Deaths of Despair and Support for Trump in the 2016 Presidential Election

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The U.S.'s unprecedented opiate epidemic was an important theme of the 2016 presidential campaign. Both Hillary Clinton and Donald Trump expressed concern about the crisis and offered strategies to deal with it. The opiate crisis also pervaded many key campaign issues, including international trade, immigration, and health care. Recent analyses suggest a relationship between Trump support and opiate overdoses in key states and provide potential explanations for why Trump received so much support in America's new post-industrial "heroin beltway"[1].

Over the past decade, nearly 400,000 people in the U.S. died from accidental drug overdoses and drug-induced diseases. Nearly 400,000 more committed suicide, and over 250,000 died from alcohol-induced diseases like cirrhosis of the liver[2]. Approximately a fifth of these drug, alcohol and suicide deaths involved opiates (prescription pain relievers or heroin), suggesting that opiates are part of a larger problem[3]. Mortality rates from these 'deaths of despair' are much higher among non-Hispanic whites than among other racial/ethnic groups[4]. This decade-long increase in deaths from drug overdoses, suicides, and alcohol-induced diseases has been substantial enough to significantly increase the *overall* mortality rate for middle-age non-Hispanic whites, especially those without a college degree living in small cities and rural areas[5].

Here I examine the relationship between county-level rates of mortality from drugs, alcohol and suicide (2006-2014) and voting patterns in the 2016 Presidential election. I focus on three regions where the drug epidemic has received considerable attention: the Industrial Midwest, Appalachia, and New England[6]. Because much of the narrative surrounding Trump's election success has emphasized the role of economic distress[7] and working-class voters, I include these factors in my analyses.

KEY FINDINGS
Trump over-performed the most in counties with the highest drug, alcohol and suicide mortality rates.
Much of this relationship is accounted for by economic distress and the proportion of working-class residents.
Trump performed best in counties with high economic distress and a large working class.
Drug, alcohol and suicide mortality rates are higher in counties with more economic distress and a larger working class.
Many of the counties with high mortality rates where Trump did the best have experienced significant employment losses in manufacturing over the past several decades.

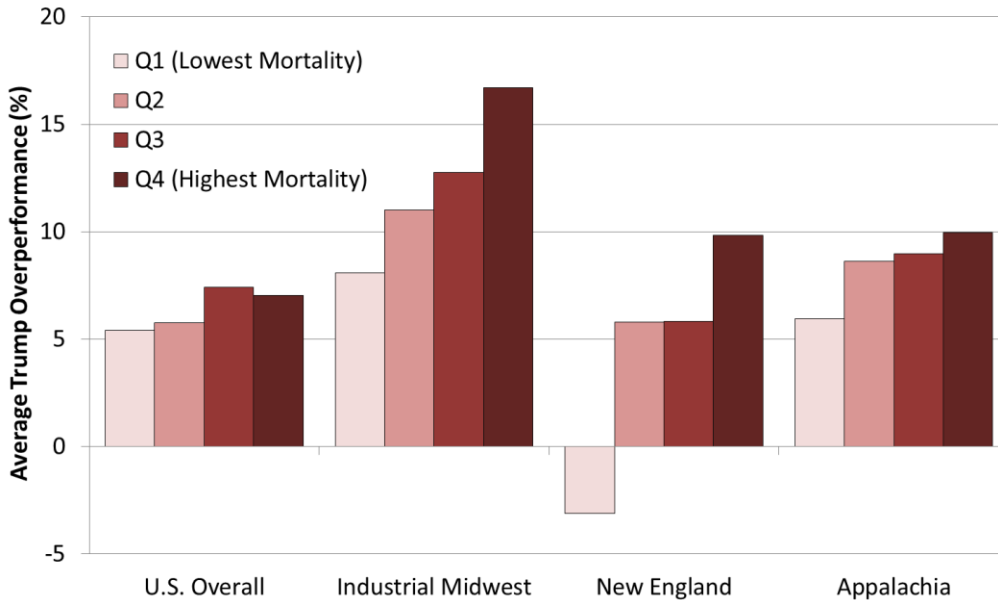## Trump Over-Performed the Most in Counties with the Highest Drug, Alcohol and Suicide Mortality Rates

