The Drug Overdose Epidemic: Deaths of Despair or Deaths of Addiction?

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Abstract

Using a framework offered by the concept of cultural lag, the authors examine two perspectives on the drug overdose epidemic afflicting America. A "deaths of despair" perspective emphasizes *cumulative disadvantages* that have beset certain segments of the U.S. population, rendering them "desperate for relief." In contrast, a "heroin markets" perspective suggests that white-powder heroin from Colombia has made heroin an attractive substitute for prescription drugs, like Oxycontin, and that the recent phenomenal growth in the number of overdose deaths has more to do with its market than anything else. The authors use secondary data to test three hypotheses derived from these perspectives. Although the available data are limited, they find support for both perspectives, particularly the "heroin market," one. They discuss implications.

Keywords: cultural lag, deaths of despair, heroin markets, deaths of addiction

INTRODUCTION

The drug overdose epidemic in the United States has been, and continues to be, a scourge upon the land. In 2016, for which data were beginning to come in at this writing, approximately 62,000 Americans died from overdoses, about a 19 percent increase over 2015 (Katz 2017). This number outstrips that of American lives lost to automobile accidents, gun shots and suicides (*Economist* 2017a). The drug overdose epidemic has become increasingly visible. One Ohio coroner's office in 2016, for example, stored dead opioid victims in refrigerated trucks outside its office because the bodies were pouring in faster than they could be processed (*Economist* 2017b). Quinones (2017) reports that "drug overdosing" is currently the number one killer of people under 50 in the United States.

Drug overdose deaths, along with alcohol-related deaths and suicides, are increasingly known as "deaths of despair," and are attributed to a reversal in what some imagined to be irreversible; that is, the mortality and morbidity rates for middle-aged white men and women (Case and Deaton 2015). In recent years the life expectancy for this social category has been decreasing, not increasing, as it continues to be for all others in the U. S. and the Western world. Monnat (2016) found a strong correlation between counties that voted for Donald Trump and ones that had high drug, alcohol and suicide mortality rates and concluded that this signaled that Trump voters often suffered from hopelessness and despair. Further contributing to the notion that drug overdose deaths are rooted in despair is convincing research suggesting that such deaths may often be misclassified suicides (e.g., Rockett et al. 2014). Suicides, most assume, are a sign of hopelessness and, if overdose deaths are really hidden suicides, the thinking goes, such deaths are also a sign of hopelessness.

Our investigation, largely driven by our belief that drug overdose deaths can be reasonably investigated as a manifestation of a particular kind of cultural lag, began with the expectation that we would uncover evidence that drug overdose deaths are in fact deaths of despair. We found such evidence, but also found evidence, perhaps even stronger, for another perspective: that

these deaths have become more about markets for heroin and, perhaps, fentanyl-- a narcotic, analgesic, and sedative. We will first consider the case that the overdose epidemic is an instance of cultural lag.

The Overdose Epidemic as an Instance of Cultural Lag

William Ogburn's (1922) concept of cultural lag refers to the social problems that can occur as the nonmaterial culture of a society (e.g., beliefs, values, perspectives) adapts to economic or technological changes. The implicit period of delayed adjustment can generate serious hardships for a population.

In the case of the drug overdose epidemic, there have been at least two changes in the material culture (e.g., everything tangible that society produces, such as tools, inventions, artifacts) that have been viewed as appropriate suspects. One change, the massive upheaval in U.S. manufacturing and job loss, brought about by automation and relocation over the past five decades, has been associated with the *demand* for opiates. Parts of the U.S. have suffered selective economic declines that have led to downward mobility for many people. This increased economic vulnerability, augmented by the Great Recession of the last decade, has raised fears and anxieties that have, in turn, led many to drown and/or drug their sorrows, and sometimes to take their lives. Monnat (2016) demonstrates that the most economically distressed counties in the U.S. are also the ones that have the highest rates of drug, alcohol and suicide mortality.

