

The Rise in Opioid Overdose Deaths

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social capital project

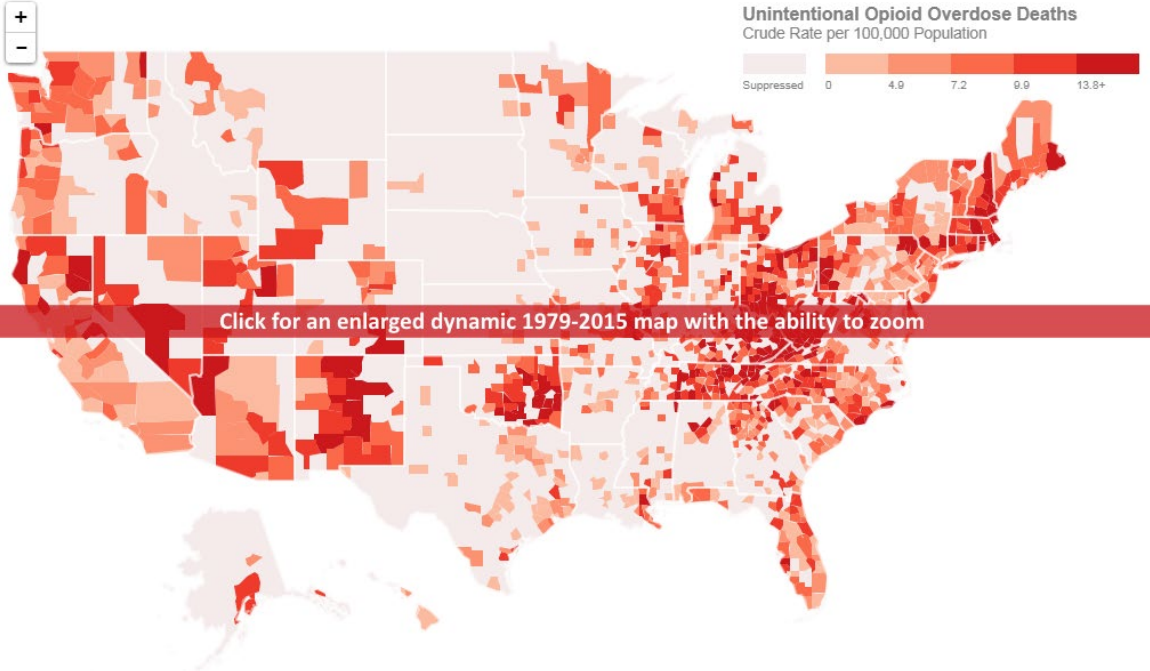
A project of the Joint Economic Committee – Republicans | Chairman, Sen. Mike Lee
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Our physical and mental health reflects the health of our relationships with others. [Studies show](#) that social networks influence the behavior of their members, affecting whether they are obese or fit, happy or sad. The stark fact is that socially isolated people and others without social support [die younger](#). Even among people with adequate social support, health status is connected to the health of their friends, family, and coworkers.

The ongoing opioid epidemic is the biggest public health crisis since HIV and AIDS came onto the scene over three decades ago. The causes of the crisis are myriad, as documented by Sam Quinones’s powerful book *Dreamland* and [recently highlighted](#) by the Chairman’s Office of the Joint Economic Committee. But against this complex backdrop, we know that it is not simply good or bad luck that determines who succumbs to opioid addiction.

[The Social Capital Project](#) is exploring the relationship between having an unhealthy associational life and dying from several causes that suggest social disrepair. These “[deaths of despair](#),” to use the evocative phrase of Anne Case and Angus Deaton, include those from opioid and other drug overdoses, as well as those from suicides and alcoholic liver disease. The Project is also assessing the social disrepair caused by the opioid crisis—the collateral damage to families, communities, and institutions as a result of these drugs.

*Unintentional Opioid Overdose Deaths, 2011-2015*¹



[Click for an enlarged dynamic 1979-2015 map with the ability to zoom](#)

Source: United States Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), NCHS, Compressed Mortality File (CMF) 1979-1998 and Multiple Cause of Death (MCD) 1999-2015 on CDC WONDER Online Database. Accessed at <http://wonder.cdc.gov/cmfi-icd9.html> and <http://wonder.cdc.gov/mcd-icd10.html>.

