

SLC ISSUE BRIEF

THE GROWTH OF SYNTHETIC OPIOIDS IN THE SOUTH

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Introduction

The drug epidemic, driven in large part by the ongoing opioid crisis, continues to ravage tens of thousands of families and communities across the United States. The latest provisional data* from the Centers for Disease Control and Prevention (CDC), released in September 2018, estimated that more than 71,500 drug overdose deaths occurred nationally between January 2017–January 2018, an increase of 6.6 percent during the same period the previous year, and 31.4 percent higher compared to January 2015–January 2016.¹ In the Southern region, drug overdoses were responsible for more than 24,000 deaths in 2017, approximately one-third of the national total.²

According to CDC data, overdose deaths resulting from opioids remain alarmingly high, increasing incrementally during the past several years. Between January 2017–January 2018, 67.9 percent of drug overdose deaths nationally were caused by opioids,[†] compared to 66.8 percent in 2016, 63.5 percent in 2015 and 61.1 percent in 2014.³ Aside from the devastating toll on thousands of victims and their families, the costs imposed by the opioid epidemic on the nation's economy

* According to the CDC, provisional data is incomplete and causes of death for some cases may be pending investigation, often resulting in underestimated numbers relative to the final count.

† The opioid cause-of-death classification, as defined by the CDC, includes opium, heroin, natural opioid analgesics, methadone, synthetic opioid analgesics other than methadone, and other unspecified narcotics, which include deaths where opioids are reported but lack additional information to specify, exactly, which drug was the cause of death.

have been staggering, with total losses since 2000 estimated to reach as much as \$1.5 trillion by 2020.

Within the broader context of the opioid epidemic lies a particularly disturbing trend: the dramatic rise of synthetic opioid abuse. Led by fentanyl, a potent drug that can be lethal with as little as two milligrams—equivalent to two grains of salt—and a host of fentanyl analogs[‡] that are easy to manufacture and distribute with minimal resources, the spread of illicit synthetic opioids represents one of the most serious concerns for law enforcement agencies and first responders trying to counter the rise in opioid overdoses.⁴ While overdose deaths generally have increased in recent years, those caused by synthetic opioids have experienced the most troubling and significant growth, increasing from slightly less than 6,000 in 2014 to more than 29,000 in 2017, an increase of 392 percent.⁵

This *SLC Issue Brief* reviews the rise of dangerous synthetic opioids, primarily fentanyl, and their evolving role within the broader opioid crisis afflicting the United States. According to the U.S. Drug Enforcement Agency (DEA), the popularity of fentanyl and related synthetic opioids will remain unchallenged for the next several years, making it crucial for state and local leaders to understand the extent of the crisis and identify potential solutions for its mitigation.

‡ Fentanyl analogs have chemical structures that are similar to pure fentanyl, differing only slightly in their chemical composition.

The Opioid Epidemic in the United States

The extent of the opioid epidemic is a widely documented and well-known national crisis that has left few areas untouched, taking 115 lives every day due to the abuse of various legal and illicit substances, including prescription pain relievers, heroin and synthetic opioids.⁶ Between January 2017–January 2018, more than 48,000 overdose deaths attributed to opioids alone were estimated across the nation, compared to 44,816 the previous year and 34,606 between January 2015–January 2016.⁷

In the SLC region, opioid-induced overdose deaths mirror national statistics, with increased overdose death rates reported in nearly every state. From 2015 to 2016, all Southern states except Arkansas experienced growth in the number of opioid overdose deaths, according to the Kaiser Family Foundation. Florida led the region, and was 5th nationally, with a 53.2 percent change between 2015–2016, followed by Virginia at 36.4 percent, Missouri at 35.9 percent and North Carolina at 29.4 percent, all greater than the national average of 27.9 percent.⁸ Alabama, Kentucky, Louisiana, Mississippi, South Carolina, Tennessee and West Virginia also experienced double-digit growth in opioid-induced overdose deaths between 2015–2016.⁹

