

The Bodies Politic: Chronic Health Conditions and Voter Turnout in the 2008 Election

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Abstract Health policy researchers often evaluate the social and economic consequences of chronic illness, but rarely have they considered the implications of chronic illness on one important form of political participation: voting. However, if chronic illnesses—already unequally distributed in society—are associated with differential rates of voter turnout, then these inequalities in democratic representation could, in turn, produce further health inequity. In this study, we use data from eight states from the 2009 Behavioral Risk Factor Surveillance Survey to examine the associations between having diagnoses of five chronic conditions and turnout in the 2008 US presidential election. After adjusting for sociodemographic characteristics and some health-related confounding factors, we find that individuals with cancer diagnoses are more likely to vote, while those with heart disease diagnoses are less likely to vote. These associations differ by race and educational status; notably, African Americans and those with lower education with cancer are even more likely to turn out to vote than whites and those with more education with cancer. We discuss the implications of our findings in the context of health social movements and the role of health organizations in shaping political processes, important directions for the study of health politics.

Keywords health politics, voting, chronic illness, inequalities

Introduction

One of the major health policy challenges in the United States in the twenty-first century is the aging population; as Americans live longer, they are living with more chronic health conditions. The US Department

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of Health and Human Services defines chronic illnesses as “conditions that last a year or more and require ongoing medical attention and/or limit activities of daily living” (HHS, n.d.). In 2010, 50.9 percent of the US population had at least one chronic health condition, and 26 percent had multiple chronic conditions (Ward and Schiller 2013), with cancer, heart disease, arthritis, and diabetes among the most prevalent (CDC 2013). These conditions are not distributed equally in society, however. Racial and ethnic minorities and individuals with lower socioeconomic status are significantly more likely to have certain chronic conditions. For example, 14.1 percent of American Indians /Alaskan Natives had diabetes diagnoses in 2011, compared with 12.6 percent of non-Latino African Americans, 12.1 percent of Latinos, and only 7.9 percent of whites; the diabetes rate among those without a high school degree is more than twice that of college graduates (Schiller, Lucas, and Peregoy 2012). Health disparities for cancer and heart disease, however, are patterned somewhat differently. In the 2011 National Health Interview Survey (Schiller, Lucas, and Peregoy 2012), 8.5 percent of whites indicated that they had received a cancer diagnosis from a doctor or health professional, compared with 5.2 percent of African Americans and 3.6 percent of Latinos, and Latinos were somewhat less likely to report coronary heart disease (5.9 percent) than either whites (6.3 percent) or African Americans (6.9 percent).

Researchers in public health and health policy often identify and analyze the consequences of chronic illness—and disparities therein—on a variety of health and social outcomes but rarely on political outcomes. For example, researchers have sought to understand how much chronic illnesses cost the health care system, public and private payers, and employers (American Diabetes Association 2008). Researchers have also examined the burden of chronic illness on labor market outcomes, such as worker productivity (Goetzel et al. 2003). Still others have examined the consequences of chronic illness on quality of life (Wilson and Cleary 1995), functioning and performing daily activities (Verbrugge and Patrick 1995), and psychosocial outcomes such as mental health, social support, and general well-being (Moussavi et al. 2007; Stewart et al. 1989). However, few health researchers concern themselves with the consequences of chronic health conditions on outcomes related to political participation, the most basic of which is the expression of one’s right to vote. While public health scholars have examined how differences in political power and policy making are important upstream determinants of health inequalities (Navarro and Shi 2001), researchers have rarely paused to consider the other direction: how health inequalities might shape differentials in political power.

Carpenter (2012) and Pacheco and Fletcher (2015) recently have urged greater attention among political scientists on the politics of health. Carpenter argues that there are important distinctions between health and other policy domains of interest to the discipline, such as labor or environmental politics. One such difference is the “embodied” nature of health; health can be central to how we think of ourselves, and thus health politics is more intimate than other issue arenas (Carpenter 2012). Pacheco and Fletcher (2015) make the case that health inequalities can produce political inequalities through multiple pathways.

We take up their call by examining the politics of health with respect to a long-standing politically important outcome: voter turnout. Our key research question is, does having a particular kind of chronic illness make individuals more or less likely to vote? By couching our question in terms of specific chronic conditions, we seek to expand upon earlier work that has focused on the impact of a more general measure of health—variously called self-rated health or subjective health status—on voter turnout. Denny and Doyle (2007), using British data, Mattila and colleagues (2013), in an analysis of thirty European nations, and Pacheco and Fletcher (2015), in two US data sets, show that being in poor health significantly reduces the propensity to turn out to vote, even controlling for many of the demographic and political factors that influence voting behavior.

Our motivations for examining specific chronic conditions partially overlap with these researchers’ motivations. We, too, are interested in the ways in which health differences among citizens may affect the quality of democratic representation. If people with particular chronic health conditions are less apt to vote than their healthier counterparts, there is the potential for “representational distortion” (Verba, Schlozman, and Brady 1995) if the policy preferences of the different groups systematically diverge. Because voting in presidential elections is the most egalitarian form of political participation (Verba, Schlozman, and Brady 1995), policy preferences between voters and nonvoters are usually small; therefore, voting tends to produce less representational distortion than other kinds of political activity such as working for, or contributing to, political campaigns, where participation levels are much lower and the preferences of the active and inactive are often more pronounced (Verba, Schlozman, and Brady 1995; Schlozman, Verba, and Brady 2012). Importantly, however, on issues of health care reform, differences between voters and nonvoters are larger than on many other policy issues such as abortion or foreign policy (Schlozman, Verba, and Brady 2012; Pew Research Center for the

People and the Press 2012). Representational distortion through differential turnout, therefore, could contribute to the creation of and implementation of health policies that do not represent the interests of those who might be most affected: people in poor health (Denny and Doyle 2007; Mattila et al. 2013; Pacheco and Fletcher 2015; Price et al. 2006). On the other hand, if there is differential turnout among the chronically ill based on specific diagnoses, representational distortion may occur within different diseases, not just between the healthy and the less well. To our knowledge, we are the first to examine whether these kinds of turnout inequalities exist.

Health, Disease, and Voter Turnout

There are at least four reasons to believe that the impact of specific chronic conditions on voter turnout might not only be a matter of ill-health: participatory resources, social networks, disease identities, and mobilization by advocacy organizations.

Participatory Resources

In general, the experience of illness reduces the financial and non-financial resources—including physical, cognitive, and social/emotional resources—that could promote civic participation through voting. People with chronic illnesses are very likely to face limitations in daily living or other activities (Verbrugge and Patrick 1995), so they may not vote because they simply feel too sick to get to the polls or they face functional limitations or other disabilities as a result of their health conditions, which impair their ability to walk or drive (Schur et al. 2002). There may also be important differences in the illness experience across diseases. A Swedish study examining the link between heart disease incidence and social capital (measured as the proportion of voters in that community) suggested that stress—a contributor to heart disease—may be confounded with feelings of empowerment that are also related to likelihood of voting (Sundquist et al. 2006). In addition, cognitive or emotional burdens may reduce attention to, interest in, or knowledge about politics or give rise to feelings of political inefficacy, all of which are important variables predicting turnout (Verba, Schlozman, and Brady 1995). In their 2007 paper, Denny and Doyle speculate that the experience of illness can produce these burdens, although empirical evidence on this point is limited. Another potential cognitive explanation may be that experiencing a serious chronic illness occupies people with a variety of concerns, including the threat of

their own mortality, which could reduce motivations to vote. In fact, discounting the value of future payoffs (Fowler and Kam 2006) or being more risk averse (Kam 2012) reduces the probability of voting.

Financial resources also matter. Health and socioeconomic status are highly correlated, with evidence in both directions (see Deaton 2002). Thus, the experience of chronic illness can often be tied up with the socioeconomic status and educational attainment explanations known to shape political participation (Verba, Schlozman, and Brady 1995). Pacheco and Fletcher (2015), for example, find an association between health status and turnout above and beyond its associations with socioeconomic status. Whether or not specific health conditions would matter for turnout beyond their associations with socioeconomic resources has not been examined, and it is possible that the resource constraints across different conditions are not equivalent. The underlying demographics of specific diagnoses vary, for example, but even controlling for these differences may not render them comparable because the social patterning of a disease may be more than just the sum of its demographic components, a point we develop below in discussing variations in disease identity. In addition, the cognitive barriers to voter participation may not be equally shared. For example, a person with diabetes may feel more burdened by an illness that requires daily management than a cancer survivor who is past active treatment, even though both people may rate their own health as “only fair.”

