


**VIRGINIA'S OPIOID
EPIDEMIC CONTINUES
AND COVID-19 MAY BE
MAKING IT WORSE**



We first wrote in detail about opioid abuse in the State of the Commonwealth Report in 2017, a year when opioid abuse and opioid deaths unfortunately began to capture public attention. We described the situation in Virginia and nationally as one that was spinning out of control and already had imposed significant costs on all citizens, opioid users or not.

Alas, the only thing that has changed in the three years since is that Virginia now finds itself in the unenviable position of being in the midst of *two* ongoing health crises – the tragic calamity of COVID-19 and our ongoing opioid predicament. The coronavirus pandemic is on everyone’s mind because it has forced drastic changes in behavior. Opioid abuse, on the other hand, represents a longer-term, more slowly developing challenge that simply refuses to go away.

We pay more attention currently to COVID-19 because its effects are so widespread and so easy to see. These include an upsurge in COVID-19-related infections and deaths across Virginia; an unprecedented rise in unemployment that has spread itself unequally across the citizenry; scores of failing restaurants and other businesses; schools and colleges that worry if they can continue to be effective or even survive; hospitals that have been forced to cancel patient visits and operations for maladies such as cancer that

are unrelated to the coronavirus; canceled or abbreviated athletic seasons; truncated arts and performance schedules; and reduced tax collections. The end result is that our social lives have contracted like accordions, and we long for the appearance of reliable tests and vaccines that might end this nightmare. We outlined the far-reaching economic impact of these developments in the first chapter of this report.

Nonetheless, while COVID-19 is a tragedy of immense proportions (more than 250,000 deaths nationally, including more than 3,800 deaths in Virginia), plausibly it is a circumstance that we can overcome within a few years if we exercise discipline. The privations we now are experiencing may turn out to be (we hope) temporary.

On the other hand, opioid addiction and abuses that too often lead to death constitute a stealthier opponent whose impact has not diminished. Vanquishing opioid abuse will require ongoing attention and remedies. Data released by the Centers for Disease Control and Prevention (CDC) underline the long-term, destructive impact of opioid addiction. An estimated 2 million Americans have an opioid use disorder¹ and the CDC reports that 46,802 people died in 2018 from opioid overdoses, up from 21,088 in 2010.²

How does Virginia fare where opioid fatalities are concerned? Graph 1 plots age-adjusted³ death rates from opioid overdoses in Virginia and the United States between 2000 and 2018. One can see that both the Commonwealth and national rates have more than quadrupled since 2000. If there is any comfort to be had, it is that Virginia's rate grew only 6% between 2017 and 2018, the latest year for which these data are available.

As unfortunate as Virginia's experience with opioid abuse has been, the Commonwealth fares relatively well in this regard compared to its neighbors. Graph 2 presents age-adjusted opioid death rates for Virginia and its four neighboring states. Virginia's death rate consistently has been the lowest in this group. West Virginia stands out like the proverbial

sore thumb, although it must be noted that rates in all five states have been climbing steadily. We will probe the reasons for this in a subsequent section.



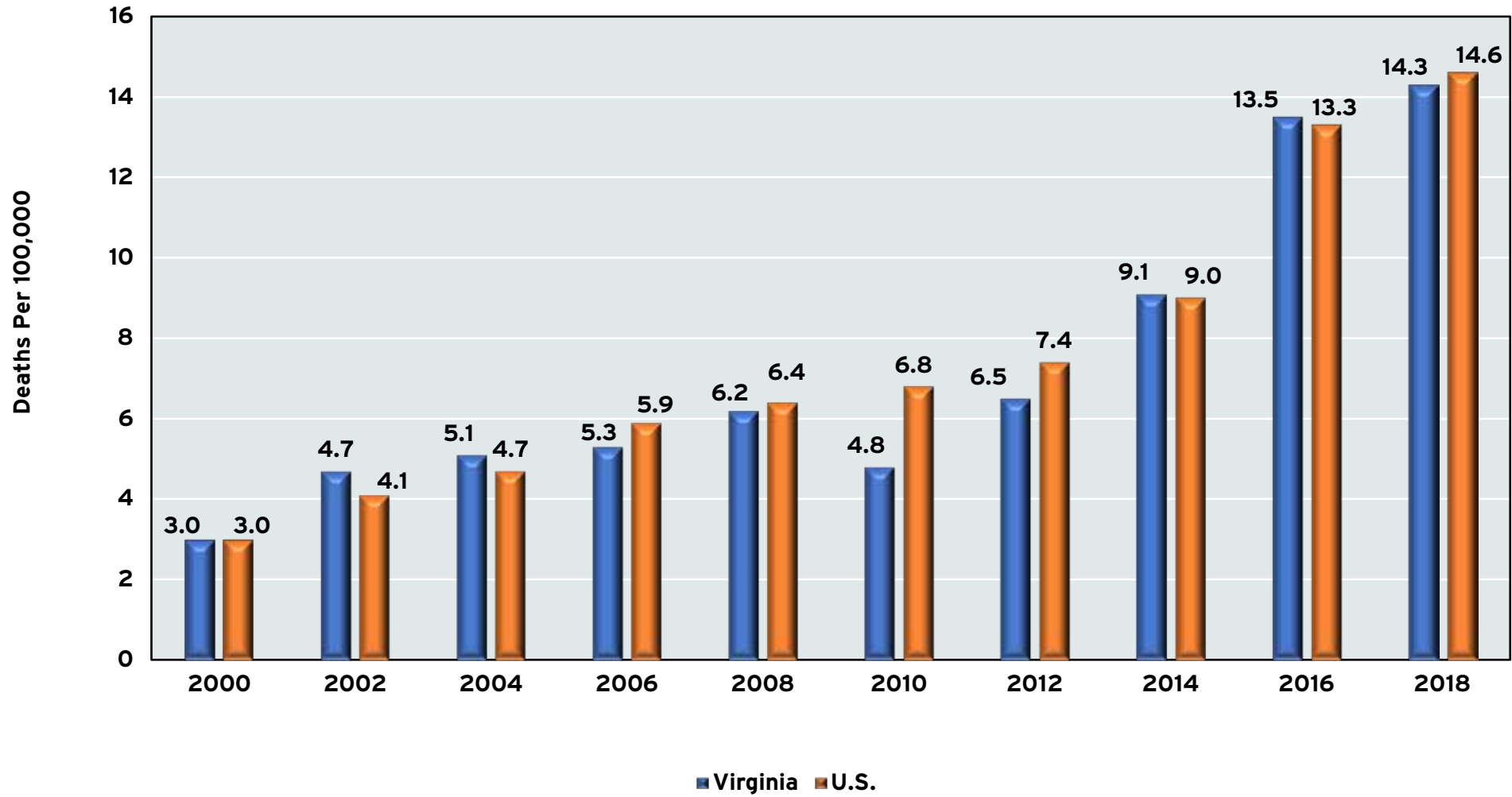
1 Stacy Weiner, "COVID-19 and the Opioid Crisis: When a Pandemic and an Epidemic Collide," AAMC (July 27, 2020), www.aamc.org/news-insights/covid-19-and-opioid-crisis-when-pandemic-and-epidemic-collide.