Donald Trump did better than Mitt Romney in 2,469 (79.5 percent) of the 3,106 counties included in these analyses (See Table 1)[8]. This includes 51 percent of large urban counties, 70 percent of small urban counties, 84 percent of micropolitan counties,

TABLE 1. PERCENTAGE OF COUNTIES WHERE TRUMP DID BETTER THAN ROMNEY, BY REGION

	U.S.	Industrial Midwest	Appalachia	New England
Overall Percentage of Counties where Trump Did Better than Romney	79.5	88.5	90.7	68.7
Percentage of Counties with Above-Median Drug, Alcohol and Suicide Mortality Rate where Trump Did Better than Romney	81.7	94.8	94.5	82.9
Percentage of Counties with Below-Median Drug, Alcohol and Suicide Mortality Rate where Trump Did Better than Romney	77.3	83.8	80.2	53.1

Data Sources: Atlas of U.S. Presidential Elections; U.S. Centers for Disease Control and Prevention

and 92 percent of rural counties[9]. Trump performed even better in the Industrial Midwest (88.5 percent of counties) and Appalachia (91 percent of counties). Even in New England, where Hillary Clinton won every state, Trump received a larger share of votes than Romney in 69 percent of counties.

FIGURE 1. TRUMP OVERPERFORMANCE, BY DRUG, ALCOHOL AND SUICIDE MORTALITY RATE QUARTILE

Data Sources: Atlas of U.S. Presidential Elections; U.S. Centers for Disease Control and Prevention

Nationally, and in all three regions, Trump performed better than Romney in counties with higher drug, alcohol and suicide mortality rates[10] (See Figure 1). The relationship between mortality and Trump's performance was particularly pronounced in the Industrial Midwest and New England. In the Industrial Midwest, Trump did better than Romney by an average of 16.7

percent in the highest mortality counties compared to 8.1 percent in the lowest mortality counties. In New England, Trump actually did worse than Romney by an average of 3.1 percent in the lowest mortality counties, but did better than Romney by an average of nearly 10 percent in the highest mortality counties. The differences were less pronounced in Appalachia, where Trump over-performed by 10 percent in the highest mortality counties and by 6 percent in the lowest mortality counties. These patterns held in both metropolitan and nonmetropolitan counties in all three regions[11].

The Economic Factor

The role of the economy and working-class voters has been a major storyline of this election. In the Industrial Midwest, decades of automation, consolidation, and relocation have resulted in increased unemployment and wage stagnation. Likewise, long after President Lyndon B. Johnson targeted Appalachia in his War on Poverty in 1964, much of Appalachia still struggles with chronic unemployment, disability, and poverty. Appalachia is also ground zero of the U.S. opiate epidemic[12]. New England has suffered less economic distress, but its manufacturing industry has been in decline since the 1980s, and the problem was exacerbated by the Great Recession. Given Trump's emphasis on job growth, it is not surprising that he performed the best in economically distressed and working-class counties (See Figure 2)[13].

