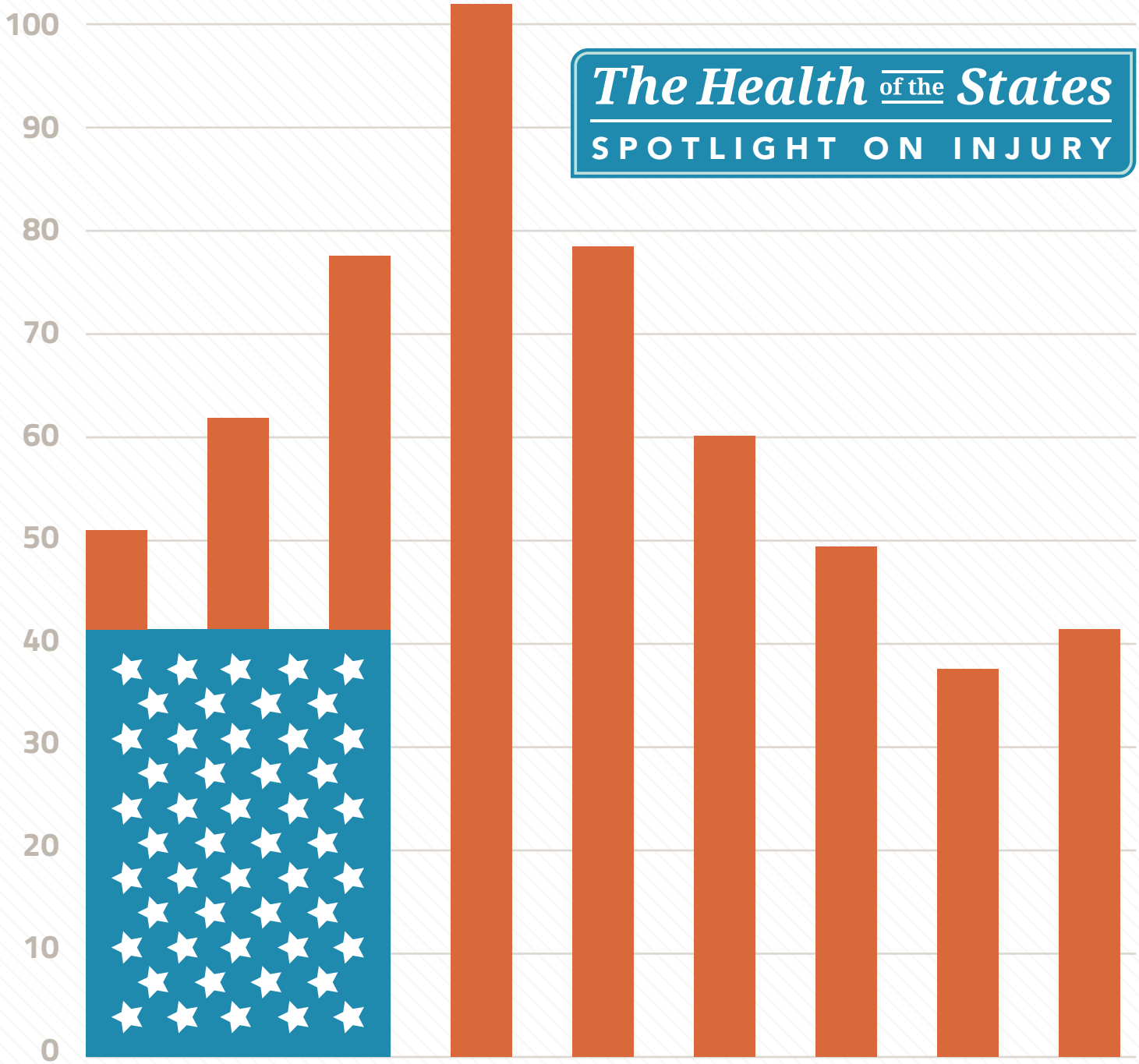

The Health of the States

SPOTLIGHT ON INJURY

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Supplement 6, July 2017

The Health of the States study, funded by the Robert Wood Johnson Foundation, was a systematic examination of health disparities in the U.S. across the 50 states and the District of Columbia. The study was conducted in 2014–2016 by the Virginia Commonwealth University Center on Society and Health and the Urban Institute. The goal was to take a "deep dive" into the available data on the health of the states and the factors that shape health. The project examined how 123 potential determinants of health, drawn from five broad domains, correlated with 39 different health outcomes that span mortality and illness/injury across the life course.

The results were issued in a series of reports: a summary report[1] released in October 2016, which was followed by a series of supplements. This report, the sixth of nine supplements, focuses on how the death rates from injuries vary across the states. Please refer to the first supplement[2] for details on the data sources and analytic methods used to produce these results.

THE HEALTH OF THE STATES

Supplement 6:

Spotlight On Injury

Virginia Commonwealth University
Center on Society and Health
and the Urban Institute

July 2017

Spotlight on Injury

This supplement examines state-level data on injury mortality rates in the United States. Injuries are classified as *unintentional* injuries, known colloquially as "accidents" (e.g., motor vehicle fatalities), and *intentional* injuries (e.g., suicide, homicide). Figure 1 presents mortality rates for unintentional and intentional injury for each state.

UNINTENTIONAL INJURIES

Unintentional injuries are a major cause of death in the United States, especially among young people.[3] The two leading causes of unintentional injuries, detailed below, are deaths from motor vehicle crashes and drug overdoses, but other causes include drowning, fires, falls, and poisonings, among others. According to data from the Centers for Disease Control and Prevention (CDC) for 2013, age-adjusted death rates from unintentional injury ranged from 27.7 per 100,000 in New York to 71.7 per 100,000 in West Virginia (Figure 2). We focus on the two most common causes of unintentional injury deaths—motor vehicle fatalities and drug overdoses.

A WORD ABOUT METHODS

We examined how strongly health outcomes correlated with state statistics in five domains that shape health: health behaviors, the physical and social environment, social and economic factors, health care, and public policies and spending. The results, presented in Figures 5, 6, 9, and 12 are based on Spearman rank-order correlation coefficients (r_s), which measure the degree to which the state ranking for the indicator (e.g., poverty) matches the state ranking for the health outcome (e.g., infant mortality). Zero represents no association between the two rankings, and 1.0 represents an exact match. A positive correlation means that a high rank on the indicator is linked to a high rank on the health outcome, or vice versa; a negative correlation means that a high rank on the indicator is linked to a low rank on the health outcome, or vice versa. See *Supplement 1: The Health of the States: Spotlight on methods*[2] for more details on data sources and methods and the rationale for omitting certain results from this report.