The costs of this epidemic have been staggering, resulting in less tax revenue for federal, state and local governments, as well as additional spending on healthcare, social services, education and criminal justice. According to a February 2018 study from Altarum, a nonprofit research and consulting healthcare organization based in Ann Arbor, Michigan, the total economic costs of the opioid epidemic topped \$1 trillion from 2001 to 2017, with another \$500 billion loss projected through 2020 if current trends continue.¹⁰ The most severe impacts have occurred during the past few years, rising significantly since 2001, when costs amounted to less than \$30 billion (in 2016 dollars), to 2017, when annual costs were approximately \$115 billion.¹¹ Lost earnings and productivity—estimated at \$800,000 per person during the course of a lifetime—are the dominant factors behind the high and rising costs of the epidemic.¹²

Other studies cite different, albeit still significant costs of the opioid crisis. The Council of Economic Advisors, a federal agency within the Executive Office of the President, announced in November 2017 that the economic impact of

Table 1		Total Per Capita Costs of the Opioid Crisis in SLC States 2015
National ranking	State	Opioid epidemic per capita costs
1	West Virginia	\$4,378
11	Kentucky	\$2,412
12	Tennessee	\$2,066
20	Missouri	\$1,727
21	North Carolina	\$1,711
24	Florida	\$1,676
26	Virginia	\$1,624
27	South Carolina	\$1,501
32	Oklahoma	\$1,330
34	Georgia	\$1,114
39	Louisiana	\$907
40	Arkansas	\$897
41	Alabama	\$892
46	Mississippi	\$703
47	Texas	\$653

Source: American Enterprise Institute, 2018.

the epidemic surpassed \$500 billion in 2017, equivalent to 2.8 percent of GDP that year.¹³ Meanwhile, a March 2018 working paper from the American Enterprise Institute (AEI) in Washington, D.C. found that per capita costs in 2015, averaged across all 50 states, were \$1,691.¹⁴ In the SLC region, per capita costs of the opioid epidemic ranged from a high of \$4,378 in West Virginia, the highest in the nation, to a low of \$653 in Texas (see Table 1).¹⁵ Moreover, according to AEI, 21 of the top 30 counties nationally with the highest per capita overdose costs were in the SLC region.¹⁶

An overreliance on legally prescribed opioids has been one of the primary drivers behind the current crisis. Healthcare providers, beginning in the 1990s, began prescribing greater quantities of opioid pain relievers to treat various health conditions—both minor and serious—believing that substance addiction was not a serious threat for most patients.¹⁷ However, according to the National Institute on Drug Abuse, a division of the U.S. Department of Health and Human Services, 21 percent to 29 percent of patients who are prescribed opioids for pain misuse them, while 8 percent to 12 percent eventually develop an opioid use disorder.¹⁸

Table 2 Drug Overdose Deaths 2015–2017					
State	Drug overdose deaths 2015	Drug overdose deaths 2016	Percent change 2015-2016	Drug overdose deaths 2017	Percent change 2016-2017
Alabama	747	793	6.2	799	0.8
Alaska	127	127	0.0	138	8.7
Arizona	1,339	1,572	17.4	1,639	4.3
Arkansas	384	387	0.8	426	10.1
California	5,070	5,058	-0.2	5,353	5.8
Colorado	923	977	5.9	1,047	7.2
Connecticut	830	985	18.7	1,057	7.3
Delaware	182	309	69.8	329	6.5
Florida	3,357	5,195	54.8	5,484	5.6
Georgia	1,321	1,411	6.8	1,492	5.7
Hawaii	175	214	22.3	203	-5.1
Idaho	216	228	5.6	227	-0.4
Illinois	1,908	2,523	32.2	2,765	9.6
Indiana	1,236	1,571	27.1	1,806	15.0
Iowa	305	324	6.2	335	3.4
Kansas	318	328	3.1	320	-2.4
Kentucky	1,258	1,477	17.4	1,526	3.3
Louisiana	906	1,012	11.7	1,108	9.5
Maine	271	367	35.4	407	10.9
Maryland	1,313	2,170	65.3	2,293	5.7
Massachusetts	1,997	2,409	20.6	2,383	-1.1
Michigan	1,963	2,459	25.3	2,653	7.9
Minnesota	610	652	6.9	715	9.7
Mississippi	341	334	-2.1	328	-1.8
Missouri	1,105	1,393	26.1	1,394	0.1
Montana	130	122	-6.2	114	-6.6
Nebraska	123	114	-7.3	152	33.3
Nevada	672	702	4.5	768	9.4
New Hampshire	426	462	8.5	472	2.2
New Jersey	1,528	2,219	45.2	2,685	21.0
New Mexico	483	508	5.2	500	-1.6
New York	1,983	2,521	27.1	2,661	5.6
North Carolina	1,665	2,052	23.2	2,510	22.3
North Dakota	64	85	32.8	84	-1.2
Ohio	3,425	4,504	31.5	4,925	9.4
Oklahoma	701	828	18.1	754	-8.9