FIGURE 2. TRUMP OVERPERFORMANCE, BY ECONOMIC DISTRESS AND WORKING CLASS PRESENCE
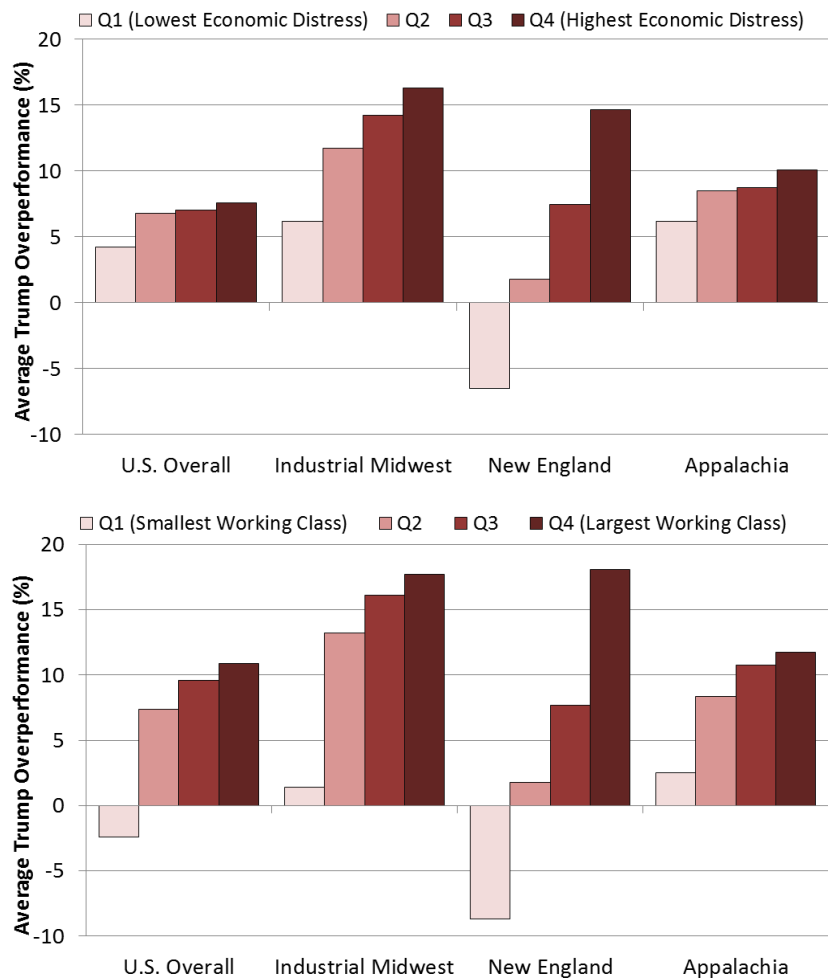
Data Sources: Atlas of U.S. Presidential Elections; U.S. Census Bureau American Community Survey

In the Industrial Midwest, Trump out-performed Romney by an average of 16.3 percent in the most economically distressed counties compared to 6.2 percent in the least economically distressed counties. The difference was much larger in New England. Trump did worse than Romney in the least economically distressed counties but over-performed by an average of 14.7 percent in the most economically distressed counties. Similar patterns are observed for

working-class presence. Nationally and in each region, Trump did far better in counties with the largest working-class presence and performed the worst in counties with the smallest working-class presence.

Drug, Alcohol and Suicide Mortality Rates are Higher in Counties with More Economic Distress and Larger Working-Class Presence

There is clearly a link between economic distress, working-class representation, and drug, alcohol and suicide mortality (See Figure 3). Nationally, mortality rates are lowest in the least economically distressed counties and highest in the most economically distressed counties. In all three regions, differences in mortality rates between the least and most economically distressed counties are substantial. This is true among metropolitan and nonmetropolitan counties. Although the differences by working-class are less pronounced, mortality rates are lowest in counties with the smallest working-class presence.