The Social Capital Project has compiled new data on the opioid crisis as part of this research. We created a visualization showing how the epidemic spread across the country and worsened between 1979 and 2015 using mortality data from the Centers for Disease Control and Prevention. In contrast to most coverage of the crisis, which has displayed the geography of drug overdose deaths generally, our maps are the first we are aware of that present deaths from unintentional opioid overdoses specifically, and the first to include deaths prior to 1999. (Opioid mortality where death was intentional or where the intent was ambiguous is unavailable before 1999 via the CDC data tool we used.)

The map above shows unintentional opioid death rates by county from 2011 to 2015. Clicking the image opens an interactive dynamic map displaying opioid deaths between 1979 and 2015. Each iteration of the map aggregates five years of data (four from 1995 to 1998, due to a change in the way the CDC coded mortality in 1999). Pressing the “play” triangle in the pop-out version cycles through time from 1979-1983 to 2011-2015. Alternatively, the user may use the slider to select a period.

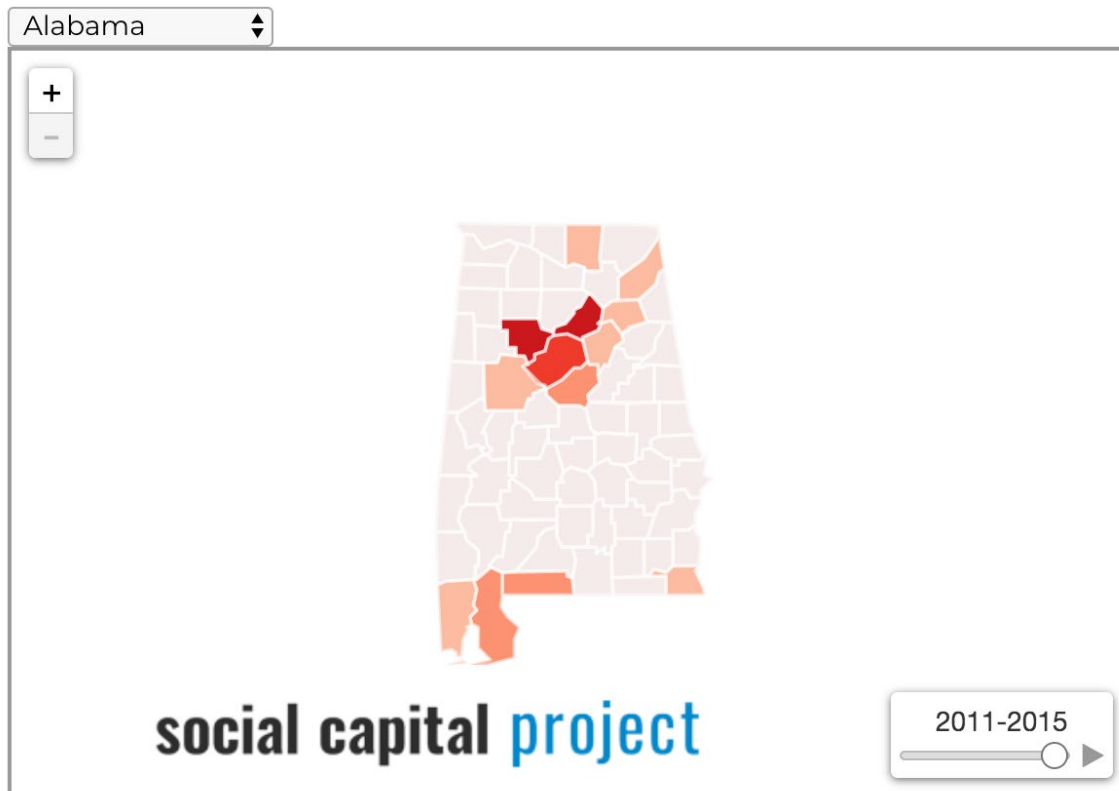
Each county is shaded in one of six colors. The data for many counties is suppressed for confidentiality reasons because the number of opioid deaths is so small. Those counties are greyed out. The other five colors represent quintiles of the 2011-2015 crude opioid death rate across counties. The lightest shade (ignoring counties with suppressed data) indicates a county’s opioid overdose mortality rate for a given period would put it in the bottom fifth of non-suppressed counties in 2011-2015. The darkest shade indicates a mortality rate high enough that only 20 percent of non-suppressed counties were that bad off in 2011-2015. These quintiles do not change as the maps displayed in the pop-out version cycle from 1979-1983 to 2011-2015. Clicking a county in the pop-out version of the map displays the opioid overdose mortality rate per 100,000 people. The displayed rate updates dynamically as the years represented by the map change. (In years where a county’s data were suppressed by CDC, the label will display “null”.)

