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PDMP TTAC
Prescription Drug Monitoring Program Training and Technical Assistance Center

Prescription Drug Monitoring Program

Prescription Opioid Overdose Deaths: Analysis and Recommendations

(revised to reflect 2020 statistics)

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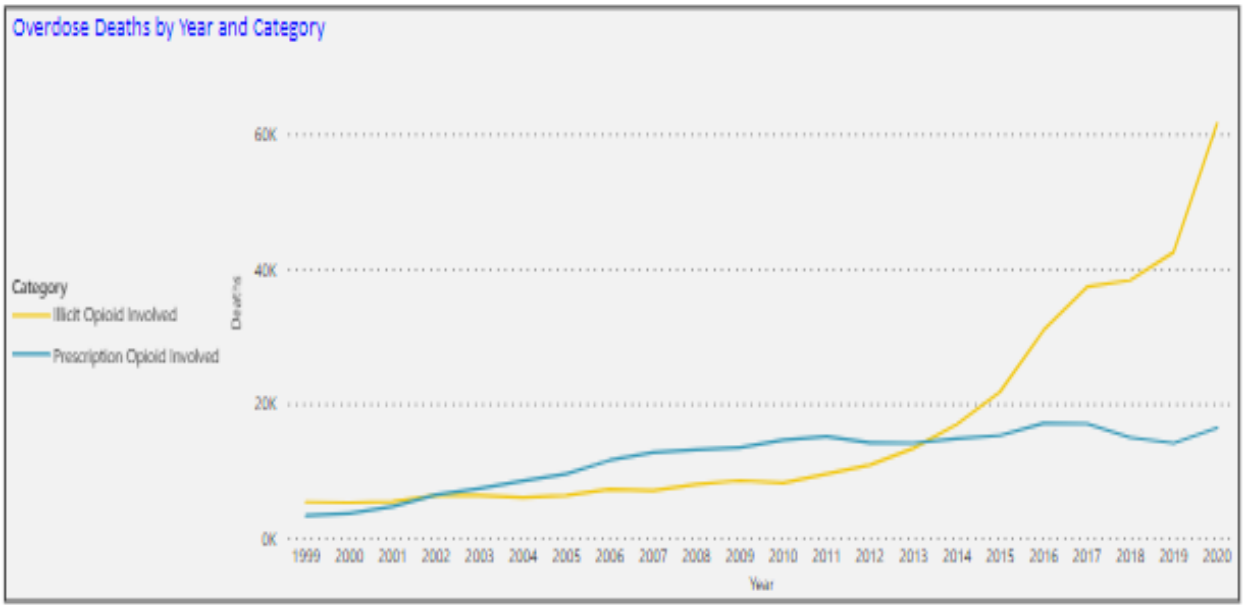
The opioid epidemic began in the United States in the late 1990s when opioids were increasingly prescribed for pain management, which resulted in a dramatic and dangerous rise in opioid use for many subsequent years. The misuse and abuse of opioids is a national crisis that impacts public health as well as social and economic welfare. The rise in the misuse and abuse of prescription opioids was a major factor for states, districts, and territories to enact legislation creating prescription drug monitoring programs (PDMPs). Of the 54 PDMPs in the United States, 39 were established since 1999 and 20 of those in the last ten years. Missouri was the last state to pass legislation (2021) to implement a PDMP. However, it should be noted that St. Louis County in Missouri has had an operational PDMP since 2017. PDMPs are an important tool in combating the misuse and abuse of prescription opioids. However, despite their success in protecting patient safety and providing the ability for prescribers and dispensers to monitor patient medication, PDMPs are only one of many important tools needed to be simultaneously employed statewide or within a community to stem the opioid epidemic. It takes the combined efforts and resources of public health, public safety, and medical communities working in unison to have a lasting impact on the epidemic.

Between 1999 and 2020, 564,421 people died from overdoses involving opioids (prescription and illicit). Data from the Centers for Disease Control and Prevention's (CDC) Wide-ranging Online Data for Epidemiologic Research (WONDER) database revealed that in 2019, 49,860 people died in the United States from opioid overdoses. In 2020, the United States experienced the greatest number of opioid-involved deaths with 68,630 overdoses. In fact, from 2016 to 2020, there was a 62.44 percent increase in the number of overdose deaths due to opioids (see below chart). Starting in 2010, illicit opioid (i.e., heroin and illicit fentanyl) overdose deaths increased every year from 8,211 (2010) to 61,516 (2020). However, during that same time frame, overdose deaths involving prescription opioids have remained comparatively steady from 14,583 (2010) to 16,416 (2020), although there was a peak of 17,087 (2016).



