	0.021	0.567	0.569
Adjusted R^2	0.017	0.565	0.567

***p < .01; **p < .05; *p < .1

Table 14 Hospital closures and gubernatorial voting (all respondents/w Milam)

	Republican Gubernatorial Vote		
Hospital Closure	0.085	−0.022	−0.024
	(0.069)	(0.039)	(0.039)
Party		0.155***	0.154***
		(0.005)	(0.006)
Hospital Closure × Party			0.005
			(0.010)
Age		0.001	0.001
		(0.001)	(0.001)
Female		−0.029	−0.029
		(0.018)	(0.018)
Education		−0.014	−0.014
		(0.009)	(0.009)
Non-Expansion		0.051	0.050
		(0.033)	(0.033)
Christian		0.092***	0.092***
		(0.020)	(0.020)
Family Income		0.0003	0.0004
		(0.004)	(0.004)
Constant	0.459***	0.453***	0.454***
	(0.035)	(0.072)	(0.071)
County×State Clustered Errors	Yes	Yes	Yes
Propensity Score	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Observations	2,067	1,535	1,535
R^2	0.027	0.585	0.585
Adjusted R^2	0.021	0.581	0.581

***p < .01; **p < .05; *p < .1

Table 15 Hospital closures and gubernatorial voting (White respondents/w Milam)

	Republican Gubernatorial Vote		
treated	0.024	−0.035	−0.036
	(0.056)	(0.040)	(0.041)
Party		0.152***	0.151***
		(0.008)	(0.009)
Hospital Closure × Party			0.002
			(0.014)
Age		−0.0001	−0.0001
		(0.001)	(0.001)
Female		−0.030	−0.030
		(0.023)	(0.023)
Education		−0.013*	−0.013*
		(0.008)	(0.008)
Non-Expansion		0.052	0.051
		(0.043)	(0.043)
Christian		0.084***	0.084***
		(0.022)	(0.022)
Family Income		−0.002	−0.002
		(0.004)	(0.005)
Constant	0.453***	0.490***	0.491***
	(0.032)	(0.084)	(0.083)
County×State Clustered Errors	Yes	Yes	Yes
Propensity Score	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Observations	1,703	1,251	1,251
R^2	0.037	0.553	0.553
Adjusted R^2	0.030	0.547	0.547

***p < .01; **p < .05; *p < .1

Table 16 Hospital closures and presidential voting (all respondents/ no Milam)

	Republican Presidential Vote		
Hospital Closure	0.090**	0.065***	0.071**
	(0.036)	(0.024)	(0.029)
Party		0.156***	0.161***
		(0.008)	(0.006)
Hospital Closure × Party			−0.020
			(0.015)
Age		0.001	0.001
		(0.001)	(0.001)
Female		0.001	−0.001
		(0.024)	(0.024)
Education		−0.026*	−0.027**
		(0.014)	(0.014)
Non-Expansion		−0.046**	−0.047**
		(0.021)	(0.022)
Christian		0.055**	0.056**
		(0.025)	(0.025)
Family Income		0.008	0.008
		(0.005)	(0.005)
Constant	0.590***	0.540***	0.549***
	(0.090)	(0.071)	(0.071)
County×State Clustered Errors	Yes	Yes	Yes
Propensity Score	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Observations	3,365	3,028	3,028
R^2	0.022	0.595	0.596
Adjusted R^2	0.018	0.591	0.593

***p < .01; **p < .05; *p < .1

Table 17 Hospital closures and presidential voting (White respondents/ no Milam)

	Republican Presidential Vote		
Hospital Closure	0.122***	0.076***	0.102***
	(0.025)	(0.025)	(0.032)
Party		0.146***	0.154***
		(0.009)	(0.006)
Hospital Closure × Party			−0.036**
			(0.017)
Age		0.001	0.001
		(0.001)	(0.001)
Female		−0.015	−0.018
		(0.022)	(0.020)
Education		−0.029**	−0.029**
		(0.013)	(0.012)
Non-Expansion		−0.031	−0.033
		(0.024)	(0.024)
Christian		0.090***	0.093***
		(0.017)	(0.017)
Family Income		0.006	0.005
		(0.005)	(0.005)
Constant	0.476***	0.480***	0.488***
	(0.118)	(0.062)	(0.061)
County×State Clustered Errors	Yes	Yes	Yes
Propensity Score	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Observations	2,769	2,499	2,499
R^2	0.034	0.553	0.558
Adjusted R^2	0.028	0.549	0.554