2 Centers for Disease Control and Prevention, "Drug Overdose Deaths," www.cdc.gov/drugoverdose/data/statedeaths.html.

3 Because people of different ages (for example, those 20 to 35) behave differently than those who are very young or very old, it is necessary to adjust opioid death rates for changes in the age distribution of the population in order to make the rates comparable between years and between states. This adjustment makes the opioid death rate for West Virginia (where 20.5% of the population is aged 65+) comparable to that in Virginia (where only 15.9% of the population is aged 65+). [U.S. Census Quick Facts, www.census.gov/quickfacts]

GRAPH 1

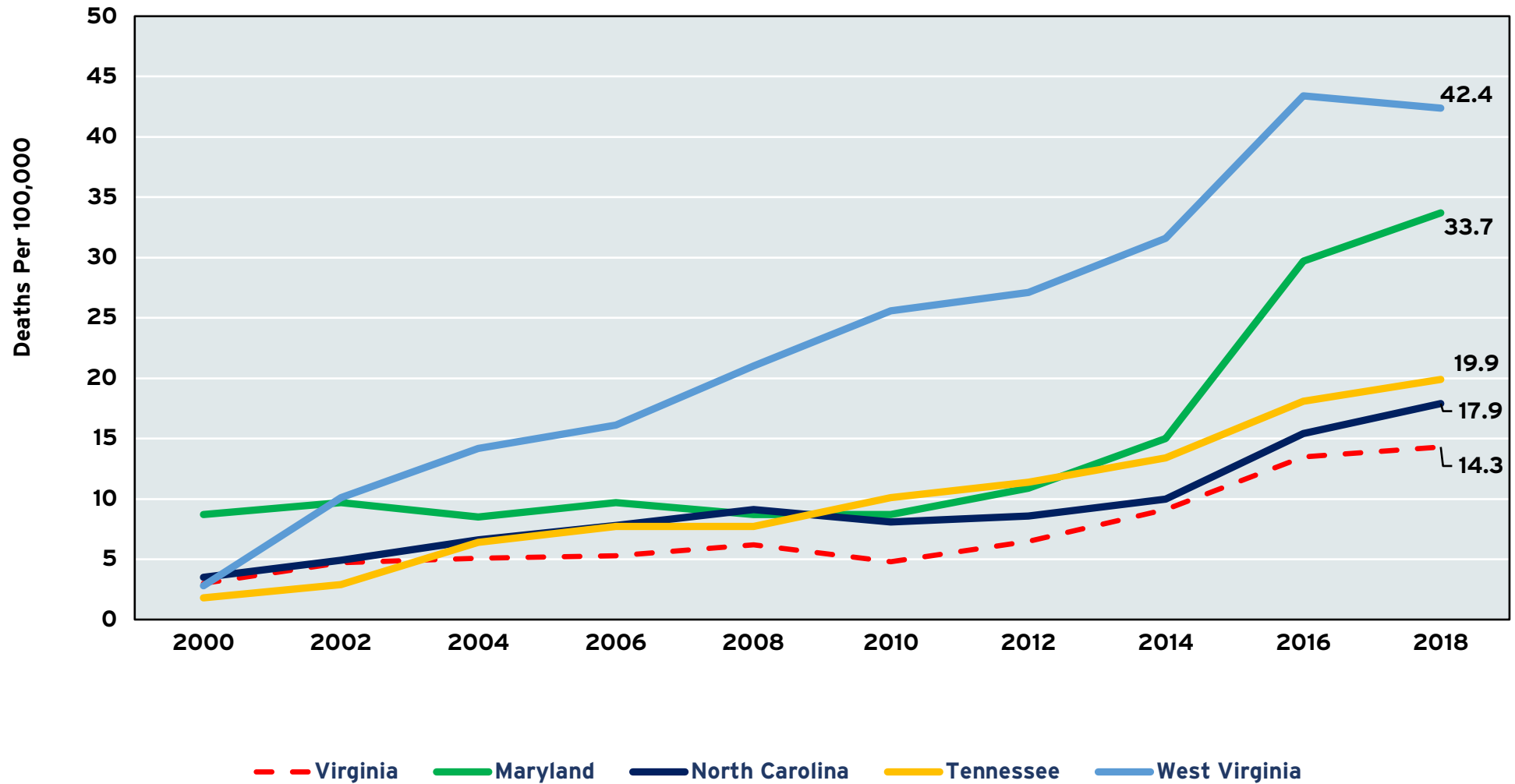
**AGE-ADJUSTED OPIOID OVERDOSE DEATH RATES: UNITED STATES AND VIRGINIA, 2000-2018
(PER 100,000)**



Source: Centers for Disease Control and Prevention, "Drug Overdose Deaths," www.cdc.gov/drugoverdose/data/statedeaths.html

GRAPH 2

AGE-ADJUSTED OPIOID OVERDOSE DEATH RATES: VIRGINIA AND SURROUNDING STATES, 2000-2018
(PER 100,000)



Sources: Centers for Disease Control and Prevention, "Drug Overdose Deaths," www.cdc.gov/drugoverdose/data/statedeaths.html, and the Kaiser Family Foundation, www.kff.org/other/state-indicator/opioid-overdose-death-rates

Opioids Versus Other Drugs

Opioids, which are derived from a milklike substance extracted from opium plants, have a variety of legitimate pain-reducing uses in medicine and dentistry. Virtually every adult American has benefited from the pain-reducing effects of opioids, for example, in the dentist's chair. Opioids, however, are not the only drug whose misuse can lead to death. Methamphetamines ("meth") and cocaine ("coke") also must be considered, having accounted, historically, for 20% to 30% of drug overdose deaths. As Graph 3 discloses, however, opioids have been growing in lethal importance (relatively speaking) and in 2018 accounted for 83.6% of all drug overdose deaths in Virginia, up from 60.7% in 2000.