Overdose Death Statistics Source

The WONDER database is an internet system that provides access to a wide array of public health information. Analysis of the raw data, without accounting for testing and reporting variations in compiling the overdose data, is limited in its applicability. The WONDER database is a valuable resource tool but cannot be solely relied upon for an accurate portrayal of overdose deaths since there is no national standard for testing and reporting of overdose information.

Users of this database can search for and read published documents on public health concerns, including reports, recommendations and guidelines, articles and statistical research data published by CDC, as well as reference materials and bibliographies on health-related topics, and query numeric data sets on CDC's information systems, via "fill-in-the blank" Web pages. Public-use data sets about deaths, cancer incidence, HIV and AIDS, tuberculosis, births, census data, and many other topics are available for query, and the requested data are readily summarized and analyzed. Users can produce tables, maps, charts and download tab-delimited text exports of summary statistics.

The Multiple Cause of Death data consist of national mortality and population data spanning the years 1999 to 2020. Data are based on death certificates for U.S. residents. Each death certificate contains a single underlying cause of death, up to 20 additional multiple causes, and demographic data. The number of deaths, crude death rates, age-adjusted death rates, and 95 percent confidence intervals for death rates can be obtained by cause of death, place of residence, and year. The Multiple Cause of Death data are produced by the National Center for Health Statistics (NCHS) at CDC. Mortality information is collected by state registries and provided to the National Vital Statistics System. Underlying cause of death and demographic descriptors are indicated on the death certificates. The underlying cause of death is defined by the World Health Organization (WHO) as "the disease or injury which initiated the train of events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury." Underlying cause of death is selected from the conditions entered by the physician on the cause of death section of the death certificate. The specific criteria used to generate the overdose statistics in this document are listed in Appendix A. Note: *T40.4 Other synthetic narcotics* is listed with the ICD-10 codes for prescription drugs; this code includes fentanyl. Analysis of the death certificates listing fentanyl as a contributing cause reveals that the fentanyl was illicit instead of prescription. Therefore, T40.4 was not used in the calculations of prescription opioid overdose deaths.

Statistical Summary

The PDMP Training and Technical Assistance Center (TTAC) at the Institute for Intergovernmental Research (IIR) has compiled overdose death statistics from 1999 to 2020 (PDMP TTAC website). This section details the prescription opioid overdose data trends from 2016 to 2020. The raw statistics are listed in Appendix B.

The 2020 national age-adjusted overdose death rate (AAODR) for prescription opioids per 100,000 people was 4.9; peaking at 5.2 in 2016 and 2017.

Year	Deaths	Population	AAODR
2016	17,087	323,127,513	5.2
2017	17,029	325,719,178	5.2
2018	14,975	327,167,434	4.5
2019	14,139	328,239,523	4.2
2020	16,416	329,484,123	4.9

In 2020, three states had an AAODR that was more than double the 2020 national AAODR:

State	Deaths	Population	AAODR
West Virginia	303	1,784,787	18.4
Kentucky	466	4,477,251	10.8
New Mexico	204	2,106,319	10.2

In 2020, there were four states with an AAODR that was less than half the 2020 national AAODR:

State	Deaths	Population	AAODR
Iowa	64	3,163,561	2.2
Hawaii	31	1,407,006	2.2
Texas	640	29,360,759	2.2
Nebraska	35	1,937,552	1.8

Nebraska and Texas were the only two states that were less than half of the national AAODR for each of the last five years. West Virginia was the only state that was more than double the national AAODR for each of the last five years.

From 2016 to 2020, there were 26 states that showed a percentage change decrease in the AAODR and 25 states with an increase (See Appendix C). The states with an AAODR percentage change of +/- 50 percent are Oklahoma (-63.66%), New Hampshire (-50.56%), Louisiana (116.94%), Montana (105.26%), Delaware (100.00%), and Indiana (75.95%).