***p < .01; **p < .05; *p < .1

Table 18 Hospital closures and gubernatorial voting (all respondents/no Milam)

	Republican Gubernatorial Vote		
Hospital Closure	0.113	−0.007	−0.008
	(0.090)	(0.045)	(0.044)
Party		0.149***	0.148***
		(0.007)	(0.007)
Hospital Closure × Party			0.001
			(0.010)
Age		0.0005	0.0005
		(0.001)	(0.001)
Female		−0.022	−0.022
		(0.028)	(0.028)
Education		−0.005	−0.005
		(0.008)	(0.008)
Non-Expansion		0.065*	0.065*
		(0.039)	(0.039)
Christian		0.082**	0.081**
		(0.034)	(0.034)
Family Income		0.001	0.001
		(0.009)	(0.009)
Constant	0.359***	0.396***	0.396***
	(0.067)	(0.147)	(0.147)
County×State Clustered Errors	Yes	Yes	Yes
Propensity Score	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Observations	1,095	842	842
R^2	0.061	0.564	0.564
Adjusted R^2	0.051	0.555	0.555

***p < .01; **p < .05; *p < .1

Table 19 Hospital closures and gubernatorial voting (White respondents/no Milam)

	Republican Gubernatorial Vote		
Hospital Closure	0.079	0.014	0.015
	(0.071)	(0.044)	(0.042)
Party		0.140***	0.140***
		(0.007)	(0.008)
Hospital Closure × Party			−0.001
			(0.013)
Age		−0.0004	−0.0004
		(0.001)	(0.001)
Female		−0.011	−0.011
		(0.032)	(0.032)
Education		−0.007	−0.007
		(0.009)	(0.009)
Non-Expansion		0.066	0.066
		(0.046)	(0.046)
Christian		0.104***	0.104***
		(0.032)	(0.032)
Family Income		−0.001	−0.001
		(0.009)	(0.010)
Constant	0.316***	0.408**	0.408**
	(0.063)	(0.165)	(0.166)
County×State Clustered Errors	Yes	Yes	Yes
Propensity Score	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Observations	922	706	706
R^2	0.095	0.522	0.522
Adjusted R^2	0.084	0.510	0.510

***p < .01; **p < .05; *p < .1

Within County and Matched Pair

See Tables 20, 21, 22, 23, 24, 25, 26, 27.

Table 20 Hospital closures and presidential voting (all respondents/w Milam)

	Republican Vote	
	(Within Pair)	(Within County)
Hospital Closure	0.088**	0.082**
	(0.040)	(0.034)
County×State Clustered Errors	Yes	Yes
Match Fixed Effect	Yes	No
County Fixed Effect	No	Yes
Observations	6,084	6,084
R^2	0.073	0.106
Adjusted R^2	0.064	0.092

***p < .01; **p < .05; *p < .1

Table 21 Hospital closures and presidential voting (White respondents/w Milam)

	Republican Vote	
	(Within Pair)	(Within County)
Hospital Closure	0.088**	0.075**
	(0.036)	(0.032)
County×State Clustered Errors	Yes	Yes
Match Fixed Effect	Yes	No
County Fixed Effect	No	Yes
Observations	4,883	4,883
R^2	0.070	0.100
Adjusted R^2	0.060	0.083

***p < .01; **p < .05; *p < .1

Table 22 Hospital closures and gubernatorial voting (all respondents/w Milam)

	Republican Vote	
	(Within Pair)	(Within County)
Hospital Closure	0.101**	0.054
	(0.049)	(0.048)
County×State Clustered Errors	Yes	Yes
Match Fixed Effect	Yes	No
County Fixed Effect	No	Yes
Observations	2,067	2,067
R^2	0.106	0.076
Adjusted R^2	0.071	0.055

***p < .01; **p < .05; *p < .1

Table 23 Hospital closures and gubernatorial voting (White respondents/w Milam)

	Republican Vote	
	(Within Pair)	(Within County)
Hospital Closure	0.093*	0.047
	(0.054)	(0.056)
County×State Clustered Errors	Yes	Yes
Match Fixed Effect	Yes	No
County Fixed Effect	No	Yes
Observations	1,703	1,703
R^2	0.099	0.074
Adjusted R^2	0.056	0.048