The 83.6% statistic is an important one to remember because when the CDC reports drug abuse data for cities and counties, it usually focuses on drug overdose death rates overall, rather than on opioid death rates specifically. Thus, most of the city- and county-level data we report here relate to drug overdose death rates overall rather than the narrower category of opioid drug overdose death rates. It will suffice for us to note that five of every six drug overdose deaths in Virginia are attributed to opioids.

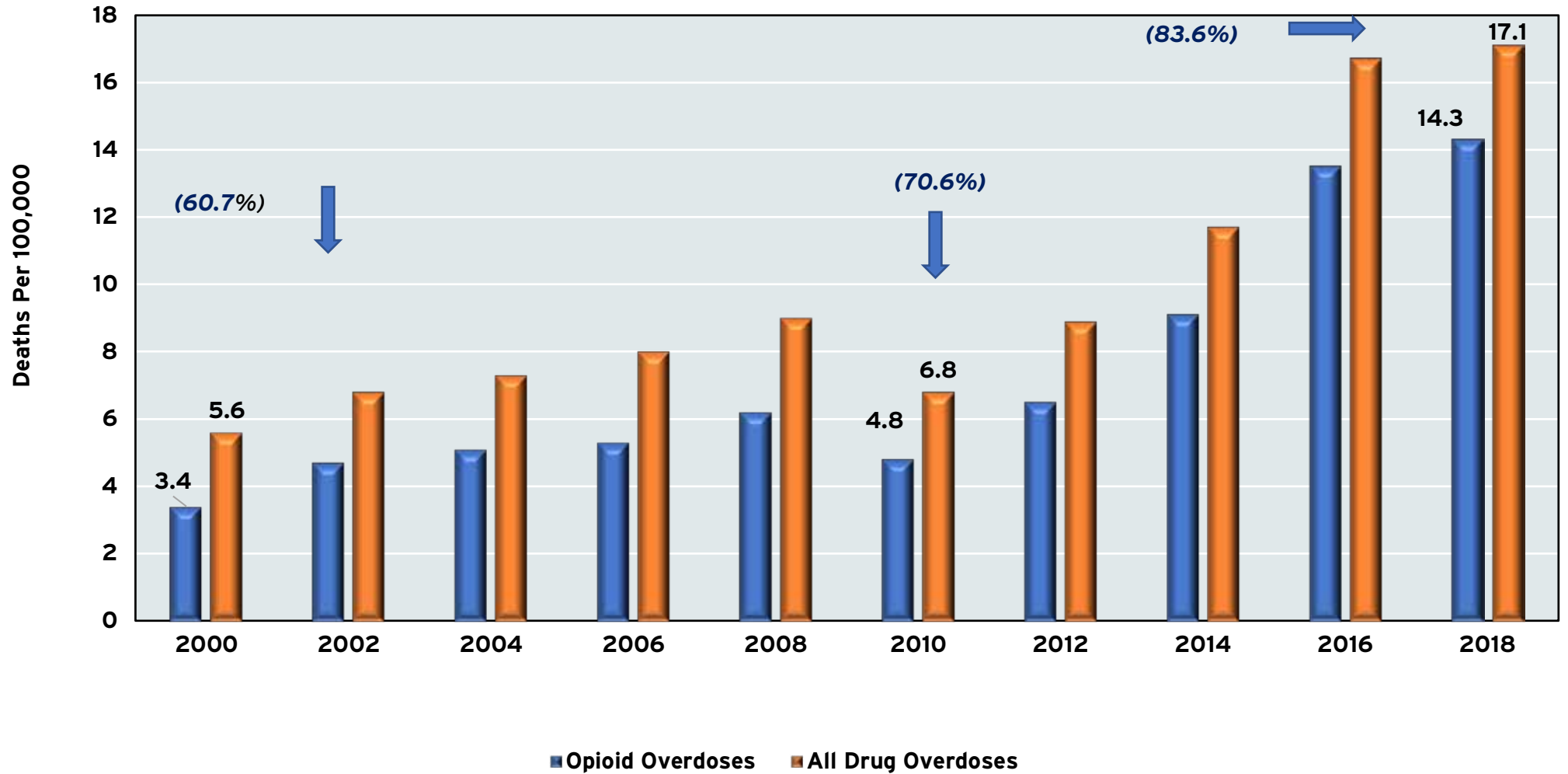
With the previous distinction between overall drug overdose death rates and opioid death rates in mind, Graph 4 presents drug overdose death rates for specific Virginia cities and counties averaged over 2016-2018. It is immediately obvious that tremendous differences exist among Virginia cities and counties with respect to drug overdose death rates. Explaining these differences is one of the primary purposes of this chapter and we begin that task in the next section.

Opioids are substances derived from opium poppy plants and have been cultivated throughout the world for thousands of years. Opium use easily can lead to physical and psychological addiction. Opioids such as heroin and codeine bind to chemical receptors in the brain; both dull pain and produce "feel good" sensations. However, continued use of an opioid leads to rising tolerance for it, and users find they need ever-larger quantities to experience the same effect. This leads to addiction. There are, of course, many legitimate uses of opioids, such as pain control in the dentist's chair and in myriad medical situations, including surgery.