Observations

PDMP TTAC's objective in analyzing the overdose statistics was to identify which efforts were most effective in reducing the incidence of prescription opioid overdose deaths. PDMP TTAC's research revealed that most states or PDMPs have implemented similar programs to address the overdose problem, for example:

- Prescriber education
- Prescribing guidelines
- Naloxone distribution programs
- Overdose fatality review teams
- Mandatory enrollment and use of PDMPs
- Substance use disorder treatment resources

Although each of these programs has merit and varying degrees of success, comparable programs in multiple states showed dissimilar impact on overdoses. The difficulty in comparing overdose rates across the country and over time is that the ways in which overdoses are identified and reported vary. A study, Methodological Complexities in Quantifying Rates of Fatal Opioid-Related Overdose, provides an excellent explanation of the issues surrounding overdose death statistics. Since overdose death investigations, toxicology testing, and reporting variances exist, caution should be used when making comparisons between states, performing trend analysis over time, or evaluating the remediation efforts based solely on the numbers reported.

In August 2018, PDMP TTAC, with support from the Bureau of Justice Assistance (BJA), hosted a national meeting that brought together representatives from the medical examiner/coroner (ME/C) communities and PDMP administrators. The meeting was convened for these representatives to learn more about each other's roles, discuss access and use of PDMP data by ME/Cs, identify best or promising practices regarding use of PDMP data by ME/Cs, and educate federal agencies regarding state and local needs in their efforts to assist in better addressing those needs. One of the many recommendations from that meeting was for the ME/C and PDMP communities to work together to establish standardized reports and procedures for overdose death investigations. Visit the PDMP TTAC website to view the meeting report.

The National Association of Medical Examiners (NAME) and CDC have standard guidelines on toxicology screens and what should be included on a death certificate; however, no single standard is followed by each state or even across jurisdictions within a state. It is important to note that overdose death investigations and subsequent toxicology testing can be expensive. In most jurisdictions, funding and staffing resources are lacking. Each ME/C office strives to correctly determine the cause of death; however, without a national standard and sufficient resources, an accurate assessment of the overdose problem in this country is difficult, if not impossible.

Recommendations

To accurately measure the scope of the prescription opioid overdose problem in the United States, a national standard for death investigation, toxicology testing, and reporting must be developed and implemented. Further research into the current processes utilized throughout the country is needed. As a starting point, state laws should expand PDMP access authority to ME/Cs and death investigators; currently, 48 of the 54 PDMPs permit this access. Secondly, PDMP TTAC will convene a group with representatives from the PDMP community, national ME/C organizations, CDC, BJA, state health departments, and epidemiologists to create this national standard. Lastly, to implement a national standard, ME/Cs and death investigators must be given additional resources and funding; possible funding sources could include federal grants, specific allocations in state budgets, or dedicated funds from the court settlements with opioid drug manufacturers.

The opioid overdose problem has impacted a significant number of individuals, families, and communities in the United States. Understanding the true scope of the overdoses is a critical step in developing meaningful strategies to address the problem.

Appendix A – Overdose Data Criteria

Category	Underlying Cause	Contributing Cause
Prescription opioid poisoning	X40, X41, X42, X43, X44, X60, X61, X62, X63, X64, X85 Y10, Y11, Y12, Y13, Y14	T40.2, T40.3
Illicit opioid poisoning	X40, X41, X42, X43, X44, X60, X61, X62, X63, X64, X85, Y10, Y11, Y12, Y13, Y14	T40.0, T40.1, T40.4, T40.6

Underlying Cause ICD-10 codes descriptions

X40 (Accidental poisoning by and exposure to nonopioid analgesics, antipyretics, and antirheumatics)
X41 (Accidental poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism, and psychotropic drugs, not elsewhere classified)
X42 (Accidental poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified)
X43 (Accidental poisoning by and exposure to other drugs acting on the autonomic nervous system)
X44 (Accidental poisoning by and exposure to other and unspecified drugs, medicaments, and biological substances)
X60 (Intentional self-poisoning by and exposure to nonopioid analgesics, antipyretics, and antirheumatics)
X61 (Intentional self-poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism, and psychotropic drugs, not elsewhere classified)
X62 (Intentional self-poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified)
X63 (Intentional self-poisoning by and exposure to other drugs acting on the autonomic nervous system)
X64 (Intentional self-poisoning by and exposure to other and unspecified drugs, medicaments, and biological substances)
X85 (Assault by drugs, medicaments, and biological substances)
Y10 (Poisoning by and exposure to nonopioid analgesics, antipyretics, and antirheumatics, undetermined intent)
Y11 (Poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism, and psychotropic drugs, not elsewhere classified, undetermined intent)
Y12 (Poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified, undetermined intent)
Y13 (Poisoning by and exposure to other drugs acting on the autonomic nervous system, undetermined intent)
Y14 (Poisoning by and exposure to other and unspecified drugs, medicaments, and biological substances, undetermined intent)