Motor vehicle fatalities

In 2013, age-adjusted death rates from motor vehicle crashes varied almost five-fold across the states, from 4.7 deaths per 100,000 in the District of Columbia to 23.4 deaths per 100,000 in Montana (Figure 1). The Top 10 states (those with the fewest motor vehicle fatalities) were primarily in the Pacific region and in a band of New England and Middle Atlantic states. The District of Columbia also ranked in the Top 10 and had the nation's lowest motor vehicle fatality rate. The Bottom 10 states, where crash fatalities were most common, were primarily in the South and, along with contiguous West South Central states, formed a southern band of states with high motor vehicle fatality rates (Figure 3).

What correlates the most with motor vehicle fatalities?

As seen in Figure 4, motor vehicle fatality rates were higher in states where fewer residents used public transit, where more residents traveled by motor vehicle, and where there were fewer walkable neighborhoods and nearby parks.

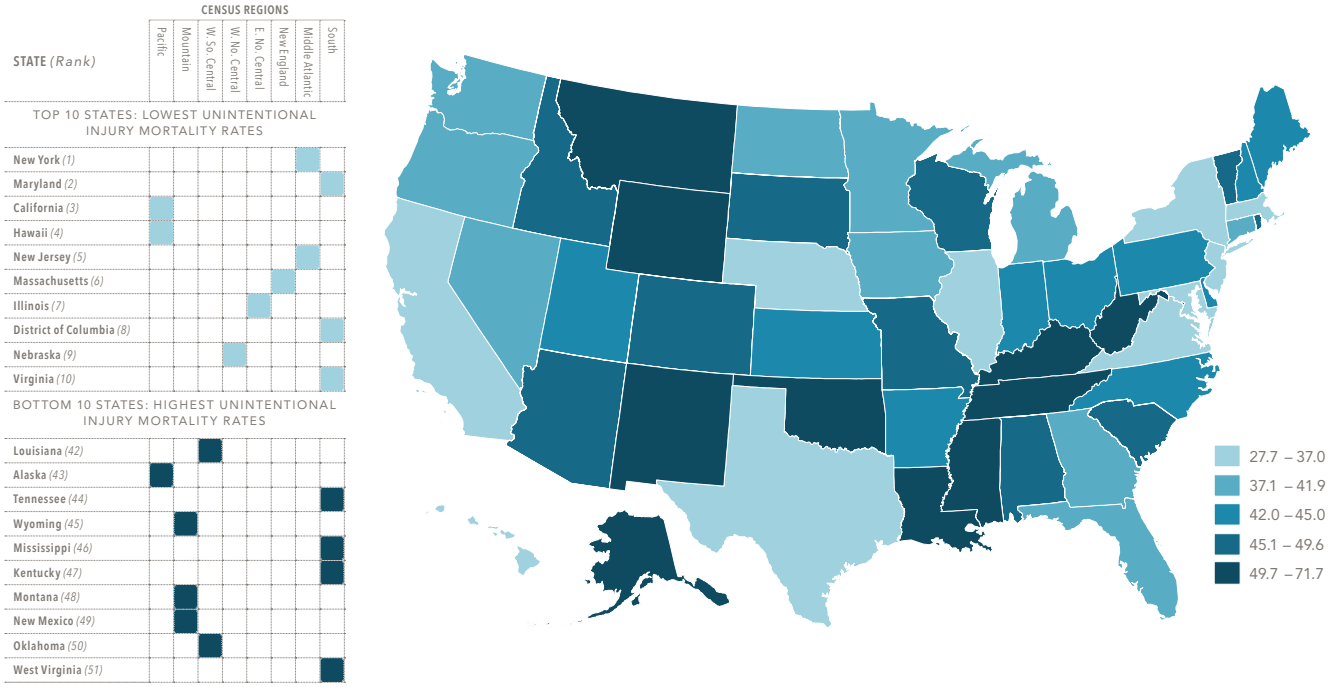
States with higher crash fatality rates were also states where residents had less education and income (Figure 5), a pattern described in the literature: studies have shown that motor vehicle crashes are more