GRAPH 3

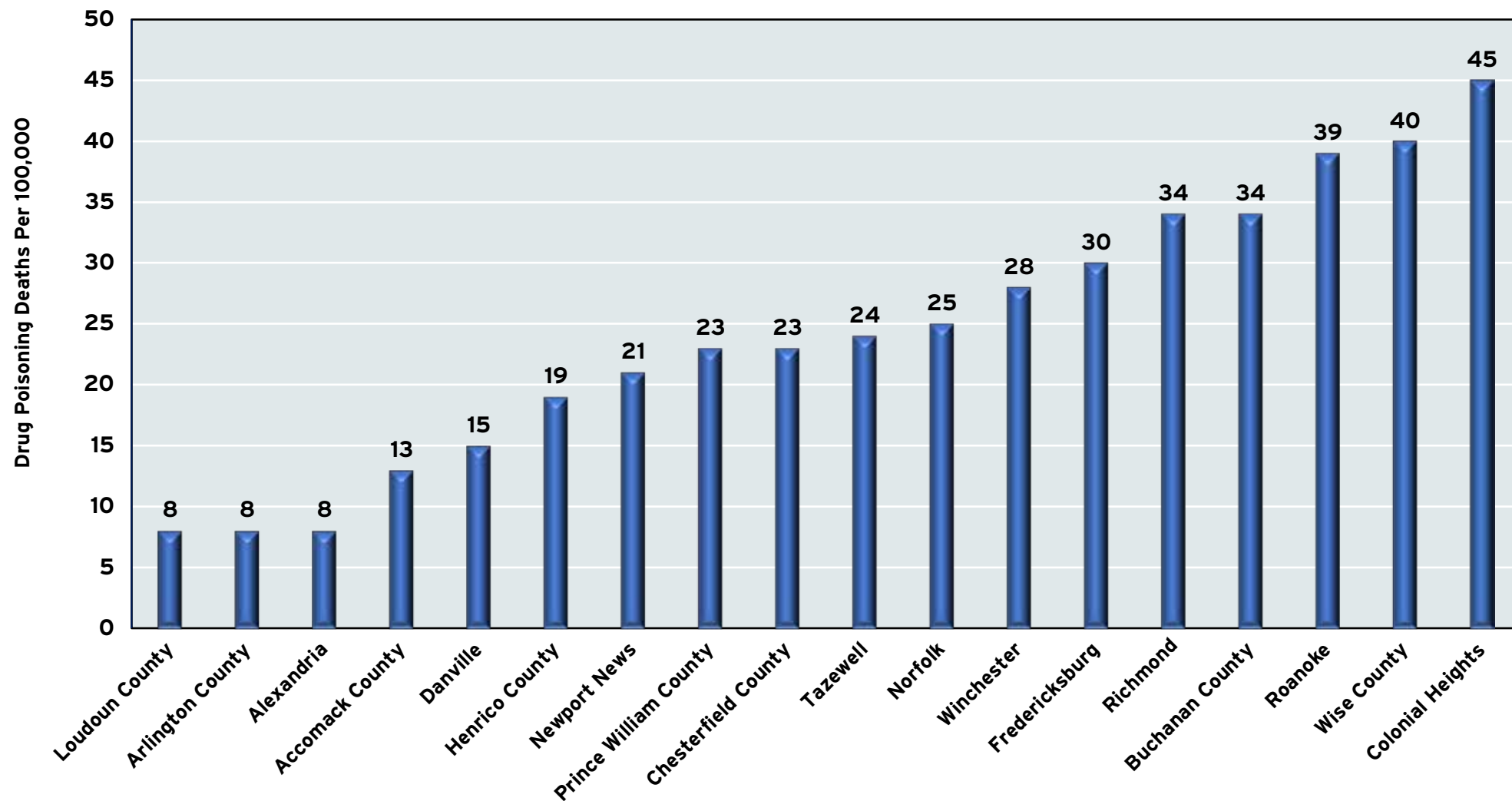
AGE-ADJUSTED DRUG OVERDOSE DEATH RATES AND OPIOID OVERDOSE DEATH RATES:
VIRGINIA, 2000-2018 (PER 100,000)



Sources: Centers for Disease Control and Prevention, "Drug Overdose Deaths," www.cdc.gov/drugoverdose/data/statedeaths.html, and the Kaiser Family Foundation, www.kff.org/other/state-indicator/opioid-overdose-death-rates

GRAPH 4

**NUMBER OF DRUG POISONING DEATHS PER 100,000:
SELECTED VIRGINIA CITIES AND COUNTIES, 2016-2018**



Source: Robert Wood Johnson Foundation, "County Health Rankings and Roadmaps: Drug Overdose Deaths," www.countyhealthrankings.org/app/virginia/2020/measure/factors/138/data

Explaining Drug Overdoses And Deaths

We think we have learned how to deal with COVID-19 and similar infections: wear a mask, maintain distance, keep your fingers away from your face and mouth, and wash your hands. No such recipe has emerged to deal with our ongoing opioid problems. This reflects the reality that it is not possible to point to a single cause that generates opioid addiction and fatal overdoses.

Instead, a variety of hypotheses exist with respect to the conditions that lead to drug overdoses, including those involving opioids. Let us examine them in greater detail.

Deaths Of Despair?

The most often cited explanation for opioid abuse is that it arises from depressed economic conditions. This has become known as the “deaths of despair” hypothesis and is most prominently associated with researchers Angus Case and Anne Deaton.⁴ In this hypothesis, people without jobs attempt to soothe their disappointing circumstance by using opioids. They are joined by others who are employed but deem their work too low-paying or uninteresting, and consequently look to opioids to add some excitement to their lives. For a few hours or days, they can transport themselves to a different reality.

The deaths of despair explanation for opioid abuse makes intuitive sense and has some empirical validity. Few would argue that economic misery does not have something to do with opioid death rates. Nevertheless, as Graph 5 shows, the economic misery argument really does not hold for what has happened in Virginia. Note that economic misery (as measured by the annual average rate of unemployment) and opioid death rates

per 100,000 Virginians essentially move in opposite directions. Initially, between 2008 and 2010, death rates fell even though unemployment was rising. If we change our focus to 2011 to 2018, we can see that falling unemployment rates did not result in lower death rates. In fact, the opposite occurred – death rates accelerated upward.

Why do we observe this behavior? Because multiple factors other than economic misery influence opioid drug use. The relationship is far more complex than some believe.⁵ Let’s consider some of the other factors that motivate drug abuse.

Researchers have learned that a variety of factors might come into play, including one’s physical location; excessively liberal prescription practices by physicians and others that make it too easy for abusers to obtain large supplies of opioids; government social safety net programs that may provide disincentives for some people to work; demographic characteristics such as race, age and marital status; the availability of quality medical care to deal with drug overdoses, including access to antidote drugs such as naloxone; the often subpar health conditions of opioid users; well-meaning but erroneous law enforcement and penal policies that imprison too many people; and local and regional cultures. These “other” factors, individually or in some combination, are at least as important in determining drug overdose behavior as is economic misery.