Social Network Explanations

Social connections, such as being a member of a church, a voluntary organization, or a union, make a person available for what Rosenstone and Hansen (1993) call “indirect mobilization” by friends, coworkers, fellow members, and neighbors (see also McClurg 2003 and contributors to Zuckerman 2005). Through simple behavioral contagion (Christakis and Fowler 2009), social pressure (Gerber, Green, and Larimer 2010), or a more considered “conditionally cooperative” strategy (Rolfe 2012), voting begets voting. Even being married can increase one’s chances of turning out if a spouse is contacted through a get-out-the-vote campaign (Nickerson 2008).

Just as social connections have been shown to be related to turnout, they also play a critical role in health outcomes. In one of the first studies to explore these relationships, Berkman and Syme (1979) found that people with fewer social and community ties were more likely to die over a period of nine years than those with more social network connections. The

experience of social isolation confers a risk for chronic illness on par with other health risks such as smoking or poor diet (House, Landis, and Umberson 1988). Since these important early studies, numerous researchers have examined these relationships (for reviews, see Smith and Christakis 2008; and Umberson and Montez 2010), showing, for instance, that marriage (while having stronger benefits for males than females) is generally associated with better health outcomes (Kiecolt-Glaser and Newton 2001), as is having high levels of social capital, though the direction of causality between civic participation and health is unclear (d'Hombres et al. 2010; Blakely, Kennedy, and Kawachi 2001). People without these attachments and social networks are both more likely to be in poor health and less likely to have the social resources that encourage participation in politics (Mattila et al. 2013).

Although the above research suggests generally that experiencing chronic illness would depress social network resources, there are also reasons to believe that this process would operate in a heterogeneous fashion by disease. Many, if not most, patient support groups or education programs are organized around specific ailments, not the "experience of illness" more generally. Although such groups are usually temporary and unlikely to be sites of explicit political discussion, they may still provide opportunities for the acquisition of civic skills and be places that facilitate new social connections. Thus, participation in these groups may be something that compensates for the material, social, and psychological disadvantages that usually attend poor health. Importantly, however, the prevalence of these kinds of groups varies extensively by condition. In a study of participation in self-help groups for twenty different diseases in four metropolitan areas, Davison, Pennebaker, and Dickerson (2000) found, in fact, that there is little correspondence between the overall incidence of a disease and the number of groups available for people who have the disease. For instance, after adjusting for incidence rates, breast cancer survivors formed more than forty times more support groups than heart disease sufferers.

Disease Identity Explanations

A related theoretical reason for exploring the chronic illness and voting connection is that, unlike the subjective experience of good or bad health, the diagnostic categories used in US medicine provide the sick with an explicit name for their malady, a classification that can acquire political relevance in at least two different ways: by highlighting specific

disease-dependent stakes in voting and by conferring a label that varies in its societal legitimacy.

First, a specific illness may affect people's sense of what is personally at stake in health policy, since health care experiences (e.g., navigating providers, billing, reimbursement) depend on the specific diagnosis. These variable experiences could translate to increased engagement in voting in the 2008 US presidential election, given the prominence of health care reform on the 2008 electoral agenda by both candidates. For example, candidate Barack Obama's campaign promise of "Health Care for All" meant the elimination of lifetime caps and that no one could be denied coverage based on preexisting conditions (Obama 2008) may have had particular relevance for those with a diagnosed illness, particularly one requiring ongoing care, even if they were already insured. Indeed, while lacking health insurance and feeling financially vulnerable with regard to health care may lead individuals to more readily identify their stakes in voting in such an election with health policy relevance, it is likely that the specific disease experience may also raise these stakes: those navigating the health care system for a particular chronic condition may have particular needs that they recognize in the campaign rhetoric on health care policy.

In fact, evidence supports the idea that interest in health care reform varies by chronic condition. Polling data from CBS News and the *New York Times* (2007) on public views about health care reform in February 2007 showed that people with chronic health conditions (cancer, heart disease, and diabetes) were more supportive of health care reform than those without the conditions, but the poll also identified some key differences by disease (see appendix A).¹ For instance, respondents who said that they, themselves, or someone else in their household had been diagnosed with cancer were the most concerned about the possibility of losing their insurance and about being able to pay for their current health care costs; they were also the most supportive of government-provided and -financed

1. The timing of the poll is fortunate. Although health care was already politicized in 2007, the level of polarization around it was not near the level it would ultimately reach with the 2008 election campaign and the debate surrounding, and the backlash against, the Affordable Care Act. The question wording for the condition question was, "Have you or has anyone in your household ever been treated for any of the following common conditions—heart disease, high blood pressure, emphysema, diabetes, cancer, or Alzheimer's disease?" (CBS News and *New York Times* 2007). Respondents had to volunteer that they or someone in their household had more than one of these conditions, which 17 percent of the sample did. Unfortunately, we do not know which of the six conditions are in these households. Hypertension was fairly widespread, but we consider it a risk factor rather than a disease. Very few households were affected by Alzheimer's or emphysema.

health care. People with diabetes or heart disease (or those who live with someone with one of these conditions) were not especially worried about losing their insurance, although households with members who have heart disease expressed concern about health care affordability.

The second identity-related explanation for a disease-specific link to turnout is that diagnosis with a condition is the critical stage in a process of social construction wherein an individual takes on a label that varies in its societally perceived legitimacy (Brown 1995). Once diagnosed, the individual can obtain access to health-related social movements and other forms of social networks that may (or may not) have implications for political action. The basic mechanism of such health movement formation is the “collective identity” facilitated by shared diagnoses and shared frames, or collective definitions of experiences and grievances (Brown et al. 2004; Allsop, Jones, and Baggott 2004). When groups defined by a particular diagnosis strategically construct a collective identity (often to counteract social stigma) and participate in politics, this process is known as engaging in “identity politics” (Anspach 1979).

The experience of specific illnesses is often bound up in how sufferers think of themselves and their identification with others who live with the same reality. These disease communities often develop shared ways of describing themselves—many people with cancer, for example, think of themselves as “survivors” rather than patients, and they often use the metaphor of a “cancer journey” in sharing their narrative. These descriptions both help in finding meaning for a significant life event and forge a collective identity that can be mobilized for political purposes (Allsop, Jones, and Baggott 2004), a process that Miller and Rahn (2002) have called “being-to-doing.” Patient groups seek to reconstruct their identities as positive rather than marginalized, and they gain their authority and legitimacy by sharing their narrative with others who have experienced the same thing (Allsop, Jones, and Baggott 2004).

However, this process does not operate in the same way for all conditions. In contrast with cancer, there are few celebrity spokespeople representing type 2 diabetes (and relatively low media coverage of the condition in general; see Armstrong, Carpenter, and Hojnacki 2006), a condition linked to racial and ethnic minorities and behavioral risk factors. Because of its higher rates in African American, Latino, and American Indian communities, the illness may have particular ethnic or racial connotations. Unlike the valorizing “survivor” identity of cancer, the label of “diabetic” that individuals assume once diagnosed may carry with it a societal sense of stigma toward the associated causal behaviors (Gollust

and Lynch 2011) or a tie to a particular racial/ethnic or cultural community. Thus, the social construction process that accompanies the label of chronic diseases may heighten particular group identity–related connections (Conrad and Barker 2010), with uncertain associations for their voting behavior.

Advocacy Organization Mobilization Explanations

Health organizations and larger health social movements have a long history in US politics. A well-known exemplar is the American Cancer Society. Started by a group of concerned physicians in 1913 with the goal of “taking cancer out of the closet,” the ACS (then known as the American Society for the Control of Cancer), within two decades, had developed a large grassroots organization to educate people about the early warning signs of cancer and to encourage those affected to seek treatment. In 1936, the society, in an effort to rebuild its treasury after it was decimated by the Great Depression, broadened its volunteer base by establishing a Women’s Field Army (WFA) to distribute information about cancer and to solicit funds (Ross 1987). By 1938, the WFA had units operating in forty-seven states and at its peak had seven hundred thousand dues-paying members (Anderson 2004). The participation of so many dedicated volunteers prompted the organization, in the early 1940s, to broaden the membership in its board of directors to include laypeople in addition to medical professionals (Ross 1987). In contrast, membership in the American Diabetes Association, founded in 1940, was restricted to physicians until 1970 (American Diabetes Association, n.d.). The American Heart Association, founded in 1915 as the Association for the Prevention and Relief of Heart Disease, did not begin recruiting lay volunteers until 1948 (American Heart Association, n.d.).