The Connection between Deaths of Despair, the Economy, and Trump Support

FIGURE 3. AVERAGE DRUG, ALCOHOL AND SUICIDE MORTALITY RATES, BY ECONOMIC DISTRESS AND WORKING CLASS PRESENCE
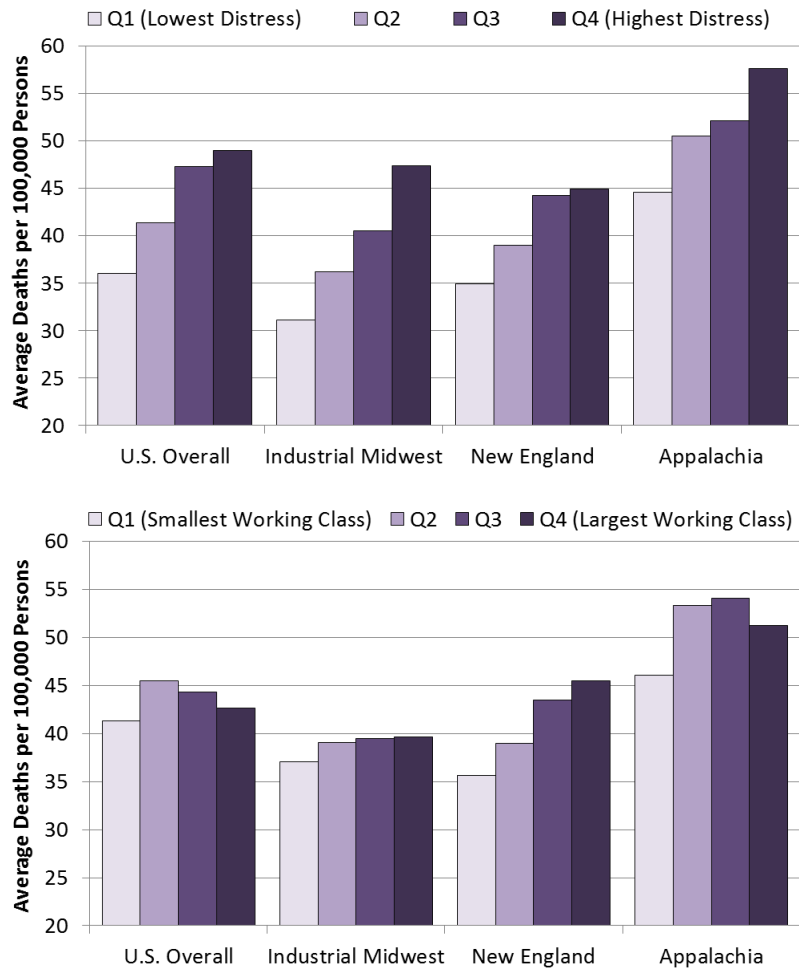
Data Sources: U.S. Centers for Disease Control and Prevention; U.S. Census Bureau American Community Survey

Much of the relationship between mortality and Trump's performance is explained by economic factors; counties with higher economic distress and larger working-class presence also have higher mortality rates *and* came out strongly for Trump[14]. In New England, there is a clear bifurcation between counties with low economic distress, low mortality rates, and poor Trump performance versus counties with high economic distress, high mortality rates, and strong Trump performance (See Figure 4). The distinction is also quite clear in the Industrial Midwest. In Appalachia, the relationship between mortality and Trump's performance actually appears to be stronger among the least

economically distressed counties, but much of Appalachia suffers from significant economic distress. Therefore, even the least distressed counties in Appalachia are among the most distressed nationwide.