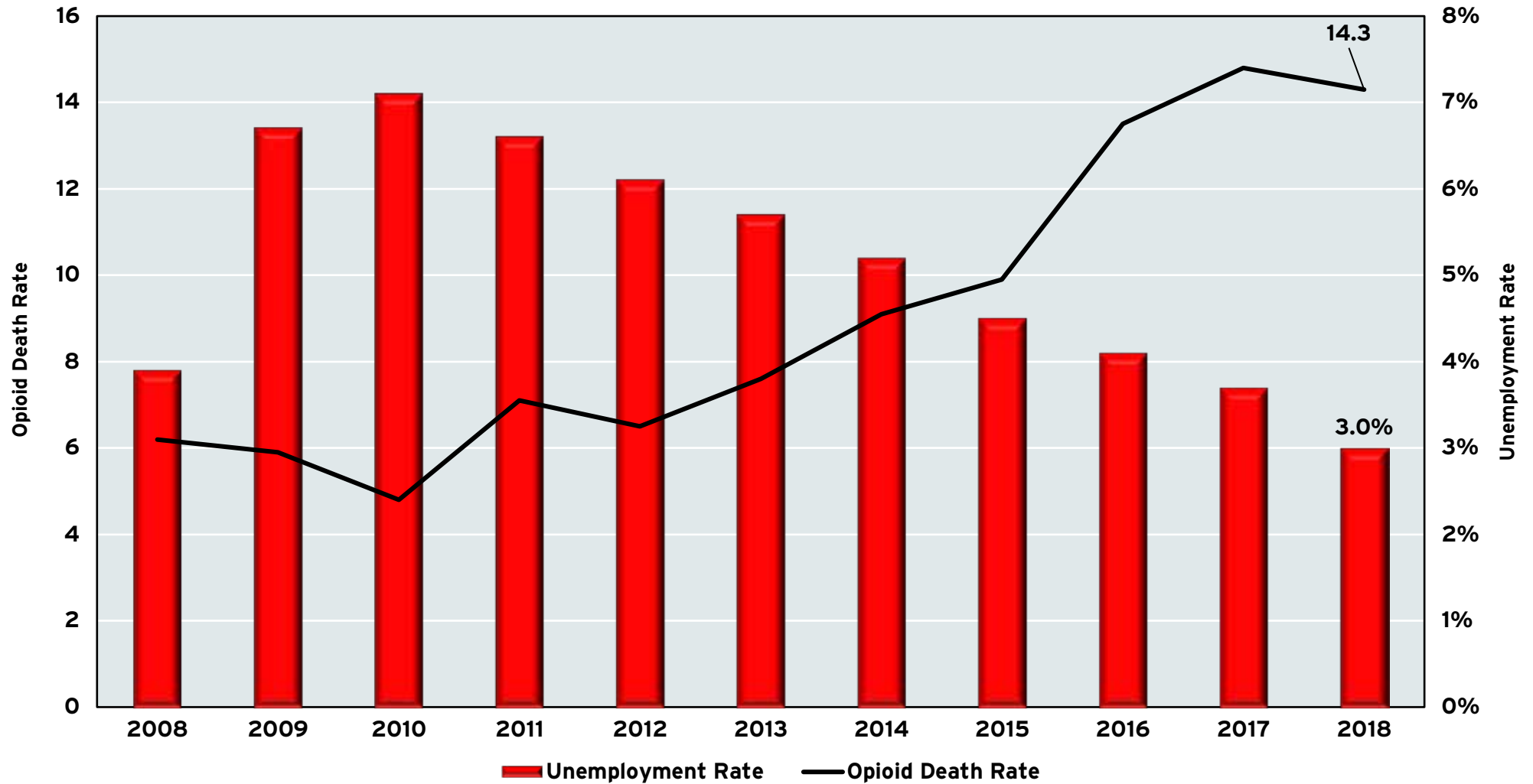
Thus, in contrast to the prevailing wisdom of several years ago, the emerging consensus today is that adverse economic conditions are only one cause among many that result in deaths from opioid abuse. This change in understanding has immediate policy implications. It would be a mistake for us to assume that if only we could diminish the rate of unemployment in Southwest Virginia (where drug overdose death rates are elevated), we would be rewarded with a significant decline in opioid abuse and subsequent deaths in that region. Improved economic conditions would help, but as we will see, the phenomena that spur opioid abuse extend well beyond unemployment and income.

⁴ Angus Case and Anne Deaton (2015), “Rising Morbidity and Mortality in Midlife Among White Non-Hispanic Substance Use Disorders in the United States,” *Proceedings of the National Academy of Sciences*, 112(49), 15078-15083; and Case and Deaton (2017), “Mortality and Morbidity in the 21st Century,” *Brookings Papers on Economic Activity*, 2(1), 397-476.

⁵ Two Old Dominion University researchers associated with the Dragas Center for Economic Analysis and Policy are among three co-authors of a journal article that deals with the determinants of opioid and drug overdose death rates in Virginia in considerable detail. See Barbara Blake-Gonzalez, Richard J. Cebula and James V. Koch, “Drug Overdose Death Rates: The Economic Misery Explanation and Its Alternatives,” *Applied Economics*, September 2020.

GRAPH 5

THE RELATIONSHIP BETWEEN THE OPIOID DEATH RATE PER 100,000 AND UNEMPLOYMENT RATES:
VIRGINIA, 2008-2018



Sources: Opioid death rates from the Centers for Disease Control and Prevention, "Drug Overdose Deaths," www.cdc.gov/drugoverdose/data/statedeaths.html; unemployment rates from FRED, the Federal Reserve Bank of St. Louis, <https://fred.stlouisfed.org/series/LAUST510000000000003A>

A Look At The Supply Side: Prescriptions And The Pharmacy Market Structure

As one medical observer put it in December 2015, “Although physicians have a moral and ethical duty to treat pain, we may be dispensing more medication than necessary.”⁶ Graph 6 reveals, however, the proverbial horse already had departed the barn by 2015. In West Virginia, for example, 146.9 opioid prescriptions per capita were written in 2009 (compared to 79.5 per capita nationally). There is general agreement that this facilitated the development of West Virginia’s high opioid death rate.⁷

The same general circumstance – indeed, the analogous lesson – applies to other states, including Virginia. After public attention was focused on the enabling nature of the prescribing habits of physicians and other prescribers, and some laws passed to track both prescribers and those receiving the prescriptions, the number of opioid prescriptions written in the Commonwealth has tumbled downward. In Virginia, this number peaked at 79.6 per capita in 2012 and fell to 52.9 by 2017 (the latest year for which these data are available). Large variations in prescription-writing habits remain, however, within the Commonwealth. In 2017, 345.1 prescriptions per capita were written in the city of Galax, but only 31.1 in Loudoun County.