Many other disease- or condition-specific organizations seek to mobilize the public and patients and their families for advocacy efforts (Archibald 2008; Keller and Packer 2014), and the number of such organizations has grown explosively since the early 1990s (Best 2012). Frequently, these groups are started by the patients with the disease, such as Cancer Schmancer, founded by comedienne Fran Drescher after her diagnosis of uterine cancer, or Michael J. Fox’s foundation to fund research into Parkinson’s disease. Other patient advocacy organizations are started by the loved ones of a person with the disease. The Allergy and Asthma Network Mothers of Asthmatics (AANMA) began with the efforts of a mother of an asthmatic seeking information about her daughter’s condition. Among

other things, AANMA mobilizes members to write letters to federal policy makers and to attend Asthma Awareness Day on Capitol Hill. Many of these more recently founded organizations, however, appear to be what Skocpol (1999) calls “associations without members.” Keller and Packel (2014), in their study of 199 patient advocacy organizations, found that fully 60 percent were national-only organizations whose websites gave no indication that they had any kind of local-level presence. Such organizations are unlikely to stimulate political involvement by large numbers of people.

These differences in organizational history and structure may have implications for the degree to which people living with these illnesses are mobilized into political activity. An important reason why people get involved in politics, whether it be conventional types of participation, such as voting, or more intense forms of noninstitutionalized action such as protests, is that someone asks them to. Verba, Scholzman, and Brady (1995) report that more than half of the people they interviewed in their Citizen Participation Study had been asked to take part in some kind of political activity; of those, more than half agreed to do so. Individuals with organizational connections—members of churches, unions, home owners associations, senior citizens’ groups, and so on—were far more likely to receive such requests than the nonaffiliated. Even controlling for the fact that recruitment invitations are more likely among those with higher socioeconomic status and levels of political information and knowledge, requests to take part in political activity substantially increase the chances that someone will vote or engage in other forms of political participation. Disease advocacy organizations can ask their members to engage politically in a variety of ways, including “virtual” requests via an e-mail blast, the distribution of voter guides, or person-to-person recruiting at a fundraising event. Some disease-related groups, such as the American Cancer Society, establish specific associations under the IRS code 501(c)(4) designation, in order to separate its more expressly political activities from its charitable arm. Others, such as the National Breast Cancer Coalition, may exist only as such entities.

Research Objective: Illuminating the Chronic Condition–Voting Link

The objective of this study is to examine the relationship between chronic health conditions and voting, the first such investigation to our knowledge. We provide descriptive evidence of the associations between five of the most common chronic health conditions—diabetes, arthritis, heart

disease, asthma, and cancer—and voting, using data from eight states and examining turnout in the 2008 US presidential election. We also examine whether these relationships are different based on the racial or socioeconomic status of the individual with the chronic disease, given the well-documented bodies of research on both health disparities and disparities in voter turnout. Overall, we find strong evidence that heart disease is associated negatively with turnout, while cancer is associated positively with turnout. These distinct and opposing political outcomes related to disease identities implicate explanatory processes related to group membership and social mobilization that differ across illnesses, concepts we discuss in our concluding section.

Data and Methods

Data

The data come from the 2009 Behavioral Risk Factor Surveillance System (BRFSS), a Centers for Disease Control and Prevention (CDC) study. BRFSS is an ongoing telephone survey (including cell phones, starting in 2011) of more than four hundred thousand American adults over eighteen years of age, providing the authoritative source of public health data on health behaviors, chronic health conditions, and preventive health care. BRFSS is in the field continuously every year. Unlike other health surveys (such as the National Health Interview Survey), BRFSS is designed to offer detailed information at the state level, and state health departments have the ability to adapt the survey instrument based on their particular health needs and interests. Although there is a core set of questions that all states use, states can also choose to incorporate optional modules. In 2009, one such module (23.8) concerned “Social Context,” an eight-item module. In addition to survey items assessing home ownership, financial stressors, and details of workers’ pay structure, this module included a question about turnout in the 2008 election (described below). Eight states—Alabama, Alaska, Hawaii, Delaware, Illinois, Louisiana, South Carolina, and Wisconsin—chose to field this special module in 2009. The data for this study come from the 2009 BRFSS data for these eight states, totaling 49,405 respondents (CDC 2009).

Measures

The main dependent variable is a simple item asking respondents: “Did you vote in the last presidential election?” Options included “Yes,” “No,” “Not

applicable” (and included the prompts of “Not registered,” “Not a U.S. citizen,” or “Not eligible”), “Don’t know,” or “Refused.” We collapsed this item to create a dichotomous variable (1 = Yes, 0 = No), and all other options were coded as missing.

The key independent variables are respondents’ self-reporting of having a chronic health condition, including diabetes, arthritis, angina/coronary heart disease (which we refer to as heart disease for simplicity), asthma, and cancer. These are the only common chronic conditions available to us; we decided to focus on diagnosed health conditions for their distinct identity implications, rather than risk factors (such as high cholesterol). All five variables were measured in a similar way: “Have you ever been told by a doctor or other health professional that you have [chronic health condition]?” Some items included additional caveats, such as branching logic for the diabetes question to rule out gestational diabetes among women with a previous pregnancy. The question for arthritis (a broad category of conditions) encompassed the following specific diagnoses: “Have you ever been told by a doctor or other health professional that you have some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia?”

We also examined a variety of health-related variables that could plausibly be related to both the experience of chronic health conditions and political participation. Two variables concerned health insurance and access to care. People with chronic conditions who are uninsured or financially at risk as a result of their health care needs might find more at stake with health policy, as discussed above. Health insurance coverage was measured by this question: “Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare?” We used a dichotomous version of this variable, where 1 = No, signaling that the individual was uninsured. Financial insecurity was measured through a single item asking about the adequacy of coverage based on the costs of care: “Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?” As with uninsurance, we created an indicator variable (1 = Yes and 0 = No). For all variables, responses of “Don’t know / Not sure” or “Refused” were classified as missing.

Other variables of interest were participants’ health and functional consequences of their conditions, to capture some of the participatory resources described above. Based on other work (e.g., Mattila et al. 2013), we included self-rated health in the model. Self-rated health was measured using a standard five-category item: “Would you say that in general your health is Excellent, Very good, Good, Fair, or Poor?” We also included a

measure of respondents' degree of functional limitations using the following item: "Are you limited in any way in any activities because of physical, mental, or emotional problems?" This variable was coded to be dichotomous, where 1 = Yes and 0 = No. Next, given known relationships between illness and social support and social support and voting, we also incorporated respondents' degree of emotional and social support. This was measured as a five-category variable: "How often do you get the social and emotional support you need?" where 1 = Always, 2 = Usually, 3 = Sometimes, 4 = Rarely, and 5 = Never.

Finally, the BRFSS data include a suite of sociodemographic characteristics, including age, gender, race (white, African American, other), Latino ethnicity, marital status, income (an eight-category linear variable), educational attainment (Less than high school, High school, Some college, and College or more), own home versus rent, unemployed, and living in a metropolitan statistical area (MSA), suburb, or not an MSA. Appendix A displays descriptive characteristics of the sample across all these variables.

Analysis

We used logit regressions with state fixed effects (and standard errors clustered by state) to examine the relationship between turnout and chronic health conditions. The first model includes chronic health conditions and a variety of sociodemographic characteristics known to predict turnout and be correlated with health conditions. Failure to control for these factors would produce a biased estimate of the association between chronic conditions and turnout. For instance, since African Americans have a higher incidence of diabetes and since the risk of diabetes increases with age (in a curvilinear fashion), any association between diabetes and turnout would need to account for race, age, and age squared. For similar rationales, we also included measures of many of the social and economic determinants of health and political participation, such as home ownership, marital status, and living in a metro or rural region. The full models displaying all sociodemographic covariates are available in appendix C. To test whether any associations between chronic health conditions and turnout hold up after accounting for potential confounders or mediators of the relationship, we sequentially added the health and social consequence variables into the model: first, health insurance and financial insecurity; then, health status and disability (our measures of health-specific resources to distinguish them from more generic kinds of resources); and finally, degree of

emotional support (an imperfect measure of social connectedness but the best available in these data). To interpret the relationships between chronic health conditions and turnout, we calculated the predicted probability of voting in the 2008 election for each chronic health condition, for the sample average, using Stata 11's "margins" commands, with standard errors calculated using the delta method. Finally, we estimated stratified models and models with interaction terms by race and educational status to assess whether the association between chronic health conditions and turnout differs for socially disadvantaged populations. All analyses were conducted using the BRFSS survey weights to account for the complex design and nonresponse.