FIGURE 4. TRUMP OVERPERFORMANCE, BY MORTALITY, AND ECONOMIC DISTRESS

● Lowest Economic Distress ● Highest Economic Distress
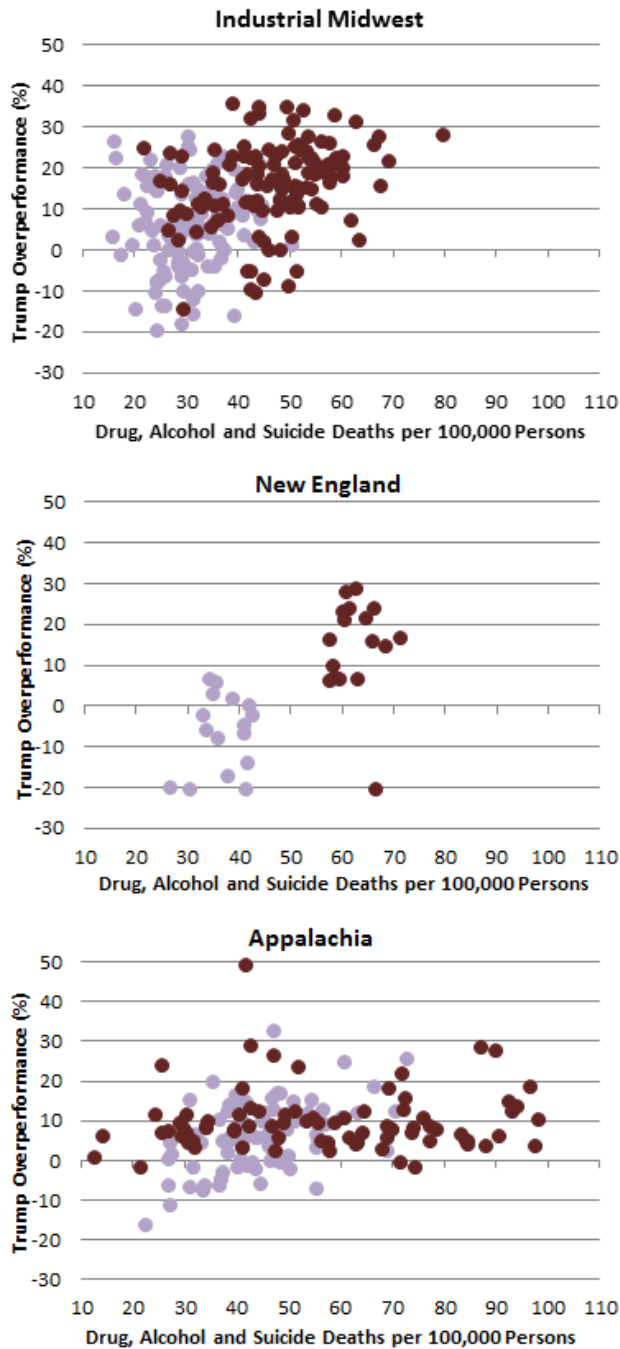
Industrial Midwest

New England

Appalachia

Data Sources: Atlas of U.S. Presidential Elections; U.S. Centers for Disease Control and Prevention; U.S. Census Bureau American Community Survey

These findings reflect larger systemic economic and social problems that go far beyond drug and alcohol abuse and suicide. In many of the counties where Trump did the best, economic precarity has been building and social and family networks have been breaking down for several decades[15]. In these places, there are now far fewer of the manual labor jobs that once provided livable wages, health insurance, and retirement benefits to those without a college degree. Downward mobility is the new normal. Trump's anti-free trade message likely resonated with voters who saw once-thriving manufacturing plants shut down and minimum wage jobs replace the better jobs available to their parents and grandparents.

In his book *Dreamland*, Sam Quinones writes about Scioto County, Ohio – a blue-collar county with a once thriving manufacturing base anchored by shoe, steel, brickyard, atomic energy, and soda factories[12]. By the 1990s, these factories were long gone, replaced by big-box stores, check-cashing and rent-to-own services, pawn shops and scrap yards, and the nation's first large "pain clinic" where doctors doled out prescriptions for OxyContin and other narcotics without much diagnosis or follow-up. Scioto County was soon the pill-mill capital of America, with more prescription pain relievers per capita than any other place in the country. Today in Scioto County, incomes are lower than in the 1980s, and poverty, disability, and

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unemployment rates are high. Scioto County's drug, alcohol and suicide mortality rate more than doubled from 32.9 in 1999 to 74.8 in 2014, and Trump received 33 percent more of the county's vote than Romney.

Mingo County, West Virginia has the seventh highest drug, alcohol and suicide mortality rate in the U.S.[16], which increased from 53.6 in 1999 to 161.1 in 2014. Trump's share of the vote was nearly 19 percent higher than Romney's share. Mining and related industries employed nearly 40 percent of the county's workers in the 1980s and accounted for two-thirds of the county's earnings. Since then, mining has dropped to 20 percent of employment and a third of wages, and household income has declined by 10 percent. Mingo County now has an adult poverty rate of 23 percent and a disability rate of 32 percent, making it among the most economically distressed counties in the U.S.

Likewise, Coos County, New Hampshire, which swung from Obama to Trump, has the highest drug, alcohol and suicide mortality rate in New England. The share of jobs in manufacturing there declined from 38 percent to 7 percent, and payroll wages from manufacturing dropped from 49 percent to 9 percent since the mid-1980s. Similar stories emerge in former industrial small cities and rural towns across the U.S.