The map below drills down on specific states, which may be chosen from the drop-down menu.

Unintentional Opioid Overdose Deaths, by State¹

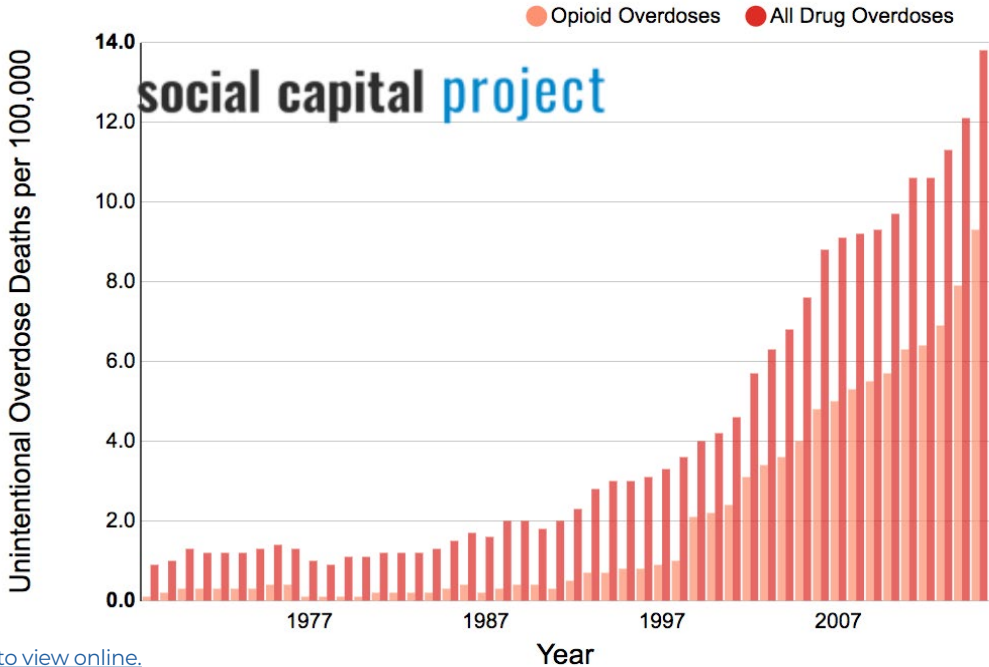
Unintentional Opioid Overdose Deaths
Crude Rate per 100,000 Population

[Click to view online.](#)



The charts below display the national trend in mortality from all drugs and from opioids specifically, with the first chart showing mortality rates and the second the number of deaths. On the online version, click the circle next to a variable to deselect one and focus on the trend of the other.

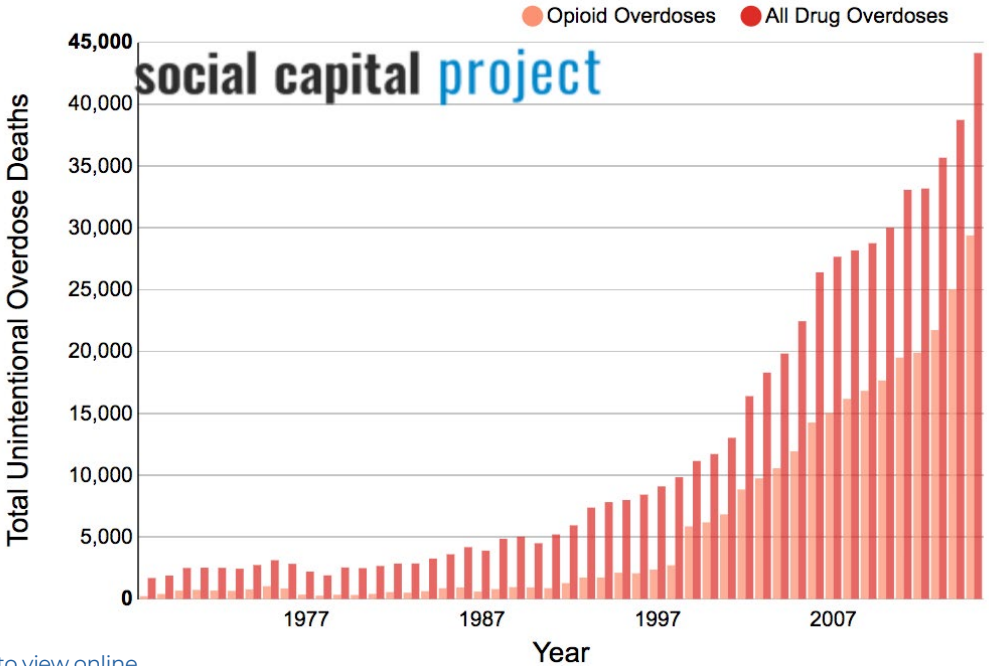
Rate of Unintentional Drug Overdose Deaths, 1968-2015 ²