FIGURE 1
INJURY MORTALITY (PER 100,000), BY STATE

Unintentional injuries		Motor vehicle accidents		Drug overdoses		Suicides		Homicides	
NY	27.7	DC	4.7	MD	4.1	DC	5.7	NH	1.7
MD	27.9	MA	5.3	SD	4.7	NJ	8.0	UT	1.9
CA	29.2	NJ	6.2	NE	5.1	NY	8.1	ID	2.0
HI	30.1	NY	6.4	IA	7.1	MA	8.2	IA	2.1
NJ	31.8	RI	6.6	AR	7.5	CT	8.7	MA	2.2
MA	32.5	WA	7.5	MN	7.5	MD	9.2	ME	2.2
DC	33.6	HI	7.9	TX	7.7	IL	9.9	OR	2.3
IL	33.6	CT	8.2	VA	8.2	CA	10.2	HI	2.4
NE	34.9	MN	8.4	HI	8.2	NE	11.6	MN	2.5
VA	34.9	AK	8.5	OR	8.2	TX	11.7	SD	2.5
TX	37.0	IL	8.6	MT	8.4	HI	11.8	RI	2.8
GA	38.3	CA	8.7	CA	9.1	GA	12.0	CT	2.9
WA	38.7	MD	8.7	NY	9.1	MN	12.1	WA	2.9
FL	39.1	UT	8.7	KS	9.1	RI	12.2	WI	3.2
CT	39.3	OR	8.8	GA	9.2	LA	12.4	CO	3.5
IA	40.0	VA	9.1	ID	9.3	DE	12.5	NY	3.5
MI	40.1	OH	9.6	MS	9.3	VA	12.5	MT	3.7
MN	40.1	CO	9.6	IL	10.0	NC	12.6	VA	4.0
OR	40.1	PA	10.0	FL	10.2	NH	12.8	NE	4.1
ND	41.7	NV	10.0	NC	10.5	MI	12.9	KS	4.2
NV	41.9	NH	10.1	ME	10.6	OH	12.9	WV	4.2
NH	42.5	WI	10.3	VT	10.8	MS	13.0	KY	4.7
ME	42.6	MI	10.4	WA	11.0	PA	13.4	CA	4.9
NC	42.7	IA	11.0	CO	11.2	FL	13.8	NJ	4.9
DE	42.9	VT	11.6	AL	11.2	SC	14.0	TX	5.1
IN	43.1	FL	12.0	DC	11.3	WA	14.0	PA	5.3
UT	43.4	ME	12.1	SC	11.4	IN	14.2	NV	5.4
KS	44.4	DE	12.2	MI	12.3	AL	14.4	AK	5.6
AR	44.8	IN	12.6	WI	12.5	IA	14.4	DE	5.8
PA	44.9	NE	12.6	NH	12.5	WI	14.4	NC	5.8
OH	45.0	MO	12.7	AK	12.8	KS	14.7	OH	5.9
RI	45.3	GA	12.7	IN	13.1	TN	15.4	AZ	6.0
CO	46.4	AZ	12.7	NJ	13.1	KY	15.5	FL	6.2
SC	46.6	KS	12.9	UT	13.4	MO	15.6	IL	6.2
SD	46.7	NC	13.5	WY	13.7	WV	16.4	IN	6.2
WI	46.8	TX	13.8	MA	14.0	OR	16.8	TN	6.3
MO	47.0	KY	15.4	CT	14.1	VT	16.8	GA	6.4
AL	47.2	TN	15.5	MO	14.4	OK	17.2	MI	6.7
ID	47.7	NM	15.7	AZ	14.5	AR	17.3	MO	6.7
AZ	48.6	ID	16.0	DE	15.0	ND	17.3	NM	6.7
VT	49.6	WY	16.0	TN	15.3	ME	17.4	SC	6.8
LA	50.5	SC	16.2	LA	15.4	AZ	17.5	OK	7.0
AK	52.5	LA	16.5	NV	16.8	SD	18.0	MD	7.2
TN	52.7	SD	16.8	PA	17.1	CO	18.6	AR	7.5
WY	55.2	WV	17.5	OK	17.4	NV	18.6	AL	8.9
MS	55.6	ND	17.8	NM	18.4	ID	19.2	MS	10.0
KY	55.7	AR	18.4	OH	18.8	NM	20.3	DC	12.1
MT	57.7	OK	18.7	RI	20.0	UT	21.4	LA	12.2
NM	59.0	AL	18.8	KY	20.4	WY	21.5	ND	NR
OK	62.7	MS	22.6	WV	29.7	AK	23.2	VT	NR
WV	71.7	MT	23.4	ND	NR	MT	23.7	WY	NR

FIGURE 2

MORTALITY RATES FOR UNINTENTIONAL INJURIES (PER 100,000), BY STATE (2013)



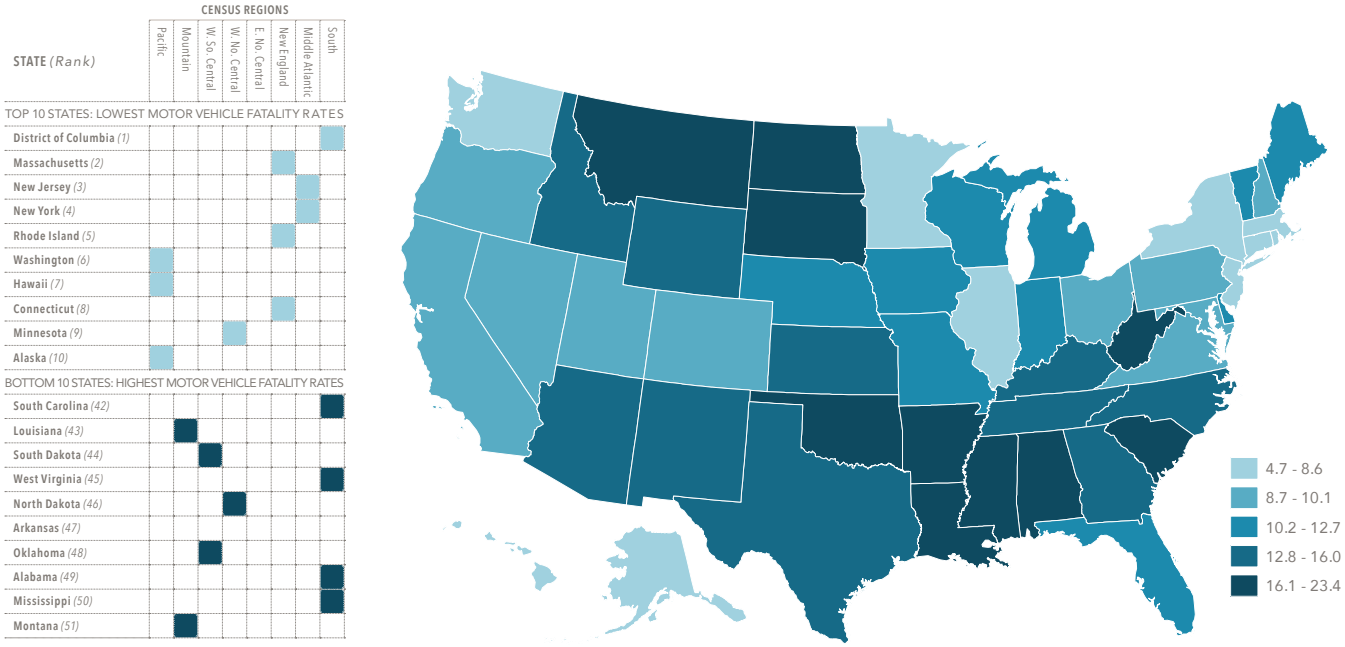
common among motorists with less education.[4,5] Our data also found that states with higher crash fatality rates spent less on income support, public assistance, and unemployment compensation for low-income persons (Figure 6). Spending on income support (per capita of persons with low incomes below 200 percent of the poverty level) was $2,915 in Top 10 states with lower crash fatality rates and $1,009 in Bottom 10 states.

In fact, Figure 6 shows that states with higher motor vehicle fatalities tend to spend less on infrastructure—such as housing and redevelopment, and even waste management. Notably, these states spend significantly less on mass transit, which may explain why residents are more likely to commute by motor vehicle.