Conclusion

This research contributes important insights into the complex economic, social, and political forces that combined to produce the unexpected outcome of the 2016 Presidential election. Clearly there is an association between drug, alcohol and suicide mortality and Trump's election performance[17]. However, this relationship should not be interpreted as causal. No single factor (including race, education, income, rurality, or health) can explain this election outcome. To suggest otherwise ignores the economic, social, and demographic complexities that drive human behavior and the contexts of the communities where these voters live. What these analyses demonstrate is that community-level well-being played an important role in the 2016 election, particularly in the parts of America far-removed from the world of urban elites, media, and foundations.

Over the past year, Wall Street trader turned photographer/journalist Chris Arnade traveled to many forgotten parts of the U.S. (often referred to as 'fly-over' country by those living on the coasts) to talk with Trump supporters about their frustrations, fears, and anxieties[18]. These small cities and rural towns have borne the brunt of declines in manufacturing, mining, and related industries and are now struggling with the opiate scourge. He heard from folks in communities facing economic and social destruction. In these places, good jobs and the dignity of work have been replaced by suffering, hopelessness and despair, the feeling that America isn't so great anymore, and the belief that people in power don't care about them or their communities. Here, downward mobility is the new normal.

In the U.S., work has historically been a source of financial, social, and moral status. But the American working class regularly receives the message that their work is not important. That message is delivered via low wages, declining benefits, government programs for which they do not qualify but for which they pay taxes, and the seemingly ubiquitous message that everyone should obtain a college degree[19]. Making college affordable for those who want to attend is

essential, but it is equally essential to ensure that there are jobs with livable wages and decent benefits for those without a college degree.

Ultimately, at the core of increasingly common 'deaths of despair' is a desire to escape – escape pain, stress, anxiety, shame, and hopelessness. These deaths represent only a tiny fraction of those suffering from substance abuse and mental health diseases and disorders, and the effects ripple beyond the individuals who die to include families, friends, first responders, service providers, and employers. Drug and alcohol disorders and suicides are occurring within a larger context of people and places desperate for change. Trump promised change. It remains to be seen whether and how the Trump Administration's economic, health, and social policies bring relief to the individuals and communities now mired in diseases and deaths of despair.

Data and Methods

County-level mortality rates (2006-2014) are from the U.S. Centers for Disease Control and Prevention Multiple Cause of Death Files. Data are based on death certificates for U.S. residents. Rates are per 100,000 people and are age-adjusted based on the 2000 U.S. population. Contact the author to obtain the specific causes of death included in these analyses. Election data are from the U.S. Election Atlas, version .35. The 2016 election results are not yet official, and final tallies will differ slightly from those reported here. 'Over-performance' refers to the positive difference between the percentage of votes received by Donald Trump in 2016 versus Mitt Romney in 2012. Economic variables are from the U.S. Census Bureau's American Community Survey 2010-14. The Industrial Midwest region includes 504 counties in Illinois, Indiana, Michigan, Ohio, Pennsylvania, and Wisconsin. The New England region includes 67 counties in Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont. The Appalachian region is defined as all of West Virginia and selected counties in Kentucky, Tennessee, Alabama, Georgia, Maryland, Mississippi, North Carolina, and Virginia as denoted by the Appalachian Regional Commission (N=322 counties).

About the Author

Shannon Monnat is Assistant Professor of Rural Sociology, Demography, and Sociology and a Research Associate in the Population Research Institute at Penn State University. These analyses are part of a larger project aimed at identifying county-level predictors of drug, alcohol and suicide mortality.

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References and Notes

[1] See: Frydl, Kathleen. (2016). The Oxy Electorate: A Scourge of Addiction and Death Siloed in Fly-Over Country and Quinones, Sam. (2016). Donald Trump and Opiates in America.

[2] These death counts came from the CDC's underlying cause of death files and include only those where drugs, alcohol, or suicide are indicated as the underlying cause of death. I included intentional drug overdoses in the suicide category. My analyses of county-level data used the multiple cause of death files.