Results

Table 1 displays the prevalence of the five chronic health conditions in this sample, overall and by race/ethnicity and educational status. Almost half the sample reports having at least one of the five conditions; the prevalence is highest for arthritis (29.3 percent) and lowest for cancer (10.1 percent). Consistent with national data, our findings reveal a population that faces a significant chronic disease burden. These results also show that African Americans face higher rates of diabetes, and African Americans and Latinos face higher rates of asthma. In contrast, rates of arthritis are significantly higher among whites than among other racial groups. While rates of heart disease are equivalent between African Americans and whites, Latinos and those with other racial group identification (i.e., Asian and American Indian) report lower incidence of heart disease. Finally, whites report strikingly higher cancer rates than other races, with the rate of African Americans, Latinos, and those of other racial group identification around half the rate of whites. These data are consistent in direction with data from the National Health Interview Study in which 8.5 percent of whites indicated that they had received a cancer diagnosis, compared with 5.2 percent of African Americans and 3.6 percent of Latinos (Schiller, Lucas, and Peregoy 2012). In interpreting these results, it is important to consider both that the data come from only eight US states (so they are not national estimates) and that the question assessing chronic health conditions makes access to health care conditional in the question: the question asks about previous diagnoses by a health care professional and thus does not account for any untreated/undiagnosed health burden in this population.

Table 1 Prevalence of Chronic Health Conditions in Analytic Sample of Eight US States, and by Race, Ethnicity, and Educational Status (N=49,405) in Percentages

Chronic Disease	Full Sample (N = 49,405)	Race/Ethnicity				Education	
		White (N = 33,602)	Black (N = 7,868)	Latino (N = 1,425)	Other race (N = 3,898)	> Some college or more education (N = 20,466)	High school or less education (N = 28,939)
Diabetes	11.0	9.6	16.0 ^a	9.6	10.6	8.8	14.3 ^b
Arthritis	29.3	30.9	29.0 ^a	22.0 ^a	22.5 ^a	26.1	34.0 ^b
Heart disease	9.7	10.3	9.6	7.8 ^a	7.4 ^a	7.6	12.7 ^b
Asthma	12.8	11.5	13.7 ^a	18.0 ^a	12.7	12.1	13.8 ^b
Cancer	10.1	12.4	5.6 ^a	6.2 ^a	6.8 ^a	10.3	9.9
At least one of the above	48.2	49.2	48.2	42.4	42.1	44.4	53.8

Source: Author's analysis of 2009 Behavioral Risk Factor Surveillance System data (CDC 2009)

Note: All estimates incorporate complex sample survey weights.

^aDifferences from white is significant at $p \leq 0.05$ in two-tailed tests.

^bDifferences from some college or more is significant at $p \leq 0.05$ in two-tailed tests.

Differences by educational status are more clear-cut. Individuals with fewer years of education (high school or less) are significantly more likely to report diabetes, arthritis, heart disease, and asthma, compared with those with some college or more education.

Turning now to the key outcome of interest, turnout, we find that reported turnout in the 2008 election is high in this sample: 74.3 percent of BRFSS participants in these eight states report voting in the election. This measure—higher than the US Census reported rate of 64 percent (File and Crissey 2012)—may be inflated due to social desirability bias, particularly because the BRFSS item does not use probes to normalize not voting, as do other surveys designed for political purposes. However, despite concerted efforts to reduce overreporting,² the respondents in the American National Election Studies (2010), a very high-quality survey of the US election, nonetheless reported a turnout rate of 78.1 percent. Of the total sample of 49,505 participants, 3,324 (6.7 percent) either were not eligible to vote or refused to answer, and thus they enter our analyses below as missing. After removing this group, the proportion of those who report turning out to vote is 79.9 percent. Our figure, therefore, is not out of line with other survey studies of voter turnout in 2008.

Table 2 displays the results of regression models to assess the associations between chronic health conditions and turnout. Model 1, incorporating only the sociodemographic characteristics, reveals that people with a history of heart disease were significantly less likely to report voting in the 2008 election, whereas people with a history of cancer were significantly more likely to report voting. Table 3 displays the differences in the predicted probabilities of voting, showing that people with a history of heart disease are about 2.4 percentage points less likely to turn out to vote, while people with a history of cancer are about 2.6 percentage points more likely to vote.

These differences could be due to the high profile of health care policy in the 2008 election, with—as noted earlier—Barack Obama and John McCain both placing health care reform high on their policy agendas. Perhaps people with chronic health conditions are motivated to vote based on their needs for health insurance access or the financial security that comes with more affordable health care. Accounting for these factors

2. For example, the traditional voter turnout question used in the American National Election Studies is as follows: “The next question is about the elections in November. In talking to people about elections, we often find that a lot of people were not able to vote because they were not registered, they were sick, or they just didn’t have time. How about you—did you vote in the elections this November?”

Table 2 Associations between 2008 Voter Turnout and Chronic Health Conditions

	Model 1 (Demographics)	Model 2 (+ Insurance)	Model 3 (+ Health and Disability)	Model 4 (+ Emotional Support)
Diabetes	-0.06 (0.05)	-0.08 (0.04)	-0.01 (0.04)	-0.01 (0.04)
Arthritis	-0.03 (0.05)	-0.04 (0.05)	0.03 (0.05)	0.03 (0.05)
Heart disease	-0.18 (0.06)**	-0.19 (0.05)***	-0.10 (0.06)	-0.11 (0.06)*
Asthma	0.01 (0.06)	-0.00 (0.06)	0.04 (0.05)	0.04 (0.05)
Cancer	0.21 (0.07)**	0.20 (0.06)**	0.24 (0.06)***	0.24 (0.06)***
Uninsured		-0.32 (0.09)***	-0.34 (0.09)***	-0.33 (0.09)***
Avoid doctor		0.04 (0.06)	0.08 (0.05)	0.11 (0.05)*
Disability limitations			-0.15 (0.06)*	-0.14 (0.06)*
Self-rated health			-0.11 (0.03)***	-0.09 (0.03)***
Emotional support				-0.09 (0.02)***
Includes demographics and state fixed effects ¹	✓	✓	✓	✓
N	38,988	38,988	38,988	38,988

Source: Author's analysis of 2009 Behavioral Risk Factor Surveillance System data (CDC 2009)

Notes: Table entries show logit coefficients and standard errors.

¹All models adjust for age and age squared, race (black, Latino, other race relative to white), income, educational level, home ownership, marriage status (married vs. unmarried), gender, employment status (out of work vs. not), and urbanicity. All models also adjust for fixed effects of state with standard errors clustered at the state. Models showing all covariates are available in appendix B.

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$ from two-tailed tests.

Table 3 Differences in Probabilities of Turnout by Chronic Health Conditions in Percentages

	Model 1	Model 2	Model 3	Model 4
Diabetes	-0.83	-1.00	-0.12	-0.16
Arthritis	-0.41	-0.56	0.42	0.40
Heart disease	-2.35	-2.56	-1.36	-1.45
Asthma	0.08	-0.05	0.47	0.46
Cancer	2.60	2.53	2.94	2.89
Uninsured	—	-4.39	-4.60	-4.50
Avoid doctor	—	0.48	1.06	1.33
Disabled	—	—	-1.93	-1.88
Self-rated health (poor compared to excellent)	—	—	-5.52	-4.86
Social/emotional support (never compared to always)	—	—	—	-4.68

Source: Author's analysis of 2009 Behavioral Risk Factor Surveillance System data (CDC 2009)

Notes: Table entries show differences in probability of voting for those with the health condition compared with those without the condition indicated, based on predicted probabilities from the logit regression models displayed in table 3, with all other covariates held constant at their means. Associations with turnout that are statistically significant ($p < .05$) in table 2 are displayed in bold.

(model 2), we still find the same positive association with turnout for those with a history of cancer and the negative association for those with heart disease. We also see that not having health insurance is associated with about a 4.4 percentage-point decrease in the probability of voting (table 3).

Of course, people with chronic health conditions may not vote because they feel too sick to get to the polls or they face functional limitations or other disabilities as a result of their health conditions (Schur et al. 2002). After adjusting for these factors (model 3), we still find that people with cancer are more likely to turn out to vote by about 3 percentage points. The association for those with heart disease becomes smaller and rises above conventional levels of statistical significance. As anticipated, these findings show that compared to those in excellent health, those in poor health are less likely to vote by about 5.5 percentage points; similarly, those with any activity limitations are less likely to vote by 2 percentage points.