States with higher crash fatalities also had lower cigarette tax rates, and had more limited Medicaid eligibility. For example, tobacco taxes in Top 10 states (lower crash fatality rates) averaged $3.10 per pack, compared to $0.84 in Bottom 10 states; Medicaid eligibility rates were 138.6 percent of the Federal Poverty Level (FPL) and 41.4 percent of FPL, respectively. States that lack the resources or political climate for these policies may also be less

FIGURE 3

MOTOR VEHICLE FATALITIES (PER 100,000), BY STATE (2013)

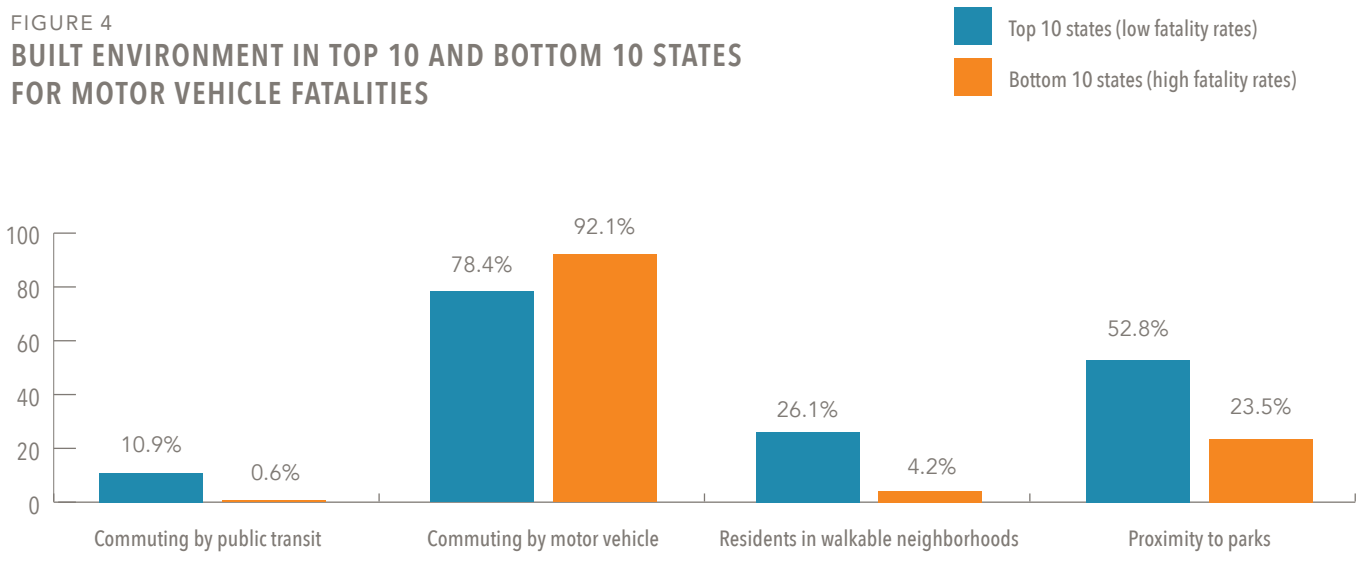


willing to increase alcohol taxes, which can reduce fatal alcohol-related motor vehicle crashes.[6] These states may also have lower transportation budgets and less political will to invest in highway safety improvements, the enforcement of motor vehicle laws, or emergency medical services that rapidly treat and transport crash victims to trauma centers.[7] Figure 5, which describes associations between motor vehicle fatalities and indicators examined, shows several associations that may relate more to the lower socio-economic status that exists in high crash fatality states than to driving practices.

For example, lower socioeconomic status could easily explain the decreased access to health care and the higher prevalence of unhealthy behaviors observed in Figure 5. Motor vehicle deaths were highly correlated with shortages in primary care physicians, which could be a proxy for other health care service limitations, such as emergency medical services and trauma care, which reduce fatalities from car crashes.[7] More than half (53.9 percent) of the populations in Bottom 10 states lived in a shortage area for mental health services—more than three times the percentage in Top 10 states (15.5 percent).

FIGURE 4

BUILT ENVIRONMENT IN TOP 10 AND BOTTOM 10 STATES FOR MOTOR VEHICLE FATALITIES



Motor vehicle fatality rates correlated with a variety of risky behaviors, such as carrying weapons, smoking, physical inactivity, and sexual activity before age 18. These associations do not necessarily reflect causal relationships but rather a pattern of co-occurrence, where conditions "go together" at the state level. States where residents are more engaged in risky behaviors may also be states where motorists are more prone to unsafe driving behaviors. Data on specific behaviors—such as speeding, drinking and driving, texting and driving, or failure to use seat belts or motorcycle helmets—were not available for adult motorists. Data for texting and driving by teens were available and correlated highly with motor vehicle fatality rates: the proportion of teens reporting texting and driving in 2009 was 49.1 percent in Bottom 10 states and 35.1 in Top 10 states. In recent years, the use of cellphones in cars has become even more commonplace.[8]

Drug overdose fatalities

Deaths from drug use (including both illicit and prescription drugs, especially opioid narcotics) have recently eclipsed motor vehicle crashes as the leading cause of unintentional injury deaths in the United States,[9] but the rates vary sharply across the country. As of 2013, the age-adjusted death rate from drug overdose ranged more than 7-fold, from 4.1 per 100,000 in Maryland to 29.7 per 100,000 in nearby West Virginia (Figure 1).[a] The Top 10 states (with low drug overdose rates) were primarily in the West North Central region but also included two Southern states: Maryland, which had the nation's lowest rate, and nearby Virginia (Figure 7). Of note, Mississippi—which ranked

a. No data for North Dakota were reported.

in the Bottom 10 for 31 health outcomes examined in this study, more than any other state—had relatively low death rates from drug overdoses and ranked in the second to highest quintile (Figure 1). Two West South Central states, Texas and Arkansas, alsoranked in the Top 10, while two neighboring states (Oklahoma and Louisiana) ranked in the Bottom 10. No state in New England, a region generally known for favorable health status, ranked in the Top 10 for low drug overdose deaths. In fact, Massachusetts, an otherwise healthy state that ranked in the Top 10 for 21 health outcomes, a total matched only by Utah, ranked in the fourth (second-worst) quintile for drug overdose deaths.