In defense of those professionals who write prescriptions, it may be difficult for them to know if their patient truly needs an opioid because sensations of pain or an inability to sleep are self-reported by individuals and difficult to track. Nor will the prescribing professional necessarily know if the opioids are used for the purposes prescribed or instead sold on the street, where the value of a pill may increase 5 to 15 times. A single oxycodone pill, for example, may cost \$6 at the pharmacy but sell for \$12 to \$40 on the street.⁸ One cannot ignore the financial incentives present

for people to sell legally acquired opioids. Nevertheless, the relevant point is that overly generous prescription practices must bear some responsibility for facilitating the opioid epidemic.⁹

A related consideration focuses on pharmacy market structure and specifically considers how much competition there is among pharmacies in a specific city or county, as well the extent to which the pharmacies belong to a “chain” such as Walgreens, Walmart or CVS. Do the chains charge lower or higher prices? Do they track opioid prescription recipients more thoroughly than a local pharmacy that may operate on the basis of long-standing local relationships? Recent evidence does not provide conclusions concerning pricing but does suggest that drug overdose death rates are lower in cities and counties where the presence of the chains is large. Perhaps chain pharmacies make it more difficult for an opioid abuser to obtain multiple prescriptions or receive heavier dosages.¹⁰

6 Anita Gupta, “How Physicians Can Curb the Prescription Opioid Epidemic,” *MedPage Today’s KevinMD.com* (Dec. 31, 2015), www.kevinmd.com/blog/2015/12/physicians-can-curb-prescription-opioid-epidemic.html.

7 CDC (2020), “U.S. Opioid Prescribing Rate Maps,” www.cdc.gov/drugoverdose/maps/rxrate-maps.html.

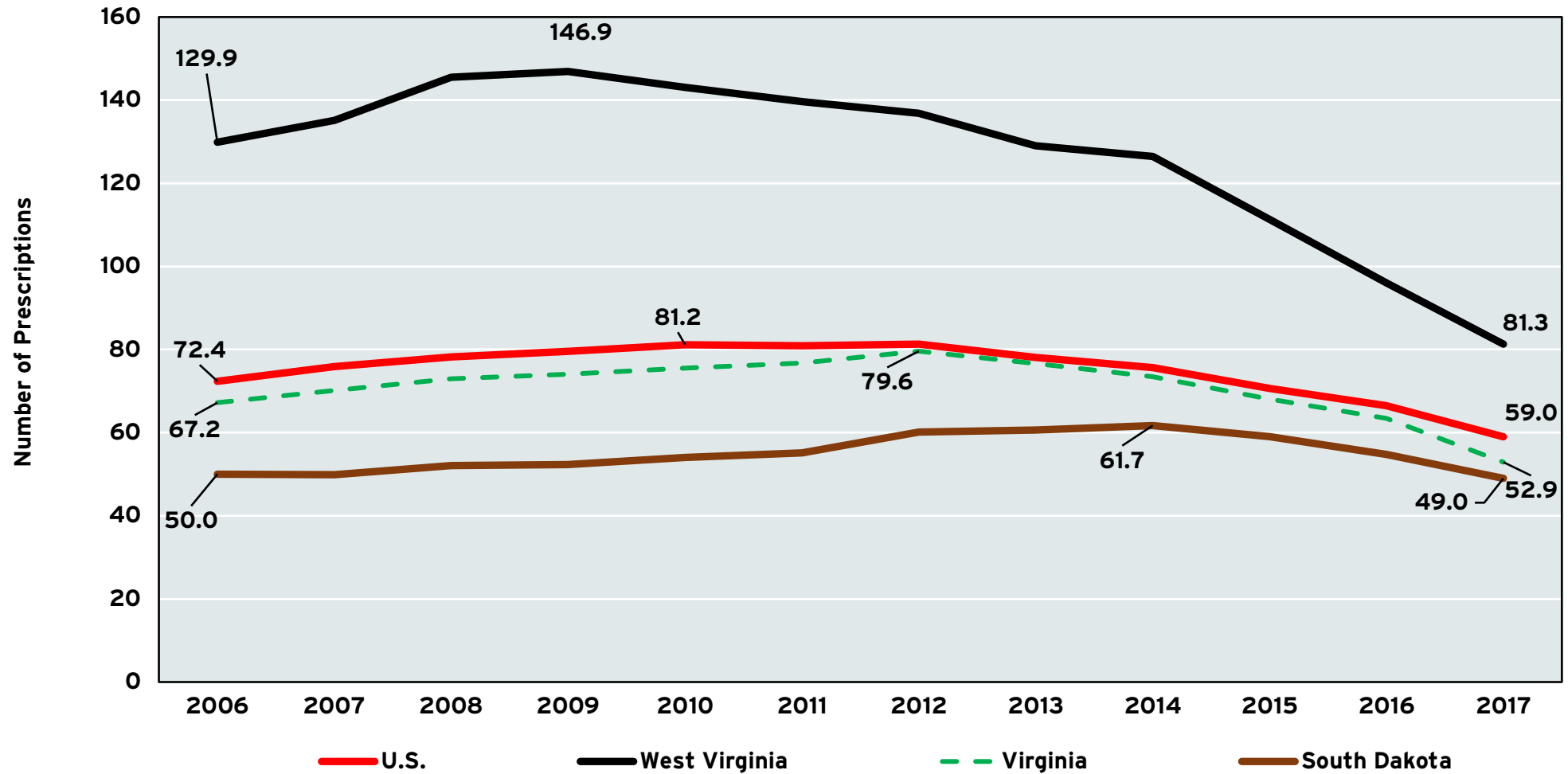
8 Rehab Spot, “The Annual Cost of Addiction to Prescription Opioids: \$3,500 to \$70,000+,” *Rehab Spot* (accessed Feb. 27, 2020), www.rehabspot.com/treatment/paying-for-rehab/cost-of-addiction.

9 This is among the empirical conclusions of Blake-Gonzalez et al., cited above.

10 This also is among the empirical conclusions of Blake-Gonzalez et al.

GRAPH 6

**NUMBER OF LEGAL PRESCRIPTIONS FOR OPIOIDS WRITTEN:
VIRGINIA AND OTHERS, 2006-2017**



Source: Centers for Disease Control and Prevention (2020), "U.S. Opioid Prescribing Rate Maps," www.cdc.gov/drugoverdose/maps/rxrate-maps.html

Is The Social Safety Net Too Generous?

The President's Council of Economic Advisers has made strong assertions that rising social safety net funding and more widespread health insurance coverage have made it easier for opioid abusers to pursue their habits.¹¹

When it talks about social safety net funding, the council has in mind items such as unemployment compensation benefits, disability payments and Supplementary Nutrition Assistance Program (SNAP, or "food stamps") benefits.

Some startling differences exist in the provision of social safety net support throughout Virginia. Disability payments provide an apt illustration. In 2017, 24.6% of residents, ages 15-64, in Southwest Virginia's Scott County were receiving some form of disability payment from a governmental unit, while in Fairfax County only 5.1% were receiving such assistance. The attention-getter is that the drug overdose death rate per 100,000 individuals was 27.1 in Scott County, but only 12.4 in Fairfax County.