***p < .01; **p < .05; *p < .1

Table 24 Hospital closures and presidential voting (all respondents/no Milam)

	Republican Vote	
	(Within Pair)	(Within County)
Hospital Closure	0.071**	0.088**
	(0.032)	(0.038)
County×State Clustered Errors	Yes	Yes
Match Fixed Effect	Yes	No
County Fixed Effect	No	Yes
Observations	3,365	3,365
R^2	0.135	0.183
Adjusted R^2	0.122	0.159

***p < .01; **p < .05; *p < .1

Table 25 Hospital closures and presidential voting (White respondents/no Milam)

	Republican Vote	
	(Within Pair)	(Within County)
Hospital Closure	0.112***	0.093***
	(0.028)	(0.035)
County×State Clustered Errors	Yes	Yes
Match Fixed Effect	Yes	No
County Fixed Effect	No	Yes
Observations	2,769	2,769
R^2	0.103	0.148
Adjusted R^2	0.087	0.119

***p < .01; **p < .05; *p < .1

Table 26 Hospital closures and gubernatorial voting (all respondents/no Milam)

	Republican Vote	
	(Within Pair)	(Within County)
Hospital Closure	0.157***	0.123***
	(0.040)	(0.045)
County×State Clustered Errors	Yes	Yes
Match Fixed Effect	Yes	No
County Fixed Effect	No	Yes
Observations	1,095	1,095
R^2	0.202	0.134
Adjusted R^2	0.139	0.094

***p < .01; **p < .05; *p < .1

Table 27 Hospital closures and gubernatorial voting (White respondents/no Milam)

	Republican Vote	
	(Within Pair)	(Within County)
Hospital Closure	0.144***	0.117**
	(0.053)	(0.050)
County×State Clustered Errors	Yes	Yes
Match Fixed Effect	Yes	No
County Fixed Effect	No	Yes
Observations	922	922
R^2	0.191	0.138
Adjusted R^2	0.115	0.090

***p < .01; **p < .05; *p < .1

Appendix 3: Mechanisms

In this appendix section, I offer the results of the "mechanistic" analyses graphically presented in the main text. Figure 10 provides a "parallel trends" plot for counties that lost their hospital between 2012 and 2016. Table 28 presents the results of the relationship between hospital closures and presidential approval, gubernatorial approval, and ACA support for all respondents.

Table 29 provides the same information for White respondents alone.

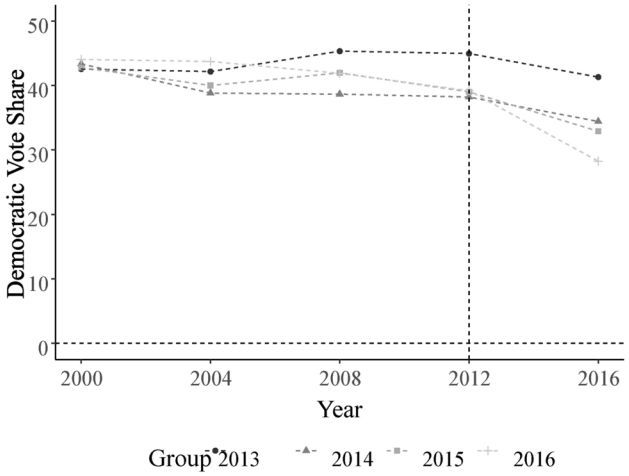

Fig. 10 Rural Hospital Closures and Election Trends. *Notes*: Fig. 10 provides trends in partisan presidential voting for counties that lost their hospitals between 2012 and 2016. *Source*: David Leip Atlas of Elections; UNC Sheps Center

Table 28 Plausible mechanisms (all respondents)

	Presidential Approval		ACA Support		Governor Approval	
	(*Obama*)	(*Post-Obama*)	(*Obama*)	(*Post-Obama*)	(*Obama*)	(*Post-Obama*)
Hospital Closure	−0.126**	0.082	−0.018	−0.038*	−0.006	0.079*
	(0.061)	(0.053)	(0.024)	(0.020)	(0.060)	(0.047)
Constant	1.138***	0.929***	0.387***	0.561***	1.094***	0.891***
	(0.065)	(0.101)	(0.037)	(0.038)	(0.063)	(0.092)
Propensity Score	Yes	Yes	Yes	Yes	Yes	Yes
Demographic Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6,156	2,680	2,669	2,753	5,749	2,496
R^2	0.069	0.067	0.045	0.066	0.013	0.049
Adjusted R^2	0.068	0.064	0.042	0.063	0.012	0.045