The death rate from drug overdoses in West Virginia, the highest in the nation, far exceeded those of other Bottom 10 states (Figure 1). The adjacent states of Ohio and Pennsylvania, also in the Bottom 10, helped form a solid band of high drug overdose states stretching along the Appalachian ridge (Figure 7). The Bottom 10 states also included Rhode Island, the only New England state to appear in the Bottom 10 list for any injury category. Analyses using more recent data provide further evidence of this geographic footprint. A 2016 report found that the rate of deaths due to drug overdoses "were highest in Northern Appalachia and in parts of the West/Southwest," lowest in the Northeast, and higher in rural counties.[10]

FIGURE 5

WHAT CORRELATES WITH MOTOR VEHICLE FATALITIES?

THE CORRELATION COEFFICIENTS (r_s)*

HEALTH BEHAVIORS			
Carrying weapons *(youth)*	0.72	Current nonsmokers	-0.64
Soda intake *(youth)*	0.63	Sexual abstinence before age 18	-0.61
Teen smoking	0.57	Physical activity *(adult)*	-0.55
Texting & driving *(youth)*	0.57		
PHYSICAL AND SOCIAL ENVIRONMENT			
Commuting by motor vehicle	0.73	Commuting by public transit	-0.84
Childhood trauma	0.61	Neighborhood resources for children	-0.75
Smokers in household *(child present)*	0.61	Neighborhoods that are walkable	-0.71
		Proximity to parks	-0.67
SOCIAL AND ECONOMIC FACTORS			
Severe housing disrepair	0.65	Median household income	-0.82
Poverty *(adults)*	0.56	Bachelor's degree/higher	-0.74
HEALTH SYSTEM			
Primary care shortage	0.69	Electronic health record system	-0.60
Inadequate colon cancer screening	0.57	Electronic health record system	-0.60

*Correlation coefficients range from zero to 1.0 and measure how strongly one variable correlates with another. Factors on the right (negative coefficients) are inversely related (e.g., one goes up when the other goes down). High correlations were also noted for other measures of the **Physical and Social Environment**: Residents in walkable neighborhoods (r_s = -0.73); **Social and Economic Factors**: Higher educated household head (-0.54); and **Health System**: Mental care shortage (0.58).

FIGURE 6

CORRELATIONS WITH STATE SPENDING

State income support ÷ pop. <100% FPL	-0.65
Housing & redevelopment ÷ pop. <100% FPL	-0.60
Tobacco taxes	-0.56
Unemployment benefits ÷ pop. <100% FPL	-0.56
Federal public assistance ÷ pop. <100% FPL	-0.53

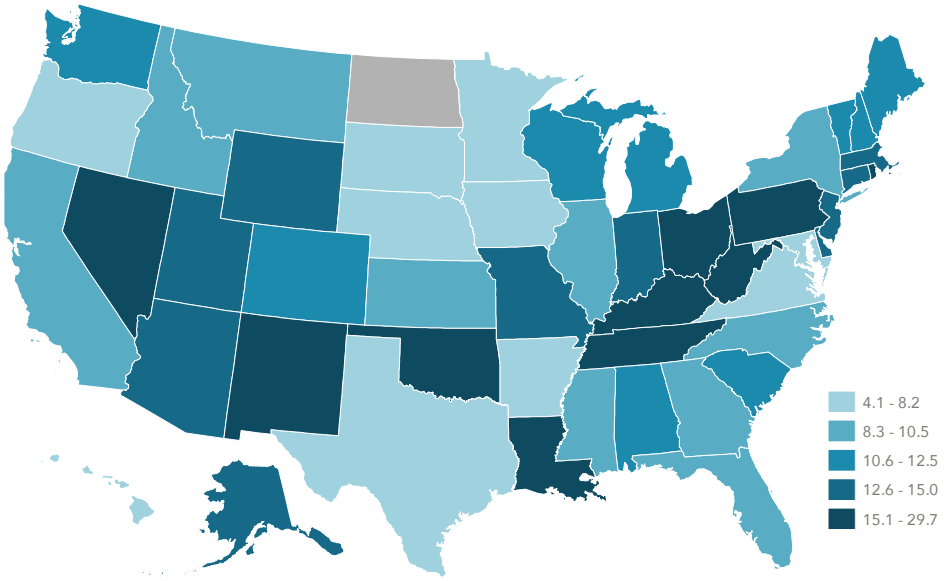
FPL = Federal poverty level. <100% FPL and <200% FPL refers to spending divided by the population living with incomes below 100 percent and 200 percent of the FPL, respectively. Correlation coefficients range from zero to 1.0 and measure how strongly one variable correlates with another. Factors shown with negative coefficients are inversely related (e.g., one goes up when the other goes down). High inverse correlations were also noted for spending on Unemployment benefits ÷ pop. <100% FPL (r_s = -0.77), State income support ÷ pop. <100% FPL (-0.73), State/Federal income support ÷ pop. <200% FPL (-0.71), State/Federal income support ÷ pop. <100% FPL (-0.70), Housing & redevelopment ÷ pop. <100% FPL (-0.62) and ÷ pop. <200% FPL (-0.62), and Federal public assistance ÷ pop. <100% FPL (-0.54). See *Supplement 1: The Health of the States: Spotlight on methods* for definitions of terms, data sources, and methods for calculating the correlation coefficients.

FIGURE 7

FATAL DRUG OVERDOSE RATES (PER 100,000), BY STATE (2013)*

STATE	Pacific	Mountain	W. So. Central	W. No. Central	E. No. Central	New England	Middle Atlantic	South
CENSUS REGIONS								
TOP 10 STATES: LOWEST DRUG OVERDOSE RATES								
Maryland (1)								■
South Dakota (2)				■				
Nebraska (3)				■				
Iowa (4)				■				
Arkansas (5)			■					
Minnesota (6)				■				
Texas (7)			■					
Virginia (8)								■
Hawaii (9)	■							
Oregon (10)	■							
BOTTOM 10 STATES: HIGHEST DRUG OVERDOSE RATES								
Tennessee (41)								■
Louisiana (42)			■					
Nevada (43)		■						
Pennsylvania (44)							■	
Oklahoma (45)			■					
New Mexico (46)		■						
Ohio (47)					■			
Rhode Island (48)						■		
Kentucky (49)								■
West Virginia (50)								■

*Data for only 50 states were available; we lacked data for North Dakota.