In the final model (model 4), we account for the strong relationship between chronic health conditions and social support and that between turnout and social support, where people with more social support tend on average to be healthier and more likely to vote. After adjusting for this factor, we see that people with a history of cancer are more likely to vote

(by 2.9 percentage points) and people with a history of heart disease are less likely to vote (by 1.5 percentage points).³ Reporting a history of diabetes, arthritis, or asthma is not significantly associated with turning out to vote in the 2008 election. This model also shows that people who report never having social or emotional support are less likely to vote by 4.7 percentage points, a similar magnitude decrement as those who report poor health. Finally, in the full model, adjusting for all covariates, we see that people who reported not being able to pay for health care in the last year were statistically significantly more likely to vote, albeit by a small percentage (1.3 percentage points).

The full results showing all covariates, available in appendix B, lend additional confidence to the validity of our findings and help us understand the magnitude of these associations. The demographic associations with turnout follow our expectations based on other work examining turnout in general and turnout in the 2008 election in particular (e.g., the more educated are more likely to vote, and African Americans are more likely to vote) (McKee, Hood, and Hill 2012). In particular, the fully adjusted model (model 4) indicates that the largest differences in turnout were by age, race, and education, with African Americans 13 percentage points more likely than non-African Americans to report voting, those with a college education or higher 21 percentage points more likely to vote than those with less education, and a person age sixty was 13 percentage points more likely to vote than someone age forty, after adjusting for all the other demographic and health-related factors in the model. Differences in turnout based on other demographic factors approximate the magnitude of the health-related variables: women were 2 percentage points more likely to vote; married people were 1.2 percentage points more likely to vote; people employed were 2 percentage points more likely to vote than those unemployed; and people who own a home were 5 percentage points more likely to vote. Thus, having cancer contributes an increase in probability to vote that is slightly more than the increment attributable to being employed.

In the last set of analyses, we examine differential associations between health conditions and voting in regression models stratified by respondents' racial identity or educational attainment. Because of sample size limitations, we focus only on African American versus white race and two

3. BRFSS also includes data on cancer type. For all of the most prevalent cancer types available in this sample (breast, prostate, colon, melanoma, and other skin cancer), unadjusted turnout was higher than the mean (all above 85 percent). We also reran our models separately, excluding the 18 percent of cancer survivors who report having breast cancer, and the models hold, suggesting to the extent possible that no single type of cancer is driving the enhanced turnout association.

Table 4 Associations of Turnout and Chronic Health Conditions, by Race and Education

	Full Sample (N = 38,988)	Stratified by Race			Stratified by Education		
		Whites Only (N = 26,857)	Blacks Only (N = 5,950)	High school or less (N = 15,067)	More than high school (N = 23,921)		
Diabetes	-0.01 (0.04)	-0.10 (0.05)*	0.06 (0.13)	0.01 (0.04)	-0.10 (0.09)		
Arthritis	0.03 (0.05)	0.09 (0.06)	-0.00 (0.12)	0.01 (0.04)	0.02 (0.10)		
Heart disease	-0.11 (0.06)*	0.00 (0.08)	-0.11 (0.03)***	-0.10 (0.04)**	-0.14 (0.13)		
Asthma	0.04 (0.05)	0.04 (0.05)	-0.11 (0.18)	-0.09 (0.05)	0.13 (0.06)*		
Cancer	0.24 (0.06)***	0.21 (0.03)***	0.41 (0.12)***	0.21 (0.08)**	0.29 (0.08)***		

Source: Author's analysis of 2009 Behavioral Risk Factor Surveillance System data (CDC 2009)

Notes: Table entries show logit coefficients and standard errors. All models adjust for all covariates in table 3, model 4, except for race and education depending on the model. All models also adjust for fixed effects of state with standard errors clustered at the state.

* $p < .05$, ** $p < .01$, *** $p < .001$ from two-tailed tests.

categories of education: high school or less education as compared with some college or more. Table 4 displays the stratified models, incorporating all covariates as in model 4 of table 2. These models show some differences in the associations with chronic conditions and turnout by race or education. For instance, for whites, but not African Americans, diabetes is negatively associated with turnout; for African Americans, but not whites, heart disease is negatively associated with turnout. Cancer is strongly positively related to turnout in both groups, and the association is actually stronger among African Americans than among whites (the logit coefficient is 0.41 for African Americans and 0.21 for whites). Similarly, cancer is strongly positively associated with turnout in both high- and low-education groups, while heart disease is negatively associated with turnout for both groups, but only statistically significantly so among those with less education. A history of asthma has a positive association with turnout only among those with high educational status. Figures 1A and 1B illuminate the differences in predicted probabilities of turning out to vote, for each health condition compared with not having that condition, for African Americans and whites (1A) and those with higher education and lower education (1B).

To interpret whether these apparent racial and educational differences are statistically significant, we estimate regression models with interaction terms by race and the five chronic conditions (in the sample limited to just African Americans and whites) and educational attainment and chronic conditions. These results (not shown) indicate a marginally significant interaction between African Americans and cancer ($p = .052$), suggesting that the effect of cancer on turnout is different for African Americans and whites. Results also indicate a significant interaction between asthma and lower education ($p < .001$), demonstrating that the effect of asthma on turnout is significantly different by educational attainment. The interaction between cancer and lower education is also statistically significant ($p = .045$), demonstrating the relatively strong relationship between cancer and turnout for the less educated.

As a final exploration, we examined self-rated health for the key groups that appear from the above models to have opposing relationships with voting. We find that self-rated health among African Americans with cancer is poorer (3.49, where higher values are poorer health) than whites with cancer (2.90; $t = 4.01$, $p < .0001$); self-rated health among those with high school or less education with cancer is poorer (3.38) than that of those with higher than high school education (2.73; $t = 19.6$, $p < .0001$). Finally, self-rated health among those with asthma and low education (3.23) was poorer than that of those with asthma and more education (2.65; $t = 16.0$, $p < .0001$).

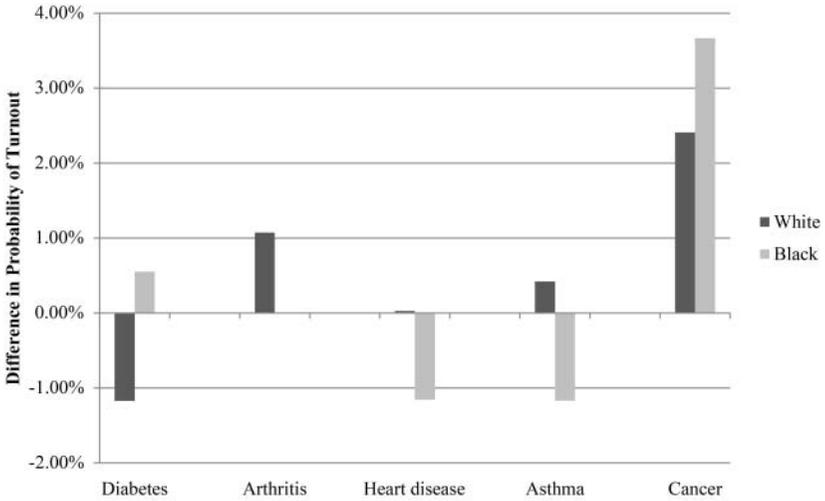


Figure 1A Differences in the Predicted Probability of Voting in 2008 by Chronic Health Conditions and Race

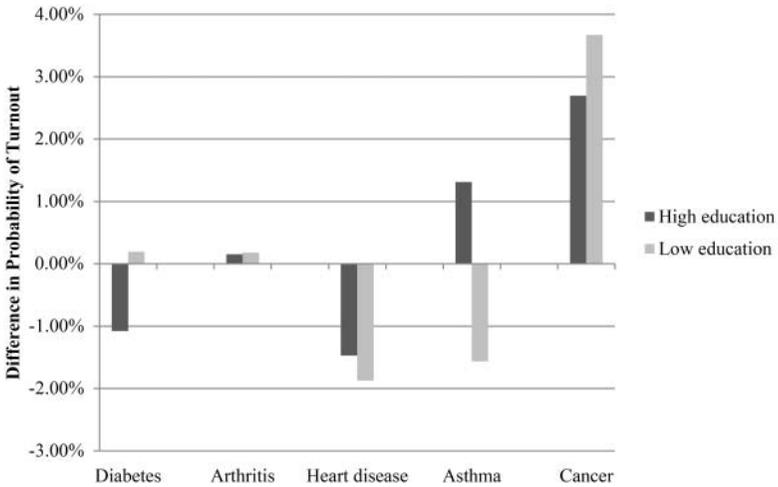


Figure 1B Differences in the Predicted Probability of Voting in 2008 by Chronic Health Conditions and Education

Source: Author's analysis of 2009 Behavioral Risk Factor Surveillance System data (CDC 2009)

Note: Predicted probabilities are based on stratified models displayed in table 4.