Contributing Cause ICD-10 codes descriptions – prescription drugs

T40.2 (Other opioids)
T40.3 (Methadone)

Contributing Cause ICD-10 codes descriptions – illicit drugs

T40.0 (Opium)
T40.1 (Heroin)
T40.4 (Other synthetic narcotics)
T40.6 (Other and unspecified narcotics)

Appendix B – Prescription Opioid Overdose Statistic Tables

National Ranking of 2020 Death Rates for Prescription Opioid Overdoses				
Rank	**State**	**Deaths**	**Population**	**AAODR**
1	West Virginia	303	1,784,787	18.4
2	Kentucky	466	4,477,251	10.8
3	New Mexico	204	2,106,319	10.2
4	Maryland	589	6,055,802	9.4
5	Tennessee	605	6,886,834	9
6	District of Columbia	65	712,816	8.7
7	South Carolina	435	5,218,040	8.5
8	Connecticut	311	3,557,006	8.5
9	Delaware	82	986,809	8.4
10	Rhode Island	87	1,057,125	8.4
11	Utah	235	3,249,879	7.9
12	Nevada	245	3,138,259	7.6
13	Indiana	461	6,754,953	7.2
14	Maine	92	1,350,141	7
15	Vermont	39	623,347	6.7
16	New York	1257	19,336,776	6.3
17	Pennsylvania	764	12,783,254	6.1
18	Louisiana	269	4,645,318	6
19	Wisconsin	338	5,832,655	5.9
20	Alaska	45	731,158	5.8
21	Florida	1255	21,733,312	5.8
22	Wyoming	30	582,328	5.5
23	Illinois	696	12,587,530	5.4
24	Colorado	323	5,807,719	5.3
25	Arizona	389	7,421,401	5.3
26	Massachusetts	363	6,893,574	5.3

National Ranking of 2020 Death Rates for Prescription Opioid Overdoses				
Rank	**State**	**Deaths**	**Population**	**AAODR**
27	New Jersey	457	8,882,371	5
28	Michigan	495	9,966,555	4.9
29	Idaho	89	1,826,913	4.9
30	North Carolina	487	10,600,823	4.7
31	Georgia	493	10,710,017	4.6
32	Ohio	511	11,693,217	4.5
33	Virginia	365	8,590,563	4.2
34	Mississippi	119	2,966,786	4.2
35	Washington	327	7,693,612	4
36	Minnesota	213	5,657,342	3.8
37	Missouri	233	6,151,548	3.8
38	Montana	39	1,080,577	3.6
39	Arkansas	105	3,030,522	3.5
40	Oregon	134	4,241,507	3.1
41	New Hampshire	44	1,366,275	3
42	Kansas	82	2,913,805	3
43	Alabama	146	4,921,532	3
44	California	1208	39,368,078	2.9
45	Oklahoma	117	3,980,783	2.9
46	Iowa	64	3,163,561	2.2
47	Hawaii	31	1,407,006	2.2
48	Texas	640	29,360,759	2.2
49	Nebraska	35	1,937,552	1.8
50	North Dakota	19	765,309	data unreliable
51	South Dakota	15	892,717	data unreliable
Total		**16,416**	**329,484,123**	**4.9**