In the middle 1990s, a second kind of material change took place: the development of prescription drugs that promised the delivery of "safe," presumably non-addictive, opioid products for pain relief. This change increased dramatically the *supply* of opioids in the American marketplace. Until then, doctors largely prescribed opioids only for patients suffering from acute pain or terminal conditions.

Perhaps the major "breakthrough" was Purdue Pharma's discovery and marketing, in 1996, of Oxycontin. Oxycontin, a time-released formula for large, and varying, dosages of oxycodone, was designed for people suffering from chronic pain. This drug gained FDA approval for this purpose and was energetically marketed by Purdue, which employed a sales force that used practices that, some (e.g., Van Zee 2009; Quinones 2015) say, were often unethical and sometimes illegal. To suggest, as we do, that the development of a product (in this case Oxycontin) was responsible for the increased supply of legal opioids is not to ignore the importance of changing attitudes towards opioids in the medical community, attitudes that as early as the 1980s had begun to doubt the thinking that opioids were highly addictive and generally to be avoided (e.g., Quinones 2015: 15ff). The widespread sale and use of drugs like Oxycontin would have been impossible if a context of relatively relaxed attitudes towards the addictive potential of opioids had not emerged in the medical community.

Two Perspectives on the Drug Death Epidemic

We have found two major perspectives accounting for the drug death epidemic: a "deaths of despair" perspective and a "heroin market" perspective. Both perspectives are of recent origin. The first perspective, associated with Anne Case and Angus Deaton[1] (e.g., Case and Deaton 2017; Case and Deaton 2015a; Case and Deaton 2015b) argues that a loss of a sense of wellbeing within a significant swath of the American population is primarily responsible for its having turned to highly addictive drugs, alcohol and suicide. In its most recent and comprehensive formulation (Case and Deaton 2017), the "deaths of despair" lens suggests that a *cumulative disadvantage* has occurred, most remarkably for whites with lower education. Unlike hypotheses that have located the mortality problem in stagnant and declining incomes (e.g., Stiglitz 2015), hypotheses that Case and Deaton claim cannot account for why less-educated whites should have poorer mortality outcomes than, for example, less-educated members of minority groups, the "deaths of despair" perspective traces health and mortality declines to the progressively worsening labor market opportunities of less-educated whites and various correlates of this worsening.

The steady decline in job opportunities for whites with lower education levels has not only had enormous effects on their marriage and divorce prospects (Cherlin 2009; Kenschaft, Clark and Ciambrone 2016), but also

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[1]Case and Deaton are affiliated with Princeton University's Center for Health and Wellbeing.

on the life chances of their children (Murray 2012; Putnam 2015). Members of this social category have become much less likely to marry, much more likely to divorce when they do marry, much more likely to have children out of wedlock, much more likely to expose their children to unstable family lives, and much less likely to enable those children to attain good educations than did less educated whites in the past. Moreover, Case and Deaton (2017:33) point out that "half of the men who are out of the labor force are taking pain medication, and two thirds of those take prescription painkiller, such as opioids." Case and Deaton concluded that reversing the trend towards deaths of despair cannot be done with purely economic solutions, at least not through *short-term* economic solutions. What is necessary is a program that addresses the family issues, the lack of spiritual fulfillment, "perceived meaning and satisfaction" (Case and Deaton 2017: 34) that lead to despair. As Case and Deaton note, this prescription is not a particularly encouraging one.

In this paper we focus exclusively on drug overdose deaths rather than combining them with alcohol-related deaths and suicides. We also use state-level data. One of the hypotheses we examine emerges directly from this "deaths of despair" perspective, namely:

Hypothesis 1: States with populations reporting high levels of overall wellbeing will have lower drug overdose death rates than states with populations reporting low levels of overall wellbeing.