Limitations

Before we proceed to a discussion of the larger implications of our results, a brief word about the limitations of our data is in order. A chief limitation is that the BRFSS module that asked about voting was only used in certain states in 2009, so we cannot generalize our findings to other states or the nation as a whole. However, these states are diverse demographically, geographically, and in terms of political participation. The use of state fixed effects allows us to control for unmeasured state-level differences in political institutions, overall activity of disease advocacy organizations (though organizational mobilization can differ between types of diseases within the same state), in social capital and social cohesion, party competition, registration requirements, and political culture. We rely only on within-state variation to estimate the coefficients. In addition, the chronic conditions we study are common enough (10 percent or more of the sample) that our sample sizes are adequate even with only eight states represented.

Second, there are limitations in the variables available in BRFSS, both relevant to health-related characteristics and political characteristics. We focused on the five chronic conditions because of their availability in the data set and their prevalence. There was no measure of physician-diagnosed depression or other mental health disorders in this data set; measures of depression symptomology (e.g., days in past month feeling sad, blue, or depressed) were asked in some states but not the ones with the turnout variable. The only measure available that tapped into mental health asked about the number of days in the past month that respondents reported that their mental health was not good, and the definition included “stress, depression, and problems with emotions.” Given that this measure does not signal a chronic illness *diagnosis*, we did not include it in these analyses. To some degree, our inclusion of self-rated health in the final model captures mental illness as well as more general symptoms, such as weakness and fatigue, each of which independently influences subjective health status even after other chronic conditions are controlled (Molarius and Janson 2002). As these health concerns could be expected to be barriers to voter turnout as well, we have removed some of their confounding in our fully adjusted results. Future research should examine the likely important links between measures of mental illness and voter turnout, especially given the strong relationships between mental illness and other nonpolitical forms of social marginalization and stigma (Link and Phelan 2001). In addition, while we included uninsurance and financial insecurity, since they are plausibly related to the individuals’ sense of stake in

health care reform, more in-depth and diagnosis-specific measures of the individual's experience with health care costs, quality, or access were not available in the survey.

Similarly, BRFSS lacks variables to consider as additional mediators, such as civic skills, political motivation, and party contact. Particularly problematic is that there are no measures of party identification, political knowledge, political interest, or which candidate the respondent voted for in the 2008 election, all of which would go far in advancing our understanding of the link between chronic illness and political participation. Nor are there any measures of the survey participants' membership in or contact with health-related organizations, a potentially important mechanism we discussed above. Our findings for the mobilizing effects of a cancer diagnosis are consistent with such a mechanism, but more explicit tests of organizational mediation are required. Health survey data rarely offer any of these valuable measures of political participation, and the same data limitation is true of political surveys, in which survey data rarely include more than paltry measures of health status (Pacheco and Fletcher 2015; Gollust 2013). We consider these analyses an important step forward and a call for encouragement to collect more data that can be used to link health and political variables.

Finally, our measure of turnout may be inflated due to social desirability bias, which plagues most surveys. As mentioned previously, the BRFSS item does not use probes to normalize not voting, although these have proved to be of limited use in reducing the bias except when they are also accompanied by additional (and lengthy) prompts that cue survey respondents' memories (Belli, Moore, and VanHoewyk 2006). In addition, African Americans tended to overreport voting in 2008 (McKee, Hood, and Hill 2012), a source of error that may be present in these data as well (reported turnout among African Americans in our sample, unadjusted for any other factors, was 85.5 percent compared to 82 percent among whites, 62 percent among Latinos, and 68 percent among those reporting another race/ethnicity). However, we have no reason to believe that this error would be particularly enhanced among those with chronic conditions (adjusting for race and other covariates), so this does not likely pose a threat to our overall findings.

Discussion

Our results reveal that in a very large sample of residents in eight US states, the experience of specific chronic conditions is associated with turning out

to vote in the 2008 presidential election, even after accounting for confounding demographic characteristics and the recently documented association between turnout and subjective perceptions of poor health (Mattila et al. 2013; Pacheco and Fletcher 2015). Specifically, having cancer is associated with a small increase in propensity of voting in that election, and having heart disease is associated with a small decrease in propensity of voting, for the full sample. We are able to rule out that these associations are explained entirely by certain aspects of the participatory resource or social network explanations discussed in the introduction: neither health insurance status, financial insecurity regarding costs of care, disability, feelings of poor health, nor the quality of social support explained away these associations. Although our ability to accurately operationalize these theoretical constructs is limited in this data set, our findings do demonstrate that there is something “special” about having a particular chronic illness that is associated with turnout, even after adjusting for other correlated factors.

At the same time, we also provide additional evidence in support of the strong association between self-rated health and turnout (e.g., Mattila et al. 2013; Pacheco and Fletcher 2015); people in poor health in our sample were less likely to vote in 2008, even after adjusting for health conditions. This finding adds to the growing body of evidence demonstrating the surprising predictive power of this particular indicator of overall health (e.g., Schnittker and Bacak 2014). We also show that people with less frequent emotional support, the uninsured, and the disabled are also less likely to vote. This could be because these variables are tapping into aspects of financial and nonfinancial participatory resources, as opposed to measuring aspects of self-interest in voting. Indeed, these findings confirm the consensus in political behavior that factors plausibly related to self-interest (e.g., a self-interested rationale among the uninsured to vote to gain access to health insurance) do not generally boost turnout except under very specific conditions (Sears and Citrin 1985).

Our final key finding is that any “chronic condition effect” on turnout differs by respondents’ socioeconomic status and race. In particular, we show that cancer boosts the turnout of African Americans and the less educated more than whites and the well educated. This is all the more remarkable given that we find in our data that African Americans with cancer (and the less educated with cancer) have lower self-rated health than whites (or the more educated) with cancer: they feel sicker but vote in higher numbers nonetheless. Of the chronic conditions examined, having cancer appears to compensate somewhat for existing inequalities in

political participation rather than reinforcing them, similar to the way religious affiliation compensates for income (Verba, Schlozman and Brady, 1995; but see Putnam and Campbell 2012). Being diagnosed with asthma, on the other hand, exacerbates socioeconomic inequalities. Being diagnosed with diabetes is particularly demobilizing among whites. These results reinforce our case that the study of health in mass politics would be well served by going beyond subjective health status as the primary independent variable to examine specific health conditions, since these health conditions have variable relationships with political outcomes. Below, we identify some additional explanations for these disease-specific relationships and describe their implications.

Disease-Specific Explanations for Health and Voting Link

Our findings of a special relationship between cancer and turnout demand additional inspection. Empirical and narrative evidence about the experience of cancer and cancer movements—in contrast with those of other conditions—help make sense of these findings and also provide a set of hypotheses for future inquiries into health politics. A poll conducted by the Kaiser Family Foundation and *USA Today* in 2006 of more than nine hundred households in which at least one person had been diagnosed with cancer may help illuminate the “compensatory” interaction between education and having cancer (KFF, Harvard School of Public Health, and *USA Today* 2006). In analyses of these data, Rahn (2009) found that 61 percent of people with cancer considered themselves to be “survivors.” Interestingly, a “survivor” identity was more widespread among those with *less* education: 69 percent of those without a high school education thought of themselves as survivors, compared with 61 percent of survivors with a high school degree. Just 52 percent of those with a college degree or more claimed the identity. People with cancer who considered themselves to be survivors were far more likely to engage in a variety of activities, including fund-raising, volunteering, and counseling others (Rahn 2009) than those who did not identify as survivors. These situations provide sites where survivorship identities can be recognized by others, publicly “performed,” and reinforced (see, e.g., Klawiter 1999).

As described in the introduction, the American Cancer Society combines advocacy with opportunities for identity expression. Its annual Relay for Life, for example, a fund-raising event that happens in nearly six thousand communities across the nation and involves millions of participants and volunteers, opens with a celebratory Survivors’ Walk, a ceremonial

walk around the track that honors the cancer survivors in attendance, many of them wearing special T-shirts that make their identities apparent. In 2008, relay attendees also might have had the opportunity to board the Fight Back Express, a crosscountry bus tour organized by the American Cancer Society Cancer Action Network (ACS CAN), the American Cancer Society's political arm (a 501[c][4] organization), to register voters and recruit activists for the ACS's policy agenda (see Frates 2008), which included a vigorous push for health care reform. According to ACS CAN, the Fight Back Express went to 512 events in 480 different communities. A similar get-out-the-vote effort, Cancer Votes, was directed by ACS CAN in 2012.