[Click to view online.](#)

Source: United States Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), NCHS, Compressed Mortality File (CMF) 1968-1998 and Multiple Cause of Death (MCD) 1999-2015 on CDC WONDER Online Database. The change in opioid deaths from 1998 to 1999 partly reflects a change in CDC coding. See end note 1. Accessed at <https://wonder.cdc.gov/cmfi-icd8.html>, <http://wonder.cdc.gov/cmfi-icd9.html> and <http://wonder.cdc.gov/mcd-icd10.html>.

Total Unintentional Drug Overdose Deaths, 1968-2015 ²



[Click to view online.](#)

Source: United States Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), NCHS, Compressed Mortality File (CMF) 1968-1998 and Multiple Cause of Death (MCD) 1999-2015 on CDC WONDER Online Database. The change in opioid deaths from 1998 to 1999 partly reflects a change in CDC coding. See end note 1. Accessed at <https://wonder.cdc.gov/cmfi-icd8.html>, <http://wonder.cdc.gov/cmfi-icd9.html> and <http://wonder.cdc.gov/mcd-icd10.html>.

Look for more data on the opioid crisis, as well as our report on deaths of despair and social disrepair, in the near future.

ENDNOTES

1. Estimates for each period are multi-year crude mortality rates from unintentional opioid overdoses (including licit and illicit opioids). Beginning with the 1989 data, CDC suppresses death counts (and thereby rates) for counties with fewer than ten deaths in a given period, out of confidentiality concerns. By combining years, rates are suppressed for fewer counties. In 1999, the Tenth Revision mortality codes were introduced to the *International Classification of Disease* (ICD-10), replacing the *Ninth Revision* (ICD-9) codes. We generally combine five years' of county data for each period, except that we combine four years' of data from 1995 to 1998 because of the discontinuity created by the switch to ICD-10 codes. Each period shares a year with the previous and subsequent periods, except that due to the discontinuity, the 1995-1998 and 1999-2003 periods do not overlap. By comparing maps for 1998 (based on ICD-9 codes) and 1999 (based on ICD-10 codes), we confirmed that little of the difference between the 1995-1998 and 1999-2003 maps is due to the discontinuity.

CDC does not suppress death counts prior to 1989; for consistency with the more recent estimates, we code the rates for 1979-1983, 1983-1987, and 1987-1991 as suppressed if a county had fewer than ten deaths. We retained county death rates the CDC deemed “unreliable” because there were ten to nineteen deaths. Age-adjusted rates are not provided by CDC WONDER for such counties, necessitating our use of crude rates. Generally, there is minimal difference between crude and age-adjusted rates for drug and opioid overdoses. Opioid deaths are identified from 1979 to 1998 by IDC-9 code E850.0 (Opiates and related narcotics). From 1999 to 2015, opioid deaths are identified as those with underlying cause-of-death codes X40-X44 and multiple-cause-of-death codes T40.0, T40.1, T40.2, T40.3, T40.4, and T40.6.

2. The charts show the annual age-adjusted mortality rate (and number of deaths) from unintentional overdoses involving either all drugs or opioids specifically (licit and illicit). Overall drug overdose deaths are identified from 1968 to 1978 as those with ICD-8 codes E850-E859; opioid deaths are those with ICD-8 code 853.0. Drug overdose deaths between 1979 and 1998 are categorized under ICD-9 codes E850-E858. Opioid deaths are identified from 1979 to 1998 by IDC-9 code E850.0. From 1999 to 2015, drug overdose deaths are those with underlying-cause-of-death ICD-10 codes of X40-X44; opioid deaths are the subset of those with multiple-cause-of-death codes T40.0, T40.1, T40.2, T40.3, T40.4, and T40.6.

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