Table 2 (continued)					
State	Drug overdose deaths 2015	Drug overdose deaths 2016	Percent change 2015-2016	Drug overdose deaths 2017	Percent change 2016-2017
Oregon	495	508	2.6	545	7.3
Pennsylvania	3,435	5,101	48.5	5,501	7.8
Rhode Island	322	353	9.6	327	-7.4
South Carolina	741	905	22.1	998	10.3
South Dakota	64	75	17.2	69	-8.0
Tennessee	1,572	1,677	6.7	1,844	10.0
Texas	2,678	2,877	7.4	2,994	4.1
Utah	715	751	5.0	660	-12.1
Vermont	101	137	35.6	129	-5.8
Virginia	1,015	1,391	37.0	1,439	3.5
Washington	1,139	1,105	-3.0	1,182	7.0
West Virginia	752	932	23.9	1,029	10.4
Wisconsin	931	1,116	19.9	1,189	6.5
Wyoming	96	91	-5.2	61	-33.0

Source: "Provisional Drug Overdose Death Counts," National Center for Health Statistics, Centers for Disease Control and Prevention, based on data available for analysis on September 5, 2018, <https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm>.

Moreover, 4 percent to 6 percent who misuse prescription opioids transition to heroin, and approximately four-fifths of people who use heroin first misused prescription opioids.¹⁹

Although states, communities and healthcare providers have taken aggressive steps to address and, hopefully, reduce the number of prescribed opioids – annual prescribing rates dropped nearly 20 percent from 2006 to 2017, according to the CDC – the number of prescriptions written nationally continues to be a concern. In 2017, approximately 58 opioid prescriptions were written for every 100 Americans, with more than 17 percent of the population having at least one prescription filled at some point during the year.²⁰ On average, 3.4 opioid prescriptions were dispensed per patient in 2017, with an average of 18 days per prescription.²¹ According to one analysis of data from the United Nations Narcotics Control Board, the United States consumed more daily doses of opioids between 2013–2015 than the other 19 most populous countries combined.²²

Synthetic Opioid Overdoses

As concerning as the opioid crisis continues to be for most states, there are at least some indications it may be peaking in certain areas. In the SLC region, six of the 15 member states – Georgia, Kentucky, Mississippi, Oklahoma, Tennessee and Texas – experienced slower growth rates of opioid-induced overdose deaths between 2015–2016 than they did the previous year. In Arkansas, there was a decrease of 18 percent in opioid overdoses between 2015–2016, the second largest drop in the nation.²³

Similarly, the CDC’s data shows that overall increases in drug overdose deaths potentially have slowed in the past couple of years, with 11 of 15 SLC member states – Alabama, Florida, Georgia, Kentucky, Louisiana, Missouri, North Carolina, South Carolina, Texas, Virginia and West Virginia – experiencing slower increases between 2016–2017 than they did between 2015–2016. Two states – Mississippi and Oklahoma – experienced decreases in the number of drug overdose deaths during the same period (see Table 2).²⁴