Other cancer-related organizations also have policy impact. For example, the National Breast Cancer Coalition (NBCC), founded in 1991, led the fight that ultimately resulted in a large increase in federal funding for breast cancer research in the US Department of Defense (Strach 2013), and LiveStrong also has held a prominent role in awareness building and has spent more than \$2 million on lobbying (Choma 2013). Neither the NBCC nor LiveStrong has the local reach of the ACS, however; they resemble Skocpol's (1999) "new model of association building" led by upper-middle-class professionals. The ACS thus may occupy a unique position in health politics, having retained its volunteer roots at the local level while developing a powerful voice in Washington.

Cancer is also overrepresented among disease advocacy organizations overall. According to data collected by Rachel Best (personal communication, September 30, 2014), in 2005 (the most recent year in her data set) there were 620 cancer organizations, two-thirds of which were "general" rather than organized around specific types of the disease. In contrast, asthma had just 18 advocacy organizations, diabetes 52, arthritis 54, and heart disease 83. Organizational differences among these groups are also potentially consequential for political mobilization. In Iowa, for example, a battleground state in the last two presidential elections, the ACS has nine local offices. In contrast, the American Lung Association, the oldest of the big health charities, has just one, located in a suburb of the largest city and state capital, Des Moines. In Wisconsin, also a battleground state, the ACS has nine local offices, whereas the American Diabetes Association has three, two of them located in suburbs of Milwaukee and the other in a suburb of Madison. We already know from campaign politics literature that the number of local offices can make a difference to turnout (Masket 2009). In comparison to the other big health charities and many newer health advocacy groups, the ACS has the organizational infrastructure to pursue a

“ground game” for its health policy agenda. Mobilization, accompanied by the distinctive health policy attitudes of people with cancer (appendix A), may have been an especially potent combination in 2008.

Disease-related professional societies and health organizations also differ in their strategies of influence. Some, like the National Breast Cancer Coalition, have expressly political goals (Strach 2013), whereas other health nonprofits (like the American Heart Association) prefer nonconfrontational, awareness-raising campaigns, partnering with commercial entities (see Bennett 2011), or both. Some health organizations have the resources to pursue both “insider” and “outsider” routes to political influence. The big health nonprofits that represent the chronic conditions we study here all have a Washington presence, but the ACS stands out among them in its lobbying capacity.

Using data from OpenSecrets.org, the website of the Center for Responsive Politics, figure 2 displays the cumulative lobbying expenditures from 1998 to 2012 of five organizations—the ACS, the American Heart Association, the American Lung Association, the Arthritis Foundation, and the American Diabetes Association (CRP, n.d.). During this interval, the ACS spent more than three times the amount spent by the American Heart Association and more than ten times as much as the American Lung Association. These differences are consequential: in the most comprehensive study to date, Best (2012) finds that lobbying expenditures by disease-specific organizations significantly affect changes in federal research funding, as does the total number of nonprofits that represent a particular disease. Thus, considering that individuals with diseases differ in their propensity to vote and the organizations representing those diseases already have higher or lower influence in politics, we would see a multiplicative effect for how people with chronic conditions are more or less represented in politics (with cancer, for instance, leading in influence), an implication we consider in our conclusion.

Finally, social construction and illness experience also likely factor into the observed differences in voter turnout. It is well known that media coverage of illness is not proportional to its prevalence and that diseases that cause higher mortality among racial/ethnic minorities are particularly less likely to be covered (Adelman and Verbrugge 2000; Armstrong, Carpenter, and Hojnacki 2006). Diseases for which there is less attention may make the newly diagnosed feel less a part of a social community of people affected by that condition; combined with the differences in number of affiliated organizations, this could have implications for the social network-based mechanisms of political turnout. Second, chronic illnesses

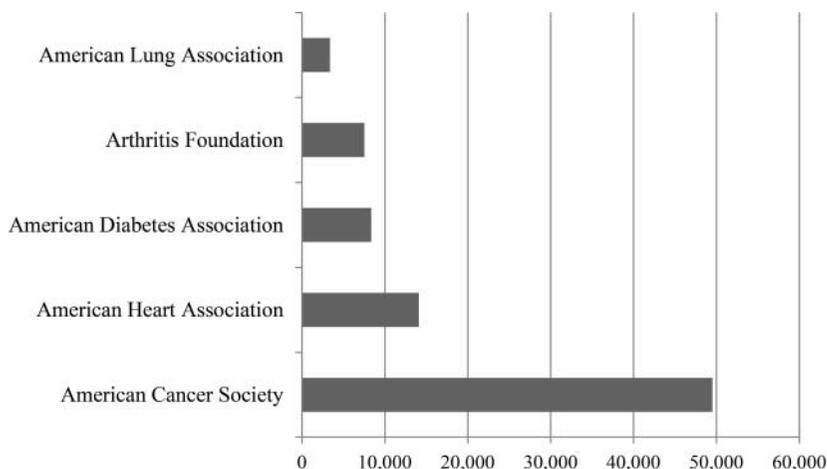


Figure 2 Total Lobbying Expenditures (in Millions) by Disease Nonprofits, 1998–2012

Source: Authors' calculation from data from OpenSecrets.org (CRP, n.d.)

differ in their social construction of “deservedness.” Groups in society that are considered unsympathetic, undeserving, or stigmatized receive fewer benefits (and, in fact, more punitive attention) than those groups that are constructed sympathetically (Schneider and Ingram 1993). The way in which a disease’s causal attribution is understood in society—in particular, whether individuals are perceived to be at fault for their illness (Weiner 1993)—influences our cultural and social understanding of disease. Heart disease and diabetes, for instance, may be viewed by society as diseases in which sufferers are at fault due to improvidential behavior (Gollust and Lynch 2011). On the societal level, as Best (2012) argues, these social constructions feed back and shape the disease advocacy process, with stigmatized diseases disadvantaged in terms of the amount of funding they receive. On the individual level, the experience of living with a negatively constructed illness may be disempowering (compounding the stress of the illness experiences), and the experience of stigma independently contributes to negative health outcomes and stress (Puhl and Heuer 2010), thus further depressing the emotional and physical resources that could be used for voting. As Sundquist and colleagues (2006) suggest in the case of cardiovascular disease, this sense of disempowerment is correlated both with disease incidence and with voting.

Conclusions and Implications

Overall, our findings demonstrate that certain populations—those with heart disease, those who report poor health and poor emotional support, those without insurance, and those who are disabled—are all vulnerable to being underrepresented in politics, whereas those with cancer may be overrepresented. These findings illuminate how the workings of health politics (e.g., the social construction of deserving disease groups and advocacy organization mobilization) may contribute to the process known in political science literature as policy feedback: creating a new participation pattern that will, in turn, shape policy and politics outcomes in the future (Campbell 2011; Mettler and Soss 2004). Of course, it is important to acknowledge that voting is just one of many routes through which individuals can participate in politics and have an influence on policy outcomes. Yet voting is the most direct route through which individuals have their voices heard, whether through democratic representation or through public health–related referenda appearing on ballots. (These are increasingly used; consider recent votes for sugar-sweetened beverage taxation or legalizing medical marijuana.) Thus, our findings of relationships among chronic health conditions and voter turnout offer a mechanism through which some kinds of health inequalities might be perpetuated. If groups that suffer disproportionate burdens of certain chronic illnesses are also those that have less access to political power and the resources that serve as a fundamental cause of health inequalities (Link and Phelan 1995), then these inequalities will be reified and exacerbated in the future. Our results suggest that, for instance, people with heart disease who lack political power may face a compounding of health threats, since access to political power is itself an important determinant of health.

Our results, though, challenge a simplistic understanding of health disparities that lumps together disease sufferers: we see heterogeneity in the relationships with turnout by disease and also by social status within diseases. Contrary to the conventional health disparities explanation, we do not see that African Americans or people of lower socioeconomic status are particularly disadvantaged in the realm of voting. On average, African Americans are more likely to report voting in 2008 and the less educated are less likely. However, within specific disease groups these relationships differ; for example, African Americans and the less educated with cancer actually reap what seems to be a greater benefit through the disease label in terms of propensity to vote. As we discuss below, the mechanisms behind these relationships demand further inquiry. But at the least, our findings

challenge health disparities scholars to consider the complex interrelationships among disease experience, race, and class rather than reducing group identities to only one or the other.