***p < .01; **p < .05; *p < .1

Table 29 Plausible mechanisms (White respondents)

	Presidential Approval		ACA Support		Governor Approval	
	(*Obama*)	(*Post-Obama*)	(*Obama*)	(*Post-Obama*)	(*Obama*)	(*Post-Obama*)
Hospital Closure	−0.240***	0.075	−0.056**	−0.066***	0.124*	0.096*
	(0.065)	(0.059)	(0.027)	(0.022)	(0.066)	(0.052)
Constant	1.183***	0.743***	0.432***	0.661***	1.112***	0.764***
	(0.071)	(0.117)	(0.043)	(0.043)	(0.071)	(0.106)
Propensity Score	Yes	Yes	Yes	Yes	Yes	Yes
Demographic Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,967	2,045	2,086	2,091	4,654	1,914
R^2	0.020	0.071	0.061	0.083	0.015	0.054
Adjusted R^2	0.019	0.068	0.058	0.079	0.014	0.050

***p < .01; **p < .05; *p < .1

Appendix 4: Within State Matching & Regressions

This section provides the results of a series of robustness checks related to the matching process. Despite limited suitable county matches within all states, we may be concerned that differences across states are driving the results. In this section, I replicate the main analyses limit matches to exact matches *within* state. Table 30 presents balance statistics on a series of demographics related to the probability of a community experiencing a hospital closure, reporting the differences between matches within states and the matching used in the main text. The results are robust to this change and are in many cases stronger. Subsection "Matching Within State Regression Results" Tables 31 and 32 replicate the propensity score analyses with and with-

Table 30 Balance statistics from nearest neighbor in state matching comparison (no Milam)

Variable	Closure counties	Control (after matching)	P-value
% Rural	68%	67%	0.83
% Black	17%	17%	0.97
% Hispanic	6%	7%	0.57
% Over 65	16%	16%	0.86
Median Household Income	$36,600	%37,100	0.70
% in Poor or Fair Health	22%	23%	0.92
% Uninsured	21%	21%	0.68
# Hospitals (2010)	1	1	0.89
# Democratic Vote Share (2000)	43	41	0.53
# Democratic Vote Share (2004)	38	37	0.67
N	52	52	

Notes: Table 30 presents balance statistics on a series of demographics related to the probability of a community experiencing a hospital closure. *Sources*: University of North Carolina Sheps Center; Robert Wood Johnson Foundation County Health Rankings

Table 31 Hospital closures and GOP voting (all respondents/W Milam)

	Presidential Vote	Gubernatorial Vote
Hospital Closure	0.087**	0.006
	(0.040)	(0.044)
Constant	0.554***	0.455***
	(0.076)	(0.052)
County×State Clustered Errors	Yes	Yes
Propensity Score	Yes	Yes
Year Fixed Effects	Yes	Yes
Observations	5,156	1,780
R^2	0.019	0.040
Adjusted R^2	0.016	0.034

***p < .01; **p < .05; *p < .1

Table 32 Hospital closures and GOP voting (all respondents/no Milam)

	Presidential Vote	Gubernatorial Vote
Hospital Closure	0.062*	0.053
	(0.032)	(0.073)
Constant	0.651***	0.475***
	(0.065)	(0.059)
County×State Clustered Errors	Yes	Yes
Propensity Score	Yes	Yes
Year Fixed Effects	Yes	Yes
Observations	3,564	1,250
R^2	0.020	0.024
Adjusted R^2	0.016	0.015

***p < .01; **p < .05; *p < .1

Table 33 Hospital closures and presidential voting (all respondents/no Milam)

	Republican Vote	
	(Within Pair)	(Within County)
Hospital Closure	0.068***	0.088**
	(0.025)	(0.038)
Constant	0.393***	0.322***
	(0.021)	(0.005)
County×State Clustered Errors	Yes	Yes
Match Fixed Effect	Yes	No
County Fixed Effect	No	Yes
Observations	3,564	3,564
R^2	0.119	0.170
Adjusted R^2	0.108	0.149

***p < .01; **p < .05; *p < .1

Table 34 Hospital closures and gubernatorial voting (all respondents/no Milam)

	Republican Vote	
	(Within Pair)	(Within County)
Hospital Closure	0.157***	0.059**
	(0.040)	(0.030)
Constant	0.450***	0.475***
	(0.003)	(0.023)
County×State Clustered Errors	Yes	Yes
Match Fixed Effect	Yes	No
County Fixed Effect	No	Yes
Observations	1,250	1,250
R^2	0.159	0.100
Adjusted R^2	0.103	0.069

***p < .01; **p < .05; *p < .1

out the Milam, TX case. The “Within Matched Pair and County Regressions" subsection includes (Tables 33, 34, 35, 36) replicate the *within* county and *within* matched pair analyses with and without the Milam, TX case using the *within* state matched pair.