What correlates the most with drug overdose fatalities?

Deaths from drug overdoses are a great public health concern, especially the growing number of deaths from prescription opioids and heroin.[11] Unfortunately, the data from this study shed little light on the factors responsible for differences in overdose rates across the states. Drug overdose rates did not correlate highly with any domain—social and economic factors, health behaviors, the physical and social environment, etc.—or with any of the individual indicators included in this study, with the exception of the use of prescription drugs for non-medical purposes (r_s= 0.50). In the Bottom 10 states (with highest overdose rates), 5.6 percent of respondents reported using drugs for this purpose, compared to 4.0 percent in the Top 10 states. Overdose deaths were moderately correlated with state rankings on the following:

- Smoking (current smoking, r_s= 0.37; ever smoker, r_s= 0.47)
- Illicit drug use (r_s= 0.47)
- Children's exposure to violent crime (r_s= 0.43)

These mortality data were collected in 2013, and prescription drug abuse has increased significantly in recent years. We suspect that the factors that do drive these overdose deaths were not discernible at the state level or were not addressed by the indicators measured in this study and warrant further study with more current data.

INTENTIONAL INJURIES

Suicide

In 2013, suicide rates varied more than 4-fold, from 5.7 per 100,000 in the District of Columbia to 23.7 per 100,000 in Montana (Figure 1). The Top 10 states (with the lowest suicide rates) were geographically dispersed and included some unexpected findings (Figure 8). For example, Louisiana—a state that ranked in the Bottom 10 for 29 outcomes examined in this study—had relatively low suicide rates, ranking in the second quintile. The Bottom 10 states (with the highest suicide rates) were dominated by the Mountain states: all eight states in the region ranked in the Bottom 10 (Figure 8). Notably, Utah, an otherwise healthy state that ranked in the Top 10 for 21 health outcomes—a total matched only by Massachusetts—ranked in the Bottom 10 for suicide, as did Colorado, a state that ranked in the Top 10 for 16 health outcomes. The Bottom 10 also included South Dakota, as well as Alaska, which had the second highest suicide rate in the country.

What correlates the most with suicide?

As with drug overdoses, our data do not clarify the factors responsible for variations in suicide rates. Relatively low suicide rates in the South could reflect the high

FIGURE 8
SUICIDE RATES (PER 100,000), BY STATE (2013)

STATE (Rank)	Pacific	Mountain	W. So. Central	W. No. Central	E. No. Central	New England	Middle Atlantic	South
TOP 10 STATES: LOWEST SUICIDE RATES								
District of Columbia (1)								■
New Jersey (2)							■	
New York (3)							■	
Massachusetts (4)						■		
Connecticut (5)						■		
Maryland (6)								■
Illinois (7)					■			
California (8)	■							
Nebraska (9)				■				
Texas (10)			■					
BOTTOM 10 STATES: HIGHEST SUICIDE RATES								
Arizona (42)		■						
South Dakota (43)				■				
Colorado (44)*		■						
Nevada (44)*		■						
Idaho (46)		■						
New Mexico (47)		■						
Utah (48)		■						
Wyoming (49)		■						
Alaska (50)	■							
Montana (51)		■						

*See Supplement 1: The Health of the States: *Spotlight on Methods for our protocol for handling tied rankings.*

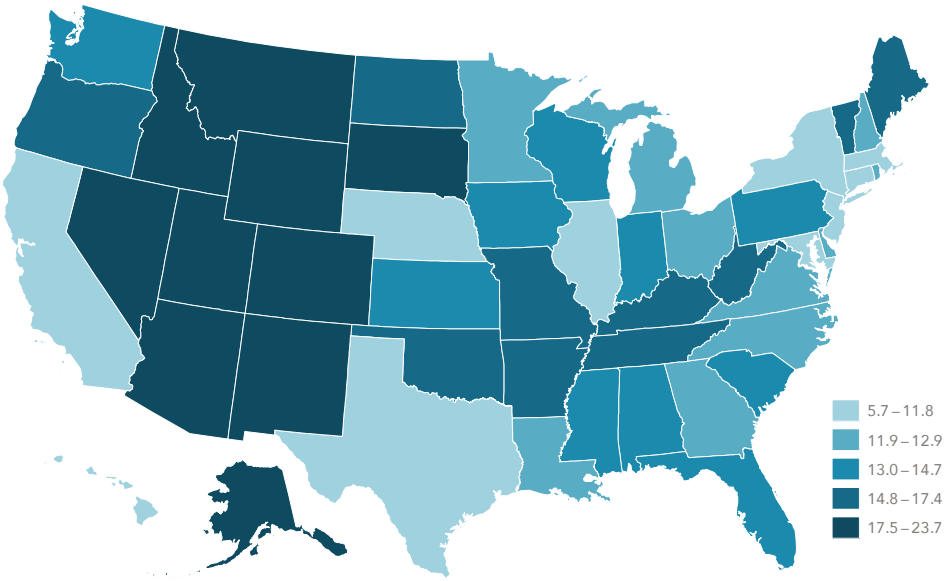


FIGURE 9

WHAT CORRELATES WITH SUICIDE?

THE CORRELATION COEFFICIENTS (r_s)*

HEALTH BEHAVIORS			
Children living with user	0.69		
Carrying weapons *(youth)*	0.58		
Screen time	0.52		
PHYSICAL AND SOCIAL ENVIRONMENT			
Childhood trauma	0.54	Commuting by public transit	-0.52
Safe neighborhoods *(parent report)*	0.50		
SOCIAL AND ECONOMIC FACTORS			
Children with no preschool/ Head Start	0.75	Poor living amid racial segregation	-0.55
		Income inequality	-0.50
HEALTH SYSTEM			
Inadequate cervical *(Pap)* screening	0.61	Rehospitalization	-0.66
		Diabetes management	-0.60

*Correlation coefficients range from zero to 1.0 and measure how strongly one variable correlates with another. Factors on the right (negative coefficients) are inversely related (e.g., one goes up when the other goes down).