Due to our data limitations, we were not able to explore the precise mechanisms of how chronic conditions lead to voting, but we have laid out a number of explanations that implicate disease identity and advocacy group mobilization as potential hypotheses. Whether and how these social, organizational, and political processes contribute to the self-perceptions of disease sufferers and influence their political activity (or inactivity) is an important question for future inquiry. In what ways do bearing illness-related stigmas have political consequences (see, e.g., Link and Phelan 2001)? What is the role of health organizations in promoting or alleviating these stigmas? Answering these kinds of questions requires an interdisciplinary orientation (combining health policy, medical sociology, and political science) and linking many kinds of data: the disease identities and health-related perceptions of people with different health conditions, the cultural content of illness categories, mobilization efforts by various social and political actors, and indicators of a variety of political outcomes, including, but not limited to, voting, lobbying, and research funding. Our more modest study indicates that chronic conditions affect political action differently and in ways that are not mediated through subjective health status. We have speculated about the origins of these differences, but more systematic and comparative analyses of health organizations and their structures and strategies are needed to understand them fully. We encourage political behavior scholars and others interested in health politics to pursue research that incorporates multiple levels of analysis and comparative disease categories. Such an approach is necessary, in our view, to elucidate the nexus of political and health inequalities.

■ ■ ■

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Appendix A Polling Data on Health Attitudes by Health Condition, 2007, in Percentages

	Fear Losing Insurance ^a	Very Concerned about Health Care Costs ^b	Favor National Health Insurance ^c
Heart Disease	39.1	31.3	57.4
Diabetes	39.3	18.3	57.4
Cancer	54.0	36.9	65.0
No Health Conditions	38.2	22.6	49.0

Source: Authors' analysis of CBS News and *New York Times* 2007; Roper Center for Public Opinion Research, n.d.

^aAre you concerned that in the next five years, you or anyone in your household might lose your health insurance for any reason such as changing jobs or developing a serious illness? [Question asked only of people with health insurance (89%).]

^bHow concerned are you about the health care costs you and your family might face in the coming years—Very concerned, Somewhat concerned, or Not at all concerned?

^cWhich do you think would be better for the country: (1) Having one health insurance program covering all Americans that would be administered by the government and paid for by taxpayers, OR (2) Keeping the current system where many people get their insurance from private employers and some have no insurance?

Appendix B Descriptive Characteristics of Analytic Sample from Eight US States (N = 49,405)

Characteristic	Mean or %
Age	49.3 (mean)
Male	46.3%
Black	19.4%
Latino	3.93%
Other race	8.83%
Income (8-pt. scale)	5.64 (mean)
Educational attainment	
< High school	10.2%
High school	30.8%
Some college	27.1%
College or more	31.9%
Own home	74.2%
Married	53.4%
Unemployed	7.1%
Urbanicity	
Center city / MSA	32.4%
Outside MSA	22.7%
Suburb	10.0%
Rural	34.9%
Uninsured	13.7%
Avoided doctor	13.7%
Self-rated health	
Excellent	18.1%
Very good	31.3%
Good	31.5%
Fair	13.5%
Poor	5.6%
Frequency of emotional support	
Always	40.5%
Usually	25.9%
Sometimes	14.4%
Rarely	4.5%
Never	4.7%

Source: Author's analysis of 2009 Behavioral Risk Factor Surveillance System data (CDC 2009)

Appendix C Full Regression Models (showing all covariates)

	Model 1 Demographics Only			Model 2 Including Insurance			Model 3 Including Health and Disability			Model 4 Including Emotional Support		
	Robust		p-value	Robust		p-value	Robust		p-value	Robust		p-value
	Coef.	SE		Coef.	SE		Coef.	SE		Coef.	SE	
Diabetes	-0.06	0.05	0.168	-0.08	0.04	0.086	-0.01	0.04	0.830	-0.01	0.04	0.777
Arthritis	-0.03	0.05	0.559	-0.04	0.05	0.423	0.03	0.05	0.481	0.03	0.05	0.508
Heart Disease	-0.18	0.06	0.002	-0.19	0.05	0.000	-0.10	0.06	0.066	-0.11	0.06	0.050
Asthma	0.01	0.06	0.908	0.00	0.06	0.951	0.04	0.05	0.485	0.04	0.05	0.494
Cancer	0.21	0.07	0.002	0.20	0.07	0.002	0.24	0.06	0.000	0.24	0.06	0.000
Uninsured				-0.32	0.09	0.000	-0.34	0.09	0.000	-0.33	0.09	0.000
Avoid doctor				0.04	0.06	0.506	0.08	0.05	0.102	0.11	0.05	0.048
Has disability limitation							-0.15	0.06	0.016	-0.14	0.06	0.015
Self-rated health ¹							-0.11	0.03	0.000	-0.09	0.03	0.001
Emotional support ²										-0.09	0.02	0.000
Age	0.04	0.01	0.000	0.04	0.01	0.000	0.05	0.01	0.000	0.05	0.01	0.000
Age squared	0.00	0.00	0.167	0.00	0.00	0.104	0.00	0.00	0.047	0.00	0.00	0.035
Black (ref = white)	1.21	0.08	0.000	1.22	0.08	0.000	1.21	0.08	0.000	1.22	0.08	0.000
Latino (ref = white)	-0.37	0.06	0.000	-0.36	0.07	0.000	-0.35	0.08	0.000	-0.34	0.08	0.000
Other race (ref = white)	-0.57	0.14	0.000	-0.56	0.14	0.000	-0.56	0.14	0.000	-0.54	0.14	0.000
Income	0.14	0.01	0.000	0.13	0.01	0.000	0.12	0.01	0.000	0.11	0.01	0.000
HS = high school (ref = < HS)	0.86	0.04	0.000	0.85	0.03	0.000	0.83	0.03	0.000	0.82	0.03	0.000
Some college (ref = < HS)	1.44	0.06	0.000	1.42	0.06	0.000	1.40	0.06	0.000	1.38	0.06	0.000

Appendix C (continued)

	Model 1			Model 2			Model 3			Model 4		
	Demographics Only			Including Insurance			Including Health and Disability			Including Emotional Support		
	Coef.	SE	p-value	Coef.	SE	p-value	Coef.	SE	p-value	Coef.	SE	p-value
College + (ref = < HS)	1.97	0.06	0.000	1.94	0.06	0.000	1.90	0.06	0.000	1.88	0.06	0.000
Own home (ref = < HS)	0.40	0.06	0.000	0.39	0.06	0.000	0.37	0.06	0.000	0.38	0.06	0.000
Married	0.13	0.06	0.038	0.11	0.06	0.065	0.11	0.06	0.076	0.09	0.06	0.119
Male	-0.20	0.05	0.000	-0.19	0.05	0.000	-0.18	0.05	0.000	-0.17	0.05	0.000
Out of work	-0.21	0.06	0.001	-0.14	0.06	0.010	-0.15	0.05	0.005	-0.15	0.05	0.006
Not MSA (ref = MSA)	0.16	0.05	0.002	0.17	0.05	0.001	0.17	0.05	0.001	0.17	0.05	0.001
Suburb (ref = MSA)	0.08	0.03	0.030	0.07	0.04	0.070	0.07	0.04	0.059	0.07	0.04	0.080
Alabama	-0.16	0.02	0.000	-0.15	0.02	0.000	-0.14	0.02	0.000	-0.14	0.02	0.000
Alaska	0.08	0.03	0.002	0.10	0.02	0.000	0.11	0.02	0.000	0.11	0.02	0.000
Hawaii	-0.65	0.05	0.000	-0.66	0.05	0.000	-0.66	0.05	0.000	-0.65	0.05	0.000
Delaware	-0.27	0.01	0.000	-0.27	0.01	0.000	-0.27	0.01	0.000	-0.28	0.01	0.000
Illinois	-0.13	0.02	0.000	-0.12	0.02	0.000	-0.12	0.02	0.000	-0.12	0.02	0.000
Louisiana	-0.13	0.02	0.000	-0.10	0.02	0.000	-0.09	0.02	0.000	-0.10	0.02	0.000
South Carolina	-0.36	0.02	0.000	-0.35	0.02	0.000	-0.34	0.02	0.000	-0.34	0.02	0.000
Constant	-2.40	0.19	0.000	-2.30	0.19	0.000	-2.07	0.24	0.000	-1.94	0.24	0.000

Source: Author's analysis of 2009 Behavioral Risk Factor Surveillance System data (CDC 2009)

Notes: Table entries show logit coefficients and robust standard errors, clustered at the state. Omitted state is Wisconsin.

¹Self-rated health coded excellent to poor.

²Emotional support coded always to never.