Is there cause and effect between disability status and opioid death rates? The evidence is mixed. Reputable economic studies have revealed some disincentive effects attached to the presence and expansion of social safety net programs, but these studies nearly always have focused on labor force participation and work hours rather than opioid use. The Blake-Gonzalez et al. study cited earlier addresses the impact of disability status and found only modest evidence of its importance with respect to opioid death rates. However, this is a relationship that merits more research.

Is Risky Work A Factor?

Some jobs carry more risk than others. The Bureau of Labor Statistics reported in 2018 that the chance someone will die from an accident at

work is only 3.5 per 100,000 full-time equivalent workers, but a hefty 34.9 per 100,000 for those in the extractive industries, such as mining.¹² In 2018, more than 15% of the work force in Buchanan County, Virginia, was involved in mining or mining-related work.¹³

Riskier jobs plausibly lead to more frequent worker injuries, which in turn often lead to increased use of opioids to counteract the pain associated with the injuries. And this, in turn, may push some of those injured into opioid abuse, leading to their deaths. We tested this proposition by means of a multivariate statistical analysis in which one of the considerations was the percentage of workers in a city or county involved in mining and similarly risky employment. Holding constant a host of other variables such as education and unemployment, we found a strong positive relationship between the drug overdose death rate and the degree to which physically risky employment is present.

Note here that it is not the absence of employment per se that is the problem but instead the nature of the employment. Once again, the "deaths of despair" hypothesis does not deal effectively with some of the nuances that exist in the real world.

¹¹ Council of Economic Advisers (2019), "The Role of Opioid Price in the Evolving Opioid Crisis," www.whitehouse.gov.

¹² Bureau of Labor Statistics, "National Census of Fatal Occupational Injuries in 2018," <https://www.bls.gov/news.release/pdf/cfoi.pdf>.

¹³ Data USA, Buchanan County, Virginia, <https://datausa.io/profile/geo/buchanan-county-va#economy>.

The Urban-Rural Dichotomy

Two derivatives of the deaths of despair explanation pertaining to drug overdose death rates focus on aspects of geographic location. One version of the location hypothesis asserts that people in rural locations have fewer opportunities for work and cultural activities and, as such, boredom pushes them to opioid abuse. A second version examines the length of employee commutes and maintains that the prospect of a long commute can discourage employment and lead people to opioids. With respect to this latter assertion, it is worth noting that while some very long commuting times exist in rural locations in Virginia, they also are present in metropolitan areas such as Northern Virginia, Hampton Roads and Richmond.

Our statistical analysis found evidence in favor of both propositions (holding other factors such as unemployment constant). Rural locations (as measured by population per square mile) appear to spur drug usage that leads to higher overdose death rates (other things held equal). Longer commutes do likewise.

Table 1 displays average population densities and average commuting times for a nonrandom selection of Virginia cities and counties along with their drug overdose death rates in 2017. These jurisdictions were chosen deliberately to demonstrate that one cannot automatically assume a more rural jurisdiction will have a higher drug overdose death rate, or that shorter commutes necessarily result in lower drug overdose death rates. The lesson to draw once again is that drug overdose death rates (for which opioids have an approximate 80% weighting) are the product of many different interacting factors and available evidence does not support explanations that focus on a single factor.

TABLE 1

AVERAGE ONE-WAY COMMUTING TIMES AND DRUG OVERDOSE DEATH RATES: SELECTED VIRGINIA CITIES AND COUNTIES, 2017

City or County	Average Population Density Per Square Mile	Average Minutes Daily Commute to Job, One-Way	Drug Overdose Death Rate, 2017
Alexandria	10,694	37.8	11.1
Buchanan County	43	29.7	49.1
Fauquier County	107	40.0	38.6
Prince William County	1,381	39.6	16.1
Virginia Beach	1,839	23.7	21.6
Charlottesville	4,678	17.0	16.0
Lynchburg	1,655	17.5	18.0
Radford	1,824	17.8	12.6
Richmond	3,788	21.6	41.5
Shenandoah County	85	31.0	32.0

Sources: Federal Reserve Bank of St. Louis (FRED) for population; U.S. Census Quick Facts for square mile sizes; Centers for Disease Control and Prevention for death rates

The Impact Of COVID-19 On Drug Overdose Behavior

How has COVID-19 affected drug overdose behavior and drug overdose death rates? This is a vital question. Has the loss of employment caused by COVID-19 and the isolation of individuals in their living spaces altered their drug-related behavior? It seems plausible that COVID-19 has changed some behavior but the nature of the drug-related data produced by the CDC does not enable us to make such a judgment because the published versions of these data are annual in nature and typically appear with a two-year lag. Thus, if we were to rely only on CDC data, it would be 2022 before we would be able to detect any impacts that COVID-19 is having on drug-related behavior.

The Centers for Disease Control and Prevention (CDC) has collected drug overdose data for many years and maintains an open website that makes it possible for anyone to access those data, which are primarily annual in nature. However, other nongovernmental organizations, such as the National Opinion Research Center at the University of Chicago (NORC) and the Kaiser Family Foundation, perform a valuable public service by slicing, dicing and presenting the CDC's drug overdose data in forms that can be more easily understood. NORC and the Kaiser Family Foundation also excel at connecting drug overdose data to other relevant data, for example, unemployment rates, median household income and educational attainment.

Fortunately, another very promising and much more immediate source of data has been developed by the Overdose Detection Mapping Application Program (ODMAP), a federally sponsored initiative that collects drug-related data from ambulance teams, hospitals and police. ODMAP information is collected and assembled on a monthly basis and therefore

provides immediate signals concerning trends in drug overdose behavior. While these data are not as clean as the CDC's annual data because of variations in local reporting practices, they have opened new vistas in terms of our ability to interpret what is happening in the drug overdose arena.