2016–2020 National Death Rates for Prescription Opioid Overdose by Year				
State	Year	Deaths	Population	Age-Adjusted Rate
Alabama	2016	124	4,863,300	2.6
Alabama	2017	167	4,874,747	3.4
Alabama	2018	152	4,887,871	3.2
Alabama	2019	161	4,903,185	3.3
Alabama	2020	146	4,921,532	3
Alaska	2016	51	741,894	6.8
Alaska	2017	51	739,795	7
Alaska	2018	38	737,438	4.9
Alaska	2019	47	731,545	6.1
Alaska	2020	45	731,158	5.8
Arizona	2016	380	6,931,071	5.6
Arizona	2017	414	7,016,270	5.9
Arizona	2018	362	7,171,646	5
Arizona	2019	364	7,278,717	4.9
Arizona	2020	389	7,421,401	5.3
Arkansas	2016	132	2,988,248	4.7
Arkansas	2017	125	3,004,279	4.4
Arkansas	2018	119	3,013,825	4.2
Arkansas	2019	98	3,017,804	3.5
Arkansas	2020	105	3,030,522	3.5
California	2016	1172	39,250,017	2.8
California	2017	1169	39,536,653	2.8
California	2018	1084	39,557,045	2.6
California	2019	1073	39,512,223	2.6
California	2020	1208	39,368,078	2.9
Colorado	2016	258	5,540,545	4.5
Colorado	2017	300	5,607,154	5.1
Colorado	2018	268	5,695,564	4.4
Colorado	2019	258	5,758,736	4.3
Colorado	2020	323	5,807,719	5.3
Connecticut	2016	264	3,576,452	7.2
Connecticut	2017	273	3,588,184	7.7
Connecticut	2018	231	3,572,665	6.4
Connecticut	2019	283	3,565,287	7.8
Connecticut	2020	311	3,557,006	8.5
Delaware	2016	41	952,065	4.4
Delaware	2017	78	961,939	8.7
Delaware	2018	82	967,171	8.9
Delaware	2019	75	973,764	8.2
Delaware	2020	82	986,809	8.4

2016–2020 National Death Rates for Prescription Opioid Overdose by Year				
State	Year	Deaths	Population	Age-Adjusted Rate
District of Columbia	2016	66	681,170	9.3
District of Columbia	2017	58	693,972	8.4
District of Columbia	2018	41	702,455	5.7
District of Columbia	2019	36	705,749	4.9
District of Columbia	2020	65	712,816	8.7
Florida	2016	1183	20,612,439	5.8
Florida	2017	1272	20,984,400	6
Florida	2018	1282	21,299,325	6
Florida	2019	1190	21,477,737	5.6
Florida	2020	1255	21,733,312	5.8
Georgia	2016	536	10,310,371	5.1
Georgia	2017	568	10,429,379	5.4
Georgia	2018	440	10,519,475	4.1
Georgia	2019	396	10,617,423	3.6
Georgia	2020	493	10,710,017	4.6
Hawaii	2016	55	1,428,557	3.6
Hawaii	2017	40	1,427,538	2.5
Hawaii	2018	33	1,420,491	2.3
Hawaii	2019	26	1,415,872	1.6
Hawaii	2020	31	1,407,006	2.2
Idaho	2016	77	1,683,140	4.7
Idaho	2017	63	1,716,943	3.8
Idaho	2018	75	1,754,208	4.3
Idaho	2019	81	1,787,065	4.5
Idaho	2020	89	1,826,913	4.9
Illinois	2016	479	12,801,539	3.7
Illinois	2017	623	12,802,023	4.8
Illinois	2018	539	12,741,080	4.2
Illinois	2019	545	12,671,821	4.2
Illinois	2020	696	12,587,530	5.4
Indiana	2016	262	6,633,053	4
Indiana	2017	425	6,666,818	6.6
Indiana	2018	370	6,691,878	5.6
Indiana	2019	400	6,732,219	6.2
Indiana	2020	461	6,754,953	7.2
Iowa	2016	92	3,134,693	3.1
Iowa	2017	104	3,145,711	3.4
Iowa	2018	64	3,156,145	2.1
Iowa	2019	60	3,155,070	2
Iowa	2020	64	3,163,561	2.2