[3] The percentage of deaths that involve opiates has increased precipitously over the past decade. In 2000, only 9 percent of drug, alcohol and suicide deaths involved opiates, but by 2014, 23 percent of drug, alcohol and suicide deaths involved opiates.

[4] Only Native Americans have higher rates of morality from drugs, alcohol and suicide.

[5] Case, Anne. and Deaton, Angus. (2015). Rising morbidity and mortality in midlife among white non-Hispanic Americans in the 21st century. *PNAS* 112(49):15078-15083.

[6] I found similar trends in other regions of the country as well, especially the Mountain West (AZ, CO, ID, MT, NV, NM, UT, and WY'. In the Mountain West, Trump *underperformed*, across all levels of mortality except the highest (the top quartile), and his average underperformance was lowest at the lowest level of mortality.

[7] *Economic distress* is a factor-weighted index comprised of six variables: percentage aged 18 to 64 in poverty, percentage of families with children headed by a single parent, percentage of households receiving public assistance, percent unemployed, percent disabled, and percentage aged 18 to 64 without health insurance; *Working-class presence* is an index of percentage of residents aged 25+ without a college degree and the percentage of workers employed in manual labor occupations (farming, forestry, fishing, construction, extraction, maintenance, production, transportation, and material moving).

[8] The analyses excluded Alaska and Hawaii due to suppression of mortality rates for many counties in those states.

[9] Large urban counties are those located in a metropolitan area with at least 1 million residents; small urban counties are those located in a metropolitan area with fewer than 1 million residents; micropolitan counties are those located in labor market areas centered on an urban cluster with a population of at least 10,000 but less than 50,000; rural counties are those located outside of a metropolitan or micropolitan area.

[10] For ease of reading, I refer to 'drug, alcohol and suicide mortality' simply as 'mortality' throughout the brief.

[11] Trump's average overperformance was higher in nonmetropolitan vs. metropolitan counties. In all three regions, Trump over-performed more in counties with the highest drug, alcohol and suicide mortality rates, and that was true among both metropolitan and nonmetropolitan counties.

[12] Quinones, S. (2015). *Dreamland: The True Tale of America's Opiate Epidemic*. Bloomsbury Press.

[13] Economic distress and working-class quartiles are region-specific.

[14] The introduction of economic factors into region-specific regression models resulted in the elimination of statistical significance for the relationship between mortality and Trump overperformance for New England and Appalachia. In the Industrial Midwest, economic factors explained half of the association between mortality and Trump overperformance. Nationally, economic factors explained 44 percent of the association between mortality and Trump overperformance. Even when using statistical models that include 14 demographic, economic, social, and health care factors, the drug, alcohol and suicide mortality rate remains a significant and positive predictor of Trump overperformance nationally. For the list of specific variables included in regression models, contact the author. All models included state fixed effects.

[15] See: Bailey, Conner, Leif Jensen, and Elizabeth Ransom. (2014). *Rural America in a Globalizing World: Problems and Prospects for the 2010s*; Duncan, Cynthia M. and Angela Blackwell. (2015). *Worlds Apart: Poverty and Politics in Rural America*; Smith, Kristen E. and Ann R. Tickamyer. (2011). *Economic Restructuring and Family Well-Being in Rural America*; Brown, David L. and Lou E. Swanson. (2003). *Challenges for Rural America in the Twenty-First Century*.

[16] This ranking is of 2014 – the most recent year for which county-level mortality rates are available. Five of the six counties with higher rates have substantial Native American populations.

[17] There are many ways to measure Trump's performance. This report presents results from analyses that used the percentage difference in the share of votes received by Trump vs. Romney, but trends were similar when I used both Trump's overall share of votes and the difference in the share of votes received by Trump vs. Clinton.

[18] Arnade, Chris. (2016). What I learned after 100,000 miles on the road talking to Trump supporters. *The Guardian*.

[19] Chen, Victor Tan. (2015). *Cut Loose: Jobless and Hopeless in an Unfair Economy*. University of California Press.