We examined variables that, while not being proofs against despair, had been suggested to be inhibitors of despair. Religiosity is one factor that kept coming up in our examination of the literature on suicide and alcoholism, drug use, and even despair itself. Thus, for example, in a large number of articles published between 1980 and 2008, Gearing and Lizardi (2009) found epidemiological support for the protective effects of religious commitment, a protection that existed across Christian, Jewish, Muslim and Hindu communities. Similarly, in another review article, Haber et al. (2011) found a consistent inverse relationship between alcoholism and religion or spirituality. Kendler Gardner, and Prescott (1997) and Binswanger et al. (2012) have found evidence, in disparate populations, that religiosity can be a protective factor against drug use and overdosing. Other studies (e.g., McClain et al. 2003) have even found evidence that spiritual wellbeing can be a protection against despair in terminally ill cancer patients. The literature is *not* unequivocal, to be sure. In *Dreamland*, Quinones' (2015) marvelous study of the opiate epidemic, he found that addiction spread particularly quickly within one church community. In general, though, the literature led us to our second hypothesis we propose related to the "death of despair."

Hypothesis 2: States with high percentages of their populations saying they are not religious will have higher drug overdose death rates than other states.

If the "death of despair" perspective on drug overdose deaths has a short pedigree, the "heroin market" perspective, as far as we can tell, has an even shorter one. We first saw it articulated in a short *Economist* article on May 11th, 2017 (Economist 2017c). This perspective argues that the long-term trend in drug deaths may not only have much to do with working-class despair, but also that its recent, life-defying rise has even more to do with access to heroin markets.

Until about 2010, the increase in opioid deaths was highly related to prescription drugs, like Oxycontin. In the past few years, heroin and potent synthetic drugs, like fentanyl, have become more significant, even though most users of the latter two drugs were formerly abusers of the former.

Drug abusers often make the switch from prescription drugs to heroin and synthetic drugs because the latter are cheaper and more potent. There are actually two major kinds of heroin on the U. S. market currently and only one of these, a white-powder heroin from Colombia, looks and acts sufficiently like crushed pain pills that it has made the switch an easy one for prescription-drug addicts. Once this switch is made, fentanyl, or some other synthetic drug, often comes into the mix. According to the *Economist* (2017c), a Mexican brown-powder or black-tar heroin, which figures much more prominently in Quinones's (2015) story and is more characteristically found west of the Mississippi, has "probably deterred many painkiller addicts from trying the drug (i.e., heroin), and has kept synthetic opioids at bay" according to the *Economist* (2017c).

While neither the *Economist* nor its primary data source, the Centers for Disease Control (CDC), provide us with a way of determining precisely which states are

most involved in the white-powder heroin market, the CDC has recently begun to provide data on how many of the drug overdose deaths in a state can be attributed to heroin. These data are only available, however, for the 28 states for which the CDC finds the heroin overdose death data "good" quality or better.

As a first approximation of the market for white-powder heroin in a state, we use statewide heroin overdose death rates to test the heroin market perspective:

Hypothesis 3: States with higher heroin overdose death rates will have higher overall drug overdose rates than states with lower heroin overdose death rates.

METHODOLOGICAL APPROACH and MAJOR VARIABLES

Data Sources and Limitations

The tests of our hypotheses are based on data available to researchers for secondary analysis. Specifically, we used data from the Kaiser Family Foundation (2017a) and from Gallup's (2017) "State of the States." Data for this project were not always easy to locate. We were limited by budget to materials available online, but we have located data sources that researchers with deeper pockets or more prestigious institutional affiliations may also want to explore.

Because of budget and data limitations, we had to make some methodological compromises. For example, when we tried to measure heroin markets, we ran into our most severe data barriers. Not surprisingly, there are no good state-level data on the kinds of heroin available in illegal heroin markets. Therefore, we decided that a decent, but imperfect, substitute measure is the heroin overdose death rate by state.[2] But certain bits of critical

information are, to the best of our knowledge, simply untapped as of now.