2016–2020 National Death Rates for Prescription Opioid Overdose by Year				
State	Year	Deaths	Population	Age-Adjusted Rate
Kansas	2016	90	2,907,289	3
Kansas	2017	89	2,913,123	3.1
Kansas	2018	87	2,911,505	3.2
Kansas	2019	85	2,913,314	3
Kansas	2020	82	2,913,805	3
Kentucky	2016	429	4,436,974	10
Kentucky	2017	433	4,454,189	10
Kentucky	2018	315	4,468,402	7.2
Kentucky	2019	345	4,467,673	7.8
Kentucky	2020	466	4,477,251	11
Louisiana	2016	124	4,681,666	2.6
Louisiana	2017	168	4,684,333	3.6
Louisiana	2018	144	4,659,978	3
Louisiana	2019	188	4,648,794	4.2
Louisiana	2020	269	4,645,318	6
Maine	2016	154	1,331,479	13
Maine	2017	100	1,335,907	7.6
Maine	2018	69	1,338,404	5.1
Maine	2019	73	1,344,212	5.6
Maine	2020	92	1,350,141	7
Maryland	2016	812	6,016,447	13
Maryland	2017	711	6,052,177	12
Maryland	2018	576	6,042,718	9.2
Maryland	2019	589	6,045,680	9.4
Maryland	2020	589	6,055,802	9.4
Massachusetts	2016	351	6,811,779	4.9
Massachusetts	2017	321	6,859,819	4.6
Massachusetts	2018	331	6,902,149	4.7
Massachusetts	2019	288	6,892,503	4
Massachusetts	2020	363	6,893,574	5.3
Michigan	2016	678	9,928,300	7
Michigan	2017	633	9,962,311	6.5
Michigan	2018	556	9,995,915	5.6
Michigan	2019	454	9,986,857	4.6
Michigan	2020	495	9,966,555	4.9
Minnesota	2016	195	5,519,952	3.6
Minnesota	2017	195	5,576,606	3.6
Minnesota	2018	136	5,611,179	2.5
Minnesota	2019	143	5,639,632	2.6
Minnesota	2020	213	5,657,342	3.8

2016–2020 National Death Rates for Prescription Opioid Overdose by Year				
State	Year	Deaths	Population	Age-Adjusted Rate
Mississippi	2016	103	2,988,726	3.4
Mississippi	2017	96	2,984,100	3.2
Mississippi	2018	92	2,986,530	3.1
Mississippi	2019	97	2,976,149	3.2
Mississippi	2020	119	2,966,786	4.2
Missouri	2016	268	6,093,000	4.5
Missouri	2017	253	6,113,532	4.1
Missouri	2018	265	6,126,452	4.4
Missouri	2019	242	6,137,428	3.9
Missouri	2020	233	6,151,548	3.8
Montana	2016	19	1,042,520	
Montana	2017	24	1,050,493	2.3
Montana	2018	26	1,062,305	2.3
Montana	2019	33	1,068,778	3.1
Montana	2020	39	1,080,577	3.6
Nebraska	2016	28	1,907,116	1.6
Nebraska	2017	37	1,920,076	2
Nebraska	2018	41	1,929,268	2.1
Nebraska	2019	39	1,934,408	2
Nebraska	2020	35	1,937,552	1.8
Nevada	2016	275	2,940,058	8.9
Nevada	2017	276	2,998,039	8.7
Nevada	2018	235	3,034,392	7.2
Nevada	2019	189	3,080,156	5.8
Nevada	2020	245	3,138,259	7.6
New Hampshire	2016	89	1,334,795	6.5
New Hampshire	2017	62	1,342,795	4.8
New Hampshire	2018	43	1,356,458	3.1
New Hampshire	2019	45	1,359,711	3.3
New Hampshire	2020	44	1,366,275	3
New Jersey	2016	416	8,944,469	4.5
New Jersey	2017	490	9,005,644	5.3
New Jersey	2018	517	8,908,520	5.8
New Jersey	2019	456	8,882,190	5
New Jersey	2020	457	8,882,371	5
New Mexico	2016	186	2,081,015	9.2
New Mexico	2017	171	2,088,070	8.5
New Mexico	2018	176	2,095,428	8.2
New Mexico	2019	179	2,096,829	8.9
New Mexico	2020	204	2,106,319	10