Graph 7 compares the number of drug overdoses reported to ODMAP by 1,201 local agencies across the United States between January and May 2020 to the analogous numbers they reported in the comparable months in 2019. These data suggest that the COVID-19 pandemic is leading more people to overdose on drugs. The pop sociology explanation for this is that unemployment, physical isolation, lack of social contacts and general anomie have spurred people to increase their use of a variety of drugs, including alcohol and opioids. Thus, it has been reported that alcohol sales nationally rose more than 25% in the first half of 2020 and that an analysis of 500,000 urine tests from a national sample revealed a 32% increase in nonprescribed fentanyl, a particularly deadly opioid that is 80 to 100 times as potent as morphine (<https://www.millenniumhealth.com/news/signalsreportcovid/>).¹⁴

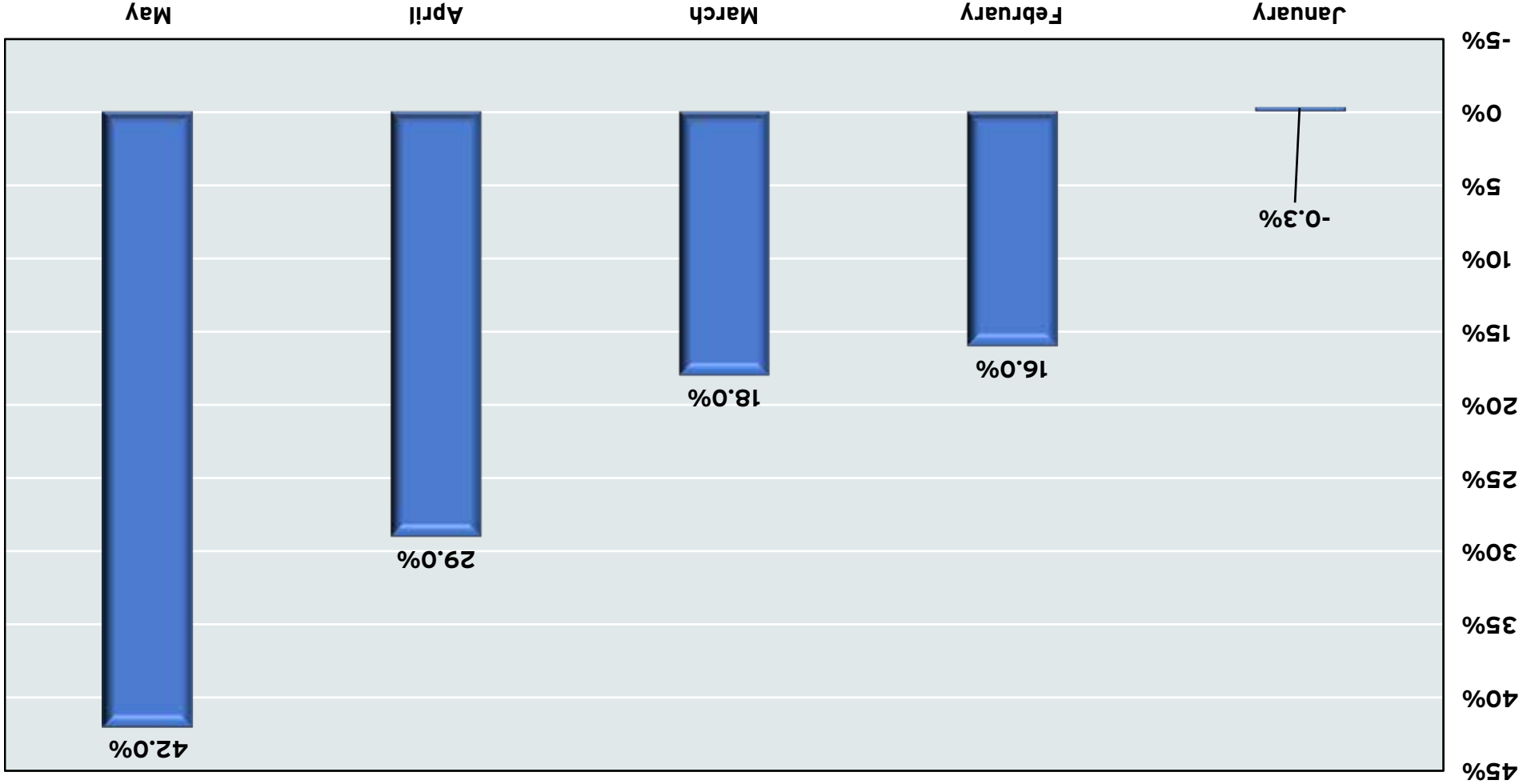
If these data are accurate, then a tentative conclusion is that COVID-19 is responsible, at least partly, for the recent upsurge in drug overdoses reported in the first months of 2020. However, we would urge caution in this regard and ask readers to refer back to Graph 5. It demonstrates visually that the unemployment rate and opioid death rate typically have moved in opposite directions in Virginia. Just as economic misery by itself cannot explain drug overdose behavior in Virginia, likely there are factors other than COVID-19 that are responsible for the increase in drug overdoses that occurred nationally in the first half of 2020.

If the drug and opioid abuse problem were viewed metaphorically as a machine, then this machine is one that has many different moving parts. Thus, it is an error to tie drug overdose behavior only to economic misery. The real world is more complicated than this – a distinction that often eludes those who write about drug overdose issues in the popular media. The factors that motivate an individual living in Fairfax County to use a powerful opioid such as fentanyl likely differ from those that spur the same behavior in Buchanan County in Virginia's coal country.

¹⁴ Stacy Weiner, "COVID-19 and the Opioid Crisis: When a Pandemic and an Epidemic Collide," July 27, 2020, <https://www.aamc.org/news-insights/covid-19-and-opioid-crisis-when-pandemic-and-epidemic-collide>.

**INCREASE IN REPORTED OPIOID OVERDOSES IN 1,201 JURISDICTIONS:
UNITED STATES, 2020 COMPARED TO 2019**

GRAPH 7



Source: William Wan and Heather Long, "Cries for Help: Drug Overdoses Are Soaring During the Coronavirus Pandemic," The Washington Post (July 1, 2020), www.washingtonpost.com/health/2020/07/01/coronavirus-drug-overdose/ based upon data from the Overdose Detection Mapping Application Program

Final Thoughts

Opioid abuse may be “out of sight, out of mind” for a majority of Virginians, but the preceding analysis tells us that our struggle to overcome opioid abuse continues. The good news is that it appears that the very rapid growth in drug overdose deaths we witnessed during the past decade may be over. The bad news is that COVID-19 may have halted this progress.

Readers of this chapter may not know anyone personally who is addicted to an opioid or another dangerous drug. Knowledgeable or not, however, readers will join all other citizens in bearing the costs of dealing with what still must be labeled an epidemic. The front lines in battling this epidemic are occupied primarily by local governments, nonprofit organizations and the hospitals and health providers that often must serve individuals without health insurance or other means to pay for the services they receive. The choices confronting these organizations are stark. They may choose to reallocate funds away from other needs (for example, K-12 education, public safety or cancer treatment), or perhaps subtly reduce the quality of the services they offer. Or, more visibly, they may choose to increase their tax rates and prices. There are no free lunches in this world.

Hardly a happy situation, but neither is the opioid epidemic that is responsible for this conundrum.