High correlations were also noted for other measures of **Social and Economic Factors**: Racial segregation (r_s= -0.51) and **Health Systems**: Rehospitalization (heart attack) (-0.63), Rehospitalization (pneumonia) (-0.58), Mammography screening (-0.57), and Rehospitalization (heart failure) (-0.55). A correlation with per capita spending on natural resources (-0.58) was considered spurious.

representation of African Americans, a population known for lower rates of depression and suicide,[3,12] but the reasons for higher suicide rates in the Mountain states are less certain. Firearms are a leading cause of death and injury in the country, but there are few reliable data on civilian firearm ownership (due to national policy decisions).[13] We did find a high correlation with teens carrying weapons (r_s= 0.58): the rate is 21.0 percent in Bottom 10 states (with high suicide rates) and 14.1 percent in Top 10 states (with low rates). We lack data on substance abuse among adults—a known risk factor for suicide— but data on childhood exposure to adult substance abuse show that suicide correlates highly with the prevalence of children "living with someone with a problem with alcohol or drugs" and with exposure to childhood trauma (adverse childhood events).

The higher suicide rates documented among non-Hispanic whites may explain some of the correlations we observed with socioeconomic status. For example, our data revealed lower suicide rates in states where more residents lived in segregated or unsafe neighborhoods or experienced greater income inequality (Figure 9). The percentage of the population living in racially segregated neighborhoods in Top 10 states (low suicide rates) was 27.0 percent, more than twice that of Bottom 10 states (11.3 percent) where suicide rates are highest. Alaska, the state with the second highest suicide rate, has a small African American population (2 percent) and has ranked in the top quintile for

FIGURE 10

HOMICIDE RATES (PER 100,000), BY STATE (2013)*

STATE (Rank)	Pacific	Mountain	W. So. Central	W. No. Central	E. No. Central	New England	Middle Atlantic	South
CENSUS REGIONS								
TOP 10 STATES: LOWEST HOMICIDE RATES								
New Hampshire (1)						■		
Utah (2)		■						
Idaho (3)		■						
Iowa (4)				■				
Maine (5)						■		
Massachusetts (5)						■		
Oregon (7)	■							
Hawaii (8)	■							
South Dakota (9)				■				
Minnesota (9)				■				
BOTTOM 10 STATES: HIGHEST HOMICIDE RATES								
Missouri (38)**				■				
New Mexico (38)**		■						
South Carolina (41)								■
Oklahoma (42)			■					
Maryland (43)								■
Arkansas (44)			■					
Alabama (45)								■
Mississippi (46)								■
District of Columbia (47)								■
Louisiana (48)			■					

*Data for only 48 states were available; we lacked data for North Dakota, Vermont, and Wyoming. See **Supplement 1: The Health of the States: Spotlight on Methods for our protocol for handling tied rankings.

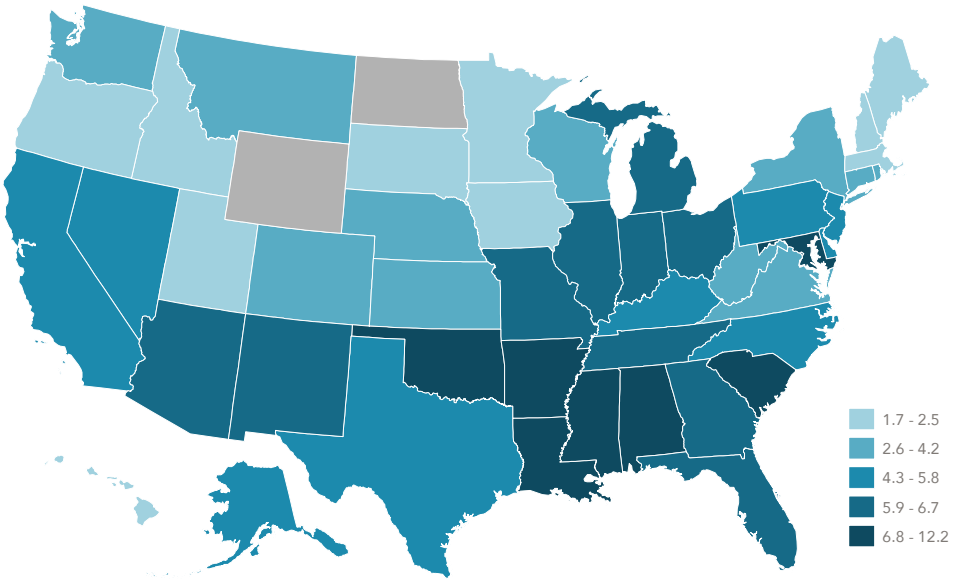
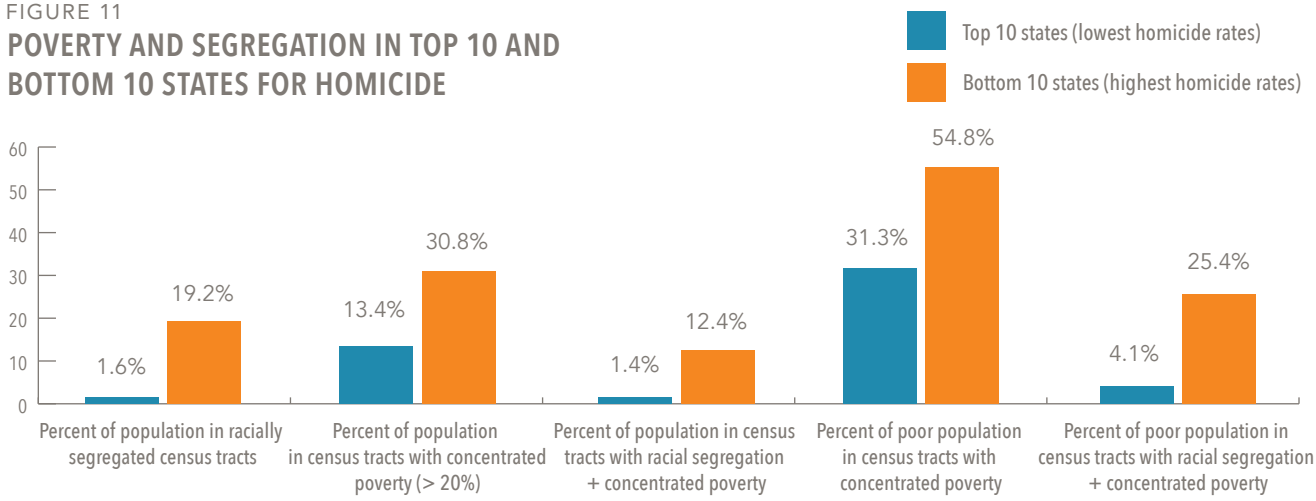


FIGURE 11

POVERTY AND SEGREGATION IN TOP 10 AND BOTTOM 10 STATES FOR HOMICIDE



household income for three decades,[14] but it also has one of the highest rates of civilian firearm ownership in the nation (59.8 percent as of 2004).[15]

This confounding role of race may also help explain why suicide rates were higher in states where more residents reported safe neighborhoods or fewer commuters used public transportation. Use of public transportation for commuting to work was 11.5 percent in Top 10 states (with low suicide rates), almost seven times that of Bottom

b. Data for North Dakota, Vermont, and Wyoming were not reported.