2016–2020 National Death Rates for Prescription Opioid Overdose by Year				
State	Year	Deaths	Population	Age-Adjusted Rate
New York	2016	1100	19,745,289	5.4
New York	2017	1044	19,849,399	5.1
New York	2018	998	19,542,209	4.9
New York	2019	939	19,453,561	4.7
New York	2020	1257	19,336,776	6.3
North Carolina	2016	695	10,146,788	6.9
North Carolina	2017	659	10,273,419	6.5
North Carolina	2018	489	10,383,620	4.7
North Carolina	2019	420	10,488,084	4
North Carolina	2020	487	10,600,823	4.7
North Dakota	2016	21	757,952	2.8
North Dakota	2017	18	755,393	
North Dakota	2018	24	760,077	3.4
North Dakota	2019	27	762,062	3.7
North Dakota	2020	19	765,309	
Ohio	2016	867	11,614,373	7.7
Ohio	2017	947	11,658,609	8.4
Ohio	2018	571	11,689,442	5
Ohio	2019	477	11,689,100	4.2
Ohio	2020	511	11,693,217	4.5
Oklahoma	2016	322	3,923,561	8.4
Oklahoma	2017	251	3,930,864	6.7
Oklahoma	2018	172	3,943,079	4.3
Oklahoma	2019	133	3,956,971	3.4
Oklahoma	2020	117	3,980,783	2.9
Oregon	2016	165	4,093,465	3.9
Oregon	2017	154	4,142,776	3.5
Oregon	2018	151	4,190,713	3.4
Oregon	2019	127	4,217,737	2.8
Oregon	2020	134	4,241,507	3.1
Pennsylvania	2016	729	12,784,227	5.9
Pennsylvania	2017	618	12,805,537	4.9
Pennsylvania	2018	690	12,807,060	5.5
Pennsylvania	2019	623	12,801,989	5
Pennsylvania	2020	764	12,783,254	6.1
Rhode Island	2016	114	1,056,426	11
Rhode Island	2017	99	1,059,639	8.8
Rhode Island	2018	85	1,057,315	7.7
Rhode Island	2019	63	1,059,361	5.9
Rhode Island	2020	87	1,057,125	8.4

2016–2020 National Death Rates for Prescription Opioid Overdose by Year				
State	Year	Deaths	Population	Age-Adjusted Rate
South Carolina	2016	381	4,961,119	7.8
South Carolina	2017	345	5,024,369	7.1
South Carolina	2018	375	5,084,127	7.4
South Carolina	2019	351	5,148,714	7
South Carolina	2020	435	5,218,040	8.5
South Dakota	2016	28	865,454	3.2
South Dakota	2017	16	869,666	
South Dakota	2018	11	882,235	
South Dakota	2019	16	884,659	
South Dakota	2020	15	892,717	
Tennessee	2016	739	6,651,194	11
Tennessee	2017	644	6,715,984	9.6
Tennessee	2018	550	6,770,010	8.2
Tennessee	2019	515	6,829,174	7.6
Tennessee	2020	605	6,886,834	9
Texas	2016	617	27,862,596	2.2
Texas	2017	646	28,304,596	2.3
Texas	2018	547	28,701,845	1.9
Texas	2019	535	28,995,881	1.8
Texas	2020	640	29,360,759	2.2
Utah	2016	349	3,051,217	13
Utah	2017	315	3,101,833	11
Utah	2018	306	3,161,105	11
Utah	2019	277	3,205,958	9.3
Utah	2020	235	3,249,879	7.9
Vermont	2016	35	624,594	5.9
Vermont	2017	40	623,657	6.3
Vermont	2018	27	626,299	4.4
Vermont	2019	29	623,989	4.9
Vermont	2020	39	623,347	6.7
Virginia	2016	400	8,411,808	4.7
Virginia	2017	404	8,470,020	4.7
Virginia	2018	326	8,517,685	3.8
Virginia	2019	306	8,535,519	3.5
Virginia	2020	365	8,590,563	4.2
Washington	2016	388	7,288,000	5
Washington	2017	343	7,405,743	4.3
Washington	2018	301	7,535,591	3.8
Washington	2019	268	7,614,893	3.3
Washington	2020	327	7,693,612	4

2016–2020 National Death Rates for Prescription Opioid Overdose by Year				
State	Year	Deaths	Population	Age-Adjusted Rate
West Virginia	2016	340	1,831,102	20
West Virginia	2017	304	1,815,857	17
West Virginia	2018	234	1,805,832	13
West Virginia	2019	185	1,792,147	11
West Virginia	2020	303	1,784,787	18
Wisconsin	2016	382	5,778,708	6.7
Wisconsin	2017	362	5,795,483	6.4
Wisconsin	2018	301	5,813,568	5.3
Wisconsin	2019	282	5,822,434	4.8
Wisconsin	2020	338	5,832,655	5.9
Wyoming	2016	26	585,501	4.4
Wyoming	2017	31	579,315	6
Wyoming	2018	28	577,737	4.6
Wyoming	2019	28	578,759	4.7
Wyoming	2020	30	582,328	5.5

Appendix C – Percentage Change in Prescription Opioid Overdose Deaths From 2016 to 2020