Major Variables and Statistical Analysis

Our dependent variable is the overall drug overdose death rate per 100,000 (age-adjusted) in 2013 and 2015 (Kaiser Family Foundation, 2017a). The three major independent variables in our analysis are measures of a state's population's overall wellbeing, its religiosity and its heroin markets. For the first two independent variables we use data provided by Gallup's (2017) "State of the States" for 2016. These data summarize daily polls taken throughout the year to provide overall measures on many state (and city and individual) characteristics. Our measure of states' overall wellbeing is Gallup's Overall Well-Being Index in 2016, a measure that is a composite indicator of people's sense of purpose, their social and financial wellbeing, their sense of community and physical health.[3]

Our measure of religiosity is the percentage of a state's residents who say religion is not important in their lives and that they seldom or never attend religious services. A high score on this measure is interpreted, for this study, as a low score on religiosity. We used Gallup (2017) for our 2016 measure and found an earlier Gallup measure of the same variable in 2011 from Hicken (2012).

With no more than 50, and sometimes as few as 28, states as units of analysis, there are relatively few degrees of freedom to conduct simple linear multiple regression analyses, especially given the relatively large number of independent variables we are initially interested in. Therefore, we employ forward stepwise regression analyses via the Statistical Package of

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[2]We used this measure, aware of the limitation that it is a constituent of our dependent variable, the overall overdose death rate by state, and therefore likely to be more highly correlated with it than other possible measures, the likeliest, perhaps, being the drug arrest rate by state. Unfortunately, alternate measures like crime rates, including the drug arrest rate, vary with many things other than heroin usage (including the usage of other drugs and the highly variable inclinations of state law enforcement authorities to criminalize drug usage). Therefore, we view crime rates as an even more imperfect measure of heroin markets than the heroin overdose death rate. Moreover, we have determined that not all constituents of the overall drug overdose death rate are strongly

correlated. Thus, for instance, the methadone overdose death rate is correlated with the heroin overdose death rate at a weak .11 level. In the absence of a better measure of the extent to which heroin markets thrive in states, then, and with genuine concern about the appropriateness of our measure, we proceeded.

[3]We spoke with a Gallup representative about obtaining measures of overall wellbeing for earlier years, but found the costs to do so were beyond our (and our College's) means. The closest we were able to come to an earlier measure was not the actual index in an earlier year but a ranking of states by overall wellbeing in 2012 (Gallup-Heathways 2012). We have used these data in our panel regression analysis reported later in this paper.

the Social Sciences (SPSS). We use the variables we speculated might be related to the drug overdose death rate and select variables that create an economical model. Specifically, we instructed SPSS to add the most significant variable at each step of its processing until all variables not in the selected model have p values that are greater than .05.

The forward stepwise regression analysis enables a cross-sectional examination of the variables that have the greatest controlled association with our dependent variable, drug overdose death rates. But both the "despair" and the "markets" perspective focus on *change* in drug overdose death rates. Consequently, another statistical tool we use here is panel regression analysis. Panel regression analysis permits the evaluation of the impact of several independent variables on *change* in a dependent variable by regressing the latter on itself (in 2015) and the independent variables at an earlier time (in 2013). This statistical tool usually yields a conservative test because the lagged dependent variable is normally extremely highly correlated with itself at the earlier time (cf. Hannan 1979). This is especially likely to be the case with short time lags, such as the one used in this analysis (two years).

Based on the Economist's (2107c) analysis, we assumed that states with higher heroin death rates are ones in which a white-powder heroin market is dominant, since it is in these states that prescription drug addicts will have most likely switched over to heroin. Since the CDC (2017) has determined that heroin deaths are sufficiently accurate in 28 states, those are the states for which published data on heroin death rates were available in 2014 and 2015. We use these data in both a cross-sectional stepwise regression analysis and our panel regression analysis.