FIGURE 12

WHAT CORRELATES WITH HOMICIDE?

THE CORRELATION COEFFICIENTS (r_s)*

HEALTH BEHAVIORS			
Physical inactivity *(adult)*	0.60	Exclusive breastfeeding	-0.67
Current smokers	0.56	Bicycle helmet use *(youth)*	-0.65
Fights with injury *(youth)*	0.52	Birth control *(youth)*	-0.63
Sexual activity before age 18	0.52	Breakfast *(youth)*	-0.61
PHYSICAL AND SOCIAL ENVIRONMENT			
Violent crime rate	0.74	Safe schools *(parent report)*	-0.67
Dating violence *(youth)*	0.55	Commuting by walking/cycling	-0.60
Weapon injury in school	0.55	Neighborhood resources for children	-0.54
		Safe neighborhoods *(parent report)*	-0.52
SOCIAL AND ECONOMIC FACTORS			
Single-parent households	0.74	Higher educated household head	-0.65
Poverty *(children)*	0.67	Proficient in math *(grade 8)*	-0.63
Poor living in concentrated *(>20%)* poverty	0.63	Married	-0.54
People living amid racial segregation + concentrated *(>20%)* poverty	0.62	Employment	-0.54
Adults in prison	0.60		
Racial segregation	0.55		
HEALTH SYSTEM			
Could not afford doctor	0.52	Electronic health record system	-0.55
Avoidable hospitalization	0.51	Private insurance	-0.54
		Annual dental visit *(adult)*	-0.51

*Correlation coefficients range from zero to 1.0 and measure how strongly one variable correlates with another. Factors on the right (negative coefficients) are inversely related (e.g., one goes up when the other goes down).

High correlations were also noted for other measures of **Health Behaviors**: Physical activity (children) (r_s= -0.59), Any breastfeeding (-0.59), Fruit intake (youth) (-0.55); **Physical and Social Environment**: Teens who consider school unsafe (0.53); and **Social and Economic Factors**: Proficient in reading (grade 8) (-0.62), Residents in concentrated (>20%) poverty (0.62), Proficient in math (grade 4) (-0.62), People living amid racial segregation + very concentrated (>40%) poverty (0.60), Poverty (adults) (0.59), Poverty (supplemental def.) (0.56), Residents in very concentrated (>40%) poverty (0.56), Poor people living amid racial segregation + very concentrated (>40%) poverty (0.52), and Poor people living amid racial segregation + concentrated (>20%) poverty (0.50).

10 states (1.7 percent). Access to health care could be expected to reduce the risk of suicide—and indeed we find that states with lower suicide rates have higher rates of Pap testing (cervical cancer screening) and proper management of diabetes—but we also found that they had higher rates of hospital readmissions, a measure of inadequate outpatient care. Suicide correlated moderately with shortages in mental health care providers (r_s= 0.44).

Homicide

Homicide rates varied dramatically across the United States—more than seven-fold as of 2013, from 1.7 per 100,000 in New Hampshire to 12.2 per 100,000 in Louisiana (Figure 1).[b] The Top 10 states (with low homicide rates) were geographically dispersed, but the Bottom 10 states (with high homicide rates) were primarily in the South and West South Central states (Figure 10). Homicide rates for Louisiana and the District of Columbia sharply exceeded those of the other Bottom 10 states. The District of Columbia had the second highest homicide rate but, as noted, the lowest suicide rate in the country.

What correlates the most with homicide?

In contrast to suicide, homicide was highly correlated with lower socioeconomic status. States with higher homicide rates

c. Data for North Dakota, Vermont, and Wyoming were not reported.

were more likely to have single-parent households, household and neighborhood poverty, and lower educational attainment. Child poverty rates were 15.9 percent in Top 10 states (with the lowest homicide rates) and 24.9 percent in Bottom 10 states. Homicide rates were higher in communities confronting the convergence of poverty and residential segregation (Figure 11).

Not surprisingly, states that ranked highly on homicide had higher adult incarceration rates and more violent neighborhoods, as reflected by higher violent crime rates, less safe schools and neighborhoods, teen injuries at school, and intimate partner violence (Figure 12). The violent crime rate in Bottom 10 states (with high homicide rates) was 516.6 per 100,000, more than double that of Top 10 states (221.2 per 100,000). The risk of adult incarceration was also doubled.

Teens in high-homicide states were more likely to get injured in fights. Other unhealthy behaviors that are known to be more prevalent in higher poverty populations were observed, such as poor diet, physical inactivity, and smoking. Youth were less likely to wear bicycle helmets, teens were less likely to use birth control, and mothers were less likely to engage in exclusive breastfeeding. Also, access to health care (private insurance, annual dental visits) was more limited, doctors were less affordable, more patients were hospitalized for conditions that can be managed outside the hospital, and office-based physicians were less likely to use electronic medical records. None of the state spending categories we examined correlated highly with homicide.

What The Data Affirm: The Takeaway

Residents of states that invest less in public transportation (and other public services), and where commuters are more likely to drive to work, are at greater risk of fatal crashes. Poverty, limited education, segregation, and other neighborhood socioeconomic conditions correlate strongly with violence and homicide, as well as with motor vehicle fatalities. Other factors not directly examined in this supplement—e.g., stress and anxiety, drug use patterns, and access to guns—probably best explain state variations in deaths from drug overdoses and suicide.

The bottom line? What explains injury deaths depends on the nature of the injury.

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