Table 35 Hospital closures and presidential voting (all respondents/W Milam)

	Republican Vote	
	(Within Pair)	(Within County)
Hospital Closure	0.060**	0.075**
	(0.028)	(0.032)
Constant	0.482***	0.335***
	(0.026)	(0.005)
County×State Clustered Errors	Yes	Yes
Match Fixed Effect	Yes	No
County Fixed Effect	No	Yes
Observations	5,156	5,156
R^2	0.072	0.101
Adjusted R^2	0.064	0.085

***p < .01; **p < .05; *p < .1

Table 36 Hospital closures and gubernatorial voting (All Respondents/W Milam)

	Republican Vote	
	(Within Pair)	(Within County)
Hospital Closure	0.093*	0.104*
	(0.054)	(0.063)
Constant	0.452***	0.544***
	(0.002)	(0.028)
County×State Clustered Errors	Yes	Yes
Match Fixed Effect	Yes	No
County Fixed Effect	No	Yes
Observations	1,780	1,780
R^2	0.112	0.071
Adjusted R^2	0.068	0.047

***p < .01; **p < .05; *p < .1

Matching State Regression Results

Within County/Within Matched Pair

Appendix 5: Placebo Test

This section also presents the results of a series of placebo tests to rule out pre-treatment differences. I estimate placebo "treatment" effects for hospital closures that have yet to happen. Specifically, I compare attitudes among respondents in closure communities interview 1, 2, 3, and 4 years before their local hospital closed–meaning the closures could not have influenced their voting. Table 37 presents the results of analyses. There is no evidence of a pre-existing difference in presidential voting.

Table 37 Placebo robustness check

	Voted republican president			
Placebo (t-1)	-0.012			
	(0.016)			
Placebo (t-2)		-0.015		
		(0.017)		
Placebo (t-3)			-0.024	
			(0.018)	
Placebo (t-4)				-0.013
				(0.019)
Constant	0.850***	0.804***	0.826***	0.804***
	(0.168)	(0.172)	(0.173)	(0.177)
State FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Geographic Controls	Yes	Yes	Yes	Yes
Demographic Controls	Yes	Yes	Yes	Yes
N	2499	2380	2316	2225
R-squared	0.570	0.569	0.567	0.563
Adj. R-squared	0.558	0.557	0.554	0.550

***p<0.01; **p<0.05; *p<0.1

Appendix 5: County Level Election Analyses

In this section, I include the results of *within* county analyses and *within* state analyses using county-level administrative election data. Table 38 presents the county-level results without the Milam, TX case. Table 39 presents results including the Milam case.

Table 38 Hospital closures and county voting (no Milam)

	Republican presidential vote	
Hospital Closure	0.044*	0.038***
	(0.023)	(0.014)
Constant	0.556***	0.736***
	(0.004)	(0.100)
County × State Clustered Errors	Yes	Yes
County Fixed Effect	Yes	No
Matched Pair Fixed Effect	No	Yes
County Demographic Controls	No	Yes
Observations	1,198	1,198
R^2	0.169	0.151
Adjusted R^2	0.090	0.132

***p<0.01; **p<0.05; *p<0.1

Table 39 Hospital closures and county voting (with Milam)

	Republican presidential vote	
Hospital closure	0.046**	0.047***
	(0.022)	(0.015)
Constant	0.556***	0.846***
	(0.004)	(0.119)
County × State Clustered Errors	Yes	Yes
County Fixed Effect	Yes	No
Matched Pair Fixed Effect	No	Yes
County Demographic Controls	No	Yes
Observations	1,241	1,241
R^2	0.187	0.157
Adjusted R^2	0.106	0.136

***p < 0.01; **p < 0.05; *p < 0.1

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Declarations

Conflict of Interest The author has no conflict of interest.

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