We entered nine other variables into our cross-sectional analyses, anticipating that some of these might supersede our main independent variables as predictors of drug overdose deaths rates. The conventional view that economic deprivation leads to drug misuse (e.g., Stiglitz 2015) led us to several possibilities. We expected, for example that states with higher unemployment rates would have higher drug overdose death rates than others and so entered a measure of unemployment rates in 2015 (Bureau of Labor Statistics 2017). We expected that states with higher poverty rates would experience higher overdose

death rates than others and so entered poverty rates for 2015 (Bishaw and Glassman 2016). We thought that better educated populations would have lower overdose death rates than others and entered the percentage of the state population with a high school diploma or higher (Wikipedia 2017, based on U.S. Census data). We also expected states with older populations, which are more likely to receive legal opioid prescriptions for pain, to have higher drug overdose death rates than others and entered a measure of median age in 2014 (Murphy 2015). Along these same lines, we felt the drug overdose death rates might directly vary with the prescription rates of legal opioid painkillers and so entered a measure of this in 2012, the date for which we could find such an indicator (Paulozzi et al. 2014). The literature led us to expect that drug overdose deaths might be concentrated in states with predominantly white populations and, in any case, wanted to enter a variable measuring race, so use data on the percentage of a state's population that was white in 2015 (Kaiser Family Foundation 2017b). We thought it possible that two kinds of populations might be more likely to have strong norms against drug use: people identifying as Republicans and those who are very religious, and so we entered measures of each, again using Gallup data (Gallup 2017). We also speculated that marijuana might be a gateway drug to drug overdose deaths and so entered a measure of statewide marijuana use, based the National Survey on Drug Use and Health in 2014 (Hughes et al. 2016).

Results

We first performed a cross-sectional analysis involving the drug overdose death rate as the dependent variable and 11 independent or predictor variables.[4] These 11 predictors were: the unemployment rate in 2015, the percentage of the population claiming to be nonreligious in 2016, the proportion of the population with a high school certificate or more of formal education, the prescription rate of legal opioids in 2012, the percentage of the population that was white in 2015, the poverty rate in 2015, the median age of the population in 2015, the percentage of the population with a Republican party affiliation in 2016, the percentage of the population claiming to be religious in

2016, the Gallup index measuring the level of well being experienced by the population in 2016, and marijuana use in 2014.

Table 1 shows that the forward stepwise regression found that two of these variables constituted an economical model: the index of overall wellbeing in 2016, with a beta of -.75 in the final model, and the percent of the population claiming to be nonreligious in 2016, with a beta of .51 in the final model. This finding would appear to support the perspective that drug overdose deaths are substantially a result of despair. States with higher well-being indices have lower drug overdose death rates than others <u>and</u> states with higher percentages of their populations claiming to be nonreligious (or lacking a major protection against despair) have higher death rates than others. (See Table 1.)

Table 1. Final Model Produced by Forward Stepwise Regression of the Drug Overdose Death Rate by State on Eleven Independent Variables without a Measure of Heroin-Related Death Rates

	Betas
Overall Well-Being Index, 2016	-.75***
Percentage of Population Claiming to Be Nonreligious, 2016	.51***
N	50
Adjusted R-square	.42

Note: *** indicates statistical significance at the .001 level.

However, the problem with this analysis, as proponents of the "market" perspective on drug overdose deaths suggest, is that it does *not* take into account the effect of the market for heroin in states. We have tried to take an accounting of its effect by measuring the market in terms of the heroin death rate in states, despite the reservations we have for using this measure. Among these reservations are that "good" to "excellent" data about heroin deaths rates are only available for 28 states and, even for these, the Centers for Disease Control advise that they *not* be used for comparisons among states (CDC, 2017). But, we reasoned, if the heroin death rates are so incomparable, they would provide a relatively conservative test of the "market" perspective,

even if heroin death rates are not the ideal measure of the degree to which states are involved in heroin markets. Their incomparability might lead us to expect a lower correlation with overall drug overdose death rates than we would obtain with more comparable data. (See Table 2.)

Table 2. Final Model Produced by Forward Stepwise Regression of Drug Overdose Death Rate by State on Thirteen Independent Variables, including Heroin-Induced Death Rates

	Betas
Heroin-Induced Death Rates	.67***
Opioid Prescription Rates, 2012	.33**
N	28
Adjusted R-square	.52

Note: *** indicates statistical significance at the .001 level.