While there appears to be some cause for optimism regarding the slowing rate of growth of overdoses caused by all opioids, this is not the case with overdose deaths specifically attributed to synthetic opioids – a category of non-naturally occurring substances that have known opiate qualities and mimic the effects of opioids to varying degrees – which have increased exponentially in recent years. Fentanyl is the most well-known and commonly used synthetic opioid, sometimes prescribed by physicians for severe pain, cancer treatment and post-surgery pain relief. Legally prescribed fentanyl for medical purposes is not necessarily dangerous if the recommended dosage and usage are strictly followed.²⁵ In fact, in 2014, more than 6.5 million fentanyl prescriptions were written for patients, mostly for severe chronic pain.²⁶

However, the sudden and dramatic rise of synthetic opioid overdoses is primarily the result of increased production and distribution of illicit synthetic opioid substances, including fentanyl and an array of fentanyl analogs with such names as acrylfentanyl, carfentanil, furanylfentanyl, U-47700 and 3-methylylfentanyl, all of which

are easily manufactured and distributed with minimal resources.²⁷ In 2014, synthetic opioids were responsible for 5,978 deaths across the United States, equal to approximately 12 percent of all drug overdose deaths that year. In 2015, the number of deaths attributed to synthetic opioids increased to 10,327, or 19 percent of all drug overdose deaths; in 2016, they were responsible for 21,508

State	2014	2015	Percent change 2014-2015	2016	Percent change 2015-2016
Alabama	47	70	48.9	157	124.3
Arkansas	32	44	37.5	38	-13.6
Florida	343	610	77.8	1,566	156.7
Georgia	174	284	63.2	277	-2.5
Kentucky	179	323	80.5	465	44.0
Louisiana	29	38	31.0	89	134.2
Mississippi	24	35	45.8	45	32.4
Missouri	109	183	67.9	441	141.0
North Carolina	217	300	38.3	601	100.3
Oklahoma	73	93	27.4	98	5.4
South Carolina	110	161	46.4	237	47.2
Tennessee	132	251	90.2	395	57.4
Texas	157	186	18.5	250	34.4
Virginia	176	270	53.4	648	140.0
West Virginia	122	217	77.9	435	100.5

Source: Kaiser Family Foundation, 2017.

State	Labs	State	Labs	State	Labs
Florida	553	South Carolina	90	Texas	42
Virginia	534	Georgia	80	Louisiana	23
Kentucky	511	Arkansas	68	Oklahoma	17
Missouri	245	Alabama	64	Mississippi	15
Tennessee	120	West Virginia	43	North Carolina	10

Source: U.S.-China Economic and Security Review Commission, 2017.

deaths, approximately 32 percent of all drug overdoses. In 2017, the number increased again, to 29,416 deaths, or 41 percent of all drug overdose cases.²⁸ In other words, during a four-year span, the number of overdose deaths resulting from synthetic opioid abuse increased by an astonishing 392 percent. By comparison, the number of overdose deaths caused by all opioids increased by nearly 63 percent during the same period, from 29,874 in 2014 to 48,612 in 2017.²⁹

Approached from a different perspective, the number of deaths caused by synthetic opioid overdoses in 2017 was on par with the number of overdoses caused by all opioids in 2014. Meanwhile, overdose deaths attributed to heroin increased by approximately 41 percent between 2014–2017; for cocaine, the increase was 154 percent; and for natural opioids and semi-synthetic opioids,^{*} the increase was 17 percent.³⁰

These disturbing trends are reflected across the South. With the exception of Arkansas, every SLC member state saw increases in the number of overdose deaths caused by synthetic opioids in 2016, according to the Kaiser Family Foundation. Seven states—Alabama, Florida, Louisiana, Missouri, North Carolina, Virginia and West Virginia—experienced increases greater than 100 percent; another five—Kentucky, Mississippi, South Carolina, Tennessee and Texas—had increases greater than 30 percent. This follows a similar trajectory from 2015, when every Southern state experienced significant increases in the number of synthetic opioid-induced overdose deaths, from a high of 90.2 percent in Tennessee to a low of 18.5 percent in Texas (see Table 3).³¹