Still, Table 2 must be interpreted with caution. The data in Table 2 suggest that, when a measure of heroin deaths is introduced, only it (beta =.67) and the legal opioid prescription rate (beta = .33) appear in a model. Moreover, this model explains about 10 percent more variation (adjusted R-square = .52) in drug overdose death rates for the 28 states involved than did the model in Table 1 (adjusted R-square =. 42) for 50 states. We thus, cautiously, infer that, in cross-sectional models at least, there appears to be greater support for the "market" than the "despair" perspective on drug overdose deaths.

Unfortunately, cross-sectional analyses such the ones presented in Tables 1 and 2 cannot sort out time-sequencing and one is left with the questions: which comes first, the despair, the market for heroin, or the drug deaths? Also, would the relatively strong support for the heroin "market" perspective persist *if* we focused on changes in the drug overdose death rate rather than simply levels of that rate? Both questions led us to employ panel regression, a technique that requires early and late measures of the dependent variable as well as measures of the independent variables of interest at approximately the same time as the early measure of the dependent variable.

The "lag" in our panel regression analyses is limited by the data we've been able to find online. But, in general, those analyses again tend to support the "market" perspective. Thus, when we examined what may have affected the change in the drug overdose death rate in the period between 2013 and 2015 (the period for which we can find online reasonably-appropriate measures of our key independent variables), we find stronger controlled relations between early measures of the heroin death rate and change in drug overdose death rates than we do early measures of either of our of statewide despair measures. Table 3 boils down these findings and shows, as one would expect, that the strongest predictor in our model of 2015 drug overdose deaths rate in the 28 states involved was drug overdose death rates in 2013 (beta = .50). A close second was heroin overdose death rates in 2014 (beta = .49), followed by the legal opioid prescription rates in 2012 (beta = .36). Neither of our measures of despair or a potential for despair—e.g., the ranking of states by levels of overall well being in 2012 (beta = -.18) and the percentage of the population claiming to be nonreligious in 2011 (beta = .13), was statistically significantly related to drug overdose deaths in 2015 when the other variables were controlled, even though both variables were related in the predicted direction to the dependent variable. (See Table 3.)

Table 3. Panel Regression Analysis of Drug Overdose Death Rate in 2015 on Itself in 2013 and the Heroin Overdose Death Rate in 2014, Opioid Prescription Rate in 2012, the Ranking of States by Levels of Overall Well Being in 2012, and the Percentage of Those Claiming to be Nonreligious 2011

	Betas
Drug Overdose Death Rate 2013	.50***
Heroin Overdose Death Rate 2014	.49***
Legal Opioid Prescription Rate 2012	.36*
Ranking by Overall Well Being 2012	-.18
Percent Nonreligious 2011	.13
N	28
Adjusted R-square	.81

Notes: * indicates significance at the .05 level; ***, at the .001 level.

DISCUSSION

We find support for both the "deaths of despair" and the "heroin market" perspectives, although the support for the latter appears to be stronger than that for the former. In a cross-sectional analysis involving all 50 states, without a measure of heroin markets only available for 28 states, stepwise regression picked our two "despair" indicators, overall wellbeing and the absence of religiosity, out of a lineup involving 11 variables. But when we introduced heroin death rates into an analysis involving only 28 states, it and our indicator of the legal opioid prescription rate (in 2012) pushed the despair indicators out of the picture. Moreover, in our panel analysis involving the four dependent variables of interest—the two despair variables, the heroin market variable and the opioid prescription rate variables— only the latter two had significant associations with drug overdose death rates in 2015, when drug overdose deaths rates in 2013 were controlled. Neither of our perspectives, by the way, had predicted that the legal opioid prescription rate would still have the significant impact it appears to have on drug overdose deaths in America. That it does is certainly worthy of policy consideration (see below).