States reporting the highest number of fentanyl and fentanyl analog overdoses are concentrated in the East and Midwest, believed to be a result of the characteristics of the heroin market and supply chains in these regions. Fentanyl powder can be mixed easily with white powder heroin, primarily sold in Eastern and Midwestern states, whereas it is more difficult to combine with black tar heroin, which dominates the market west of the Mississippi River.³² According to the DEA, the overwhelming majority of fentanyl and fentanyl analogs seized between 2014–2017

^{*} According to the CDC, natural and semi-synthetic opioids include morphine and codeine, oxycodone, hydrocodone, hydromorphone and oxymorphone.

have been found in powder form,[†] a strong indication that it is being manufactured and distributed for heroin users.³³ As of September 2017, the DEA analyzed almost 500 kilograms of powder-based fentanyl and fentanyl analogs, an increase of 796 percent since 2014.³⁴

The number of discovered laboratories with traces of fentanyl and fentanyl analogs underscores the popularity of these drugs east of the Mississippi River. Among the top 20 states with the largest number of seized laboratories with traces of such substances, only two were west of the Mississippi River: Missouri and California. Three SLC member states—Florida, Virginia and Kentucky—were among the top 10 states in the nation for the number of discovered laboratories with traces of these substances. An additional six states—Missouri, Tennessee, South Carolina, Georgia, Arkansas and Alabama—were among the top 20 nationally (see Table 4).³⁵

Experts suggest illicit synthetic opioids are manufactured almost exclusively in China—a claim the Chinese government denies—and then shipped directly to the United States or via Mexico, where drug cartels repackage and then smuggle them into the country, often combined with other substances, such as heroin, cocaine and methamphetamine.³⁶ According to U.S. law enforcement agencies, Chinese chemical manufacturers export an array of fentanyl-based products destined for the United States, including raw fentanyl, fentanyl precursors,[‡] fentanyl analogs, fentanyl-laced prescription drugs and machinery required for fentanyl-producing laboratories.³⁷

There are indications that Chinese authorities, in collaboration with U.S. law enforcement agencies, are actively working to stem illicit synthetic opioid production and distribution in the country. In January 2018, the Chinese government announced controls on two prominent fentanyl precursors, NPP and 4ANPP, following similar restrictions in 2017 on other substances contributing to

[†] Fentanyl and fentanyl analogs in tablet form also have increased dramatically in recent years, indicating a similar growing interest in marketing to prescription opioid abusers. From 2014 to 2017, DEA seizures of fentanyl and fentanyl analogs in tablet form increased by 7,266 percent.

[‡] Fentanyl precursors are chemicals used to illicitly produce fentanyl and fentanyl analogs.

the synthetic opioid crisis.³⁸ Additionally, in August 2018, the U.S. Department of Justice announced an indictment against two Chinese nationals for manufacturing and shipping fentanyl analogs and hundreds of other drugs to at least 25 countries and 37 U.S. states.³⁹ Also in August 2018, U.S. and Chinese officials announced that a joint investigation—the first of its kind between the two countries—into a fentanyl ring led to the dismantlement of an international supplier of fentanyl and fentanyl analogs. According to officials, the investigation prevented more than 20 million doses of substances from reaching the United States.⁴⁰ It is possible, though certainly not guaranteed, that such collaborations mark a turning point in cooperation between the United States and China to slow imports of fentanyl into the country.

Conclusion

The opioid epidemic, a pervasive public health issue, has impacted nearly all age groups to varying degrees. In 2016, according to the Kaiser Family Foundation, individuals aged 25–54 comprised the bulk of opioid-induced overdose deaths.⁴¹ However, variations exist across the region within more specifically defined age groups. In seven of the 15 SLC member states—Florida, Georgia, Mississippi, Missouri, North Carolina, Texas and Virginia—those aged 25–34 were the most affected group by overdose deaths. Meanwhile, in Arkansas, Kentucky, Louisiana, Oklahoma and West Virginia, those between the ages of 35 and 44 primarily were affected. For two states—South Carolina and Tennessee—those between the ages of 45 and 54 were most affected and, in Alabama, a nearly equal percentage of overdose deaths were reported in people aged 25–34 and 35–44.⁴²