We have hinted at the caution with which we report these results. Much of the caution has to do with data limitations, although some of it has to do with more theoretical concerns. We are pleased enough with our despair measures for the cross-sectional analyses, but neither is easily or cheaply available for the proper year (2013) of the panel analysis, and the wellbeing indicator, a ranking of indexes rather than the indexes themselves for that analysis, is suboptimal. Our measure of heroin markets is less than ideal for several reasons. Theoretically, we would much prefer some measure of the degree to which white-powder heroin dominates a state market for heroin. One can imagine polling being able to tap such a concept, in much the same way The Center for Behavioral Health Statistics and Quality now polls for marijuana usage. But we're not there yet. Our indicator, the heroin overdose death rate, entails many difficulties, not the least of which is its likely unreliability for years to come. But even if it were perfectly reliable, it is obviously a sub-dimension of the overall drug overdose death rate and therefore more likely to be correlated with that rate than a measure with more obvious face validity. Perhaps the most obvious problem, however, is the fact that the heroin death

rate is available for only 28, just over half of the states. One has to wonder what kinds of biases are involved in such a partial representation, but they surely include, to some degree, a variable concern for the growing heroin epidemic within the larger drug epidemic. At a more theoretical level, our results may be criticized for entanglement with the ecological fallacy. Thus, for instance, just because states with high overall wellbeing indexes have relatively low drug overdose death rates does not mean that individuals with a sense of wellbeing are protected from overdosing.

Still, our results are suggestive, both theoretically and in terms of public policy. At the theoretical level, they suggest that the transition from addiction to legal prescription painkillers to addiction to heroin and synthetic drugs like fentanyl may now be the main driver of rapidly increasing drug overdose deaths in the United States. As a consequence, those concerned about the drug overdose epidemic may need to distinguish it, conceptually, from the somewhat clearer instance of deaths of despair, such as suicide. It may be more useful to think of drug overdose deaths as deaths of addiction, addictions that may originally have had some foundation in despair, but that may also have had some foundation in chronic pain management or simple experimentation with opioids for pleasure.

Case and Deaton (2017) point out that dealing with overdose deaths as deaths of despair actually points to policies that are anything but simple to enact. It would not only mean attempting to deal creatively with the economic changes that have led to widespread economic discomfort, but also with intervening conditions like later and more fragile marriages and an inability to provide supportive families for children. If one conceptualized the drug overdose epidemic in terms of deaths of addiction, however, the question becomes one of how to prevent addiction in the first place and how to make it more easily treated if it occurs. States have begun to deal with both of these issues. Thus, for instance, Florida (Johnson et al. 2014) and Kentucky (Chapman 2017) are among states that have begun to regulate pain clinics and doctors who have prescribed opioids. Various states and municipalities have begun to sue pharmaceutical companies to get them to change their advertising methods (e.g., *Economist* 2017b). Various jurisdictions have expanded access to Naloxone, a drug that treats overdoses, as well as to treatment and rehabilitation centers (e.g., Chapman 2017) and some

public efforts have been made to reduce the stigma associated with addiction so that concerned friends and relatives are more inclined to help (Quinones 2015).

On a less positive note, Medicaid expansion under the Affordable Care Act has accounted for roughly half of Medicaid expenditures on substance abuse treatment in many of the states with the greatest drug overdose death rates (Alonso-Zaldivar 2017). At this writing, these funds, utilized by low-income adults, are likely to be cut substantially under Republican healthcare plans.

What to do about the markets for white-powder heroin and synthetic opioids is harder to prescribe, but so far nothing seems to have worked. Noting the markets for white-powder and black-tar heroin are largely separated by the Mississippi River, the *Economist* (2017c) recommends that "This is a rare case where one should pray that America stays divided." But prayer has its limits. And efforts have been made to shut down dark net sources of synthetic drugs, even as these sources continue to pop up, like targets in a deadly game of whack-a-mole (Popper 2017).

Dealing effectively with the overdose drug epidemic will undoubtedly require efforts on many fronts. But choosing the right fronts will increasingly depend on figuring out what they are. Generating relevant data and making those data more readily available to researchers, however, are certainly going to be two of them.

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