Synthetic opioids are particularly dangerous and far more potent than naturally occurring opioid substances. Fentanyl is 50–100 times deadlier than morphine, while carfentanil, a fentanyl analog, is worse, with a potency rate as much as 10,000 times greater. These lethal substances have extremely rapid onset times that can lead to fatal overdoses in a matter of minutes, leaving first responders with limited options to revive victims experiencing synthetic opioid-induced overdoses. Moreover, first responders have reported a range of symptoms when dealing with synthetic opioids in the field, including disorientation, coughing, sedation and, in a few extreme

cases, cardiac arrest, leading some areas to forego field tests altogether due to the threat to first responders posed by these substances.⁴³

The sudden popularity of synthetic opioids is due, in large part, to how easily they can be manufactured and combined with various substances. According to a July 2018 CDC emergency notification, public health and law enforcement agencies have reported that fentanyl and fentanyl analogs now are commonly mixed with a host of more traditional substances, including heroin, prescription opioid tablets and cocaine.⁴⁴ Another report published in May 2018 in the *Journal of the American Medical Association* also found that, among synthetic opioid-related overdose deaths between 2010–2016, 80 percent involved alcohol or other illicit substances. Of those, prescription opioids were involved in 20.9 percent of cases, cocaine in 21.6 percent and heroin in 29.8 percent.⁴⁵ These statistics suggest that most overdose deaths involving synthetic opioids are the result of mixing or lacing drugs, either by users during consumption or by distributors before reaching the market. In many cases, users who overdose on synthetic opioids may not even be aware that they are consuming such potent substances.

A comprehensive approach from federal, state and local governments, healthcare providers and law enforcement agencies is required to effectively combat the increase in synthetic opioid abuse. Public health departments in all states should be provided the necessary resources to monitor trends in illicit opioid drug supplies, including the various drugs with which opioids often are mixed. Obtaining accurate information on local drug supplies and reporting the exact cause of death for suspected overdoses also are pivotal to determine the impact of synthetic opioid consumption.

States and communities should ensure that first responders, drug treatment centers and families of individuals at risk of overdosing are equipped with overdose-reversing drugs, such as naloxone, which can be administered quickly to mitigate the effects of an overdose. The CDC warns that, notwithstanding the already proven protocols established for opioid-induced overdoses, those resulting from potent synthetic opioids often require multiple—and sometimes prolonged—doses of overdose-reversing drugs to successfully treat victims.

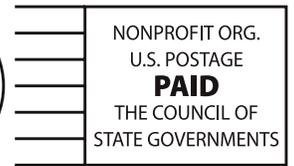
Lastly, it is critical that states promote public awareness campaigns in schools, corrections facilities and treatment centers to provide needed information about the many risks associated with synthetic opioid consumption. Given how easily synthetic opioids can be combined with more traditional, less potent substances, it is important for current and potential drug users to understand they may not be fully aware of the efficiency of drugs they are consuming, putting them at a significantly higher risk of overdosing.

Endnotes

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This report was prepared by **Roger Moore**, policy analyst and committee liaison of the Human Services & Public Safety Committee of the Southern Legislative Conference, chaired by **Senator Katrina Shealy** of **South Carolina**. This report reflects the policy research made available to appointed and elected state officials by the **Southern Office of The Council of State Governments (CSG)**.

Opened in 1959 as the final regional office of CSG, the mission of the Southern Office is to promote and strengthen intergovernmental cooperation among its 15-member states, predominantly through the programs and services provided by its **Southern Legislative Conference (SLC)**. Legislative leadership, members and staff depend on the SLC to identify and analyze solutions for the most prevalent and unique

state government policy issues facing Southern states. Member outreach in state capitols, leadership development and staff exchange programs, meetings, domestic and international delegation study tours, and policy fly-ins by the Southern Office support state policymakers and legislative staff in their work to build a stronger region.

Established in 1947, the SLC is a member-driven organization and serves as the **premier public policy forum for Southern state legislatures**. The SLC Annual Meeting and a broad array of similarly well-established and successful SLC programs — focusing on both existing and emerging state government innovations and solutions — provide policymakers diverse opportunities to interact with policy experts and share their knowledge with colleagues.